

**SKRIPSI
PENERAPAN (VALUE ENGINEERING) PADA
PEMBANGUNAN GEDUNG KANTOR DPRD KABUPATEN
NGADA NUSA TENGGARA TIMUR**



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**PROGRAM STUDI TEKNIK SIPIL S-1
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
INSTITUT TEKNOLOGI NASIONAL
MALANG
2016**

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**PENERAPAN (VALUE ENGINEERING) PADA
PEMBANGUNAN GEDUNG KANTOR DPRD KABUPATEN
NGADA NUSA TENGGARA TIMUR**

Diajukan Untuk Memenuhi Salah Satu Persyaratan Dalam Memperoleh Gelar
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INSTITUT TEKNOLOGI NASIONAL MALANG

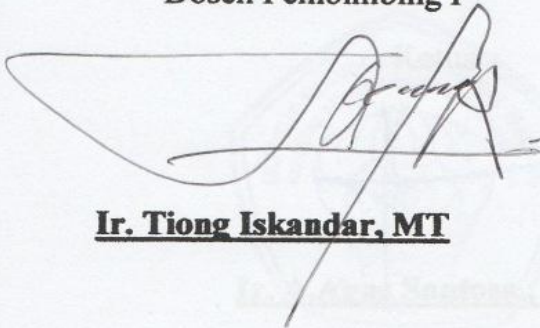
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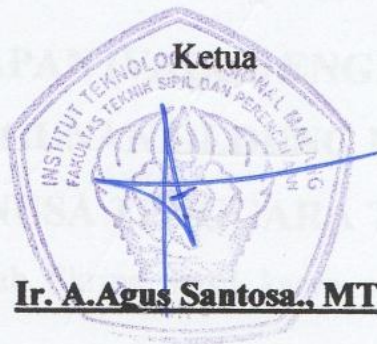
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**PENERAPAN ANALISA VALUE ENGINEERING PADA
PEMBANGUNAN GEDUNG KANTOR DPRD KABUPATEN
NGADA NUSA TENGGARA TIMUR”**

SKRIPSI



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FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
INSTITUT TEKNOLOGI NASIONAL
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2016**



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PEMBANGUNAN GEDUNG KANTOR DPRD KABUPATEN
NGADA NUSA TENGGARA TIMUR”**

Adalah Skripsi hasil karya sendiri, bukan merupakan duplikat serta tidak mengutip atau menyadur seluruhnya dari karya orang lain, kecuali yang tidak disebutkan dari sumber aslinya.

Malang, Oktober 2016

Yang membuat pernyataan,

(Jeronimo J.G.Gomes)

ABSTRAKSI

PENERAPAN ANALISA VALUE ENGINEERING PADA PEMBANGUNAN GEDUNG KANTOR DPRD KABUPATEN NGADA NUSA TENGGARA TIMUR

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Rencana anggaran biaya (RAB) suatu proyek haruslah direncanakan dengan efisiensi optimal. Banyak hal yang dapat dilakukan sebelum membuat RAB diantaranya adalah pemilihan bahan yang sangat berpengaruh pada kualitas dan mutu dari bangunan tersebut. Terkadang merencanakan RAB masih terdapat beberapa item pekerjaan yang memiliki anggaran terlalu tinggi.

Salah satu teknik yang digunakan untuk mengoptimalkan biaya adalah dengan menggunakan aplikasi Value Engineering (Rekayasa Nilai). Value Engineering (Rekayasa Nilai) adalah suatu pendekatan terorganisir dan kreatif yang bertujuan untuk mengidentifikasi biaya yang tidak perlu. Kemudian dicari alternatif desain menggunakan kriteria non biaya metode zero one

Dalam penerapan value engineering rekayasa nilai dilakukan pada pekerjaan balok dan kolom di Proyek Pembangunan Gedung Kantor DPRD Kabupaten Ngada Nusa Tenggara Timur, dengan memperkecil dimensi balok dan kolom dan hasilnya tidak mengurangi fungsi dan dapat menerima beban yang diberikan. Desain yang diusulkan dibandingkan dengan desain awal. Desain yang diterapkan pada proyek tidak dibahas, item pekerjaan yang dibahas adalah pekerjaan struktur beton setelah dianalisa didapat penghematan pada balok Rp **896.541.504** atau sebesar 32 % sedangkan pada kolom terdapat penghematan Rp **169.030.289** atau sebesar 13 % dari biaya keseluruhan proyek

KATA PENGANTAR

Puji Tuhan, berkat melimpahkan Rahmat dan BerkatNya saya dapat menyelesaikan Skripsi ini dengan judul **“PEMBANGUNAN GEDUNG KANTOR DPRD KABUPATEN NGADA NUSA TENGGARA TIMUR.”**

Skripsi ini dimaksudkan untuk memenuhi salah satu syarat menyelesaikan Program Pendidikan Sarjana S-1 di Jurusan Teknik Sipil, Fakultas Teknik Sipil dan Perencanaan di Institut Teknologi Nasional Malang.

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BAB I

PENDAHULUAN

1.1 Latar Belakang

Rencana anggaran biaya (RAB) suatu proyek haruslah direncanakan dengan efisien dan optimal. Banyak hal yang dilakukan sebelum membuat RAB diantaranya adalah pemilihan desain dan bahan yang dipakai. Pemilihan desain dan bahan sangatlah berpengaruh pada kualitas dan mutu dari bangunan tersebut.terkadang merencanakan RAB masih terdapat beberapa item pekerjaan yang memiliki anggaran terlalu tinggi.

Dalam manajemen konstruksi (MK) terdapat suatu disiplin ilmu teknik sipil yang dapat digunakan untuk mengefisiensi dan mengaktifkan biaya.ilmu tersebut dapat dikenal dengan nama *Value Engineering* (Rekayasa Nilai).

Secara garis besar *Value Engineering* (VE) dapat diartikan sebagai suatu pendekatan yang kreatif dan terencana dengan tujuan untuk mengidentifikasi dan mengefisiensi biaya-biaya yang tidak perlu tanpa mengubah fungsi produk atau jasa. Value engineering digunakan untuk menghasilkan biaya yang lebih baik/lebih rendah dari harga yang telah direncanakan sebelumnya dengan batasan batasan fungsional dan mutu pekerjaan.

Untuk itu pada penulisan tugas akhir ini,peneliti mencoba untuk menerapkan *Value Engineering* pada pekerjaan beton pada gedung kantor DPRD Kabupaten Ngada Nusa Tenggara Timur.

Perlunya rekayasa nilai pada struktur utama adalah untuk mengendalikan suatu biaya tanpa mengubah nilai fungsi suatu bangunan, agar lebih ekonomis dan efisien.

Penulisan tugas akhirnya ini adalah sebagai pembanding desai awal dengan usulan dari. Desain yang diterapkan pada proyek tidak dibahas karena pada tugas akhir ini,hanya pekerjaan beton.

1.2 **Rumusan Masalah**

Penggunaan bahan atau material penyusun konstruksi pada tiap tiapa item pekerjaan kurang efisien mengakibatkan bertambah besarnya biaya yang harus dikeluarkan.

Sehingga diperlukan suatu pengkajian ulang dengan memilih alternative yang lain guna didapatkan nilai yang lebih optimal.

Berdasarkan uraian diatas, maka timbul permasalahan yang menarik untuk diteliti, antara lain :

1. Apa saja item pekerjaan yang dapat dilakukan Rekayasa Nilai
2. Bagaimana penerapan rekayasa nilai pada pekerjaan utama pembangunan gedung kantor DPRD Ngada Nusa Tenggara Timur
3. Berapa besar penghematan biaya yang diperoleh dari penerapan value engineering pada proyek pembangunan gedung kantor DPRD Ngada Nusa Tenggara Timur

1.3 Maksud Dan Tujuan

1. Untuk mengetahui pekerjaan mana yang bias dilakukan *Value Engineering*
2. Mengetahui penghematan (cost saving) biaya pekerjaan yang dilakukan value engineering pada gedung kantor DPRD Ngada Nusa Tenggara Timur
3. Dapat mengetahui jumlah/besar biaya total proyek sebelum dan sesudah dilakukan Rekayasa nilai.

1.4 Batasan Masalah

Karena begitu luasnya value engineering dalam pelaksanaan konstruksi, maka dalam hal ini dilakukan pembatasan terhadap permasalahan sehingga penulis lebih berfokus. Batasan masalah dalam penelitian ini adalah sebagai berikut :

1. Value engineerin (rekayasa nilai) dilakukan pada pekerjaan sipil dan arsitektur, pekerjaan struktur utama (Balok Dan Kolom) di gedung kantor DPRD Ngada NTT
2. Desain awal yang digunakan adalah desain yang dibuat oleh konsultan perencana.
3. Anggaran biaya dan harga satuan diambil sesuai dengan data yang ada pada RAB
4. Kajian tidak dilakukan terhadap bagian pekerjaan terbang

BAB II

LANDASAN TEORI

2.1 Tinjauan Singkat Landasan Teori

Didalam proses mencapai tujuan telah ditentukan batasan besar yaitu besar biaya (anggaran) yang dialokasikan, jadwal serta mutu yang harus dipenuhi. Ketiga batasan diatas merupakan tiga kendala (triple constrain). merupakan parameter penting bagi penyelenggara proyek yang sering di alokasikan sasaran proyek tiga kendala tersebut dijabarkan sebagai berikut:

1. Anggaran proyek harus diselesaikan dengan biaya yang tidak melebihi anggaran. untuk proyek-proyek yang melibatkan dana dalam jumlah besar dan penjadwalan bertahun tahun, anggaran bukan hanya ditentukan dalam total proyek tetapi dipecahkan bagi komponen- komponen atau periode tertentu yang jumlahnya disesuaikan dengan keperluan.
2. Jadwal proyek harus disesuaikan dengan kurun waktu dan tanggal akhir yang telah ditentukan. Bila hasil akhir proyek baru, maka penyerahan tidak boleh melewati batas waktu yang telah ditentukan.
3. Mutu, produk, atau hasil kegiatan proyek harus memenuhi spesifikasi dan kriteria yang telah di persyaratkan mutu berarti mampu memenuhi spesifikasi dan kriteria yang telah dipersyaratkan. memenuhi persyaratan mutu berarti

mampu memenuhi tugas yang di maksudkan atau sering disebut sebagai fit or the intened use.(husen,2011)

2.2. Sejarah Singkat Value Engineering

Value engineering ditemukan oleh seorang sarjana teknik bernama *Lawrence D.Miles* Pada Tahun 1947,yang didasarkan karena keinginan untuk mendapatkan bahan baku pengganti dengan biaya yang rendah tetapi masih memenuhi fungsi produk uang diharapkan .

Pengembangan konsep value engineering ini dikembangkan pada awal perang dunia ke-II oleh *Lawrence D.Miles* dari perusahaan *General Electric Co.(GE)* saat memproduksi peralatan perang dalam jumlah yang besar.perang yang mengakibatkan penurunan jumlah tenaga kerja ahli,bahan baku,dan suku cadang.teknik yang di kembangkan tersebut dapat menurunkan biaya,meningkatkan produksi atau keduanya.

Analisa value engineering pertama kali dipromosikan pada angkatan darat amerika serikat pada perang korea,tetapi pihak pertama yang menerapkan teknik tersebut pada biro perkapalan angkatan laut as saan merencanakan sebuah program untuk mengatur pengurangan biaya pembuatan kapal dan peralatan perang pada tahap perencanaan program tersebut dikenal sebagai *value engineering* (rekayasa nilai).

Pada tahun pertama penerapan program tersebut diakui telah menhemat biaya sampai 18 juta dolar. keberhasilan tersebut mendorong peluncuran program sejenis yang mendatangkan penghematan substansi di angkatan udara as pada tahun 1955 dan korps artiteri angkatan darat as pada tahun 1956. Pada tahun 1956, sekretaris Negara pertahanan as membuat keputyhsan untuk mengurangi biaya belanja pertahanan, dengan mendorong penerapan *value engineering* (rekayasa nilai) sebagai program penurunan biaya berdasarkan prinsip prinsip sebagai berikut;

1. Hanya membeli yang dibutuhkan
2. Membeli dengan harga terendah
3. Mengurangi biaya melalui penghilangan kegiatan yang tak perlu penerapan standarisasi dan konsolidasi.

Hasil dari penerapan *value engineering* (rekayasa nilai) telah menghilangkan biaya tak perlu dan penghematan anggaran *value engineering* kemudian menyebar keseluruh America dan eropa pada tahun 1960an.

Value Engineering (rekayasa nilai) sebagai suatu teknik manajemen yang menghasilkan penghematan biaya proyek berkembang dengan pesat dalam dunia industry dan konstruksi. pengaruhnya sampai ke-Indonesia pada tahun 1990, pada saat pemerintah sedang melakukan program efisiensi dalam penggunaan biaya.

2.3 Pengertian

2.3.1 Value Engineering

Value Engineering (rekayasa nilai) merupakan suatu pendekatan yang bersifat kreatif dan sistematis dengan tujuan menghilangkan biaya-biaya yang tidak perlu.

Rekayasa Nilai adalah usaha yang terorganisasi secara sistematis dan mengaplikasikan suatu teknik yang telah diakui, yaitu teknik mengidentifikasi fungsi produk atau jasa yang bertujuan memenuhi fungsi yang diperlukan dengan harga yang terendah (paling ekonomis). Rekayasa Nilai bermaksud memberikan sesuatu yang optimal bagi sejumlah uang yang dikeluarkan dengan memakai teknik yang sistematis untuk menganalisis dan mengendalikan total biaya produk. Rekayasa nilai akan membantu membedakan dan memisahkan antara yang diperlukan, dimana dapat dikembangkan alternatif yang memenuhi keperluan (meninggalkan yang tidak perlu) dengan biaya terendah. (Soeharta, 2001).

Sebelum membahas lebih jauh, terlebih dahulu kita harus mengetahui apa yang dimaksud dengan nilai, biaya dan fungsi itu sendiri.

2.3.2 Pengertian Nilai (Value)

Arti nilai (*value*) sulit dibedakan dengan biaya (*cost*) atau harga (*price*). Nilai mengandung arti subyektif apalagi bila dihubungkan dengan moral, estetika, sosial,

ekonomi. Pengertian nilai dibedakan dengan biaya karena hal-hal sebagai berikut (soeharto, 2001:313) :

- Ukuran nilai ditentukan oleh fungsi atau kegunaannya sedangkan harga atau biaya ditentukan oleh substansi barangnya atau harga komponen-komponen yang membentuk barang tersebut.
- Ukuran nilai cenderung kearah subyektif sedangkan biaya tergantung kepada (*monetary value*) pengeluaran yang telah dilakukan untuk mewujudkan barang tersebut.

2.3.3 Pengertian Biaya(Cost)

Biaya adalah jumlah segala usaha dan pengeluaran yang dilakukan dalam mengembangkan, memproduksi, dan mengaplikasikan produk. Penghasil produk selalu memikirkan akibat dari adanya biaya terhadap kualitas, reabilitas dan maintainability karena ini akan berpengaruh terhadap biaya bagi pemakai. Biaya pengembangan merupakan komponen yang cukup besar dari total biaya. Sedangkan perhatian terhadap biaya produksi amat diperlukan karena sering mengandung sejumlah biaya yang tidak perlu (*unnecessary cost*).

2.3.4 Fungsi

Arti fungsi sangat penting dalam studi Rekayasa Nilai karena fungsi akan menjadi objek utama dalam hubungannya dengan biaya. Untuk mengidentifikasi fungsi L.D Miles menerangkan sebagai berikut :

1. Suatu sistem memiliki berbagai macam fungsi yang dibagi menjadi 2 kategori berikut ini.
 - a) Fungsi dasar, yaitu alasan pokok sistem itu terwujud. Misalkan kendaraan truk, fungsi pokoknya adalah sebagai alat pengangkut, dan inilah yang mendorong produsen membuatnya. Bila suatu peralatan kehilangan fungsi dasarnya, berarti alat tersebut akan kehilangan nilai jual dipasaran.
 - b) Fungsi kedua adalah kegunaan yang tidak langsung untuk memenuhi fungsi dasar, tetapi diperlukan untuk menunjangnya. Fungsi kedua kadang-kadang menimbulkan hal-hal yang tidak disukai. Misalnya untuk menggerakkan truk dipilih mesin diesel yang relatif murah bahan bakarnya, akan tetapi mengeluarkan asap hitam yang tidak disukai.
2. Untuk mengidentifikasi fungsi dengan cara yang mudah adalah dengan menggunakan kata kerja dan kata benda seperti yang terlihat pada table 2.1

Tabel 2.2 Identifikasi fungsi menggunakan kata kerja dan kata benda.

Nama Peralatan	Fungsi	
	Kata Kerja	Kata Benda
1. Truk	Mengangkut	Barang
2. Pompa	Mendorong	Air
3. Cangkul	Menggali	Tanah

Sumber : Soeharto, 2001.

Bila belum dapat menjelaskan fungsi dengan dua kata seperti diatas, berarti informasi yang tersedia masih kurang untuk mengidentifikasi dan mendefinisikan fungsi yang dimaksud. Adapun hubungan antara nilai, biaya dan fungsi dijabarkan dengan memakai rumus-rumus sebagai berikut :

Nilai = Fungsi / Biaya, atau Nilai = Manfaat / Biaya

Dari rumus diatas maka nilai dapat ditingkatkan dengan cara sebagai berikut

(Soeharto, 2001 :315) :

- a) Meningkatkan fungsi atau manfaat tanpa menambah biaya
- b) Mengurangi biaya dengan mempertahankan fungsi dan manfaat
- c) Kombinasi a dan b

2.4 Penyebab Biaya Tak Perlu

Jika penyebab bias dikenali dan dimengerti, maka dapat diambil tindakan atau dibuat aturan untuk mencegah penyebab tersebut terjadi. Penyebab penyebab tersebut antara lain sebagai berikut;

1. Inefisiensi manajemen

a. Kegagalan menentukan sarana nilai

b. Kekurangan pada perencanaan.

Nilai yang baik hanya mungkin terjadi dengan adanya kesungguhan tujuan, maka perencanaan harus ditetapkan dengan hati-hati untuk memastikan setiap bagian organisasi memberikan kontribusi ke arah yang telah disepakati

c. Kekurangan tekanan

Tidak adanya monitoring secara berkala manajemen adalah sumber dari biaya yang tidak perlu dan kegagalan dalam pencapaian sasaran nilai, karena perencanaan tidak berarti tanpa monitoring berkelanjutan oleh manajemen.

d. Kekurangan pelatihan

e. Setiap tugas, betapapun sederhana dan mudahnya, biasanya membutuhkan pelatihan. Setiap personil harus mendapatkan keterampilan melalui pelatihan yang terencana. Mutu pelatihan harus dijaga dan dilakukannya oleh pihak

yang mempunyai pengalaman keberhasilan penerapan rekayasa nilai serta terbukti mampu mengkomsumsikan pengalamannya

2. Kegagalan perorangan

Kelemahan dasar manusia yang menyebabkan ketidakmampuan untuk memahami bagaimana menyelesaikan masalah. tiga elemen utama prinsip yang diperlukan untuk keberhasilan pencapaian nilai yang baik antara lain:

a. Informasi

Tampa adanya informasi relevan yang dapat diterapkan, akan menimbulkan biaya biaya tak perlu. Kekurangan informasi dapat menyebabkan kesalahan pengambilan keputusan dan mengakibatkan perancangan ulang yang mahal

b. Komunikasi

Salah satu hal yang menyebabkan kekurangan informasi adalah kurangnya komunikasi. komunikasi juga dilakukan untuk berkonsultasi dengan tenaga ahli yang terlibat. Rekayasa nilai dalam konsep tim dan teknik tekniknya akan mengurangi akibat buruk yang disebabkan oleh kekurangan komunikasi.

c. Ide

Teknik teknik dalam rekayasa nilai mendisiplinkan organisasi agar mencari ide baru secara bebas. pencarian dan pembebsan ide akan

memberikan banyak alternative pemecahan masalah. Kekurangan ide menyebabkan penggunaan rancangan produk terdahulu yang mengurangi daya saing karena tidak *up to date*.

3. Kelemahan manusia

Karakter alami manusia kadang juga dapat menyebabkan biaya biaya tak perlu seperti;

- a. Kepercayaan atas sesuatu pernyataan atau anggaran yang salah
- b. Kebiasaan dan sikap seseorang, seseorang cenderung mengambil keputusan berdasarkan pada kebiasaan dan sikapnya tidak berdasarkan pada fakta atau kenyataan
- c. Terlalu berhati hati dan takut mengambil resiko akan menimbulkan suatu rancangan yang boros,karena penggunaan material melebihi kekuatan produk yang di butuhkan.
- d. Kekurangan waktu menyebabkan suatu pekerjaan dilakukan dengan tergesa gesa sehingga memberikan hasil yang tidak sesuai harapan, dan adanya pekerjaan perbaikan atau pekerjaan ulang.

2.5 Waktu Penerapan Rekayasa Nilai (*Value Engineering*)

Faktor penting yang harus diyakini adalah bahwa hampir semua desain

proyek selalu mengandung biaya-biaya yang tidak perlu, bagaimanapun juga bagusnya tim perencana. Hal ini terjadi karena tidak mungkin menyelesaikan secara bersama sejumlah banyak detail untuk suatu proyek dengan tetap menjaga keseimbangan fungsional antara biaya, kinerja dan keandalan mutu tanpa tinjauan *Value Engineering*

Sifat dari desain konstruksi menuntut sedemikian banyak variabel dan penyelesaiannya dibatasi dalam waktu ketat sehingga perencana tidak sempat untuk meninjau ulang hal-hal tersembunyi yang mengakibatkan timbulnya biaya-biaya yang tidak perlu. Namun harus disadari bahwa timbulnya biaya-biaya yang tidak perlu didalam suatu desain bukan mencerminkan tingkat kemampuan profesional seorang perencana, tetapi lebih merupakan masalah manajerial (Zimmerman, 1982).

Secara umum, *VE (value engineering)* dapat diterapkan pada semua jenis proyek yakni mulai dari gagasan awal hingga menjadi kenyataan atau disebut “daur hidup proyek konstruksi” (*the life cycle of construction project*) dimana pada setiap tahapannya adalah saling berhubungan, yaitu:

1. Konsep Dan Sudi Kelayakan (*Concept And Feasibility Studies*)
2. Rekayasa dan desain (*engineering and design*)
3. Pengadaan (*procurement*)
4. Kontruksi (*Construction*)
5. Memulai dan penerapan (*start up and implemenation*)

6. Operasi dan pemanfaatan (*operation or utilization*)

Setiap tahap diatas berhubungan satu sama lain, besarnya waktu dalam prosentase yang dibutuhkan masing-masing tahap tergantung jenis proyek yang dikerjakan.

Secara teoritis program *VE* dapat diaplikasikan pada setiap tahap sepanjang waktu berlangsungnya proyek tetapi lebih efektif bila program *VE* sudah diaplikasikan pada saat tertentu dalam tahap perencanaan untuk menghasilkan penghematan potensial yang sebesar-besarnya. Secara umum untuk mendapatkan penghematan potensial maksimum, pererapan *VE* harus dimulai sejak dini pada tahap konsep dan secara continue hingga selesainya perencanaan. Semakin lama saat menerapkan program *VE*, nilai penghematan akan semakin kecil. Sedangkan biaya yang diperlukan untuk mengadakan perubahan akibat adanya *VE* semakin besar.

2.5 Faktor Factor Penggunaan Dan Karakteristik Value Engineering

factor factor penggunaan dan value engineering adalah;

1. tersedianya data data perencanaan

data data perneencanaan yang dimaksud disini adalah data data yang berhubungan langsung dengan proses perencanaan sebuah bangunan yang di bangun dan akan dilakukan value engineering.

2. Biaya awal (initial cost)

Biaya awal yang dimaksud adalah biaya yang dikeluarkan mulai awal pembangunan sampai penggunaan tersebut selsesai.

3. Persyaratan operasional dan perawatan dalam alternative alternative desasin yang disampaikan melalui analisis value engineering dan jangka waktu tertentu.
4. Biaya dan nilai.(*Cost Dan Worth*)
5. Manajemen hubungan

Menurut *Imam Soeharto* (1995), proses pelaksanaan *Value Engineering* mengikuti suatu metodologi berupa langkah sistematis berupa (RK-KN) Rencana Kerja Rekayasa Nilai atau *Value Engineering Job Plan* dengan urutan :

1. Mengidentifikasi Masalah
2. Merumuskan Pendapat
3. Kreatifitas
4. Analisis
5. Penyajian

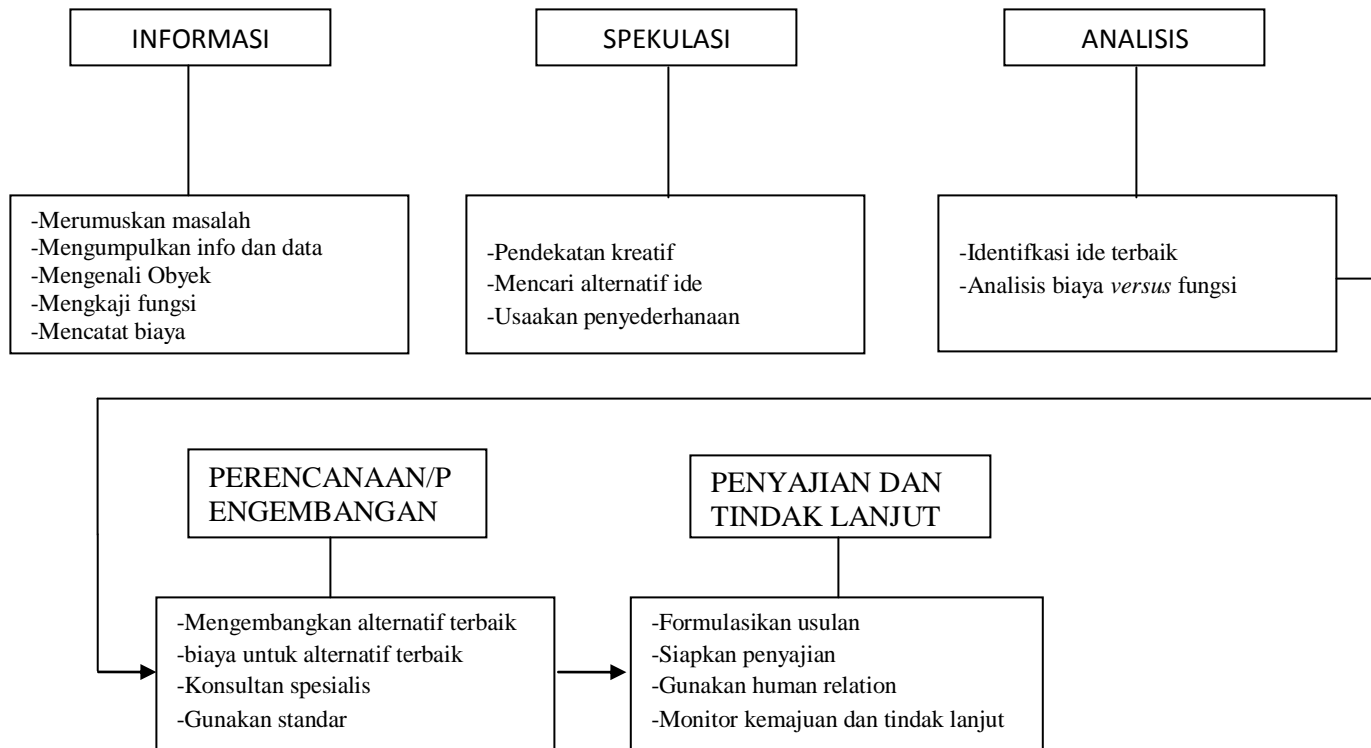
Sebenarnya terdapat bermacam interpretasi terhadap urutan langkah RK-RN, seperti pada tabel berikut yang disusun oleh L. D. *Miles* dan *Departement of Defense USA (DOD)*, dengan sistematika dan pendekatan yang sama.

Tabel 2.3

Proses Rencana Kerja Value Engineering

L. D. Miles	DOD
1. Informasi	1) Informasi
2. Spekulasi	2) Spekulasi
3. Analisis	3) Analisis
4. Perencanaan	4) Pengembangan
5. Penyajian	5) Peyakinan dan tindak lanjut
6. Penyajian	

Sumber : Imam Soeharto, 1995



Gambar 2.2 Langkah-langkah Proses Rekayasa Nilai

Sumber : Imam Soeharto, 1995

2.8 Uraian Tahapan-Tahapan Value Engineering

Seperti yang sudah dijelaskan pada sub bab 2.6 mengenai konsep dasar dari *Value Engineering* maka dalam sub bab ini akan dijelaskan dari masing-masing tahapan *Value engineering*.

1.8.1 RK-RN 1 : Tahap Informasi

Tahapan informasi adalah tahap pengumpulan data sebanyak mungkin dari proyek yang menjadi obyek penelitian. Proses dimana mencari informasi mengenai tiap komponen.

Dell'Isola (1974) menyebutkan tahapan informasi suatu system pekerjaan dapat berupa jawaban dari pertanyaan-pertanyaan berikut :

1. Itemnya apa?
2. Apa fungsinya?
3. Berapa nilai dari fungsi tersebut?
4. Berapa total biayanya?
5. Area mana yang mempunyai indikasi biaya tinggi atau nilai yang rendah?

Selain itu informasi penting lainnya dapat berupa :

1. Sudah berapa lama desain itu dibuat atau digunakan
2. System alternative material atau metode apa saja yang digunakan dalam konsep aslinya
3. Masalah khusus apa yang ada pada system atau proyek
4. Seberapa sering penggunaan desain ini setiap tahunnya

Informasi umum suatu proyek dapat berupa :

1. Criteria desain teknis
2. Kondisi lapangan (topografi, kondisi tanah, daerah sekitarnya, gambar sekitar)
3. Kebutuhan-kebutuhan regular
4. Unsure-unsur desain (komponen konstruksi dan bagian-bagian dan proses)
5. Riwayat proyek
6. Batasan yang dipakai untuk proyek
7. Utility yang tersedia
8. Perhitungan desain
9. Partisipasi public

Informasi-informasi diatas bisa dicatat pada table seperti pada table 2.4 (data-data non teknis) dan table 2.5 (data-data teknis proyek)

Table 2.4

Form Informasi/Data

TAHAP INFORMASI		
Proyek :		
Lokasi :		
NO	SUMBER INFORMASI	DATA/INFORMASI YANG DITERIMA

Sumber : Imam Soeharto, 1995

Tabel 2.5

Form Informasi Data-data Teknis Proyek

TAHAP INFORMASI	
Proyek :	
Item :	

Lokasi :		
NO	SUMBER INFORMASI	DATA-DATA PROYEK

Sumber : Imam Soeharto, 1995

Langkah pengumpulan informasi selanjutnya adalah dengan mengidentifikasi item pekerjaan yang berpotensi rendah dalam nilai tetapi berbiaya tinggi, ini merupakan seni dalam pendekatan *Value Engineering* (Rekayasa Nilai) dan menjadi langkah awal sebelum penerapan *Value Engineering*.

Untuk mengetahui biaya yang tidak diperlukan sangatlah sulit, beberapa teknik yang digunakan dalam tahap ini adalah :

1. *Cost Model*

Cost Model adalah suatu model yang digunakan untuk menggambarkan distribusi biaya total suatu proyek. Penggambaran dapat berupa suatu bagan yang disusun dari atas kebawah. Bagian atas adalah jumlah biaya elemen bangunan dan dibawahnya merupakan susunan biaya item pekerjaan dari elemen bangunan tersebut.

Dengan *cost model* dapat dilihat perbedaan biaya tiap elemen bangunan. Perbedaan biaya tiap elemen bangunan tersebut dapat dijadikan pedoman dalam menentukan item pekerjaan mana yang akan dianalisis *Value Engineering*.

2. *Breakdown*

Breakdown adalah suatu analisis untuk menggambarkan distribusi pemakaian biaya dari item-item pekerjaan suatu elemen bangunan. Jumlah biaya item pekerjaan tersebut kemudian diperbangkan dengan total biaya proyek untuk mendapat prosentase bobot pekerjaan. Bila memiliki bobot pekerjaan besar, maka item pekerjaan tersebut berpotensi untuk dianalisis *Value Engineering*. Untuk lebih jelasnya dapat dilihat pada table 2.6

Table 2.6

Breakdown

Item pekerjaan	Biaya
1.Pekerjaan A	Rp.....
2.Pekerjaan B	Rp.....
3.Pekerjaan C	Rp.....
4.Pekerjaan D	Rp.....

5.Pekerjaan E	Rp.....
6.Pekerjaan F	Rp.....
Total biaya	Rp M.
Total Proyek Keseluruhan	Rp N.
Persentase	=Rp M/Rp N
	=.....%

Sumber : Dell'Isola (1974)

Table 2.6 dapat dijelaskan sebagai berikut :

- a. Pekerjaan A-F merupakan item-item pekerjaan dari suatu elemen bangunan yang memiliki potensial untuk dilakukan *Value Engineering*. Item pekerjaan tersebut dipilih karena memiliki biaya yang besar dari elemen pekerjaan lainnya.

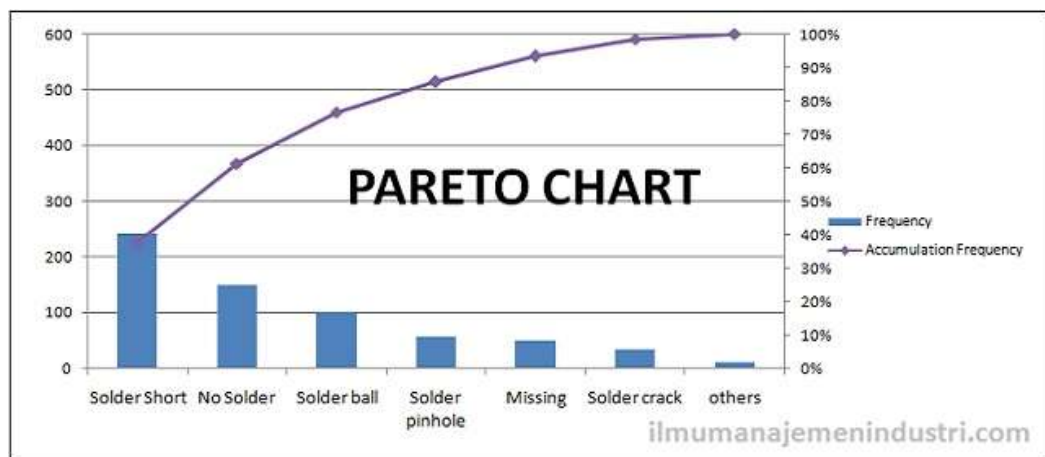
- b. Untuk mengetahui item pekerjaan tersebut berpotensi untuk dilakukan *Value Engineering* adalah dengan membandingkan jumlah item pekerjaan tersebut dengan biaya total proyek. Bila memiliki prosentase yang besar, maka berpotensi untuk dilakukan *Value Engineering*.
 - c. Setelah diidentifikasi, selanjutnya dipilih salah satu item pekerjaan A-F yang berpotensi untuk dilakukan analisis *Value Engineering*. Selain memiliki biaya yang besar, dalam memilih item pekerjaan dapat ditinjau dari segi bahan dan desain yang dapat memunculkan berbagai macam alternative pengganti.
3. Hukum Pareto

Para ahli *Value Engineering*, dalam memilih fungsi yang akan dikaji sering menggunakan Hukum Pareto. Dalam hukum distribusi Pareto disebutkan bahwa 20% bagian dari suatu item memiliki bobot 80% dari biaya (*Vilfredo Pareto*, 1848-1923). Pada awalnya hukum distribusi Pareto menggambarkan persentase pendapatan diterima oleh masyarakat 20%.

Walaupun hukum tersebut tidak benar-benar tepat untuk proyek konstruksi, yang menyatakan bahwa sebagian kecil komponen proyek menyumbang sebagian besar biaya proyek. Dalam biaya yang besar tersebut umumnya terdapat biaya takperlu (*unnecessary cost*)

Untuk mengidentifikasi komponen-komponen berbiaya tinggi maka dilakukan pengurutan biaya komponen total dari yang terbesar ke komponen biaya yang terkecil. Bila hasil tadi diplot kedalam grafik untuk dianalisa secara Hukum Pareto.

Gambar 2.3 Diagram Pareto



4. Analisa Fungsi

Fungsi adalah kegunaan atau manfaat yang diberikan produk kepada pemakai untuk memenuhi suatu atau sekumpulan kebutuhan tertentu. Analisis fungsi merupakan suatu pendekatan untuk mendapatkan suatu nilai

tertentu, dalam hal ini fungsi merupakan karakteristik produk atau proyek yang membuat produk atau proyek tersebut dapat bekerja atau dijual.

Secara umum fungsi dibedakan menjadi fungsi primer dan fungsi sekunder. Fungsi primer adalah fungsi tujuan atau prosedur yang merupakan tujuan utama dan harus dipenuhi serta suatu identitas dari suatu produk tersebut dan tanpa fungsi tersebut produk tidak mempunyai kegunaan sama sekali. Sedangkan fungsi sekunder adalah fungsi pendukung yang mungkin dibutuhkan untuk melengkapi fungsi dasar agar mempunyai nilai yang lebih baik. Analisis fungsi bertujuan untuk :

1. Mengklasifikasikan fungsi-fungsi esensial (sesuai dengan kebutuhan) dan menghilangkan fungsi-fungsi yang tidak diperlukan.
2. Agar perancang dapat mengidentifikasi komponen-komponen dan menghasilkan komponen-komponen yang diperlukan.

Tabel 2.5

Form Analisa Fungsi

ANALISA FUNGSI	
Proyek :	Item :
Lokasi :	Fungsi :

No	Uraian	Fungsi		Jenis	Cost	Wort	Keterangan
		Kt. Kerja	Kt. Benda				
	1	2	3	4	5	6	7

Sumber : Imam Soeharto, 1995

Analisa fungsi dilakukan dengan membuat table atau format analisa fungsi sebagai berikut:

Keterangan :

Kolom 1: Daftar semua uraian subitem yang terdapat dalam bagian yang kita tinjau

Kolom 2: Definisi dari tindakan atau fungsi dari subitem dalam kata kerja aktif

Kolom 3: Definisi kata benda dari fungsi yang ditinjau

Kolom 4: Pertolongan jenis fungsi, dibedakan menjadi 2 jenis, yaitu:

- Fungsi utama "P" (Primer)
- Fungsi sekunder "S" (Sekunder)

Kolom 5: Biaya yang diperkirakan (*Estimatic Cost*) dari setiap fungsi, baik primer maupun sekunder

Kolom 6: Biaya terendah yang diperlukan untuk bias memenuhi fungsi yang diinginkan.

Kolom 7: Keterangan untuk pihak lain jika ada tambahan penjelasan mengenai analisa fungsi yang dilakukan

2.8.2 RK-RN II: Tahap Kreatifitas

Tahap kreatifitas adalah suatu tahap dimana muncul alternatif-alternatif yang digunakan dalam melakukan analisis *Value Engineering* pada komponen pembangunan tersebut. Alternatif-alternatif tersebut dapat dikaji dari segi bahan, dimensi, waktu pelaksanaan, biaya pelaksanaan, dan lain-lain.

Pada tahapan ini ide—ide diproduksi dan dilakukan pemikiran terhadap alternatif-alternatif yang lain yang dapat memenuhi kegunaan atau fungsi yang sama. Ketidakmampuan untuk menghasilkan ide baru adalah salah satu penyebab utama biaya tak perlu. Alternatif yang diusulkan mungkin dapat diperoleh dari usaha pengurangan komponen, penyederhanaan, atau modifikasi dengan tetap mempertahankan fungsi utama obyek. dalam tahap spekulasi ini juga dipraktekkan penggunaan imajinasi dan pemunculan ide-ide baru yang mungkin tanpa memikirkan aspek kepraktisan maupun tingkat kesulitan dalam implementasinya. Ide-ide dan

gagasan diperoleh dari personil yang bekerja langsung dilapangan, dari vendor, ataupun pihak perencana. Tujuannya adalah untuk mendengar dan mencatat pertanyaan , idea tau pemikiran yang berkembang sebanyak mungkin, untuk kemudian menganalisanya.

Dalam tahap kreatif ini, pembuatan ide dapat dikembangkan lebih luas dengan ,elakukannya dalam sebuah kelompok yang anggotanya dari bidang kerja yang berbeda. Dalam kelompok tersebut dipraktekkkan apa yang dikenal sebagai brainstorming (pemunculan ide hasil pemikiran secara bebas). Berlaku peraturan:

- Mengutarakan ide sebebas mungkin
- Tidak mengkritik suatu usulan atau pendapat
- Mendorong adanya ide-ide yang diluar kebiasaan atau tidak konvensional

Berikut ini beberapa pertanyaan kreatif yang mungkin muncul , sebagai berikut:

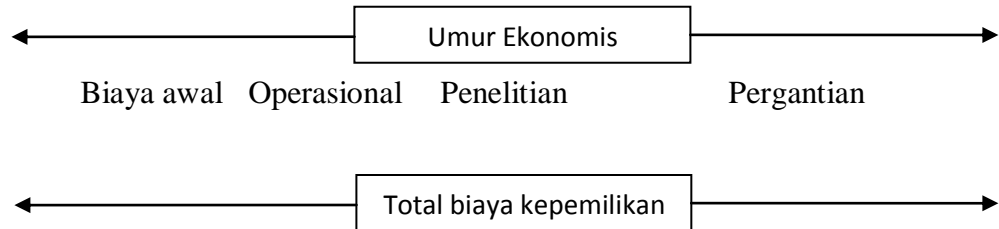
- Apakah bagian tersebut benar-benar diperlukan?
- Dapatkah digunakan material yang tidak terlalu mahal?
- Apakah telah ditemukan proses atau cara baru yang lebih ekonomis untuk mengerjakan bagian-bagian objek?
- Sudahkah diusahakan penyederhanaan?

2.8.3 RK-RN II : Tahap Analisa

Tahap analisa adalah tahap dimana tim *Value Engineering* melakukan analisis terhadap alternatif-alternatif yang dipakai dalam item pekerjaan baik dari segi biaya maupun non biaya pada pekerjaan konstruksi. Ada beberapa langkah yang digunakan dalam tahap ini, diantaranya sebagai berikut:

- a. Langkah *Judicial* (pertimbangan) adalah langkah yang berbeda karena selama langkah ini kreatif terhadap berbagai macam alternatif yang ditunda penilaiannya terhadap fungsi, mutu dan kualitas dari produk atau proyek karena masih dalam tahap pemikiran. Tujuan dari langkah ini adalah untuk menyeleksi ide-ide tersebut untuk dianalisis pada tahap selanjutnya agar dapat diputuskan alternative desain yang paling menjajikan dari keseluruhan ide yang muncul pada tahap kreatif, pada tahap ini dapat digunakan teori-teorirasional komperhensif (*Rational comprehensive*), teori inlremental dan pengamatan terpadu (*mixed scanning*).
- b. Analisa keuntungan dan kerugian dari masing-masing alternative yang terpilih dari tahap sebelumnya (tahap *Judicial*). Baik itu dari segi biaya, teknik pelaksanaan, mutu atau kualitas, waktu pelaksanaan, tenaga kerja, pabriksi dan lain-lain.

- Perubahan pendapatan yang akan datang yang telah diketahui sebelumnya



Gambar 2.5 Faktor yang Mempengaruhi Live Cycle Cost

2.8.4 RK-RN IV : Tahap pengembangan

Pada tahap ini alternatif-alternatif yang terpilih dari tahap sebelumnya dibuat program pengembangan sampai menjadi usulan yang lengkap. Umumnya tim tidak cukup memiliki pengetahuan yang menyeluruh dan spesifik. Untuk maksud diatas, diperlukan bantuan dari luar, yaitu para spesialis (tenafga ahli) sesuai bidangnya masing-masing. Contohnya, *chek list* suatu pompa untuk pompa air akan melakukan hal-hal sebagai berikut:

- ✓ Kinerja yang diinginkan (NPSH, tekanan.dan lain lain
- ✓ Keandalan dalam pemeliharaan
- ✓ *Compability*
- ✓ *Safety* (keselamatan)
- ✓ *Pasokan suku cadang*

Alternatif yang memiliki aspek teknis paling baik akan dievaluasi lebih lanjut mengenai biaya untuk mendukung usulan pemilihannya.

2.8.5 RK-RN V : Tahap Penyajian dan Program Tindak Lanjut

Tahap dimana berisi rencana awal dari system dan item pekerjaan yang dilakukan *Value Engineering*, usulan yang terbaik, dasar pertimbangan dalam memilih usulan atau alternative yang terbaik dan diskusi yang berisi tentang nilai penghematan yang didapat dari usulan yang terpilih. Jadi Tugas Akhir ini akan berisikan sebagai berikut:

- Identitas obyek atau proyek
- Penjelasan fungsi masing-masing komponen dan keseluruhan komponen, sebelum dan sesudah dilakukan *Value engineering*.
- Perubahan desain (pengurangan, peningkatan) yang disusulkan
- Total penghematan biaya yang akan diperoleh

Disamping hal-hal diatas, sering pula diperlukan keterangan teknis bahwa kinerja proyek secara keseluruhan (bukan hanya obyek yang sedang dikaji) tidak akan tergantung oleh perubahan sebagai dampak *Value Engineering*.

Dalam tahap ini juga ditampilkan dalam sebuah form proposal seperti table

2.20 dibawah in

Table 2.20

Form Data-data Teknis Proyek

TAHAP PENYAJIAN	
Proyek :	Item :
Lokasi :	Fungsi :
NO	URAIAN
1.	Desain Awal
2.	Desain Usulan
3.	Desain Pertimbangan
4.	Biaya Awal
5.	Biaya Akhir (termasuk biaya penundaan dan perubahan)
6.	Penghematan Potensial

Sumber Imam Soeharto 1995

BAB III

METODOLOGI PENELITIAN

3.1 Deskripsi Proyek

Pada proyek pembangunan gedung kantor DPRD Ngada Nusa Tenggara Timur, adapun pihak yang berkepentingan disini adalah :

Nama gedung : Gedung kantor DPRD Ngada Nusa Tenggara Timur

Lokasi gedung : Kabupaten Ngada Nusa Tenggara Timur

Fungsi bangunan : Gedung Perkantoran

Kontraktor pelaksana : PT.Ardi Tekindo Perkasa

Struktur gedung : Lantai 1 sampai lantai 4 menggunakan struktur

Pada penyusunan tugas akhir ini penulis menggunakan langkah langkah dari tenaga kerja rekayasa nilai.struktur utama yang dimaksud adalah pekerjaan balok dan kolom.

3.2 Tahapan Kajian Rekayasa Nilai

Adapun tahapan rencana kerjs rekayasa nilai menurut *soeharto (2005)* yaitu terdiri dari 5 tahap :

3.2.1. Tahap Informasi

Tahap ini yang dilakukan dengan mengumpulkan informasi yang diperlukan berupa :

a) Data primer

Data primer merupakan sumber data yang diperoleh langsung dari sumber asli (tidak melalui media perantara).Data primer dapat berupa opini subjek (orang) secara individual atau kelompok, hasil observasi terhadap suatu benda (fisik), kejadian atau kegiatan, dan hasil pengujian.

b) Data sekunder

Data sekunder adalah data-data pendukung yang dapat dijadikan input dan referensi dalam melakukan analisa Rekayasa Nilai. Data sekunder, diantaranya data mengenai daftar harga satuan dan analisa pekerja, data bahan atau material bangunan yang digunakan, data alat-alat berat, peraturan-peraturan bangunan gedung dari Departemen Pekerjaan Umum dan data-data lainnya yang dapat dijadikan referensi dalam menganalisa Rekayasa Nilai, dan Studi literatur (diktat, jurnal, *hand book*) serta penelitian Rekayasa Nilai

sebelumnya.

3.2.2 Tahap Spekulasi Dan Kreatif

Pada tahap ini melakukan pendekatan secara kreatif dengan memunculkan ide alternatif sebagai perbandingan terhadap rencana awal. Alternatif-alternatif yang akan dipilih harus sesuai dengan batasan-batasan kriteria desain yang ditentukan pihak owner, konsultan perencana, maupun pelaksana. Selain itu dalam memunculkan ide alternatif juga harus diperhatikan dalam kemungkinan dan kemudahan pelaksanaannya.

Dalam tahap spekulasi yang dilakukan adalah :

a. Merubah dimensi tanpa mengurangi suatu bangunan.

- Balok

Menyederhanakan dimensi dengan berpedoman pada rumus, misal

Tinggi Balok (h) : $1/10L$ sampai dengan $1/15 L$

Lebar Balok (b) : $1/2 h$ Sampai dengan $2/3 h$

Keterangan :

L = Panjang Bentang

- Kolom menyederhanakan dimensi dengan berpedoman pada rumus, misal

$$H_{\min} = 3/2 b$$

$$H_{\max} = 2 b$$

Keterangan :

B = lebar kolom

3.2.3 Tahap Analisis

Pada tahap ini ide-ide yang muncul pada tahap spekulasi dianalisis dan dikritik, dilakukan evaluasi terhadap setiap ide yang tertampung pada tahap spekulasi untuk melihat apakah ide tersebut bisa untuk dikembangkan lebih lanjut dan direkomendasi sebagai hasil yang member nilai tambah.

Analisa ini dilakukan dengan analisa keuntungan dan kerugian yang mana pada tahap analisis ini mempunyai tujuan untuk memperoleh dan mendapatkan alternatif yang terbaik dari ide-ide atau gagasan-gagasan yang muncul pada tahap spekulasi.

Setelah dilakukan analisa keuntungan dan kerugian dilakukan analisa untuk menentukan urutan kelayakkan atau ranking atas sejumlah kriteria pengujian dengan menggunakan metode Zero One. Langkah langkah kerja metode Zero One adalah sebagai berikut :

1. Semua kriteria diperlukan ditulis dikolom sebelah kiri dan bagian sebelah atas.
2. Dilakukan perbandingan antara kriteria kriteria tersebut dengan

membandingkan kriteria yang satu dengan kriteria yang lain. Kriteria yang sama bobotnya dengan kriteria yang lain diberi tanda X, kriteria yang kurang penting di beri nilai 0, kriteria yang lebih penting dibandingkan dengan yang lain diberi nilai 1.

3. Nilai nilai dijumlahkan yang terbesar merupakan rangking yang tertinggi, dan dari hasil analisa tersebut diberi bobot.

Hasil dari pembobotan untuk masing masing pada pekerjaan pembobotan dapat dilai pada table :

➤ **Analisa Matrik**

Tujuan dari analisa matrik adalah untuk mendapatkan urutan (rangking) penghematan potensial dari setiap alternative yang diusulkan. Dengan demikian kita dapat mengutuskan alternative penghematan potensial yang paling maksimum dari jumlah yang dibahas.

Setelah diketahui biaya total untuk masing masing alternative yang dilakukan penilaian untuk menentukan bobot dan sejumlah parameter penguji dari masing masing kriteria. Untuk lebih jelasnya dapat dilihat pada table 3.1

Keterangan table 3.1

1. Waktu. adalah waktu yang digunakan dalam pelaksanaan pekerjaan beton, yang dititik beratkan pada pekerjaan balok dan pelat

2. Pengawasan mutu. Dititik beratkan pada mutu material beton yang digunakan. Dalam hal ini desain awal dan desain yang sudah di VE,memiliki mutu yang baik.
3. Pelaksanaan dan kemudahan dalam pelaksanaan
Setelah diketahui bobot atas jumlah parameter penguji, maka dilakukan analisa matrik dengan megalikan bobot nilai dan parameter penguji dan masing kriteria.

3.3.4 Tahap Pengembangan/Alternative Desain

Pasa tahap ini alternative alternative yang dipilih dari tahap sebelumnya dibuat program pengembangannya sampai usulan yang lengkap. Adapun langkah langkah tahap pengembangan adalah sebagai berikut :

1. Perencanaan dimensi pekerjaan struktur
2. Perhitungan peralatan beban pada struktur
3. Perhitungan pembebanan
4. Setelah didapat semua pembebanan pada semua struktur, kemudian dilakukan perhitungan statika dengan menggunakan STAAD PRO.

Adapun langkah langkah menggunakan program staad pro sebagai berikut :

1. Aksesslah program staad pro sebelum melakukan pemodelan data

input.selanjutnya akan muncul staad pro *windows* dan langsung pilih *file new*.

2. Selanjutnya akan muncul kotak dialog-new,pilih direktori yang anda inginkan untuk menempatkan *file* yang diperlukan untuk input dan output. Kemudian pilih *SPACE* untuk tipe struktur,*meter* dan *kilogram* untuk satuannya dan selanjutnya tekan tombol *next*.
3. Pada saat menilai kotak dialog *where do you want to go?*, secara otomatis program akan mmengaktifkan add beam sebagai control pemodelan.bila setuju dengan pilihan ini,langsung tekan tombol *finish*.
4. selanjutnya masukkan input mode dan input beam. Kemudian tekan tombol *constant* yang digunakan untuk menetapkan konstanta bahan.
5. Tekan tombol *support*,untuk memilih jenis dukungan yang terdiri dari jepit (*fixed*)

Dan sendi (*PINNED*),memasukkan semua beban kombinasi tekan tombol *combine*.

Adapun input STADD PRO adalah sebagai berikut :

- a. Nomor join dan nomor batang pada portal
- b. Bahan yang dibutuhkan,apakah menggunakan beton atau baja.
- c. Pendimensian pada struktur
- d. Memasukkan beban yang dimasukkan sebelumnya :

- Beban hidup
 - Beban mati
- e. Kombinasi beban,diantaranya
- 1,4 x beban mati
 - 1,2 x beban hidup + 1,6 x beban hidup
- f. Memasukkan mutu beton dan baja tulangan
6. Setelah dapat output dari program staad pro,maka dilakukan perhitungan penulangan lentur
 7. Control penulangan
 8. Penulangan geser
 9. Perhitungan volume
 10. Perhitungan RAB
 11. Analisa alternative biaya

Table 3.1

No	Kriteria	Parameter penguji	Skor
1	Biaya	Rp 100 juta s/d Rp 300 juta	4
		Rp 300 juta s/d Rp 600 juta	3
		Rp 600 juta s/d Rp 900 juta	2
		Rp 900 juta s/d Rp 1,2 M	1

2	Waktu	CEPAT	4
		Sedang	3
		Lambat	2
		Sangat lambat	1
3	Pengawasan mutu	Sangat baik	4
		baik	3
		Tidak baik	2
		Sangat jelek	1
4	Pelaksanaan	Sangat mudah	4
		Mudah	3
		Sulit	2
		Sangat sulit	1

Sumber: hasil analisa

BAB IV

PENERAPAN VALUE ENGINEERING

4.1 Deskripsi Proyek

Nama Proyek	:	Pembangunan Kantor DPRD Kabupaten Ngada
Lokasi proyek	:	Kabupaten Ngada
Luas Bangunan	:	$\pm 1545 \text{ m}^2$
Owner	:	Pemerintah DPRD Ngada
Kontraktor	:	PT.Ardi Tekindo Perkasa
Konsultan pengawas	:	CV. Widra 4
Fungsi Gedung	:	Perkantoran
Jumlah Lantai	:	4 Lantai
Struktur Bawah	:	Floot Plate
Struktur Tengah	:	Beton Bertulang
Struktur Atap	:	Deck Beton Bertulang

4.2 Tahapan Rekayasa Nilai

Adapun tahap-tahap rencana kerja rekayasa nilai menurut *imam soeharto (2001)* yaitu terdiri dari 5 tahap :

4.2.1 Tahap Informasi

Tahap informasi merupakan proses dari pengumpulan informasi yang bertujuan untuk memperoleh pemahaman yang seksama dari item studi dan mengidentifikasi pekerjaan yang akan ditinjau dengan mengumpulkan data-data sebanyak mungkin yang dapat mendukung. Dapat dilihat pada table 4.1 dan 4.2

Table 4.1

TAHAP INFORMASI		
Proyek : Pembangunan Gedung Kantor DPRD Ngada Nusa Tenggara Timur		
Item : Pekerjaan Struktur Beton		
No	Sumber informasi	Data data proyek
1	PT. Ardi Tekindo Perkasa Kontraktor Proyek Pembangunan Gedung Kantor DPRD Ngada Nusa Tenggara Timur	<ul style="list-style-type: none"> • Gambar Rencana • Gambar Detail • Daftar Rencana Anggaran Biaya

*Sumber : PT. Ardi Tekindo Perkasa. Proyek Pembangunan Gedung Kantor DPRD
Ngada Nusa Tenggara Timur.*

Table 4.2

TAHAP INFORMASI		
Proyek : Pembangunan Gedung Kantor DPRD Ngada Nusa Tenggara Timur		
Item : Pekerjaan Struktur Beton		
No	Sumber informasi	Data Data proyek

1	Kriteria desain	<ul style="list-style-type: none"> • Mutu beton para perencana struktur beton bertulang menggunakan K-275 • Mutu baja untuk perencana di pakai BJ 52 dan BJ 37
---	-----------------	--

Sumber : PT. Ardi Tekindo Perkasa. Proyek Pembangunan Gedung Kantor DPRD

Ngada Nusa Tenggara Timur.

➤ **Data Rencana Anggaran Biaya Proyek**

Dengan menganalisa anggaran biaya, proyek pembangunan gedung kantor DPRD Ngada Nusa Tenggara Timur, maka beton bertulang dapat dipisahkan menjadi beberapa item pekerjaan. dan dapat dilihat pada table 4.3.

Table 4.3

Biaya pekerjaan struktur beton		
No	Sub Item Pekerjaan	Biaya
1	Pekerjaan kolom	1,335,884,510
2	Pekerjaan balok	2,832,812,533
3	Pekerjaan plat lantai	3,851,777,483
4	Pekerjaan tangga	362,798,705

Sumber : PT. Ardi Tekindo Perkasa. Pada Proyek Pembangunan Gedung Kantor

Dprd Ngada Nusa Tenggara Timur.

Table 4.4

No	Item pekerjaan	Biaya		Komposisi
		Rp	%	
1	Pekerjaan kolom	1,335,884,510	16%	100%
2	Pekerjaan balok	2,832,812,533	34%	66%
3	Pekerjaan plat lantai	3,851,777,483	46%	50%
4	Pekerjaan Tangga	362,798,705	4%	4%
Pekerjaan		8,383,273,231	100%	
PPN 10 %		838,327,323.10		
Dibulatkan		9,221,600,554		

➤ **Kondisi Awal Pada Gedung DPRD Kabupaten Ngada**

Adapun kondisi ril/awal pada pekerjaan balok dan kolom didalam pembangunan gedung DPRD Ngada Nusa Tenggara Timur dengan menggunakan mutu beton K-275 perhitungan yang dilakukan pada 2 arah struktur (arah x dan y),dapat dilihat pada table 4.4

➤ **Pekerjaan Balok Beton**

Table 4.5

Kondisi Awal Balok Gedung DPRD			
Lantai	Line	Bentang (m)	Dimensi
2-4	1-10	6;4,8	30/60 & 25/50
	A-G	6;4,8	30/60 & 25/50

Sumber : PT. Ardi Tekindo Perkasa.Pada Proyek Pembangunan Gedung Kantor

Dprd Ngada Nusa Tenggara Timur.

TABLE 4.6

Kondisi Awal Kolom Gedung DPRD		
LANTAI	TINGGI	DIMENSI
1	5	45/45 & 60/60
2-4	3,5	45/45

Sumber : PT. Ardi Tekindo Perkasa.Pada Proyek Pembangunan Gedung Kantor

DPRD Ngada Nusa Tenggara Timur.

Yang menjadi subyek dari studi rekayasa ini adalah pekerjaan balok dan kolom gedung kantor DPRD Kab, Ngada NTT.

Table 4.7**Analisa Fungsi Balok Pekerjaan Balok Beton**

No	Komponen	Kata kerja	Kata benda	B/S	COST	WORTH
1	Beton Balok	Menyalurkan	Beban	B	1,013,694,547	1,013,694,547
2	Pembesian	Menyalurkan	Beban	B	1,520,541,765	1,520,541,765
3	Bekesting	Mencetak	beton	S	298,567,275	267,576,244
					2,832,812,569	2,801,812,556
Cost/worth 1,12						

Sumber : Hasil Analisa

No	Komponen	Kata kerja	Kata benda	B/S	COST	WORTH
1	Beton kolom	menyalurkan	Beban	B	494,262,468.1	494,262,468.1
2	Pembesian	Menyalurkan	Beban	B	748,072,925.46	748,072,925.46
3	Bekesting	mencetak	Beton	S	93,509,115.68,-	90,509,113.68
					1,335,844,509,775	1,332,844,507
Cost/worth=1,55						

Sumber : Hasil Analisa

- ✓ Maka kedua item (balok dan kolom) perlu dilakukan VE

4.2.2 Tahap Spekulasi Dan Kreatif

Berdasarkan hasil perhitungan dimensi balok dan kolom dengan mutu beton K-275, maka dapat diketahui alternative desain dimensi untuk balok dan kolom yang di ringkas pada table 4.7

➤ **Pekerjaan Balok Beton**

Table 4.9

Alternative Desain Balok				
No	Lantai	Line	Bentang (m)	Dimensi
1	1	1-10	6 dan 4,8	30/60/ & 25/50
2		A-G	6 dan 4,8	30/60/ & 25/50
3				
4	<i>alternative</i>	1-9	6 dan 4,8	25/50 & 20/40
5		A-G	6 dan 4,8	25/50 & 20/40
6				
7	2	1-10	6 dan 4,8	30/60/ & 25/50
8		A-G	6 dan 4,8	30/60/ & 25/50
9				
10	<i>alternative</i>	1-10	6 dan 4,8	25/50 & 20/40
11		A-G	6 dan 4,8	25/50 & 20/40

12				
13	3	1-9	6 dan 4,8	30/60/ & 25/50
14		A-G	6 dan 4,8	30/60/ & 25/50
15				
16	<i>alternative</i>	1-9	6 dan 4,8	25/50 & 20/40
17		A-G	6 dan 4,8	25/50 & 20/40
18				
19	4	1-9	6	30/60/ & 25/50
20		A-G	6	30/60/ & 25/50
21				
22	<i>alternative</i>	4-7	6	25/50 & 20/40
23		A-G	6	25/50 & 20/40
24				

Sumber : hasil analisa

➤ **Pekerjaan Kolom Beton**

Table 4.10

Altenative Desain Kolom Beton		
Lantai	Tinggi	Dimensi
1	5	40/40

2	3,5	40/40
3	3,5	40/40
4	3,5	40/40

Sumber: hasil analisa

4.2.2 Tahap Analisa

Pada tahap ini digali alternative untuk pekerjaan beton pada balok dan kolom dan nantinya dianalisa lebih lanjut. Perhitungan pembebanan dengan pendimensian baru dan hasil staad pro, sesuai perhitungan (dilihata lampiran 1,halaman 1-31) adapun besar biaya desain alternative pekerjaan balok dan pekerjaan kolom RAB setelah di VE,sesuai perhitungan (lihat lampiran 2, halaman 32-51). Disini harga satuan bahan sesuai dengan harga biaya yang diterapkan diproyek pembangunan gedung DPRD Ngada Nusa Tenggara Timur.

Table 4.11

Biaya pekerjaan balok beton					
No	Lantai	line	Bentang (m)	Dimensi	Biaya (Rp.)
1	1	1-10	6 dan 4,8	25/50 & 20/40	555.479.154,69
2		A-G	6 dan 4,8	25/50 &	

				20/40	
3					
4	2	1-9	6 dan 4,8	25/50 & 20/40	572.112.069,58
5		A-G	6 dan 4,8	25/50 & 20/40	
6					
7	3	1-9	6 dan 4,8	25/50 & 20/40	513.994.998,13
8		A-G	6 dan 4,8	25/50 & 20/40	
9					
10	Atap	4-7	6	25/50 & 20/40	294.684.840,70
11		A-G	6	25/50 & 20/40	
12					
13	Jumlah				1.936.271.029,10

Sumber : hasil analisa

Table 4.12

Biaya Pekerjaan Kolom Beton			
Lantai	Tinggi	Dimensi	Biaya
1	5	40/40	540.647.412,51
2	3,5	40/40	318.471.267,97
3	3,5	40/40	275.323.930,69
4	3,5	40/40	32.411.609,77

Table 4.13

Analisa Keuntungan Dan Kerugian Alternative Non Biaya

Proyek : Pembangunan gedung kantor DPRD Kab. Ngada NTT				
Item : Pekerjaan balok				
Fungsi : Mendukung beban				
No	Tahap analisa		Tahap spekulasi	
			Balok 30/60 & 25/50	Balok 25/50 & 20/40
1	Biaya	Untung		Murah
		Rugi	mahal	
2	Waktu	Untung		Cepat
		Rugi	Sedang	
3	Mutu	Untung	Baik	Baik

		Rugi		
4	Pelaksanaan	Untung	Mudah	Mudah
		Rugi		

Pembobotan Kriteria Dengan Metode Zero One

a. Perbandingan alternative dengan alternative

1. Biaya

Dimensi balok	Dimensi balok		Total	bobot
	A	B		
A	X	0	0	0
B	1	X	1	0,33

2. Mutu

Dimensi balok	Dimensi balok		Total	bobot
	A	B		
A	X	0	0	0
B	1	X	1	0,33

3. Waktu

Dimensi balok	Dimensi balok		Total	bobot
	A	B		
A	X	0	0	0
B	1	X	1	0,33

4. Pelaksanaan

Dimensi balok	Dimensi balok		Total	bobot
	A	B		
A	X	0	0	0
B	1	X	1	0,33

B. Perbandingan kriteria dengan kriteria

NO	Kriteria	Nomor kriteria				Total	Bobot
		1	2	3	4		
1	Biaya	X	1	1	1	3	0,75
2	Mutu	0	X	1	1	2	0,50
3	Waktu	0	0	X	1	1	0,25

4	Pelaksanaan	0	0	0	X	0	0
---	-------------	---	---	---	---	---	---

4.2.3 Tahap Pengembangan Alternative Desain

Dalam tahap ini alternative-alternatif yang dipilih dari tahap analisa ,dihitung biayanya,kemudian dibedakan biaya desain alternative dengan desain awal proyek.

Adapun perbedaan desain awal dengan desain value engineering untuk balok dan kolom, dapat dilihat pada table dibawah.

Table 4.14

ANALISA ALTERNATIF BIAYA BALOK BETON						
No	Lantai	Line	Design		Biaya (Rp)	
			Dimensi Awal	Dimensi VE	Biaya Awal	Biaya VE
1	1		30/60	25/50	Rp 612.162.898	Rp 429.040.733
			25/50	20/40	Rp 197.364.775	Rp 126.438.423
	2		30/60	25/50	Rp 593.911.651	Rp 424.767.419
			25/50	20/40	Rp 230.001.154	Rp 147.344.650
	3		30/60	25/50	Rp 521.969.643	Rp 366.650.348
			25/50	20/40	Rp 230.001.154	Rp 147.344.650

	4		30/60	25/50	Rp 242.206.489	Rp 166.436.491
			25/50	20/40	Rp 205.194.770	Rp 128.248.314
JUMLAH					Rp 2.832.812.533	Rp 1.936.271.029

Table 4.15

ANALISA ALTERNATIF BIAYA KOLOM BETON						
No	Lantai	Bentang	Design		Biaya (Rp)	
			Dimensi Awal	Dimensi VE	Biaya Awal	Biaya VE
1	1	5	45/45	40/40	Rp 626.891.119	Rp 540.647.413
	2	4	45/45	40/40	Rp 368.273.848	Rp 318.471.268
	3	4	45/45	40/40	Rp 300.868.487	Rp 275.323.931
	4	4	45/45	40/40	Rp 39.851.055	Rp 32.411.610
JUMLAH					Rp 1.335.884.510	Rp 1.166.854.221

➤ **Analisa matrik**

Dalam pengujian analisa matrik diambil dimensi balok yang paling besare untuk mewakili dimensi balok yang lain dan pekerjaan kolom. Berdasarkan skala skor parameter penguji tabel 3.1 maka untuk masing masing alternatif dapat dilihat pada tabel 4.16 dan 4.17

Table 4.15

Analisa Matrik Pekerjaan Balok Beton

Proyek : Pembangunan gedung DPRD Ngada Nusa Tenggara Timur		Biaya	Waktu	Mutu	Pelaksanaan	Total	reangking
No	Dimensi bobot	10	9	8	7		
	25/50	2	3	4	4		2
		20	27	32	28	107	
	20/40	4	4	4	4		1
		40	36	32	28	136	

Table 4.16

Analisa Matrik Pekerjaan Kolom Beton

Proyek : Pembangunan gedung DPRD Ngada Nusa Tenggara Timur		Biaya	Waktu	Mutu	Pelaksanaan	Total	reangking
No	Dimensi bobot	10	9	8	7		
	40/40	2	3	4	4		2
		20	27	32	28	107	

4.5 Tahap Implementasi Usulan

Sebagai tahap akhir dari metode value engineering adalah tahap usulan, yaitu dengan membuat suatu usulan, untuk mewakili beberapa buah balok, maka diambil balok yang mempunyai dimensi yang paling besar, seperti yang terangkum pada table 4.17 dan 4.18

Table 4.17

Usulan Pekerjaan Balok Beton

USULAN PEKERJAAN
Proyek : Pembangunan Gedung DPRD Ngada Nusa Tenggara Timur
Lokasi : Kab.Ngada Nusa Tenggara Timur
Item : Pekerjaan balok beton

Rencana Awal	: - Dimensi 30/60 - Diameter Tulangan 5D19
Rencana Awal	: - Dimensi 25/50 - Diameter Tulangan 5D19
Alasan	: - Biaya lebih murah - Pengawasan Mutu baik - Muda dalam Pelaksanaan
Biaya Awal	: Rp. 2.832.812.533
Biaya Setelah VE	: Rp 1.936.271.092
Penghematan	: Rp. 896.541.504
Prosentase Penghematan	: 32%

Table 4.17

Usulan Pekerjaan Kolom Beton

USULAN PEKERJAAN	
Proyek	: Pembangunan Gedung DPRD Ngada Nusa Tenggara Timur
Lokasi	: Kab.Ngada Nusa Tenggara Timur
Item	: Pekerjaan balok beton

Rencana Awal : - Dimensi 60/60
- Diameter Tulangan 5D19

Rencana Awal : - Dimensi 45/45
- Diameter Tulangan 5D19

Alasan : - Biaya lebih murah
- Pengawasan Mutu baik
- Muda dalam Pelaksanaan

Biaya Awal : Rp. 1.335.884.510

Biaya Setelah VE : Rp 1.166.854.221

Penghematan : Rp. 169.030.289

Prosentase Penghematan : 13%

BAB V

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan analisa evaluasi yang sudah dilakukan dalam penerapan rekayasa nilai pada pekerjaan pada pekerjaan beton pembangunan Gedung DPRD Ngada Nusa Tenggara Timur, dengan berpedoman pada rencana kerja rekayasa nilai, maka dapat diambil beberapa kesimpulan dibawah ini :

1. Rekayasa nilai pada pekerjaan struktur utama yaitu balok dan kolom pada pembanguna gedung kantor **DPRD Ngada Nusa Tenggara Timur**.
2. Setelah dilakukan beberapa alternatif diterapkan beberpa usulan sebagai berikut:
 - a. Balok Induk Lantai 2 sampai Lantai Atap menggunakan dimensi awal **30/60** dengan memakai tulangan D19 dan balok tersebut setelah di VE menggunakan dimensi **25/50** dengan memakai tulangan D19.
 - b. Balok anak Lantai 2 sampai Lantai Atap dengan bentang 4.8 dan 6 m menggunakan dimensi awal **25/50** dengan memakai tulangan D19 dan balok tersebut setelah di VE menggunakan dimensi **20/40** dengan memakai tulangan D16
 - c. Kolom dengan bentang 5 m menggunakan dimensi awal **45/45** dan **60/60** dengan memakai tulangan D19 dan kolom tersebut setelah di VE menggunakan dimensi **40/40** dengan memakai tulangan D19

- d. Kolom dengan bentang 3.5 m menggunakan dimensi awal **45/45** dengan memakai tulangan D19 dan kolom tersebut setelah di VE menggunakan dimensi **40/40** dengan memakai tulangan D19
3. Penghematan yang diperoleh dari penerapan rekayasa nilai diatas adalah :

a. Balok

Dengan beton ready mix K-275 dan mutu baja tulangan bj 52 dan bj 37, didapat perbandingan biaya desain awal **Rp. 2.832.812.533** dan biaya dari hasil analisa rekayasa nilai sebesar **Rp. 1.936.271.029** . Ini berarti dari hasil rekayasa nilai terdapat penghematan sebesar **Rp. 896.541.504** biaya yang didapat lebih kecil dibandingkan dengan biaya desain awal sebesar 32 persen.

b. Kolom

Dengan beton ready mix K-275 dan mutu baja tulangan bj 52 dan bj 37, didapat perbandingan biaya desain awal **Rp. 1.335.884.510** dan biaya dari hasil analisa rekayasa nilai sebesar **Rp. 1.166.854.221**. Ini berarti dari hasil rekayasa nilai terdapat penghematan sebesar **Rp. 169.030.289** biaya yang didapat lebih kecil dibandingkan dengan biaya desain awal sebesar 13 persen.

5.2 Saran

Setelah melihat hasil studi rekayasa nilai (Value Engginering) ini, maka penulis menyarankan:

1. Perlu adanya usaha Rekayasa Nilai yaitu dengan dengan melakukan analisa kembali pada suatu proyek guna mencapai suatu penghematan biaya.
2. Perlu adanya koordinasi yang terpada antara Value Engginering specialist, Pemilik Proyek, dan Perencana yang meneliti secara mendalam, menyeluruh, dan menyatakan dengan tegas kebenaran dari semua keperluan-keperluan sehingga usaha value engginering dapat dilakukan dengan baik dan sempurna.

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DAFTAR PUSTAKA

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- Sunggono kh, V, Ir, 1995. *Buku Teknik Sipil*, Bandung, Penerbit Nova.

PERHITUNGAN STRUKTUR

1. Data Perencanaan

a. Data Bangunan

- Nama Proyek : Pembangunan Kantor DPRD Kab. Ngada
- Lokasi Proyek : Kabupaten Ngada
- Luas Bangunan : $\pm 1545 \text{ m}^2$
- Jumlah Lantai : 4 Lantai
- Tinggi Bangunan : 16 meter
- Panjang Bangunan : 44,8 meter
- Lebar Bangunan : 37,8 meter
- Zona Gempa : Zona 4
- Jenis Tanah : Sedang

2. Perhitungan Pembebanan

a. Beban Mati (Dead Load)

- **Beban Mati Bangunan**

- Berat sendiri : untuk berat sendiri struktur menggunakan perintah selfweight pada program bantu STAAD Pro 2004.

- Beban tembok

→ Beban tembok lantai 2-4

Tinggi tembok 3,5 m dengan tebal setengah batu

Tinggi tembok x berat jenis per m^2

$$3.5 \times 250 \text{ kg/m}^2 = 875 \text{ kg/m}$$

→ Beban tembok sebagian + kaca lantai 2-4

Tinggi tembok 3,5 m dengan tebal setengah batu

Tinggi tembok x berat jenis per m^2 x 60%

$$3,5 \times 250 \text{ kg/m}^2 \times 0,6 = 525 \text{ kg/m}$$

- Beban pasir urug tebal 5 cm

Tebal urugan pasir x berat jenis

$$0,05 \text{ m} \times 1600 \text{ kg/m}^2 = 80 \text{ kg/m}^2$$

- Beban keramik + adukan tebal 3 cm
 Tebal keramik + adukan x berat jenis
 $0,03 \text{ m} \times 2100 \text{ kg/m}^2 = 63 \text{ kg/m}^2$
- Beban plafond dan rangka plafond
 Berat plafond + penggantung
 $11 \text{ kg/m}^2 + 7 \text{ kg/m}^2 = 18 \text{ kg/m}^2$

• **Beban Plat Lantai**

Berat sendiri plat	=	$0,12 \times 2400$	=	288	kg/m ²
Berat tegel keramik	=	2×24	=	48	kg/m ²
Berat spesi	=	2×21	=	42	kg/m ²
Berat plafond+penggantung	=	$\frac{11 + 7}{\quad}$	=	18	kg/m ²
		qd	=	396	kg/m ²

b. Beban Hidup (Live Load)

Menurut Peraturan Pembebanan Indonesia Untuk Gedung 1987 (Tabel 3.1, halaman 17), beban hidup untuk lantai gedung yang berfungsi sebagai Perkantoran adalah 250 kg/m², sedangkan untuk lantai atap adalah 100 kg/m².

c. Beban Gempa (Earthquake Load)

• Lantai Atap

Beban Mati

Elemen Horizontal

$$\begin{aligned}
 \text{Berat lantai} &= \text{luas lantai} \times \text{qd lantai} \\
 &= 44,8 \times 37,8 \times 396 = 670602 \text{ kg}
 \end{aligned}$$

$$\text{Berat Balok} = A \times L \times B_j \times \Sigma \text{ balok}$$

Berat balok memanjang

$$\text{Balok (25/50)} = 0,13 \times 6 \times 2400 \times 20 = 36000 \text{ kg}$$

$$\text{Balok (25/50)} = 0,13 \times 4,8 \times 2400 \times 10 = 14400 \text{ kg}$$

$$\text{Balok (20/40)} = 0,08 \times 6 \times 2400 \times 8 = 9216 \text{ kg}$$

$$\text{Balok (20/40)} = 0,08 \times 4,8 \times 2400 \times 4 = 3686,4 \text{ kg}$$

Berat balok melintang

$$\text{Balok (25/50)} = 0,13 \times 6 \times 2400 \times 10 = 18000 \text{ kg}$$

$$\text{Balok (25/50)} = 0,13 \times 4,8 \times 2400 \times 5 = 7200 \text{ kg}$$

$$\text{Balok (20/40)} = 0,08 \times 6 \times 2400 \times 3 = 3456 \text{ kg}$$

$$\text{Balok (20/40)} = 0,08 \times 4,8 \times 2400 \times 2 = \underline{1843,2 \text{ kg}}$$

$$\text{Wd Lantai atap} = 764403,840 \text{ kg}$$

Elemen Vertical

$$\text{Berat Kolom} = A \times (h \text{ lantai atap} + 1/2 h \text{ lantai bawah}) \times B_j \times \Sigma \text{ kolom}$$

$$\text{Kolom (40/40)} = 0,16 \times 1,75 \times 2400 \times 64 = 43008 \text{ kg}$$

Beban Hidup

$$\text{Beban hidup} = 250 \text{ kg/m}^2$$

$$\text{Faktor reduksi gempa} = 0,5$$

$$\text{Wl Lantai Atap} = 250 \times 0,5 \times 44,8 \times 37,8 = 211680 \text{ kg}$$

$$\text{Beban Total Lantai Atap} = \text{Wd} + \text{Wl}$$

$$= 764403,840 + 211680 = 976083,840 \text{ kg}$$

- Lantai 2-4

Beban Mati

Elemen Horizontal

$$\text{Berat lantai} = \text{luas lantai} \times q_d \text{ lantai}$$

$$= 44,80 \times 37,8 \times 396 = 670602 \text{ kg}$$

$$\text{Berat Balok} = A \times L \times B_j \times \Sigma \text{ balok}$$

Berat balok memanjang

$$\begin{aligned} \text{Balok (25/50)} &= 0,13 \times 6 \times 2400 \times 16 = 28800 \text{ kg} \\ \text{Balok (25/50)} &= 0,13 \times 4,8 \times 2400 \times 4 = 5760 \text{ kg} \\ \text{Balok (20/40)} &= 0,08 \times 6 \times 2400 \times 4 = 4608 \text{ kg} \\ \text{Balok (20/40)} &= 0,08 \times 4,8 \times 2400 \times 1 = 921,6 \text{ kg} \end{aligned}$$

Berat balok melintang

$$\begin{aligned} \text{Balok (25/50)} &= 0,13 \times 6 \times 2400 \times 18 = 32400 \text{ kg} \\ \text{Balok (25/50)} &= 0,13 \times 4,8 \times 2400 \times 7 = 10080 \text{ kg} \\ \text{Balok (20/40)} &= 0,08 \times 6 \times 2400 \times 2 = 2304 \text{ kg} \\ \text{Balok (20/40)} &= 0,08 \times 4,8 \times 2400 \times 2 = 1843,2 \text{ kg} \end{aligned}$$

Elemen Vertical

Berat Kolom = $A \times (1/2 \text{ lantai atas} + 1/2 \text{ lantai bawah}) \times B_j \times \Sigma \text{ kolom}$

$$\text{Kolom (40/40)} = 0,16 \times 3,5 \times 2400 \times 64 = 86016 \text{ kg}$$

Berat Dinding = $b \times h \times L \times B_j$

$$\text{Memanjang} = 0,15 \times 4,5 \times 44,80 \times 250 = 7560 \text{ kg}$$

$$\text{Melintang} = 0,15 \times 4,5 \times 37,8 \times 250 = \underline{6378,750 \text{ kg}}$$

$$W_d = 857273,790 \text{ kg}$$

Beban Hidup

$$\text{Beban hidup} = 250 \text{ kg/m}^2$$

$$\text{Reduksi gempa} = 0,5$$

$$W_l \text{ Lantai Atap} = 250 \times 0,5 \times 44,80 \times 37,8 = 211680 \text{ kg}$$

Beban T Lantai 2-4 = $W_d + W_l$

$$= 857273,790 + 211680,000 = 1068953,790 \text{ kg}$$

Berat Total Bangunan

$$\text{Berat Total Lantai 2} = 1068953,790 \text{ kg}$$

$$\text{Berat Total Lantai 3} = 1068953,790 \text{ kg}$$

$$\text{Berat Total Lantai 4} = 1068953,790 \text{ kg}$$

$$\text{Berat Total Lantai Atap} = \underline{976083,840 \text{ kg}}$$

$$W_t = 4182945,210 \text{ kg}$$

Tabel 3.1 Beban Gempa Dinamik Arah X, Z dan Y

Lantai	FX	FZ	FY (kg)
	(kg)	(kg)	$W_i \times 10 \%$
2	1068953,790	1068953,790	106895,379
3	1068953,790	1068953,790	106895,379
4	1068953,790	1068953,790	106895,379
Atap	976083,840	976083,840	97608,384

Spktrum Respons

Untuk Kabupaten Ngada berdasarkan SNI 1726-2012 memiliki percepatan batuan dasar, yaitu :

$$- S_s = 1,0$$

$$- S_I = 0,4$$

Jenis tanah untuk wilayah kota Malang di mana gedung tersebut berada adalah tanah keras.

- Penentuan koefisien situs F_a dan F_s

Koefisien situs F_a

Ditentukan berdasarkan beberapa parameter, yaitu nilai S_s yang terdapat pada Tabel 2.10 dan kelas situs yang berdasarkan jenis tanah yang terdapat pada Tabel 2.9.

$$S_s = 1,0$$

Kelas situs = SC (tanah keras)

Dari data di atas, didapat nilai :

$$F_a = 1,0$$

Koefisien situs F_v

Ditentukan berdasarkan beberapa parameter, yaitu nilai S_I yang terdapat pada Tabel 2.11 dan kelas situs yang berdasarkan jenis tanah yang terdapat pada Tabel 2.9.

$$S_I = 0,4$$

Kelas situs = SC (tanah keras)

Dari data di atas, didapat nilai :

$$F_v = 1,4$$

- Penentuan nilai S_{MS} dan S_{MI}

$$S_{MS} = F_a S_s$$

$$S_{MS} = 1,0 \times 1,0 = 1,0$$

$$S_{MI} = F_v S_I$$

$$S_{MI} = 1,4 \times 0,4 = 0,56$$

- Penentuan nilai S_{DS} dan S_{DI}

$$S_{DS} = \frac{2}{3} S_{MS}$$

$$S_{DS} = \frac{2}{3} 1,0 = 0,667$$

$$S_{DI} = \frac{2}{3} S_{MI}$$

$$S_{DI} = \frac{2}{3} 0,6 = 0,373$$

- Penentuan nilai T_0 dan T_s

$$T_0 = 0,2 \frac{S_{DI}}{S_{DS}}$$

$$T_0 = 0,2 \frac{0,373}{0,667} = 0,112$$

$$T_s = \frac{S_{DI}}{S_{DS}}$$

$$T_s = \frac{0,373}{0,667} = 0,560$$

- Penentuan nilai S_a

1. Untuk periode yang lebih kecil dari T_0 , spektrum respons

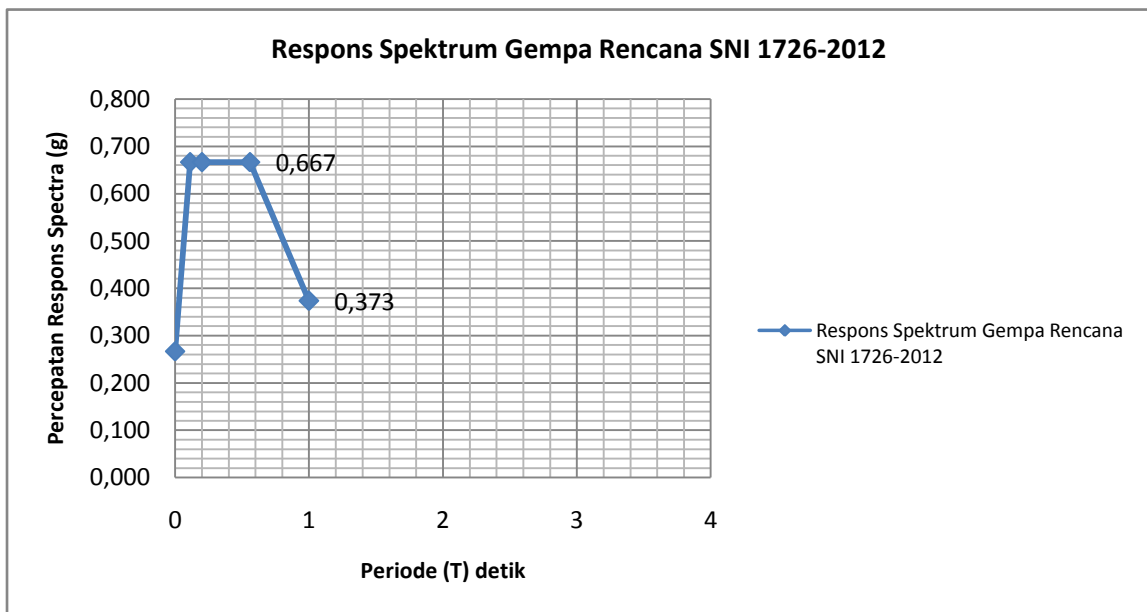
percepatan desain, S_a harus diambil dari persamaan :

$$S_a = S_{DS} \left(0,4 + 0,6 \frac{T}{T_0} \right)$$

2. Untuk periode yang lebih besar dari atau sama dengan T_0 dan lebih kecil atau sama dengan T_s , spektrum respons desain, S_a , sama dengan S_{DS} .
3. Untuk periode lebih besar dari T_s , spektrum respons percepatan desain, S_a , diambil berdasarkan persamaan :

$$S_a = \frac{S_{DI}}{T}$$

Spektrum gempa rencana SNI 1726-2012 yang diplot ke dalam *Microsoft Excel* sebagai berikut.



Gambar 3.2 Respons Spketrum Gempa Rencana

T	g
0	0,267
0,112	0,667
0,2	0,667
0,560	0,667
1	0,373

Untuk perhitungan Pusat Massa lantai dianalisa menggunakan perintah CG (*Center Gravity*) pada program bantu STAAD Pro 2004 dengan memasukkan semua dimensi struktur, beban mati dan beban hidup.

3. Perencanaan Dimensi Balok dan Kolom

a. Dimensi Balok

Menurut SNI 2847-2013 pasal 21.5.1.3 bahwa lebar balok (b) tidak boleh kurang dari 250 mm dan perbandingan lebar (b) terhadap tinggi (h) tidak boleh kurang dari 0,3.

- Untuk panjang balok induk = 6 m = 600 cm

$$h = \frac{1}{12} L \approx \frac{1}{15} L = \frac{1}{12} 600 \approx \frac{1}{15} 600$$

$$= 50 \text{ cm s/d } 40 \text{ cm} \approx 50 \text{ cm}$$

$$b = \frac{1}{2} h \approx \frac{2}{3} h = \frac{1}{2} 50 \approx \frac{2}{3} 50$$

$$= 25 \text{ cm s/d } 33,33 \text{ cm} \approx 25 \text{ cm}$$

Dipakai balok induk berukuran 25 / 50

$$b/h = \frac{25}{50} = 0,5 > 0,3 \quad (\text{OK})$$

- Untuk panjang balok induk = 4,8 m = 480 cm

$$h = \frac{1}{12} L \approx \frac{1}{15} L = \frac{1}{12} 480 \approx \frac{1}{15} 480$$

$$= 40 \text{ cm s/d } 32 \text{ cm} \approx 50 \text{ cm}$$

$$b = \frac{1}{2} h \approx \frac{2}{3} h = \frac{1}{2} 50 \approx \frac{2}{3} 50$$

$$= 25 \text{ cm s/d } 33,33 \text{ cm} \approx 25 \text{ cm}$$

Dipakai balok induk berukuran 25 / 50

$$b/h = \frac{25}{50} = 0,50 > 0,3 \quad (\text{OK})$$

- Untuk panjang balok anak = 6 m = 600 cm

$$h = \frac{1}{12} L \approx \frac{1}{15} L = \frac{1}{12} 600 \approx \frac{1}{15} 600$$

$$= 50 \text{ cm s/d } 40 \text{ cm} \approx 40 \text{ cm}$$

$$b = \frac{1}{2} h \approx \frac{2}{3} h = \frac{1}{2} 40 \approx \frac{2}{3} 40$$

$$= 20 \text{ cm s/d } 26,67 \text{ cm} \approx 20 \text{ cm}$$

Dipakai balok induk berukuran 20 / 40

$$b/h = \frac{20}{40} = 0,50 > 0,3 \quad (\text{OK})$$

b. Dimensi Plat

Untuk lantai 2 – 4 digunakan tebal plat = 12 cm, sedangkan untuk lantai atap digunakan tebal plat = 10 cm.

4. Kombinasi Beban

Sesuai dengan ketentuan yang tertera dalam SNI 2847-2013 pasal 9 disebutkan agar struktur dan komponen struktur harus direncanakan hingga semua penampang mempunyai kuat rencana minimum sama dengan kuat perlu, yang dihitung berdasarkan kombinasi dan gaya terfaktor.

- $U = 1,4 D$
- $U = 1,2D + 1,6L + 0,5 (Lr \text{ atau } R)$
- $U = 1,2D + 1,6 (Lr \text{ atau } R) + (1,0L \text{ atau } W)$
- $U = 1,2D + 1,0W + 1,0L + 0,5 (Lr \text{ atau } R)$
- $U = 1,2D + 1,0E + 1,0L$
- $U = 0,9D + 1,0W$
- $U = 0,9D + 1,0E$

Dimana :

$$U = \text{Kombinasi Pembebanan}$$

D = Beban Mati

L = Beban Hidup

L_r = Beban Atap

R = Beban Hujan

W = Beban Angin

E = Beban Gempa

1g

STAAD SPACE

START JOB INFORMATION

JOB NAME Skripsi Value Enggining

JOB CLIENT Teknik Sipil

JOB NO 1

JOB PART 1a

JOB COMMENT Concrete Grade K-275

JOB COMMENT Main Steel Grade BJ 52

JOB COMMENT Secondary Steel Grade BJ 37

ENGINEER NAME Jeronio.G

ENGINEER DATE 26-Mar-15

CHECKER DATE 28-Mar-15

APPROVED DATE 30-Mar-15

END JOB INFORMATION

INPUT WIDTH 79

UNIT METER MTON

JOINT COORDINATES

1 0 0 0; 2 0 0 24; 3 4.8 0 0; 4 4.8 0 24; 5 9.6 0 0; 6 9.6 0 24; 7 13.2 0 0;
8 13.2 0 24; 9 19.2 0 0; 10 19.2 0 24; 11 25.2 0 0; 12 25.2 0 24; 13 31.2 0 0;
14 31.2 0 24; 15 34.8 0 0; 16 34.8 0 24; 17 39.6 0 0; 18 39.6 0 24;
19 44.4 0 0; 20 44.4 0 24; 21 0 0 6; 22 44.4 0 6; 23 0 0 12; 24 44.4 0 12;
25 0 0 18; 26 44.4 0 18; 27 4.8 0 18; 28 4.8 0 12; 29 4.8 0 6; 30 9.6 0 18;
31 9.6 0 12; 32 9.6 0 6; 33 13.2 0 18; 34 13.2 0 12; 35 13.2 0 6; 36 19.2 0 18;
37 19.2 0 12; 38 19.2 0 6; 39 25.2 0 18; 40 25.2 0 12; 41 25.2 0 6;
42 31.2 0 18; 43 31.2 0 12; 44 31.2 0 6; 45 34.8 0 18; 46 34.8 0 12;
47 34.8 0 6; 48 39.6 0 18; 49 39.6 0 12; 50 39.6 0 6; 51 0 0 28.8;
52 4.8 0 28.8; 53 9.6 0 28.8; 54 13.2 0 28.8; 55 19.2 0 28.8; 56 25.2 0 28.8;
57 31.2 0 28.8; 58 34.8 0 28.8; 59 39.6 0 28.8; 60 44.4 0 28.8; 64 13.2 0 34.8;
65 19.2 0 34.8; 66 25.2 0 34.8; 67 31.2 0 34.8; 68 0 5 0; 69 0 5 24;
70 4.8 5 0; 71 4.8 5 24; 72 9.6 5 0; 73 9.6 5 24; 74 13.2 5 0; 75 13.2 5 24;
76 19.2 5 0; 77 19.2 5 24; 78 25.2 5 0; 79 25.2 5 24; 80 31.2 5 0;
81 31.2 5 24; 82 34.8 5 0; 83 34.8 5 24; 84 39.6 5 0; 85 39.6 5 24;
86 44.4 5 0; 87 44.4 5 24; 88 0 5 6; 89 44.4 5 6; 90 0 5 12; 91 44.4 5 12;
92 0 5 18; 93 44.4 5 18; 94 4.8 5 18; 95 4.8 5 12; 96 4.8 5 6; 97 9.6 5 18;
98 9.6 5 12; 99 9.6 5 6; 100 13.2 5 18; 101 13.2 5 12; 102 13.2 5 6;
103 19.2 5 18; 104 19.2 5 12; 105 19.2 5 6; 106 25.2 5 18; 107 25.2 5 12;
108 25.2 5 6; 109 31.2 5 18; 110 31.2 5 12; 111 31.2 5 6; 112 34.8 5 18;
113 34.8 5 12; 114 34.8 5 6; 115 39.6 5 18; 116 39.6 5 12; 117 39.6 5 6;
118 0 5 28.8; 119 4.8 5 28.8; 120 9.6 5 28.8; 121 13.2 5 28.8; 122 19.2 5 28.8;
123 25.2 5 28.8; 124 31.2 5 28.8; 125 34.8 5 28.8; 126 39.6 5 28.8;
127 44.4 5 28.8; 128 13.2 5 34.8; 129 19.2 5 34.8; 130 25.2 5 34.8;
131 31.2 5 34.8; 132 0 5 3; 135 13.2 5 3; 138 31.2 5 3; 141 44.4 5 3;
152 0 5 15; 153 44.4 5 15; 162 0 5 21; 163 44.4 5 21; 172 0 5 26.4;
181 44.4 5 26.4; 187 16.2 5 28.8; 189 16.2 5 3; 199 28.2 5 28.8; 201 28.2 5 3;
230 13.2 0 3; 231 31.2 0 3; 12717 0 8.5 0; 12718 0 8.5 24; 12719 4.8 8.5 0;
12720 4.8 8.5 24; 12721 9.6 8.5 0; 12722 9.6 8.5 24; 12723 13.2 8.5 0;
12724 13.2 8.5 24; 12725 19.2 8.5 0; 12726 19.2 8.5 24; 12727 25.2 8.5 0;
12728 25.2 8.5 24; 12729 31.2 8.5 0; 12730 31.2 8.5 24; 12731 34.8 8.5 0;
12732 34.8 8.5 24; 12733 39.6 8.5 0; 12734 39.6 8.5 24; 12735 44.4 8.5 0;
12736 44.4 8.5 24; 12737 0 8.5 6; 12738 44.4 8.5 6; 12739 0 8.5 12;
12740 44.4 8.5 12; 12741 0 8.5 18; 12742 44.4 8.5 18; 12743 4.8 8.5 18;
12744 4.8 8.5 12; 12745 4.8 8.5 6; 12746 9.6 8.5 18; 12747 9.6 8.5 12;
12748 9.6 8.5 6; 12749 13.2 8.5 18; 12750 13.2 8.5 12; 12751 13.2 8.5 6;
12752 19.2 8.5 18; 12753 19.2 8.5 12; 12754 19.2 8.5 6; 12755 25.2 8.5 18;
12756 25.2 8.5 12; 12757 25.2 8.5 6; 12758 31.2 8.5 18; 12759 31.2 8.5 12;
12760 31.2 8.5 6; 12761 34.8 8.5 18; 12762 34.8 8.5 12; 12763 34.8 8.5 6;
12764 39.6 8.5 18; 12765 39.6 8.5 12; 12766 39.6 8.5 6; 12767 0 8.5 28.8;
12768 4.8 8.5 28.8; 12769 9.6 8.5 28.8; 12770 13.2 8.5 28.8;
12771 19.2 8.5 28.8; 12772 25.2 8.5 28.8; 12773 31.2 8.5 28.8;
12774 34.8 8.5 28.8; 12775 39.6 8.5 28.8; 12776 44.4 8.5 28.8;
12777 13.2 8.5 34.8; 12778 19.2 8.5 34.8; 12779 25.2 8.5 34.8;
12780 31.2 8.5 34.8; 12781 13.2 8.5 3; 12782 31.2 8.5 3; 12783 0 5 9;
12784 44.4 5 9; 12785 22.2 5 0; 12786 22.2 5 34.8; 12787 4.8 5 26.4;
12788 4.8 5 21; 12789 4.8 5 15; 12790 4.8 5 9; 12791 4.8 5 3; 12792 9.6 5 26.4;
12793 9.6 5 21; 12794 9.6 5 15; 12795 9.6 5 9; 12796 9.6 5 3;
12797 13.2 5 26.4; 12798 13.2 5 21; 12799 13.2 5 15; 12800 13.2 5 9;
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20727	15614	16268	16272	16271;	20728	16268	15583	15822	16272;
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20735	15606	16274	16278	16277;	20736	16274	15518	15829	16278;
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20739	16277	16278	16280	15617;	20740	16278	15829	15582	16280;
20741	15587	16279	16281	16282;	20742	16279	15617	16283	16281;
20743	15617	16280	16284	16283;	20744	16280	15582	15836	16284;
20745	16282	16281	16285	15493;	20746	16281	16283	15609	16285;
20747	16283	16284	16286	15609;	20748	16284	15836	15491	16286;
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20757	15524	16293	16294	16295;	20758	16293	15521	16276	16294;
20759	16295	16294	16296	15591;	20760	16294	16276	15587	16296;
20761	15591	16296	16297	16298;	20762	16296	15587	16282	16297;
20763	16298	16297	16299	15495;	20764	16297	16282	15493	16299;
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20769	16095	16301	16307	16100;	20770	16301	16303	16308	16307;
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20773	16100	16307	16311	16105;	20774	16307	16308	16312	16311;
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20793	16123	16326	16330	15529;	20794	16326	16327	16331	16330;
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20825	15598	16358	16361	16185;	20826	16358	16359	16362	16361;
20827	16359	16360	16363	16362;	20828	16360	15593	16364	16363;
20829	16185	16361	16365	16190;	20830	16361	16362	16366	16365;
20831	16362	16363	16367	16366;	20832	16363	16364	16368	16367;
20833	16190	16365	16369	15528;	20834	16365	16366	16370	16369;
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20865	16224	16394	16398	16229;	20866	16394	16395	16399	16398;
20867	16395	16396	16400	16399;	20868	16396	16397	16401	16400;
20869	16229	16398	16402	15596;	20870	16398	16399	16403	16402;
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ELEMENT PROPERTY

15701 15703 15705 15707 15709 TO 15711 15713 15715 TO 15717 15719 15721 15723 -
 15725 15726 15728 TO 15730 15732 15734 TO 15736 15738 15740 TO 15742 15744 -
 15746 15748 15750 15751 15754 15756 15758 15760 15761 15763 15765 15767 -
 15768 15771 15773 15775 15777 15779 15780 15782 15783 15785 15787 15788 -
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 15812 15814 TO 15816 15818 15820 15822 15824 15825 15827 15828 15830 15832 -
 15833 15835 15837 15839 15840 15842 TO 15844 15846 15848 TO 15850 15852 -
 15854 15856 15858 15859 15861 TO 15863 15865 15867 TO 15869 15871 15873 -
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 16095 TO 16097 16099 16100 16102 16103 16105 16107 TO 16109 16111 16112 -
 16114 16115 16118 16119 16121 16122 16124 16125 16127 16128 16130 16131 -
 16133 16134 16136 16137 16139 16140 16194 TO 16313 16315 16316 16318 16319 -
 16321 THICKNESS 0.12
 16322 16324 TO 16326 16328 16329 16331 16333 16334 16336 TO 16338 16340 16341 -
 16343 16345 16346 16348 TO 16350 16352 16353 16355 16357 16358 -
 16360 TO 16362 16364 16365 16367 16369 16370 16372 16373 16376 16378 16380 -
 16381 16383 TO 16386 16388 TO 16391 16393 16395 16397 16398 16400 TO 16407 -
 16409 TO 16412 16414 16416 16418 16419 16421 TO 16423 16425 16427 TO 16430 -
 16432 TO 16434 16436 16438 16440 16442 16443 16631 TO 16984 17413 TO 18248 -
 18743 TO 19578 THICKNESS 0.12
 20073 TO 20920 20922 20924 TO 20937 20939 20941 20942 THICKNESS 0.1

DEFINE MATERIAL START

ISOTROPIC CONCRETE

E 2.21467e+006

POISSON 0.17

DENSITY 2.40262

ALPHA 1e-005

DAMP 0.05

END DEFINE MATERIAL

CONSTANTS

MATERIAL CONCRETE MEMB 122 TO 196 199 202 205 206 281 294 307 345 364 383 -

405 428 484 485 15390 TO 15674 15676 TO 15681 15683 TO 15686 15688 15690 -

15691 TO 16984 17413 TO 18314 18743 TO 19644 20073 TO 20920 20922 -

20924 TO 20937 20939 20941 TO 23078

MEMBER PROPERTY AMERICAN

122 TO 185 484 485 15390 TO 15455 18249 TO 18314 19579 TO 19643 -

19644 PRIS YD 0.4 ZD 0.4

186 TO 196 199 202 205 206 281 294 15456 TO 15458 15460 15461 15463 TO 15600 -

15661 TO 15672 15684 TO 15686 15688 15699 15700 15702 15704 15706 15708 -

15712 15714 15718 15727 15731 15733 15737 15739 15743 15745 15747 15749 -

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16004 16009 16017 16022 16024 16027 16031 16038 16041 16044 16056 16062 -
16065 16068 16080 16086 16089 16092 16104 16110 16113 16116 16117 16123 -
16126 16129 16135 16138 16141 TO 16146 16150 TO 16159 16163 TO 16168 16172 -
16173 TO 16178 16182 TO 16188 16192 16193 16314 16320 16323 16330 16342 16344 -
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16437 16439 16441 16444 TO 16452 16456 TO 16470 16473 TO 16477 -
16481 TO 16495 16499 TO 16509 16513 TO 16523 16527 TO 16530 16532 -
16535 TO 16537 16541 16543 TO 16545 16549 16551 TO 16553 16557 -
16559 TO 16562 16564 TO 16566 16568 TO 16575 16579 TO 16588 16592 TO 16597 -
16601 TO 16607 16611 TO 16617 16621 TO 16623 16625 16626 20943 TO 20959 -
20966 TO 20968 20970 20971 20973 TO 21110 21171 TO 21182 21192 TO 21195 -
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21243 TO 21250 21254 TO 21268 21272 TO 21282 21286 TO 21296 21300 TO 21304 -
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21331 TO 21333 21335 21338 TO 21340 21344 21346 TO 21348 21352 -
21354 TO 21356 21360 21362 TO 21365 21367 TO 21369 21371 TO 21378 -
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21498 TO 21501 21505 TO 21519 21523 TO 21533 21537 TO 21547 21551 TO 21554 -
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21678 TO 21680 21682 21683 21685 TO 21822 21883 TO 21894 21904 TO 21907 -
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23046 PRIS YD 0.4 ZD 0.2
23047 23048 23056 TO 23058 23066 TO 23068 23072 23075 TO 23077 -
23078 PRIS YD 0.4 ZD 0.2
SUPPORTS
1 TO 60 64 TO 67 230 231 FIXED
LOAD 1 BEBAN MATI
SELFWEIGHT Y -1
UNIT METER KG
ELEMENT LOAD
15701 15703 15705 15707 15709 TO 15711 15713 15715 TO 15717 15719 15721 15723 -
15725 15726 15728 TO 15730 15732 15734 TO 15736 15738 15740 TO 15742 15744 -
15746 15748 15750 15751 15754 15756 15758 15760 15761 15763 15765 15767 -
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16039 16040 16042 16043 16045 16047 TO 16049 16051 16052 16054 16055 16057 -
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16321 PR GY -161
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16432 TO 16434 16436 16438 16440 16442 16443 16631 TO 16984 17413 TO 18248 -
18743 TO 19578 PR GY -161
20073 TO 20920 20922 20924 TO 20937 20939 20941 20942 PR GY -50
MEMBER LOAD
186 189 TO 192 195 196 202 205 281 15456 TO 15458 15460 15463 15464 15484 -
15485 TO 15492 15494 TO 15502 15504 TO 15512 15514 TO 15522 15541 TO 15544 -
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16017 16022 16030 16031 16035 16044 16056 16062 16065 16068 16080 16086 -
16089 16092 16104 16116 16126 16141 TO 16143 16164 TO 16166 16174 TO 16176 -
16184 TO 16186 16314 16320 16323 16330 16342 16344 16347 16354 16366 16368 -
16371 16424 16435 16444 TO 16447 16449 16451 16456 16458 16460 16465 16467 -
16468 16470 16474 16481 16483 TO 16485 16487 16489 16492 16494 16499 16501 -
16503 TO 16506 16508 16513 16515 16517 TO 16520 16522 16527 16529 16531 -
16532 16534 16537 16541 16543 TO 16545 16549 16551 TO 16553 16557 16561 -
16565 16570 TO 16572 16593 TO 16595 16603 TO 16605 16613 TO 16615 16623 -
16625 16626 20943 20946 TO 20949 20952 20953 20955 20956 20958 -
20966 TO 20968 20970 20973 20974 20994 TO 21002 21004 TO 21012 -
21014 TO 21022 21024 TO 21032 21051 TO 21054 21066 TO 21087 21099 TO 21109 -
21114 21115 21118 21119 21171 TO 21182 21192 TO 21194 21205 TO 21208 21210 -
21212 21217 21219 21221 21226 21228 21229 21231 21234 21235 21237 21238 -
21241 21243 21247 21254 21256 TO 21258 UNI GY -825
21260 21262 21265 21267 21272 21274 21276 TO 21279 21281 21286 21288 21290 -
21291 TO 21293 21295 21300 21302 21304 21306 21309 21311 TO 21314 21316 21319 -
21321 TO 21324 21326 21329 21331 21334 21335 21337 21340 21344 -
21346 TO 21348 21352 21354 TO 21356 21360 21364 21368 21373 TO 21375 21396 -
21397 TO 21398 21406 TO 21408 21416 TO 21418 21426 21428 21429 21431 21435 -
21436 TO 21437 21439 21443 TO 21445 21461 21464 21468 TO 21471 21473 21475 -
21480 21482 21484 21489 21491 21492 21494 21498 21505 21507 TO 21509 21511 -
21513 21516 21518 21523 21525 21527 TO 21530 21532 21537 21539 -

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21541 TO 21544 21546 21551 21553 21555 21556 21558 21561 21565 -
 21567 TO 21569 21573 21575 TO 21577 21581 21585 21589 21594 TO 21596 21617 -
 21618 TO 21619 21627 TO 21629 21637 TO 21639 21647 21649 21650 21655 21658 -
 21659 TO 21661 21664 21665 21667 21668 21670 21678 TO 21680 21682 21685 21686 -
 21706 TO 21714 21716 TO 21724 21726 TO 21734 21736 TO 21744 21763 TO 21766 -
 21778 TO 21799 21811 TO 21821 21826 21827 21830 21831 21883 TO 21894 21904 -
 21905 TO 21906 21917 TO 21920 21922 21924 21929 21931 21933 21938 21940 21941 -
 21943 21946 21947 21949 21950 21953 21955 21959 21966 21968 TO 21970 21972 -
 21974 21977 21979 21984 21986 21988 TO 21991 21993 21998 22000 -
 22002 TO 22005 22007 22012 22014 22016 22018 22021 22023 TO 22026 22028 -
 22031 22033 TO 22036 22038 22041 22043 22046 22047 22049 22052 22056 22058 -
 22059 TO 22060 22064 22066 TO 22068 22072 22076 22080 22085 TO 22087 22108 -
 22109 TO 22110 22118 TO 22120 22128 TO 22130 22138 22140 22141 22143 22147 -
 22148 TO 22149 22151 22155 TO 22157 22173 22176 22180 UNI GY -825
 222181 TO 22183 22185 22187 22192 22194 22196 22201 22203 22204 22206 22210 -
 22217 22219 TO 22221 22223 22225 22228 22230 22235 22237 22239 TO 22242 -
 22244 22249 22251 22253 TO 22256 22258 22263 22265 22267 22268 22270 22273 -
 22277 22279 TO 22281 22285 22287 TO 22289 22293 22297 22301 22306 TO 22308 -
 22329 TO 22331 22339 TO 22341 22349 TO 22351 22359 22361 22362 UNI GY -825

LOAD 2 BEBAN HIDUP

ELEMENT LOAD

15701 15703 15705 15707 15709 TO 15711 15713 15715 TO 15717 15719 15721 15723 -
 15725 15726 15728 TO 15730 15732 15734 TO 15736 15738 15740 TO 15742 15744 -
 15746 15748 15750 15751 15754 15756 15758 15760 15761 15763 15765 15767 -
 15768 15771 15773 15775 15777 15779 15780 15782 15783 15785 15787 15788 -
 15790 15792 15793 15795 15796 15799 15801 15803 15805 15807 15809 15811 -
 15812 15814 TO 15816 15818 15820 15822 15824 15825 15827 15828 15830 15832 -
 15833 15835 15837 15839 15840 15842 TO 15844 15846 15848 TO 15850 15852 -
 15854 15856 15858 15859 15861 TO 15863 15865 15867 TO 15869 15871 15873 -
 15875 15877 15878 15880 TO 15882 15884 15886 TO 15888 15890 15892 15894 -
 15896 15897 15899 TO 15901 15903 15905 TO 15907 15909 15911 15913 15915 -
 15916 15918 TO 15920 15922 15924 TO 15926 15928 15930 15932 15934 15935 -
 15937 TO 15939 15941 15943 TO 15945 15947 TO 15951 15953 15955 15956 15958 -
 15960 15961 15963 15964 15966 15968 15969 15971 15973 15974 15976 15977 -
 15979 15981 15982 15984 15986 15987 15989 15990 15992 15994 15995 15997 -
 15999 16000 16002 16003 16005 16007 16008 16010 16012 16013 16015 16016 -
 16018 16020 16021 16023 16025 16026 16028 16029 16032 16034 16036 16037 -
 16039 16040 16042 16043 16045 16047 TO 16049 16051 16052 16054 16055 16057 -
 16059 TO 16061 16063 16064 16066 16067 16069 16071 TO 16073 16075 16076 -
 16078 16079 16081 16083 TO 16085 16087 16088 16090 16091 16093 -
 16095 TO 16097 16099 16100 16102 16103 16105 16107 TO 16109 16111 16112 -
 16114 16115 16118 16119 16121 16122 16124 16125 16127 16128 16130 16131 -
 16133 16134 16136 16137 16139 16140 16194 TO 16313 16315 16316 16318 16319 -
 16321 PR GY -250
 16322 16324 TO 16326 16328 16329 16331 16333 16334 16336 TO 16338 16340 16341 -
 16343 16345 16346 16348 TO 16350 16352 16353 16355 16357 16358 -
 16360 TO 16362 16364 16365 16367 16369 16370 16372 16373 16376 16378 16380 -
 16381 16383 TO 16386 16388 TO 16391 16393 16395 16397 16398 16400 TO 16407 -
 16409 TO 16412 16414 16416 16418 16419 16421 TO 16423 16425 16427 TO 16430 -
 16432 TO 16434 16436 16438 16440 16442 16443 16631 TO 16984 17413 TO 18248 -
 18743 TO 19578 PR GY -250
 20073 TO 20920 20922 20924 TO 20937 20939 20941 20942 PR GY -100

LOAD 3 BEBAN GEMPA

JOINT LOAD

13045 13926 14873 FX 24000 FZ 80000

15820 FX 18000 FZ 60000

UNIT METER MTON

LOAD COMB 4 KOMBINASI B. MATI + HIDUP

1 1.2 2 1.6

LOAD COMB 5 KOMB B. MATI + B. HIDUP + B. GEMPA

1 1.0 2 0.6 3 1.05

PERFORM ANALYSIS

LOAD LIST 4 5

START CONCRETE DESIGN

CODE ACI

UNIT CM KG

FC 275 MEMB 122 TO 185 484 485 15390 TO 15455 18249 TO 18314 19579 TO 19644

FYMAIN 5200 MEMB 122 TO 185 484 485 15390 TO 15455 18249 TO 18314 -

19579 TO 19644

FYSEC 3700 MEMB 122 TO 185 484 485 15390 TO 15455 18249 TO 18314 19579 TO 19644

TRACK 0 MEMB 122 TO 185 484 485 15390 TO 15455 18249 TO 18314 19579 TO 19644

DESIGN COLUMN 122 TO 185 484 485 15390 TO 15455 18249 TO 18314 19579 TO 19644

FC 275 MEMB 186 TO 196 199 202 205 206 281 294 307 345 364 383 405 428 15456 -

15457 TO 15674 15676 TO 15681 15683 TO 15686 15688 15690 TO 15700 15702 15704 -

15706 15708 15712 15714 15718 15720 15722 15724 15727 15731 15733 15737 -

15739 15743 15745 15747 15749 15752 15753 15755 15757 15759 15762 15764 -

15766 15769 15770 15772 15774 15776 15778 15781 15784 15786 15789 15791 -

15794 15797 15798 15800 15802 15804 15806 15808 15810 15813 15817 15819 -

15821 15823 15826 15829 15831 15834 15836 15838 15841 15845 15847 15851 -

15853 15855 15857 15860 15864 15866 15870 15872 15874 15876 15879 15883 -

15885 15889 15891 15893 15895 15898 15902 15904 15908 15910 15912 15914 -

15917 15921 15923 15927 15929 15931 15933 15936 15940 15942 15946 15952 -

15954 15957 15959 15962 15965 15967 15970 15972 15975 15978 15980 15983 -

15985 15988 15991 15993 15996 15998 16001 16004 16006 16009 16011 16014 -

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16017 16019 16022 16024 16027 16030 16031 16033 16035 16038 16041 16044 -
16046 16050 16053 16056 16058 16062 16065 16068 16070 16074 16077 16080 -
16082 16086 16089 16092 16094 16098 16101 16104 16106 16110 16113 16116 -
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16356 16359 16363 16366 16368 16371 16374 16375 16377 16379 16382 16387 -
16392 16394 16396 16399 16408 16413 16415 16417 16420 16424 16426 16431 -
16435 16437 16439 16441 16444 TO 16630 20943 TO 23078
FYMAIN 5200 MEMB 186 TO 196 199 202 205 206 281 294 307 345 364 383 405 428 -
15456 TO 15674 15676 TO 15681 15683 TO 15686 15688 15690 TO 15700 15702 -
15704 15706 15708 15712 15714 15718 15720 15722 15724 15727 15731 15733 -
15737 15739 15743 15745 15747 15749 15752 15753 15755 15757 15759 15762 -
15764 15766 15769 15770 15772 15774 15776 15778 15781 15784 15786 15789 -
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16354 16356 16359 16363 16366 16368 16371 16374 16375 16377 16379 16382 -
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FYSEC 3700 MEMB 186 TO 196 199 202 205 206 281 294 307 345 364 383 405 428 -
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TRACK 0 MEMB 186 TO 196 199 202 205 206 281 294 307 345 364 383 405 428 15456 -
15457 TO 15674 15676 TO 15681 15683 TO 15686 15688 15690 TO 15700 15702 15704 -
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16435 16437 16439 16441 16444 TO 16630 20943 TO 23078
DESIGN BEAM 186 TO 196 199 202 205 206 281 294 307 345 364 383 405 428 15456 -
15457 TO 15674 15676 TO 15681 15683 TO 15686 15688 15690 TO 15700 15702 15704 -
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16320 16323 16327 16330 16332 16335 16339 16342 16344 16347 16351 16354 -
16356 16359 16363 16366 16368 16371 16374 16375 16377 16379 16382 16387 -
16392 16394 16396 16399 16408 16413 16415 16417 16420 16424 16426 16431 -
16435 16437 16439 16441 16444 TO 16630 20943 TO 23078
END CONCRETE DESIGN
FINISH



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Job No 1	Sheet No 1	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title **Skripsi Value Engginering**

Client **Teknik Sipil**

Staad.Pro Query Concrete Design

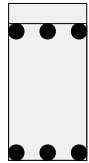
Beam no. 15784

Design Code: ACI-99

3#25 @ 436.70 0.00 To 1500.00



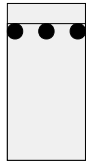
3#12 @ 56.80 0.00 To 500.99



at 0.000



at 750.000



at 1500.000

Design Load

Mz(Kn Met)	Distet	Load
16.400000	0.000000	4
-181.160004	0.000000	5
0.000000	0.000000	0

Design Parameter

Fy(Mpa)	510.000000
Fc(Mpa)	27.000000
Depth(cm)	50.000000
Width(cm)	25.000000
Length(cm)	150.000000



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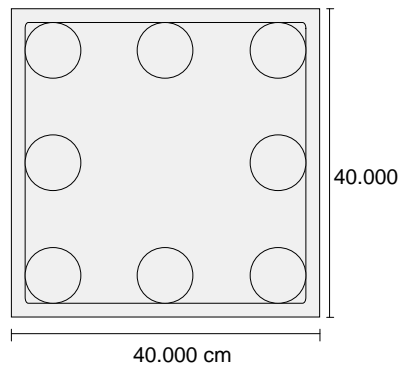
Job No 1	Sheet No 1	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engginering
Client Teknik Sipil

Staad.Pro Query Concrete Design

Beam no. 15432

Design Code: ACI-99



Design Load

Load	4
Location	END
Pu(Kns)	957.809998
Mz(Kns-Mt)	56.080002
My(Kns-Mt)	18.530001

Design Results

Fy(Mpa)	510
Fc(Mpa)	27
As Reqd(mm ²)	1600.000000
As (%)	1.005000
Bar Size	16
Bar No	8



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Job No 1	Sheet No 1	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Job Information

	Engineer	Checked	Approved
Name:	Jeronio.G		
Date:	26-Mar-15	28-Mar-15	30-Mar-15

Comments

Concrete Grade K-275
 Main Steel Grade BJ 52
 Secondary Steel Grade BJ 37

Structure Type	SPACE FRAME
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Number of Nodes	3890	Highest Node	16462
Number of Elements	3112	Highest Beam	23078
Number of Plates	3374	Highest Plate	20942

Number of Basic Load Cases	3
Number of Combination Load Cases	2

Included in this printout are data for:

All	The Whole Structure
-----	---------------------

Included in this printout are results for load cases:

Type	L/C	Name
Primary	1	BEBAN MATI
Primary	2	BEBAN HIDUP
Primary	3	BEBAN GEMPA
Combination	4	KOMBINASI B. MATI + HIDUP
Combination	5	KOMB B. MATI + B. HIDUP + B. GEMPA



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Job No

1

Sheet No

2

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

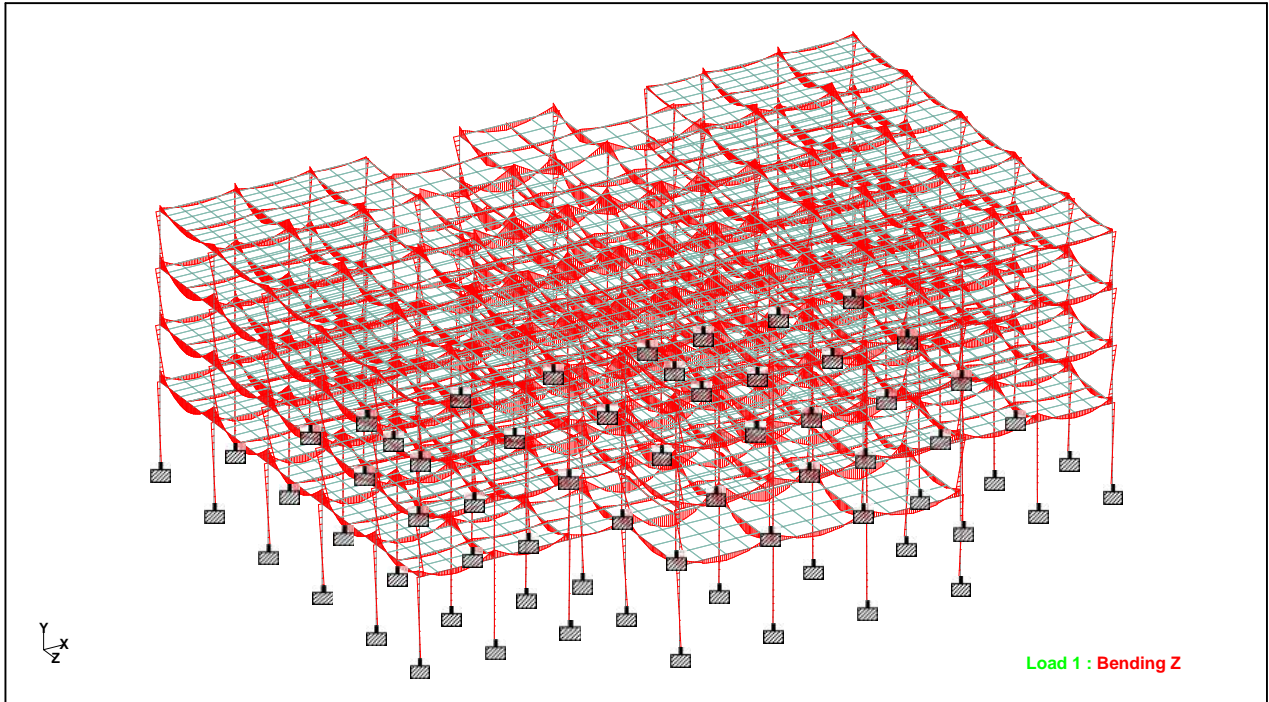
Date 26-Mar-15

Chd

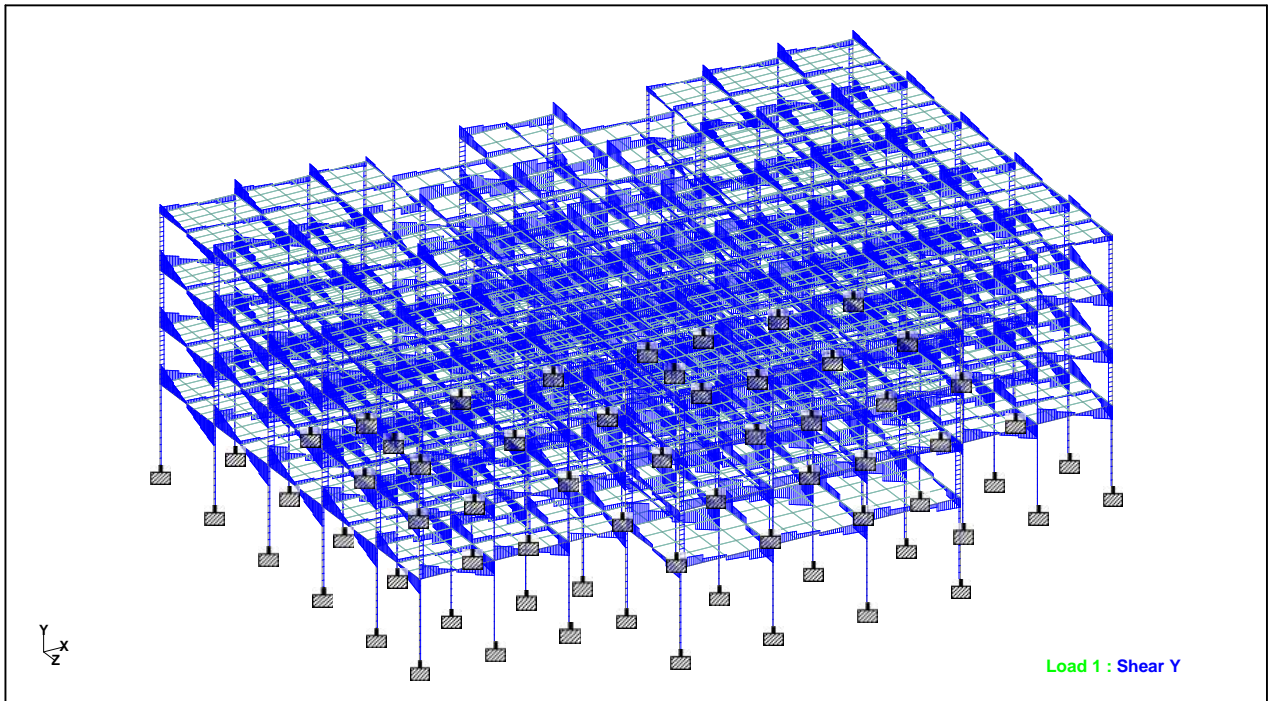
Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34



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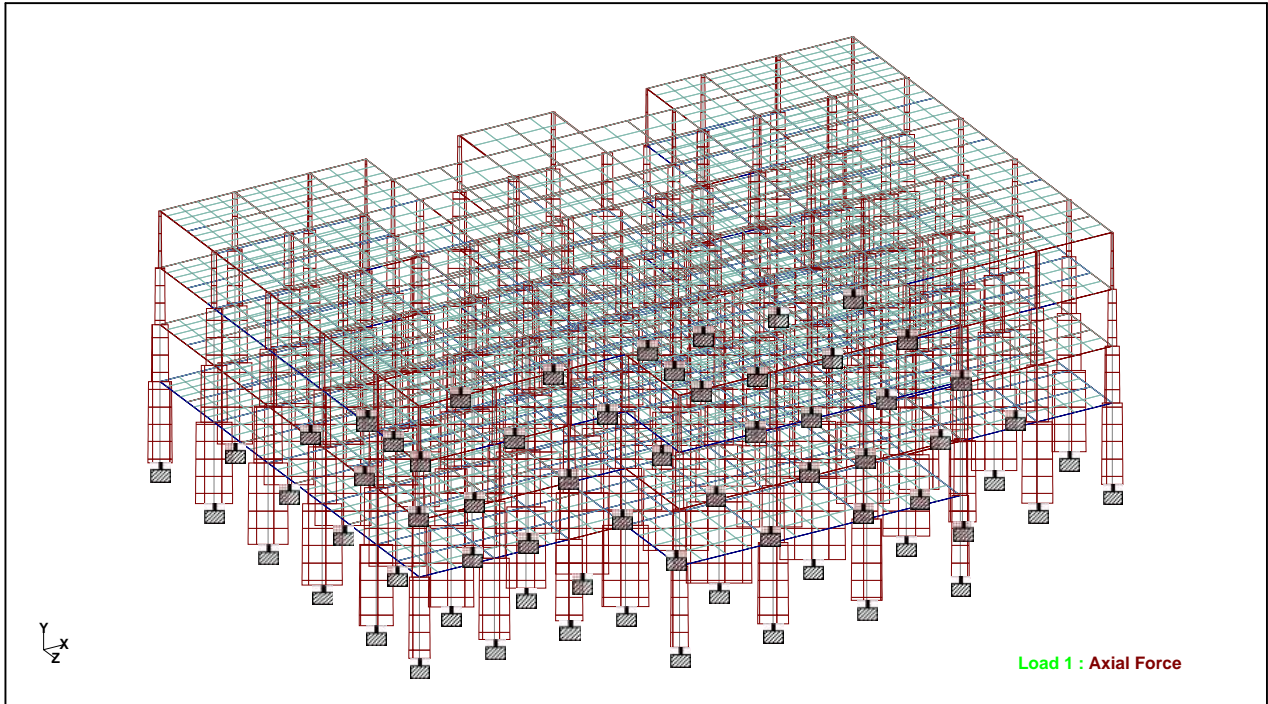
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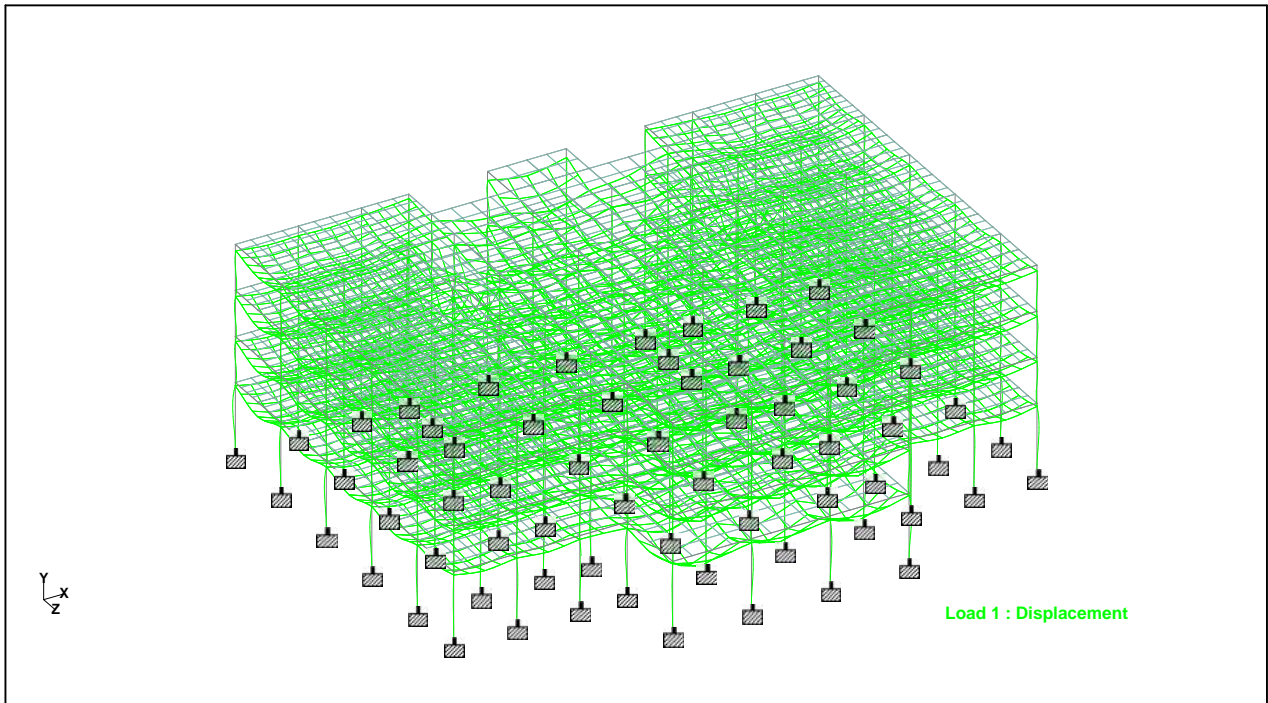
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Job No	1	Sheet No	3	Rev	
Part	1a				
Ref					
By	Jeronio.G	Date	26-Mar-15	Chd	
File	Jero Fix Staad.std	Date/Time	28-Aug-2017 02:34		

Job Title Skripsi Value Engginering
Client Teknik Sipil



fx



Displacement



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Job No

1

Sheet No

1

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Displacement Summary

Displacements shown in italic indicate the presence of an offset

	Beam	Node	L/C	X (mm)	Y (mm)	Z (mm)	Resultant (mm)
Max X	22619	16072	5:KOMB B. MA	8.093	-2.031	27.071	28.328
Min X	19598	15499	4:KOMBINASI	-0.040	-2.057	0.082	2.059
Max Y	16374	13264	3:BEBAN GEM	4.090	1.176	13.639	14.288
Min Y	21837	14667	4:KOMBINASI	0.000	-9.868	0.071	9.868
Max Z	22624	15820	5:KOMB B. MA	7.888	-5.429	27.403	29.028
Min Z	122	68	4:KOMBINASI	-0.017	-0.726	-0.015	0.726
Max Rst	22624	15820	5:KOMB B. MA	7.888	-5.429	27.403	29.028

Beam End Forces

Sign convention is as the action of the joint on the beam.

Beam	Node	L/C	Axial			Shear			Torsion	Bending		
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)				
122	1	1:BEBAN MATI	36.4E 3	-302.709	511.424	0.017	-8.296	-4.944				
		2:BEBAN HIDL	5.6E 3	-80.046	133.392	0.004	-2.188	-1.307				
		3:BEBAN GEM	-9E 3	1.24E 3	-3.99E 3	0.046	114.995	34.607				
		4:KOMBINASI	52.6E 3	-491.324	827.136	0.027	-13.456	-8.024				
		5:KOMB B. MA	30.3E 3	948.534	-3.6E 3	0.068	111.135	30.609				
68	68	1:BEBAN MATI	-34.4E 3	302.709	-511.424	-0.017	-16.781	-9.899				
		2:BEBAN HIDL	-5.6E 3	80.046	-133.392	-0.004	-4.353	-2.618				
		3:BEBAN GEM	9E 3	-1.24E 3	3.99E 3	-0.046	80.765	26.067				
		4:KOMBINASI	-50.3E 3	491.324	-827.136	-0.027	-27.101	-16.068				
		5:KOMB B. MA	-28.3E 3	-948.534	3.6E 3	-0.068	65.411	15.900				
123	2	1:BEBAN MATI	51E 3	-318.142	-124.958	-0.004	2.118	-5.205				
		2:BEBAN HIDL	10.7E 3	-146.631	-32.030	-0.001	0.524	-2.395				
		3:BEBAN GEM	-6.41E 3	1.27E 3	-4.79E 3	0.011	127.958	35.393				
		4:KOMBINASI	78.3E 3	-616.381	-201.198	-0.006	3.380	-10.078				
		5:KOMB B. MA	50.7E 3	926.990	-5.17E 3	0.007	136.788	30.520				
69	69	1:BEBAN MATI	-49.1E 3	318.142	124.958	0.004	4.010	-10.395				
		2:BEBAN HIDL	-10.7E 3	146.631	32.030	0.001	1.046	-4.795				
		3:BEBAN GEM	6.41E 3	-1.27E 3	4.79E 3	-0.011	106.892	26.861				
		4:KOMBINASI	-76E 3	616.381	201.198	0.006	6.485	-20.145				
		5:KOMB B. MA	-48.8E 3	-926.990	5.17E 3	-0.007	116.873	14.933				
124	3	1:BEBAN MATI	52.8E 3	12.134	616.360	0.003	-9.986	0.170				
		2:BEBAN HIDL	12.3E 3	0.161	274.531	0.001	-4.476	-0.004				
		3:BEBAN GEM	-6.45E 3	1.41E 3	-4.05E 3	-0.002	115.905	37.406				
		4:KOMBINASI	83E 3	14.818	1.18E 3	0.005	-19.145	0.198				
		5:KOMB B. MA	53.4E 3	1.49E 3	-3.47E 3	0.001	109.029	39.444				
70	70	1:BEBAN MATI	-50.9E 3	-12.134	-616.360	-0.003	-20.236	0.425				
		2:BEBAN HIDL	-12.3E 3	-0.161	-274.531	-0.001	-8.985	0.011				
		3:BEBAN GEM	6.45E 3	-1.41E 3	4.05E 3	0.002	82.576	31.723				
		4:KOMBINASI	-80.7E 3	-14.818	-1.18E 3	-0.005	-38.659	0.528				
		5:KOMB B. MA	-51.5E 3	-1.49E 3	3.47E 3	-0.001	61.078	33.741				
125	4	1:BEBAN MATI	68.1E 3	19.965	-145.251	-0.000	2.445	0.285				
		2:BEBAN HIDL	23E 3	0.721	-65.566	0.000	1.070	-0.002				
		3:BEBAN GEM	-3.4E 3	1.46E 3	-4.86E 3	0.008	129.201	38.474				
		4:KOMBINASI	118E 3	25.112	-279.206	0.001	4.645	0.339				



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Job No 1	Sheet No 2	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	78.3E 3	1.55E 3	-5.29E 3	0.009	138.747	40.682			
	71	1:BEBAN MATI	-66.1E 3	-19.965	145.251	0.000	4.677	0.694			
		2:BEBAN HIDL	-23E 3	-0.721	65.566	-0.000	2.145	0.038			
		3:BEBAN GEM	3.4E 3	-1.46E 3	4.86E 3	-0.008	109.279	33.065			
		4:KOMBINASI	-116E 3	-25.112	279.206	-0.001	9.045	0.893			
		5:KOMB B. MA	-76.4E 3	-1.55E 3	5.29E 3	-0.009	120.707	35.434			
126	5	1:BEBAN MATI	44.1E 3	119.406	462.972	0.006	-7.490	1.919			
		2:BEBAN HIDL	9.61E 3	36.245	213.136	0.003	-3.476	0.585			
		3:BEBAN GEM	-9.79E 3	1.48E 3	-4.12E 3	0.039	117.141	38.514			
		4:KOMBINASI	68.2E 3	201.279	896.584	0.011	-14.550	3.240			
		5:KOMB B. MA	39.5E 3	1.69E 3	-3.74E 3	0.048	113.422	42.710			
	72	1:BEBAN MATI	-42.1E 3	-119.406	-462.972	-0.006	-15.211	3.935			
		2:BEBAN HIDL	-9.61E 3	-36.245	-213.136	-0.003	-6.974	1.192			
		3:BEBAN GEM	9.79E 3	-1.48E 3	4.12E 3	-0.039	84.938	33.886			
		4:KOMBINASI	-65.9E 3	-201.279	-896.584	-0.011	-29.412	6.629			
		5:KOMB B. MA	-37.6E 3	-1.69E 3	3.74E 3	-0.048	69.790	40.231			
127	6	1:BEBAN MATI	59.2E 3	105.248	-131.687	0.001	2.225	1.675			
		2:BEBAN HIDL	19E 3	59.937	-55.813	0.001	0.913	0.961			
		3:BEBAN GEM	-4.79E 3	1.46E 3	-4.86E 3	0.014	129.150	38.581			
		4:KOMBINASI	101E 3	222.196	-247.324	0.002	4.131	3.548			
		5:KOMB B. MA	65.6E 3	1.68E 3	-5.26E 3	0.016	138.381	42.762			
	73	1:BEBAN MATI	-57.3E 3	-105.248	131.687	-0.001	4.232	3.485			
		2:BEBAN HIDL	-19E 3	-59.937	55.813	-0.001	1.824	1.978			
		3:BEBAN GEM	4.79E 3	-1.46E 3	4.86E 3	-0.014	108.945	33.209			
		4:KOMBINASI	-99.2E 3	-222.196	247.324	-0.002	7.996	7.347			
		5:KOMB B. MA	-63.7E 3	-1.68E 3	5.26E 3	-0.016	119.718	39.542			
128	7	1:BEBAN MATI	23.7E 3	130.767	146.393	0.005	-2.346	2.109			
		2:BEBAN HIDL	2.69E 3	32.329	38.195	0.002	-0.634	0.524			
		3:BEBAN GEM	-12.5E 3	1.25E 3	-4.4E 3	-0.013	121.718	34.875			
		4:KOMBINASI	32.7E 3	208.646	236.783	0.009	-3.829	3.369			
		5:KOMB B. MA	12.2E 3	1.46E 3	-4.45E 3	-0.007	125.078	39.042			
	74	1:BEBAN MATI	-21.8E 3	-130.767	-146.393	-0.005	-4.832	4.303			
		2:BEBAN HIDL	-2.69E 3	-32.329	-38.195	-0.002	-1.239	1.061			
		3:BEBAN GEM	12.5E 3	-1.25E 3	4.4E 3	0.013	93.861	26.518			
		4:KOMBINASI	-30.4E 3	-208.646	-236.783	-0.009	-7.781	6.861			
		5:KOMB B. MA	-10.3E 3	-1.46E 3	4.45E 3	0.007	92.978	32.784			
129	8	1:BEBAN MATI	79.5E 3	-347.644	-175.578	0.002	2.940	-5.662			
		2:BEBAN HIDL	21.9E 3	-124.601	-61.903	0.001	1.013	-2.029			
		3:BEBAN GEM	-813.025	1.45E 3	-4.82E 3	-0.001	128.675	38.448			
		4:KOMBINASI	130E 3	-616.535	-309.738	0.004	5.148	-10.040			
		5:KOMB B. MA	91.8E 3	1.1E 3	-5.28E 3	0.002	138.656	33.491			
	75	1:BEBAN MATI	-77.6E 3	347.644	175.578	-0.002	5.669	-11.385			
		2:BEBAN HIDL	-21.9E 3	124.601	61.903	-0.001	2.023	-4.081			
		3:BEBAN GEM	813.025	-1.45E 3	4.82E 3	0.001	107.765	32.865			
		4:KOMBINASI	-128E 3	616.535	309.738	-0.004	10.039	-20.190			
		5:KOMB B. MA	-89.9E 3	-1.1E 3	5.28E 3	-0.002	120.036	20.675			
130	9	1:BEBAN MATI	50E 3	-515.965	791.401	0.024	-12.833	-8.374			
		2:BEBAN HIDL	8.62E 3	-125.191	191.508	0.006	-3.123	-2.032			



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Job No 1	Sheet No 3	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-8.56E 3	1.18E 3	-4.06E 3	-0.031	116.338	33.264			
		4:KOMBINASI	73.8E 3	-819.463	1.26E 3	0.038	-20.397	-13.299			
		5:KOMB B. MA	46.2E 3	653.042	-3.35E 3	-0.005	107.448	25.335			
	76	1:BEBAN MATI	-48.1E 3	515.965	-791.401	-0.024	-25.972	-16.926			
		2:BEBAN HIDL	-8.62E 3	125.191	-191.508	-0.006	-6.267	-4.107			
		3:BEBAN GEM	8.56E 3	-1.18E 3	4.06E 3	0.031	82.636	24.834			
		4:KOMBINASI	-71.5E 3	819.463	-1.26E 3	-0.038	-41.194	-26.882			
		5:KOMB B. MA	-44.3E 3	-653.042	3.35E 3	0.005	57.035	6.686			
131	10	1:BEBAN MATI	97.5E 3	35.989	-211.120	0.000	3.517	0.575			
		2:BEBAN HIDL	27.7E 3	13.540	-79.095	0.000	1.292	0.216			
		3:BEBAN GEM	-2.43E 3	1.41E 3	-4.84E 3	-0.014	128.989	37.824			
		4:KOMBINASI	161E 3	64.850	-379.896	0.000	6.288	1.036			
		5:KOMB B. MA	112E 3	1.53E 3	-5.34E 3	-0.015	139.731	40.419			
	77	1:BEBAN MATI	-95.6E 3	-35.989	211.120	-0.000	6.835	1.190			
		2:BEBAN HIDL	-27.7E 3	-13.540	79.095	-0.000	2.586	0.448			
		3:BEBAN GEM	2.43E 3	-1.41E 3	4.84E 3	0.014	108.246	31.398			
		4:KOMBINASI	-159E 3	-64.850	379.896	-0.000	12.340	2.144			
		5:KOMB B. MA	-110E 3	-1.53E 3	5.34E 3	0.015	122.044	34.427			
132	11	1:BEBAN MATI	50E 3	515.965	791.401	-0.024	-12.833	8.374			
		2:BEBAN HIDL	8.62E 3	125.191	191.508	-0.006	-3.123	2.032			
		3:BEBAN GEM	-5.11E 3	1.13E 3	-4.05E 3	-0.162	115.978	32.342			
		4:KOMBINASI	73.8E 3	819.463	1.26E 3	-0.038	-20.397	13.299			
		5:KOMB B. MA	49.8E 3	1.78E 3	-3.35E 3	-0.198	107.070	43.551			
	78	1:BEBAN MATI	-48.1E 3	-515.965	-791.401	0.024	-25.972	16.926			
		2:BEBAN HIDL	-8.62E 3	-125.191	-191.508	0.006	-6.267	4.107			
		3:BEBAN GEM	5.11E 3	-1.13E 3	4.05E 3	0.162	82.708	23.055			
		4:KOMBINASI	-71.5E 3	-819.463	-1.26E 3	0.038	-41.194	26.882			
		5:KOMB B. MA	-47.9E 3	-1.78E 3	3.35E 3	0.198	57.112	43.597			
133	12	1:BEBAN MATI	97.5E 3	-35.989	-211.120	-0.000	3.517	-0.575			
		2:BEBAN HIDL	27.7E 3	-13.539	-79.095	-0.000	1.292	-0.216			
		3:BEBAN GEM	-2.36E 3	1.42E 3	-4.82E 3	-0.088	128.531	38.102			
		4:KOMBINASI	161E 3	-64.849	-379.896	-0.000	6.288	-1.036			
		5:KOMB B. MA	112E 3	1.45E 3	-5.32E 3	-0.092	139.249	39.302			
	79	1:BEBAN MATI	-95.6E 3	35.989	211.120	0.000	6.835	-1.190			
		2:BEBAN HIDL	-27.7E 3	13.539	79.095	0.000	2.586	-0.448			
		3:BEBAN GEM	2.36E 3	-1.42E 3	4.82E 3	0.088	107.859	31.633			
		4:KOMBINASI	-159E 3	64.849	379.896	0.000	12.340	-2.144			
		5:KOMB B. MA	-110E 3	-1.45E 3	5.32E 3	0.092	121.638	31.756			
134	13	1:BEBAN MATI	23.7E 3	-130.767	146.393	-0.005	-2.346	-2.109			
		2:BEBAN HIDL	2.69E 3	-32.329	38.195	-0.002	-0.634	-0.524			
		3:BEBAN GEM	-19E 3	1.14E 3	-4.33E 3	-0.149	120.012	32.088			
		4:KOMBINASI	32.7E 3	-208.647	236.783	-0.009	-3.829	-3.369			
		5:KOMB B. MA	5.4E 3	1.05E 3	-4.38E 3	-0.163	123.287	31.268			
	80	1:BEBAN MATI	-21.8E 3	130.767	-146.393	0.005	-4.832	-4.303			
		2:BEBAN HIDL	-2.69E 3	32.329	-38.195	0.002	-1.239	-1.061			
		3:BEBAN GEM	19E 3	-1.14E 3	4.33E 3	0.149	92.328	24.016			
		4:KOMBINASI	-30.4E 3	208.647	-236.783	0.009	-7.781	-6.861			
		5:KOMB B. MA	-3.48E 3	-1.05E 3	4.38E 3	0.163	91.369	20.277			



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Job No 1	Sheet No 4	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
135	14	1:BEBAN MATI	79.5E 3	347.644	-175.578	-0.002	2.940	5.662			
		2:BEBAN HIDL	21.9E 3	124.601	-61.903	-0.001	1.013	2.029			
		3:BEBAN GEM	-4.44E 3	1.48E 3	-4.77E 3	-0.108	127.255	39.160			
		4:KOMBINASI	130E 3	616.534	-309.738	-0.004	5.148	10.040			
		5:KOMB B. MA	88E 3	1.98E 3	-5.22E 3	-0.115	137.166	47.997			
	81	1:BEBAN MATI	-77.6E 3	-347.644	175.578	0.002	5.669	11.385			
		2:BEBAN HIDL	-21.9E 3	-124.601	61.903	0.001	2.023	4.081			
		3:BEBAN GEM	4.44E 3	-1.48E 3	4.77E 3	0.108	106.609	33.628			
		4:KOMBINASI	-128E 3	-616.534	309.738	0.004	10.039	20.190			
		5:KOMB B. MA	-86.1E 3	-1.98E 3	5.22E 3	0.115	118.822	49.142			
136	15	1:BEBAN MATI	44.1E 3	-119.405	462.972	-0.006	-7.490	-1.919			
		2:BEBAN HIDL	9.61E 3	-36.245	213.135	-0.003	-3.476	-0.585			
		3:BEBAN GEM	-5.66E 3	1.32E 3	-3.98E 3	-0.164	113.931	34.931			
		4:KOMBINASI	68.2E 3	-201.279	896.583	-0.011	-14.550	-3.240			
		5:KOMB B. MA	43.9E 3	1.24E 3	-3.59E 3	-0.180	110.051	34.407			
	82	1:BEBAN MATI	-42.1E 3	119.405	-462.972	0.006	-15.211	-3.935			
		2:BEBAN HIDL	-9.61E 3	36.245	-213.135	0.003	-6.974	-1.192			
		3:BEBAN GEM	5.66E 3	-1.32E 3	3.98E 3	0.164	81.119	29.742			
		4:KOMBINASI	-65.9E 3	201.279	-896.583	0.011	-29.412	-6.629			
		5:KOMB B. MA	-42E 3	-1.24E 3	3.59E 3	0.180	65.779	26.578			
137	16	1:BEBAN MATI	59.2E 3	-105.248	-131.687	-0.001	2.225	-1.675			
		2:BEBAN HIDL	19E 3	-59.937	-55.813	-0.001	0.913	-0.961			
		3:BEBAN GEM	-2.39E 3	1.5E 3	-4.77E 3	-0.127	127.011	39.501			
		4:KOMBINASI	101E 3	-222.196	-247.325	-0.002	4.131	-3.548			
		5:KOMB B. MA	68.1E 3	1.44E 3	-5.18E 3	-0.134	136.135	39.225			
	83	1:BEBAN MATI	-57.3E 3	105.248	131.687	0.001	4.232	-3.485			
		2:BEBAN HIDL	-19E 3	59.937	55.813	0.001	1.824	-1.978			
		3:BEBAN GEM	2.39E 3	-1.5E 3	4.77E 3	0.127	107.101	34.290			
		4:KOMBINASI	-99.2E 3	222.196	247.325	0.002	7.996	-7.347			
		5:KOMB B. MA	-66.2E 3	-1.44E 3	5.18E 3	0.134	117.783	31.333			
138	17	1:BEBAN MATI	52.8E 3	-12.135	616.360	-0.003	-9.986	-0.170			
		2:BEBAN HIDL	12.3E 3	-0.161	274.531	-0.001	-4.476	0.004			
		3:BEBAN GEM	-7.11E 3	1.31E 3	-3.95E 3	-0.138	113.144	34.785			
		4:KOMBINASI	83E 3	-14.820	1.18E 3	-0.005	-19.145	-0.198			
		5:KOMB B. MA	52.7E 3	1.36E 3	-3.37E 3	-0.148	106.129	36.357			
	84	1:BEBAN MATI	-50.9E 3	12.135	-616.360	0.003	-20.236	-0.425			
		2:BEBAN HIDL	-12.3E 3	0.161	-274.531	0.001	-8.985	-0.011			
		3:BEBAN GEM	7.11E 3	-1.31E 3	3.95E 3	0.138	80.690	29.420			
		4:KOMBINASI	-80.7E 3	14.820	-1.18E 3	0.005	-38.659	-0.528			
		5:KOMB B. MA	-50.8E 3	-1.36E 3	3.37E 3	0.148	59.098	30.460			
139	18	1:BEBAN MATI	68.1E 3	-19.966	-145.251	0.000	2.445	-0.285			
		2:BEBAN HIDL	23E 3	-0.721	-65.566	-0.000	1.070	0.002			
		3:BEBAN GEM	-4.22E 3	1.49E 3	-4.75E 3	-0.127	126.176	39.276			
		4:KOMBINASI	118E 3	-25.113	-279.206	-0.001	4.645	-0.339			
		5:KOMB B. MA	77.4E 3	1.54E 3	-5.17E 3	-0.134	135.571	40.956			
	85	1:BEBAN MATI	-66.1E 3	19.966	145.251	-0.000	4.677	-0.694			
		2:BEBAN HIDL	-23E 3	0.721	65.566	0.000	2.145	-0.038			
		3:BEBAN GEM	4.22E 3	-1.49E 3	4.75E 3	0.127	106.680	33.811			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 5	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-116E 3	25.113	279.206	0.001	9.045	-0.893			
		5:KOMB B. MA	-75.5E 3	-1.54E 3	5.17E 3	0.134	117.979	34.785			
140	19	1:BEBAN MATI	36.4E 3	302.709	511.425	-0.017	-8.296	4.944			
		2:BEBAN HIDL	5.6E 3	80.046	133.392	-0.004	-2.188	1.307			
		3:BEBAN GEM	-3.85E 3	1.1E 3	-3.84E 3	-0.221	110.870	31.306			
		4:KOMBINASI	52.6E 3	491.325	827.136	-0.027	-13.456	8.024			
		5:KOMB B. MA	35.7E 3	1.5E 3	-3.44E 3	-0.252	106.805	38.599			
	86	1:BEBAN MATI	-34.4E 3	-302.709	-511.425	0.017	-16.781	9.899			
		2:BEBAN HIDL	-5.6E 3	-80.046	-133.392	0.004	-4.353	2.618			
		3:BEBAN GEM	3.85E 3	-1.1E 3	3.84E 3	0.221	77.284	22.451			
		4:KOMBINASI	-50.3E 3	-491.325	-827.136	0.027	-27.101	16.068			
		5:KOMB B. MA	-33.7E 3	-1.5E 3	3.44E 3	0.252	61.756	35.043			
141	20	1:BEBAN MATI	51E 3	318.143	-124.958	0.004	2.118	5.205			
		2:BEBAN HIDL	10.7E 3	146.631	-32.030	0.001	0.524	2.395			
		3:BEBAN GEM	-722.666	1.28E 3	-4.64E 3	-0.123	124.107	35.843			
		4:KOMBINASI	78.3E 3	616.382	-201.198	0.006	3.380	10.078			
		5:KOMB B. MA	56.7E 3	1.75E 3	-5.02E 3	-0.125	132.745	44.277			
	87	1:BEBAN MATI	-49.1E 3	-318.143	124.958	-0.004	4.010	10.395			
		2:BEBAN HIDL	-10.7E 3	-146.631	32.030	-0.001	1.046	4.795			
		3:BEBAN GEM	722.666	-1.28E 3	4.64E 3	0.123	103.590	26.868			
		4:KOMBINASI	-76E 3	-616.382	201.198	-0.006	6.485	20.145			
		5:KOMB B. MA	-54.8E 3	-1.75E 3	5.02E 3	0.125	113.407	41.483			
142	21	1:BEBAN MATI	55.6E 3	-338.829	-43.144	0.000	0.724	-5.537			
		2:BEBAN HIDL	12E 3	-159.888	-11.114	0.000	0.163	-2.606			
		3:BEBAN GEM	-1.8E 3	1.24E 3	-4.7E 3	-0.012	126.514	34.634			
		4:KOMBINASI	85.9E 3	-662.416	-69.556	0.001	1.129	-10.815			
		5:KOMB B. MA	60.9E 3	864.868	-4.98E 3	-0.012	133.662	29.265			
	88	1:BEBAN MATI	-53.7E 3	338.829	43.144	-0.000	1.392	-11.077			
		2:BEBAN HIDL	-12E 3	159.888	11.114	-0.000	0.382	-5.233			
		3:BEBAN GEM	1.8E 3	-1.24E 3	4.7E 3	0.012	103.894	26.056			
		4:KOMBINASI	-83.6E 3	662.416	69.556	-0.001	2.282	-21.665			
		5:KOMB B. MA	-59E 3	-864.868	4.98E 3	0.012	110.710	13.143			
143	22	1:BEBAN MATI	55.6E 3	338.830	-43.144	-0.000	0.724	5.537			
		2:BEBAN HIDL	12E 3	159.888	-11.114	-0.000	0.163	2.606			
		3:BEBAN GEM	3.57E 3	1.19E 3	-4.55E 3	-0.134	122.439	33.294			
		4:KOMBINASI	85.9E 3	662.417	-69.556	-0.001	1.129	10.815			
		5:KOMB B. MA	66.6E 3	1.68E 3	-4.82E 3	-0.141	129.382	42.060			
	89	1:BEBAN MATI	-53.7E 3	-338.830	43.144	0.000	1.392	11.077			
		2:BEBAN HIDL	-12E 3	-159.888	11.114	0.000	0.382	5.233			
		3:BEBAN GEM	-3.57E 3	-1.19E 3	4.55E 3	0.134	100.480	25.038			
		4:KOMBINASI	-83.6E 3	-662.417	69.556	0.001	2.282	21.665			
		5:KOMB B. MA	-64.7E 3	-1.68E 3	4.82E 3	0.141	107.125	40.507			
144	23	1:BEBAN MATI	60.1E 3	-439.152	6.561	0.000	-0.058	-7.170			
		2:BEBAN HIDL	11.7E 3	-158.702	2.156	0.000	-0.044	-2.589			
		3:BEBAN GEM	-2.79E 3	1.25E 3	-4.63E 3	-0.019	125.399	34.995			
		4:KOMBINASI	90.8E 3	-780.905	11.322	0.001	-0.140	-12.747			
		5:KOMB B. MA	64.1E 3	780.780	-4.85E 3	-0.020	131.585	28.021			
	90	1:BEBAN MATI	-58.1E 3	439.152	-6.561	-0.000	-0.264	-14.363			



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Job No

1

Sheet No

6

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-11.7E 3	158.702	-2.156	-0.000	-0.061	-5.192			
		3:BEBAN GEM	2.79E 3	-1.25E 3	4.63E 3	0.019	101.537	26.420			
		4:KOMBINASI	-88.5E 3	780.905	-11.322	-0.001	-0.415	-25.543			
		5:KOMB B. MA	-62.2E 3	-780.780	4.85E 3	0.020	106.313	10.263			
145	24	1:BEBAN MATI	60.1E 3	439.153	6.561	-0.000	-0.058	7.170			
		2:BEBAN HIDL	11.7E 3	158.702	2.156	-0.000	-0.044	2.589			
		3:BEBAN GEM	2.64E 3	1.22E 3	-4.48E 3	-0.124	121.395	34.177			
		4:KOMBINASI	90.8E 3	780.907	11.322	-0.001	-0.140	12.747			
		5:KOMB B. MA	69.8E 3	1.82E 3	-4.69E 3	-0.131	127.381	44.610			
	91	1:BEBAN MATI	-58.1E 3	-439.153	-6.561	0.000	-0.264	14.363			
		2:BEBAN HIDL	-11.7E 3	-158.702	-2.156	0.000	-0.061	5.192			
		3:BEBAN GEM	-2.64E 3	-1.22E 3	4.48E 3	0.124	98.191	25.676			
		4:KOMBINASI	-88.5E 3	-780.907	-11.322	0.001	-0.415	25.543			
		5:KOMB B. MA	-67.9E 3	-1.82E 3	4.69E 3	0.131	102.800	44.439			
146	25	1:BEBAN MATI	60.4E 3	-440.521	-1.153	-0.000	0.089	-7.192			
		2:BEBAN HIDL	11.8E 3	-159.426	3.166	0.000	-0.053	-2.602			
		3:BEBAN GEM	-2.6E 3	1.26E 3	-4.62E 3	-0.003	125.200	35.150			
		4:KOMBINASI	91.3E 3	-783.707	3.682	0.000	0.022	-12.794			
		5:KOMB B. MA	64.7E 3	783.433	-4.85E 3	-0.003	131.517	28.154			
	92	1:BEBAN MATI	-58.5E 3	440.521	1.153	0.000	-0.033	-14.408			
		2:BEBAN HIDL	-11.8E 3	159.426	-3.166	-0.000	-0.102	-5.215			
		3:BEBAN GEM	2.6E 3	-1.26E 3	4.62E 3	0.003	101.181	26.474			
		4:KOMBINASI	-89E 3	783.707	-3.682	-0.000	-0.203	-25.634			
		5:KOMB B. MA	-62.8E 3	-783.433	4.85E 3	0.003	106.146	10.260			
147	26	1:BEBAN MATI	60.4E 3	440.522	-1.154	0.000	0.089	7.192			
		2:BEBAN HIDL	11.8E 3	159.426	3.166	-0.000	-0.053	2.602			
		3:BEBAN GEM	2.89E 3	1.26E 3	-4.47E 3	-0.120	121.342	35.133			
		4:KOMBINASI	91.3E 3	783.709	3.682	-0.000	0.022	12.794			
		5:KOMB B. MA	70.5E 3	1.86E 3	-4.7E 3	-0.126	127.467	45.643			
	93	1:BEBAN MATI	-58.5E 3	-440.522	1.154	-0.000	-0.033	14.408			
		2:BEBAN HIDL	-11.8E 3	-159.426	-3.166	0.000	-0.102	5.215			
		3:BEBAN GEM	-2.89E 3	-1.26E 3	4.47E 3	0.120	97.981	26.504			
		4:KOMBINASI	-89E 3	-783.709	-3.682	0.000	-0.203	25.634			
		5:KOMB B. MA	-68.6E 3	-1.86E 3	4.7E 3	0.126	102.786	45.366			
148	27	1:BEBAN MATI	84.3E 3	24.451	-8.354	0.000	0.207	0.357			
		2:BEBAN HIDL	25.4E 3	0.537	4.571	0.000	-0.075	-0.004			
		3:BEBAN GEM	603.625	1.46E 3	-4.69E 3	-0.004	126.341	38.381			
		4:KOMBINASI	142E 3	30.201	-2.711	0.001	0.128	0.422			
		5:KOMB B. MA	100E 3	1.55E 3	-4.93E 3	-0.004	132.820	40.655			
	94	1:BEBAN MATI	-82.3E 3	-24.451	8.354	-0.000	0.203	0.841			
		2:BEBAN HIDL	-25.4E 3	-0.537	-4.571	-0.000	-0.149	0.031			
		3:BEBAN GEM	-603.625	-1.46E 3	4.69E 3	0.004	103.479	32.995			
		4:KOMBINASI	-140E 3	-30.201	2.711	-0.001	0.005	1.059			
		5:KOMB B. MA	-98.2E 3	-1.55E 3	4.93E 3	0.004	108.766	35.504			
149	28	1:BEBAN MATI	84E 3	23.122	11.937	0.000	-0.142	0.335			
		2:BEBAN HIDL	25.3E 3	0.714	2.814	0.000	-0.053	-0.001			
		3:BEBAN GEM	325.963	1.45E 3	-4.69E 3	-0.018	126.439	38.187			
		4:KOMBINASI	141E 3	28.888	18.826	0.001	-0.256	0.401			



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Job No 1	Sheet No 7	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	99.5E 3	1.54E 3	-4.91E 3	-0.018	132.587	40.431			
	95	1:BEAN MATI	-82E 3	-23.122	-11.937	-0.000	-0.443	0.798			
		2:BEAN HIDL	-25.3E 3	-0.714	-2.814	-0.000	-0.085	0.036			
		3:BEAN GEM	-325.963	-1.45E 3	4.69E 3	0.018	103.713	32.847			
		4:KOMBINASI	-139E 3	-28.888	-18.826	-0.001	-0.667	1.015			
		5:KOMB B. MA	-97.6E 3	-1.54E 3	4.91E 3	0.018	108.405	35.309			
150	29	1:BEAN MATI	74.6E 3	17.444	-56.470	0.002	0.945	0.247			
		2:BEAN HIDL	25.9E 3	-0.025	-23.512	0.001	0.365	-0.011			
		3:BEAN GEM	1.4E 3	1.44E 3	-4.77E 3	-0.014	127.715	37.853			
		4:KOMBINASI	131E 3	20.892	-105.384	0.004	1.719	0.279			
		5:KOMB B. MA	91.6E 3	1.53E 3	-5.08E 3	-0.012	135.265	39.986			
	96	1:BEAN MATI	-72.7E 3	-17.444	56.470	-0.002	1.824	0.608			
		2:BEAN HIDL	-25.9E 3	0.025	23.512	-0.001	0.787	0.009			
		3:BEAN GEM	-1.4E 3	-1.44E 3	4.77E 3	0.014	106.378	32.600			
		4:KOMBINASI	-129E 3	-20.892	105.384	-0.004	3.448	0.745			
		5:KOMB B. MA	-89.7E 3	-1.53E 3	5.08E 3	0.012	113.993	34.844			
151	30	1:BEAN MATI	73.5E 3	144.025	-15.555	0.001	0.325	2.304			
		2:BEAN HIDL	21.2E 3	64.060	-0.871	0.000	0.015	1.028			
		3:BEAN GEM	-962.574	1.47E 3	-4.69E 3	0.009	126.518	38.549			
		4:KOMBINASI	122E 3	275.325	-20.060	0.001	0.415	4.410			
		5:KOMB B. MA	85.2E 3	1.72E 3	-4.94E 3	0.010	133.179	43.397			
	97	1:BEAN MATI	-71.6E 3	-144.025	15.555	-0.001	0.437	4.758			
		2:BEAN HIDL	-21.2E 3	-64.060	0.871	-0.000	0.027	2.113			
		3:BEAN GEM	962.574	-1.47E 3	4.69E 3	-0.009	103.631	33.319			
		4:KOMBINASI	-120E 3	-275.325	20.060	-0.001	0.569	9.090			
		5:KOMB B. MA	-83.3E 3	-1.72E 3	4.94E 3	-0.010	109.266	41.010			
152	31	1:BEAN MATI	64.2E 3	217.207	182.073	0.006	-2.898	3.491			
		2:BEAN HIDL	16.7E 3	99.241	84.540	0.003	-1.377	1.600			
		3:BEAN GEM	-1.35E 3	1.46E 3	-4.67E 3	0.021	126.092	38.471			
		4:KOMBINASI	104E 3	419.433	353.750	0.011	-5.680	6.748			
		5:KOMB B. MA	72.8E 3	1.81E 3	-4.67E 3	0.029	128.673	44.845			
	98	1:BEAN MATI	-62.3E 3	-217.207	-182.073	-0.006	-6.030	7.160			
		2:BEAN HIDL	-16.7E 3	-99.241	-84.540	-0.003	-2.769	3.266			
		3:BEAN GEM	1.35E 3	-1.46E 3	4.67E 3	-0.021	102.949	33.304			
		4:KOMBINASI	-101E 3	-419.433	-353.750	-0.011	-11.666	13.818			
		5:KOMB B. MA	-70.9E 3	-1.81E 3	4.67E 3	-0.029	100.405	44.089			
153	32	1:BEAN MATI	53.2E 3	219.169	-161.580	-0.001	2.654	3.525			
		2:BEAN HIDL	16.4E 3	107.978	-85.919	-0.000	1.380	1.743			
		3:BEAN GEM	537.426	1.42E 3	-4.7E 3	-0.015	126.551	37.438			
		4:KOMBINASI	90.1E 3	435.767	-331.366	-0.002	5.393	7.019			
		5:KOMB B. MA	63.6E 3	1.77E 3	-5.15E 3	-0.017	136.361	43.880			
	99	1:BEAN MATI	-51.2E 3	-219.169	161.580	0.001	5.268	7.222			
		2:BEAN HIDL	-16.4E 3	-107.978	85.919	0.000	2.833	3.551			
		3:BEAN GEM	-537.426	-1.42E 3	4.7E 3	0.015	104.014	31.954			
		4:KOMBINASI	-87.8E 3	-435.767	331.366	0.002	10.855	14.348			
		5:KOMB B. MA	-61.7E 3	-1.77E 3	5.15E 3	0.017	116.183	42.905			
154	33	1:BEAN MATI	97.4E 3	-449.585	-17.517	0.000	0.359	-7.315			
		2:BEAN HIDL	24.6E 3	-140.653	-0.076	0.000	0.004	-2.289			



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Job No 1	Sheet No 8	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.93E 3	1.45E 3	-4.73E 3	0.005	127.244	38.308			
		4:KOMBINASI	156E 3	-764.546	-21.142	0.000	0.437	-12.440			
		5:KOMB B. MA	114E 3	988.537	-4.99E 3	0.006	133.967	31.535			
	100	1:BEBAN MATI	-95.5E 3	449.585	17.517	-0.000	0.500	-14.730			
		2:BEBAN HIDL	-24.6E 3	140.653	0.076	-0.000	0.000	-4.608			
		3:BEBAN GEM	-1.93E 3	-1.45E 3	4.73E 3	-0.005	104.815	32.791			
		4:KOMBINASI	-154E 3	764.546	21.142	-0.000	0.600	-25.049			
		5:KOMB B. MA	-112E 3	-988.537	4.99E 3	-0.006	110.555	16.936			
155	34	1:BEBAN MATI	89E 3	-525.109	151.372	-0.005	-2.399	-8.540			
		2:BEBAN HIDL	20.3E 3	-179.792	77.521	-0.001	-1.261	-2.923			
		3:BEBAN GEM	1.04E 3	1.43E 3	-4.69E 3	-0.005	126.589	37.844			
		4:KOMBINASI	139E 3	-917.799	305.680	-0.008	-4.896	-14.924			
		5:KOMB B. MA	102E 3	864.080	-4.72E 3	-0.011	129.763	29.443			
	101	1:BEBAN MATI	-87.1E 3	525.109	-151.372	0.005	-5.024	-17.208			
		2:BEBAN HIDL	-20.3E 3	179.792	-77.521	0.001	-2.540	-5.893			
		3:BEBAN GEM	-1.04E 3	-1.43E 3	4.69E 3	0.005	103.278	32.066			
		4:KOMBINASI	-137E 3	917.799	-305.680	0.008	-10.092	-30.079			
		5:KOMB B. MA	-100E 3	-864.080	4.72E 3	0.011	101.894	12.925			
156	35	1:BEBAN MATI	61.1E 3	-407.492	220.238	0.007	-3.534	-6.630			
		2:BEBAN HIDL	14.5E 3	-144.084	46.748	0.003	-0.769	-2.343			
		3:BEBAN GEM	10.4E 3	1.38E 3	-4.94E 3	0.052	130.600	36.807			
		4:KOMBINASI	96.5E 3	-719.525	339.082	0.014	-5.470	-11.704			
		5:KOMB B. MA	80.7E 3	955.493	-4.94E 3	0.064	133.136	30.612			
	102	1:BEBAN MATI	-59.2E 3	407.492	-220.238	-0.007	-7.265	-13.350			
		2:BEBAN HIDL	-14.5E 3	144.084	-46.748	-0.003	-1.524	-4.722			
		3:BEBAN GEM	-10.4E 3	-1.38E 3	4.94E 3	-0.052	111.487	30.879			
		4:KOMBINASI	-94.2E 3	719.525	-339.082	-0.014	-11.156	-23.576			
		5:KOMB B. MA	-78.8E 3	-955.493	4.94E 3	-0.064	108.882	16.239			
157	36	1:BEBAN MATI	120E 3	42.117	-12.822	0.000	0.284	0.674			
		2:BEBAN HIDL	31.3E 3	14.177	6.982	0.000	-0.109	0.227			
		3:BEBAN GEM	54.555	1.4E 3	-4.78E 3	-0.011	128.127	37.608			
		4:KOMBINASI	194E 3	73.224	-4.214	0.000	0.166	1.172			
		5:KOMB B. MA	139E 3	1.52E 3	-5.02E 3	-0.012	134.752	40.298			
	103	1:BEBAN MATI	-118E 3	-42.117	12.822	-0.000	0.344	1.391			
		2:BEBAN HIDL	-31.3E 3	-14.177	-6.982	-0.000	-0.233	0.468			
		3:BEBAN GEM	-54.555	-1.4E 3	4.78E 3	0.011	106.110	31.224			
		4:KOMBINASI	-192E 3	-73.224	4.214	-0.000	0.041	2.419			
		5:KOMB B. MA	-137E 3	-1.52E 3	5.02E 3	0.012	111.620	34.458			
158	37	1:BEBAN MATI	120E 3	51.073	22.921	0.000	-0.314	0.820			
		2:BEBAN HIDL	31.3E 3	19.011	-5.293	0.000	0.084	0.306			
		3:BEBAN GEM	-90.918	1.39E 3	-4.77E 3	-0.019	128.055	37.183			
		4:KOMBINASI	194E 3	91.705	19.037	0.000	-0.243	1.473			
		5:KOMB B. MA	138E 3	1.52E 3	-4.99E 3	-0.020	134.195	40.045			
	104	1:BEBAN MATI	-118E 3	-51.073	-22.921	-0.000	-0.810	1.684			
		2:BEBAN HIDL	-31.3E 3	-19.011	5.293	-0.000	0.176	0.626			
		3:BEBAN GEM	90.918	-1.39E 3	4.77E 3	0.019	105.985	30.901			
		4:KOMBINASI	-191E 3	-91.705	-19.037	-0.000	-0.691	3.023			
		5:KOMB B. MA	-136E 3	-1.52E 3	4.99E 3	0.020	110.580	34.506			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 9	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
159	38	1:BEBAN MATI	107E 3	-11.206	-74.071	-0.002	1.239	-0.188			
		2:BEBAN HIDL	29.6E 3	-22.749	29.172	-0.000	-0.481	-0.371			
		3:BEBAN GEM	1.42E 3	1.36E 3	-4.84E 3	-0.046	129.115	36.467			
		4:KOMBINASI	176E 3	-49.845	-42.210	-0.003	0.716	-0.819			
		5:KOMB B. MA	126E 3	1.41E 3	-5.14E 3	-0.051	136.521	37.879			
	105	1:BEBAN MATI	-105E 3	11.206	74.071	0.002	2.393	-0.361			
		2:BEBAN HIDL	-29.6E 3	22.749	-29.172	0.000	-0.949	-0.745			
		3:BEBAN GEM	-1.42E 3	-1.36E 3	4.84E 3	0.046	108.388	30.326			
		4:KOMBINASI	-173E 3	49.845	42.210	0.003	1.353	-1.625			
		5:KOMB B. MA	-124E 3	-1.41E 3	5.14E 3	0.051	115.631	31.034			
160	39	1:BEBAN MATI	120E 3	-42.116	-12.822	-0.000	0.284	-0.674			
		2:BEBAN HIDL	31.3E 3	-14.177	6.982	-0.000	-0.109	-0.227			
		3:BEBAN GEM	107.619	1.41E 3	-4.76E 3	-0.056	127.645	37.747			
		4:KOMBINASI	194E 3	-73.222	-4.215	-0.000	0.166	-1.172			
		5:KOMB B. MA	139E 3	1.43E 3	-5.01E 3	-0.059	134.246	38.825			
	106	1:BEBAN MATI	-118E 3	42.116	12.822	0.000	0.344	-1.391			
		2:BEBAN HIDL	-31.3E 3	14.177	-6.982	0.000	-0.233	-0.468			
		3:BEBAN GEM	-107.619	-1.41E 3	4.76E 3	0.056	105.697	31.332			
		4:KOMBINASI	-192E 3	73.222	4.215	0.000	0.041	-2.418			
		5:KOMB B. MA	-137E 3	-1.43E 3	5.01E 3	0.059	111.187	31.227			
161	40	1:BEBAN MATI	120E 3	-51.073	22.921	-0.000	-0.314	-0.820			
		2:BEBAN HIDL	31.3E 3	-19.010	-5.293	-0.000	0.084	-0.306			
		3:BEBAN GEM	-40.655	1.37E 3	-4.75E 3	-0.125	127.478	36.812			
		4:KOMBINASI	194E 3	-91.704	19.037	-0.000	-0.243	-1.473			
		5:KOMB B. MA	138E 3	1.38E 3	-4.97E 3	-0.131	133.588	37.649			
	107	1:BEBAN MATI	-118E 3	51.073	-22.921	0.000	-0.810	-1.684			
		2:BEBAN HIDL	-31.3E 3	19.010	5.293	0.000	0.176	-0.626			
		3:BEBAN GEM	40.655	-1.37E 3	4.75E 3	0.125	105.526	30.514			
		4:KOMBINASI	-191E 3	91.704	-19.037	0.000	-0.691	-3.023			
		5:KOMB B. MA	-136E 3	-1.38E 3	4.97E 3	0.131	110.098	29.980			
162	41	1:BEBAN MATI	107E 3	11.207	-74.071	0.002	1.239	0.189			
		2:BEBAN HIDL	29.6E 3	22.749	29.172	0.000	-0.481	0.371			
		3:BEBAN GEM	816.701	1.36E 3	-4.8E 3	-0.102	128.132	36.325			
		4:KOMBINASI	176E 3	49.847	-42.211	0.003	0.716	0.819			
		5:KOMB B. MA	125E 3	1.45E 3	-5.09E 3	-0.105	135.488	38.552			
	108	1:BEBAN MATI	-105E 3	-11.207	74.071	-0.002	2.393	0.361			
		2:BEBAN HIDL	-29.6E 3	-22.749	-29.172	-0.000	-0.949	0.745			
		3:BEBAN GEM	-816.701	-1.36E 3	4.8E 3	0.102	107.113	30.405			
		4:KOMBINASI	-173E 3	-49.847	42.211	-0.003	1.353	1.625			
		5:KOMB B. MA	-123E 3	-1.45E 3	5.09E 3	0.105	114.293	32.733			
163	42	1:BEBAN MATI	97.4E 3	449.584	-17.517	-0.000	0.359	7.315			
		2:BEBAN HIDL	24.6E 3	140.652	-0.076	-0.000	0.004	2.289			
		3:BEBAN GEM	-1.63E 3	1.45E 3	-4.67E 3	-0.118	125.699	38.397			
		4:KOMBINASI	156E 3	764.544	-21.142	-0.000	0.437	12.439			
		5:KOMB B. MA	110E 3	2.06E 3	-4.93E 3	-0.125	132.345	49.004			
	109	1:BEBAN MATI	-95.5E 3	-449.584	17.517	0.000	0.500	14.730			
		2:BEBAN HIDL	-24.6E 3	-140.652	0.076	0.000	0.000	4.608			
		3:BEBAN GEM	1.63E 3	-1.45E 3	4.67E 3	0.118	103.499	32.893			



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Job No

1

Sheet No

10

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-154E 3	-764.544	21.142	0.000	0.600	25.049			
		5:KOMB B. MA	-109E 3	-2.06E 3	4.93E 3	0.125	109.174	52.032			
164	43	1:BEBAN MATI	89E 3	525.108	151.371	0.005	-2.399	8.540			
		2:BEBAN HIDL	20.3E 3	179.792	77.521	0.001	-1.261	2.923			
		3:BEBAN GEM	-2.05E 3	1.42E 3	-4.64E 3	-0.109	125.202	37.440			
		4:KOMBINASI	139E 3	917.797	305.680	0.008	-4.896	14.924			
		5:KOMB B. MA	99E 3	2.12E 3	-4.68E 3	-0.109	128.307	49.605			
	110	1:BEBAN MATI	-87.1E 3	-525.108	-151.371	-0.005	-5.024	17.208			
		2:BEBAN HIDL	-20.3E 3	-179.792	-77.521	-0.001	-2.540	5.893			
		3:BEBAN GEM	2.05E 3	-1.42E 3	4.64E 3	0.109	102.447	32.055			
		4:KOMBINASI	-137E 3	-917.797	-305.680	-0.008	-10.092	30.079			
		5:KOMB B. MA	-97.1E 3	-2.12E 3	4.68E 3	0.109	101.022	54.402			
165	44	1:BEBAN MATI	61.1E 3	407.492	220.238	-0.007	-3.534	6.630			
		2:BEBAN HIDL	14.5E 3	144.083	46.748	-0.003	-0.769	2.343			
		3:BEBAN GEM	7.42E 3	1.35E 3	-4.86E 3	-0.194	128.727	36.081			
		4:KOMBINASI	96.5E 3	719.523	339.082	-0.014	-5.470	11.704			
		5:KOMB B. MA	77.6E 3	1.91E 3	-4.86E 3	-0.213	131.169	45.921			
	111	1:BEBAN MATI	-59.2E 3	-407.492	-220.238	0.007	-7.265	13.350			
		2:BEBAN HIDL	-14.5E 3	-144.083	-46.748	0.003	-1.524	4.722			
		3:BEBAN GEM	-7.42E 3	-1.35E 3	4.86E 3	0.194	109.727	30.155			
		4:KOMBINASI	-94.2E 3	-719.523	-339.082	0.014	-11.156	23.576			
		5:KOMB B. MA	-75.7E 3	-1.91E 3	4.86E 3	0.213	107.034	47.847			
166	45	1:BEBAN MATI	73.5E 3	-144.024	-15.555	-0.001	0.325	-2.304			
		2:BEBAN HIDL	21.2E 3	-64.060	-0.871	-0.000	0.015	-1.028			
		3:BEBAN GEM	1.36E 3	1.47E 3	-4.62E 3	-0.128	124.402	38.562			
		4:KOMBINASI	122E 3	-275.325	-20.060	-0.001	0.415	-4.410			
		5:KOMB B. MA	87.7E 3	1.36E 3	-4.86E 3	-0.136	130.957	37.569			
	112	1:BEBAN MATI	-71.6E 3	144.024	15.555	0.001	0.437	-4.758			
		2:BEBAN HIDL	-21.2E 3	64.060	0.871	0.000	0.027	-2.113			
		3:BEBAN GEM	-1.36E 3	-1.47E 3	4.62E 3	0.128	101.889	33.319			
		4:KOMBINASI	-120E 3	275.325	20.060	0.001	0.569	-9.090			
		5:KOMB B. MA	-85.7E 3	-1.36E 3	4.86E 3	0.136	107.437	28.960			
167	46	1:BEBAN MATI	64.2E 3	-217.206	182.073	-0.006	-2.898	-3.491			
		2:BEBAN HIDL	16.7E 3	-99.241	84.540	-0.003	-1.377	-1.600			
		3:BEBAN GEM	500.805	1.41E 3	-4.57E 3	-0.182	123.614	37.217			
		4:KOMBINASI	104E 3	-419.432	353.751	-0.011	-5.680	-6.748			
		5:KOMB B. MA	74.7E 3	1.2E 3	-4.57E 3	-0.199	126.071	34.627			
	113	1:BEBAN MATI	-62.3E 3	217.206	-182.073	0.006	-6.030	-7.160			
		2:BEBAN HIDL	-16.7E 3	99.241	-84.540	0.003	-2.769	-3.266			
		3:BEBAN GEM	-500.805	-1.41E 3	4.57E 3	0.182	100.490	31.787			
		4:KOMBINASI	-101E 3	419.432	-353.751	0.011	-11.666	-13.818			
		5:KOMB B. MA	-72.8E 3	-1.2E 3	4.57E 3	0.199	97.824	24.256			
168	47	1:BEBAN MATI	53.2E 3	-219.169	-161.580	0.001	2.654	-3.525			
		2:BEBAN HIDL	16.4E 3	-107.978	-85.919	0.000	1.380	-1.743			
		3:BEBAN GEM	3.51E 3	1.41E 3	-4.68E 3	-0.106	125.405	37.007			
		4:KOMBINASI	90.1E 3	-435.767	-331.366	0.002	5.393	-7.019			
		5:KOMB B. MA	66.7E 3	1.2E 3	-5.13E 3	-0.110	135.157	34.287			
	114	1:BEBAN MATI	-51.2E 3	219.169	161.580	-0.001	5.268	-7.222			



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Job No 1	Sheet No 11	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-16.4E 3	107.978	85.919	-0.000	2.833	-3.551			
		3:BEBAN GEM	-3.51E 3	-1.41E 3	4.68E 3	0.106	104.309	32.308			
		4:KOMBINASI	-87.8E 3	435.767	331.366	-0.002	10.855	-14.348			
		5:KOMB B. MA	-64.8E 3	-1.2E 3	5.13E 3	0.110	116.493	24.571			
169	48	1:BEBAN MATI	84.3E 3	-24.452	-8.354	-0.000	0.207	-0.357			
		2:BEBAN HIDL	25.4E 3	-0.538	4.571	-0.000	-0.075	0.004			
		3:BEBAN GEM	-264.552	1.45E 3	-4.57E 3	-0.122	123.333	38.344			
		4:KOMBINASI	142E 3	-30.202	-2.711	-0.001	0.128	-0.422			
		5:KOMB B. MA	99.2E 3	1.5E 3	-4.81E 3	-0.129	129.662	39.906			
	115	1:BEBAN MATI	-82.3E 3	24.452	8.354	0.000	0.203	-0.842			
		2:BEBAN HIDL	-25.4E 3	0.538	-4.571	0.000	-0.149	-0.031			
		3:BEBAN GEM	264.552	-1.45E 3	4.57E 3	0.122	100.966	32.967			
		4:KOMBINASI	-140E 3	30.202	2.711	0.001	0.005	-1.059			
		5:KOMB B. MA	-97.3E 3	-1.5E 3	4.81E 3	0.129	106.128	33.755			
170	49	1:BEBAN MATI	84E 3	-23.123	11.937	-0.000	-0.142	-0.336			
		2:BEBAN HIDL	25.3E 3	-0.714	2.814	-0.000	-0.053	0.001			
		3:BEBAN GEM	-471.504	1.42E 3	-4.58E 3	-0.124	123.377	37.382			
		4:KOMBINASI	141E 3	-28.890	18.826	-0.001	-0.256	-0.401			
		5:KOMB B. MA	98.6E 3	1.47E 3	-4.79E 3	-0.131	129.371	38.916			
	116	1:BEBAN MATI	-82E 3	23.123	-11.937	0.000	-0.443	-0.798			
		2:BEBAN HIDL	-25.3E 3	0.714	-2.814	0.000	-0.085	-0.036			
		3:BEBAN GEM	471.504	-1.42E 3	4.58E 3	0.124	101.165	32.139			
		4:KOMBINASI	-139E 3	28.890	-18.826	0.001	-0.667	-1.015			
		5:KOMB B. MA	-96.7E 3	-1.47E 3	4.79E 3	0.131	105.730	32.926			
171	50	1:BEBAN MATI	74.6E 3	-17.444	-56.470	-0.002	0.945	-0.247			
		2:BEBAN HIDL	25.9E 3	0.025	-23.512	-0.001	0.365	0.011			
		3:BEBAN GEM	555.320	1.38E 3	-4.65E 3	-0.128	124.518	36.336			
		4:KOMBINASI	131E 3	-20.894	-105.384	-0.004	1.719	-0.279			
		5:KOMB B. MA	90.7E 3	1.43E 3	-4.96E 3	-0.138	131.908	37.912			
	117	1:BEBAN MATI	-72.7E 3	17.444	56.470	0.002	1.824	-0.608			
		2:BEBAN HIDL	-25.9E 3	-0.025	23.512	0.001	0.787	-0.009			
		3:BEBAN GEM	-555.320	-1.38E 3	4.65E 3	0.128	103.601	31.141			
		4:KOMBINASI	-129E 3	20.894	105.384	0.004	3.448	-0.745			
		5:KOMB B. MA	-88.8E 3	-1.43E 3	4.96E 3	0.138	111.077	32.084			
172	51	1:BEBAN MATI	31.9E 3	-283.204	-298.565	-0.002	4.945	-4.641			
		2:BEBAN HIDL	4.42E 3	-68.209	-72.395	-0.000	1.182	-1.124			
		3:BEBAN GEM	6.5E 3	1.2E 3	-4.12E 3	0.100	117.116	34.225			
		4:KOMBINASI	45.4E 3	-448.978	-474.110	-0.002	7.825	-7.367			
		5:KOMB B. MA	41.4E 3	936.662	-4.67E 3	0.104	128.626	30.621			
	118	1:BEBAN MATI	-30E 3	283.204	298.565	0.002	9.695	-9.246			
		2:BEBAN HIDL	-4.42E 3	68.209	72.395	0.000	2.367	-2.221			
		3:BEBAN GEM	-6.5E 3	-1.2E 3	4.12E 3	-0.100	85.104	24.652			
		4:KOMBINASI	-43.1E 3	448.978	474.110	0.002	15.422	-14.648			
		5:KOMB B. MA	-39.5E 3	-936.662	4.67E 3	-0.104	100.475	15.307			
173	52	1:BEBAN MATI	46.5E 3	10.375	-351.196	-0.001	5.795	0.129			
		2:BEBAN HIDL	9.57E 3	-0.439	-152.357	0.000	2.481	-0.022			
		3:BEBAN GEM	10.1E 3	1.44E 3	-4.21E 3	0.025	118.625	38.079			
		4:KOMBINASI	71.1E 3	11.747	-665.206	-0.000	10.924	0.120			



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Job No

1

Sheet No

12

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	62.8E 3	1.52E 3	-4.87E 3	0.025	131.840	40.099			
	119	1:BEAN MATI	-44.6E 3	-10.375	351.196	0.001	11.425	0.380			
		2:BEAN HIDL	-9.57E 3	0.439	152.357	-0.000	4.989	0.001			
		3:BEAN GEM	-10.1E 3	-1.44E 3	4.21E 3	-0.025	87.925	32.353			
		4:KOMBINASI	-68.8E 3	-11.747	665.206	0.000	21.693	0.456			
		5:KOMB B. MA	-60.9E 3	-1.52E 3	4.87E 3	-0.025	106.740	34.351			
174	53	1:BEAN MATI	40.9E 3	93.967	-294.629	-0.003	4.877	1.490			
		2:BEAN HIDL	7.9E 3	29.246	-123.823	-0.001	2.019	0.462			
		3:BEAN GEM	7.94E 3	1.46E 3	-4.23E 3	0.034	119.053	38.482			
		4:KOMBINASI	61.7E 3	159.553	-551.672	-0.005	9.083	2.527			
		5:KOMB B. MA	53.9E 3	1.64E 3	-4.81E 3	0.032	131.094	42.174			
	120	1:BEAN MATI	-38.9E 3	-93.967	294.629	0.003	9.570	3.117			
		2:BEAN HIDL	-7.9E 3	-29.246	123.823	0.001	4.052	0.972			
		3:BEAN GEM	-7.94E 3	-1.46E 3	4.23E 3	-0.034	88.551	33.022			
		4:KOMBINASI	-59.4E 3	-159.553	551.672	0.005	17.967	5.296			
		5:KOMB B. MA	-52E 3	-1.64E 3	4.81E 3	-0.032	104.980	38.374			
175	54	1:BEAN MATI	70.2E 3	-469.271	-105.780	0.003	1.822	-7.636			
		2:BEAN HIDL	17.4E 3	-177.939	-2.066	0.001	0.047	-2.895			
		3:BEAN GEM	3.93E 3	1.47E 3	-4.84E 3	-0.047	129.043	38.699			
		4:KOMBINASI	112E 3	-847.828	-130.242	0.006	2.263	-13.796			
		5:KOMB B. MA	84.8E 3	963.071	-5.19E 3	-0.046	137.346	31.260			
	121	1:BEAN MATI	-68.3E 3	469.271	105.780	-0.003	3.364	-15.374			
		2:BEAN HIDL	-17.4E 3	177.939	2.066	-0.001	0.054	-5.830			
		3:BEAN GEM	-3.93E 3	-1.47E 3	4.84E 3	0.047	108.476	33.175			
		4:KOMBINASI	-110E 3	847.828	130.242	-0.006	4.123	-27.776			
		5:KOMB B. MA	-82.9E 3	-963.071	5.19E 3	0.046	117.297	15.962			
176	55	1:BEAN MATI	98.2E 3	41.485	76.628	-0.000	-1.137	0.664			
		2:BEAN HIDL	28.5E 3	16.222	104.654	-0.000	-1.683	0.260			
		3:BEAN GEM	1.54E 3	1.42E 3	-4.9E 3	-0.037	129.825	38.079			
		4:KOMBINASI	163E 3	75.737	259.401	-0.001	-4.057	1.212			
		5:KOMB B. MA	117E 3	1.54E 3	-5E 3	-0.040	134.170	40.802			
	122	1:BEAN MATI	-96.3E 3	-41.485	-76.628	0.000	-2.621	1.370			
		2:BEAN HIDL	-28.5E 3	-16.222	-104.654	0.000	-3.449	0.536			
		3:BEAN GEM	-1.54E 3	-1.42E 3	4.9E 3	0.037	110.213	31.551			
		4:KOMBINASI	-161E 3	-75.737	-259.401	0.001	-8.663	2.501			
		5:KOMB B. MA	-115E 3	-1.54E 3	5E 3	0.040	111.034	34.820			
177	56	1:BEAN MATI	98.2E 3	-41.484	76.628	0.000	-1.137	-0.664			
		2:BEAN HIDL	28.5E 3	-16.222	104.654	0.000	-1.683	-0.260			
		3:BEAN GEM	1.52E 3	1.43E 3	-4.88E 3	-0.064	129.404	38.410			
		4:KOMBINASI	163E 3	-75.736	259.401	0.001	-4.057	-1.212			
		5:KOMB B. MA	117E 3	1.45E 3	-4.99E 3	-0.067	133.728	39.511			
	123	1:BEAN MATI	-96.3E 3	41.484	-76.628	-0.000	-2.621	-1.370			
		2:BEAN HIDL	-28.5E 3	16.222	-104.654	-0.000	-3.449	-0.536			
		3:BEAN GEM	-1.52E 3	-1.43E 3	4.88E 3	0.064	109.910	31.877			
		4:KOMBINASI	-161E 3	75.736	-259.401	-0.001	-8.663	-2.501			
		5:KOMB B. MA	-115E 3	-1.45E 3	4.99E 3	0.067	110.716	31.779			
178	57	1:BEAN MATI	70.2E 3	469.271	-105.780	-0.003	1.822	7.636			
		2:BEAN HIDL	17.4E 3	177.939	-2.066	-0.001	0.047	2.895			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 13	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	666.461	1.47E 3	-4.77E 3	-0.066	127.317	39.186			
		4:KOMBINASI	112E 3	847.827	-130.242	-0.006	2.263	13.796			
		5:KOMB B. MA	81.4E 3	2.12E 3	-5.12E 3	-0.073	135.534	50.518			
	124	1:BEBAN MATI	-68.3E 3	-469.271	105.780	0.003	3.364	15.374			
		2:BEBAN HIDL	-17.4E 3	-177.939	2.066	0.001	0.054	5.830			
		3:BEBAN GEM	-666.461	-1.47E 3	4.77E 3	0.066	106.635	33.042			
		4:KOMBINASI	-110E 3	-847.827	130.242	0.006	4.123	27.776			
		5:KOMB B. MA	-79.4E 3	-2.12E 3	5.12E 3	0.073	115.364	53.565			
179	58	1:BEBAN MATI	40.9E 3	-93.967	-294.629	0.003	4.877	-1.490			
		2:BEBAN HIDL	7.9E 3	-29.246	-123.823	0.001	2.019	-0.462			
		3:BEBAN GEM	10.2E 3	1.5E 3	-4.17E 3	-0.156	117.197	39.773			
		4:KOMBINASI	61.7E 3	-159.553	-551.672	0.005	9.083	-2.527			
		5:KOMB B. MA	56.3E 3	1.47E 3	-4.75E 3	-0.160	129.145	39.994			
	125	1:BEBAN MATI	-38.9E 3	93.967	294.629	-0.003	9.570	-3.117			
		2:BEBAN HIDL	-7.9E 3	29.246	123.823	-0.001	4.052	-0.972			
		3:BEBAN GEM	-10.2E 3	-1.5E 3	4.17E 3	0.156	87.266	33.922			
		4:KOMBINASI	-59.4E 3	159.553	551.672	-0.005	17.967	-5.296			
		5:KOMB B. MA	-54.4E 3	-1.47E 3	4.75E 3	0.160	103.630	31.918			
180	59	1:BEBAN MATI	46.5E 3	-10.376	-351.196	0.001	5.795	-0.129			
		2:BEBAN HIDL	9.57E 3	0.439	-152.357	-0.000	2.481	0.022			
		3:BEBAN GEM	9.07E 3	1.5E 3	-4.1E 3	-0.142	115.720	39.789			
		4:KOMBINASI	71.1E 3	-11.748	-665.206	0.000	10.924	-0.120			
		5:KOMB B. MA	61.8E 3	1.57E 3	-4.75E 3	-0.148	128.790	41.662			
	126	1:BEBAN MATI	-44.6E 3	10.376	351.196	-0.001	11.425	-0.380			
		2:BEBAN HIDL	-9.57E 3	-0.439	152.357	0.000	4.989	-0.001			
		3:BEBAN GEM	-9.07E 3	-1.5E 3	4.1E 3	0.142	85.554	33.846			
		4:KOMBINASI	-68.8E 3	11.748	665.206	-0.000	21.693	-0.456			
		5:KOMB B. MA	-59.8E 3	-1.57E 3	4.75E 3	0.148	104.250	35.159			
181	60	1:BEBAN MATI	31.9E 3	283.204	-298.565	0.002	4.945	4.641			
		2:BEBAN HIDL	4.42E 3	68.209	-72.395	0.000	1.182	1.124			
		3:BEBAN GEM	11.6E 3	1.32E 3	-4.02E 3	-0.168	113.925	36.821			
		4:KOMBINASI	45.4E 3	448.979	-474.110	0.002	7.825	7.367			
		5:KOMB B. MA	46.7E 3	1.71E 3	-4.56E 3	-0.175	125.276	43.977			
	127	1:BEBAN MATI	-30E 3	-283.204	298.565	-0.002	9.695	9.246			
		2:BEBAN HIDL	-4.42E 3	-68.209	72.395	-0.000	2.367	2.221			
		3:BEBAN GEM	-11.6E 3	-1.32E 3	4.02E 3	0.168	83.085	27.826			
		4:KOMBINASI	-43.1E 3	-448.979	474.110	-0.002	15.422	14.648			
		5:KOMB B. MA	-44.8E 3	-1.71E 3	4.56E 3	0.175	98.354	39.796			
182	64	1:BEBAN MATI	26.7E 3	-346.191	-364.189	-0.002	6.030	-5.635			
		2:BEBAN HIDL	7.04E 3	-150.396	-154.925	0.000	2.533	-2.448			
		3:BEBAN GEM	4.55E 3	1.19E 3	-4E 3	0.064	115.318	34.495			
		4:KOMBINASI	43.3E 3	-656.063	-684.908	-0.002	11.288	-10.680			
		5:KOMB B. MA	35.7E 3	816.416	-4.66E 3	0.065	128.634	29.115			
	128	1:BEBAN MATI	-24.8E 3	346.191	364.189	0.002	11.827	-11.340			
		2:BEBAN HIDL	-7.04E 3	150.396	154.925	-0.000	5.064	-4.926			
		3:BEBAN GEM	-4.55E 3	-1.19E 3	4E 3	-0.064	80.796	24.011			
		4:KOMBINASI	-41E 3	656.063	684.908	0.002	22.295	-21.489			
		5:KOMB B. MA	-33.8E 3	-816.416	4.66E 3	-0.065	99.702	10.916			



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Job No 1	Sheet No 14	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
183	65	1:BEBAN MATI	46.2E 3	32.277	-652.699	-0.001	10.708	0.517			
		2:BEBAN HIDL	15.1E 3	14.972	-313.184	-0.000	5.101	0.240			
		3:BEBAN GEM	7.08E 3	1.43E 3	-4.08E 3	-0.027	116.506	38.404			
		4:KOMBINASI	79.7E 3	62.687	-1.28E 3	-0.001	21.010	1.003			
		5:KOMB B. MA	62.8E 3	1.54E 3	-5.12E 3	-0.029	136.099	40.984			
	129	1:BEBAN MATI	-44.3E 3	-32.277	652.699	0.001	21.296	1.066			
		2:BEBAN HIDL	-15.1E 3	-14.972	313.184	0.000	10.256	0.494			
		3:BEBAN GEM	-7.08E 3	-1.43E 3	4.08E 3	0.027	83.428	31.715			
		4:KOMBINASI	-77.4E 3	-62.687	1.28E 3	0.001	41.965	2.070			
		5:KOMB B. MA	-60.8E 3	-1.54E 3	5.12E 3	0.029	115.050	34.663			
184	66	1:BEBAN MATI	46.2E 3	-32.277	-652.699	0.001	10.708	-0.517			
		2:BEBAN HIDL	15.1E 3	-14.972	-313.184	0.000	5.101	-0.240			
		3:BEBAN GEM	6.52E 3	1.44E 3	-4.06E 3	-0.072	116.052	38.590			
		4:KOMBINASI	79.7E 3	-62.687	-1.28E 3	0.001	21.010	-1.003			
		5:KOMB B. MA	62.2E 3	1.47E 3	-5.1E 3	-0.075	135.622	39.859			
	130	1:BEBAN MATI	-44.3E 3	32.277	652.699	-0.001	21.296	-1.066			
		2:BEBAN HIDL	-15.1E 3	14.972	313.184	-0.000	10.256	-0.494			
		3:BEBAN GEM	-6.52E 3	-1.44E 3	4.06E 3	0.072	83.063	31.785			
		4:KOMBINASI	-77.4E 3	62.687	1.28E 3	-0.001	41.965	-2.070			
		5:KOMB B. MA	-60.2E 3	-1.47E 3	5.1E 3	0.075	114.666	32.012			
185	67	1:BEBAN MATI	26.7E 3	346.191	-364.189	0.002	6.030	5.635			
		2:BEBAN HIDL	7.04E 3	150.396	-154.925	-0.000	2.533	2.448			
		3:BEBAN GEM	8.2E 3	1.26E 3	-3.97E 3	-0.111	114.358	35.831			
		4:KOMBINASI	43.3E 3	656.062	-684.908	0.002	11.288	10.680			
		5:KOMB B. MA	39.5E 3	1.76E 3	-4.63E 3	-0.114	127.626	44.727			
	131	1:BEBAN MATI	-24.8E 3	-346.191	364.189	-0.002	11.827	11.340			
		2:BEBAN HIDL	-7.04E 3	-150.396	154.925	0.000	5.064	4.926			
		3:BEBAN GEM	-8.2E 3	-1.26E 3	3.97E 3	0.111	80.404	26.086			
		4:KOMBINASI	-41E 3	-656.062	684.908	-0.002	22.295	21.489			
		5:KOMB B. MA	-37.6E 3	-1.76E 3	4.63E 3	0.114	99.290	41.685			
186	68	1:BEBAN MATI	-779.793	4.79E 3	46.730	4.454	-0.229	40.810			
		2:BEBAN HIDL	-198.071	900.907	12.583	2.868	-0.060	8.846			
		3:BEBAN GEM	-1.51E 3	-3.01E 3	61.429	-3.985	-0.348	-91.552			
		4:KOMBINASI	-1.25E 3	7.19E 3	76.209	9.935	-0.371	63.125			
		5:KOMB B. MA	-2.49E 3	2.17E 3	118.781	1.991	-0.630	-50.012			
	12853	1:BEBAN MATI	779.793	-3.95E 3	-46.730	-4.454	-0.115	-8.684			
		2:BEBAN HIDL	198.071	-900.907	-12.583	-2.868	-0.032	-2.220			
		3:BEBAN GEM	1.51E 3	3.01E 3	-61.429	3.985	-0.104	69.434			
		4:KOMBINASI	1.25E 3	-6.18E 3	-76.209	-9.935	-0.190	-13.972			
		5:KOMB B. MA	2.49E 3	-1.33E 3	-118.781	-1.991	-0.243	62.891			
187	70	1:BEBAN MATI	-702.767	5.14E 3	-1.315	-0.231	0.005	46.728			
		2:BEBAN HIDL	-310.877	2.11E 3	-0.118	0.065	0.001	20.069			
		3:BEBAN GEM	-1E 3	-3.15E 3	-2.711	-2.639	0.025	-89.091			
		4:KOMBINASI	-1.34E 3	9.54E 3	-1.767	-0.172	0.007	88.183			
		5:KOMB B. MA	-1.94E 3	3.1E 3	-4.232	-2.963	0.031	-34.776			
	12858	1:BEBAN MATI	702.767	-4.91E 3	1.315	0.231	0.005	-9.766			
		2:BEBAN HIDL	310.877	-2.11E 3	0.118	-0.065	0.000	-4.557			
		3:BEBAN GEM	1E 3	3.15E 3	2.711	2.639	-0.005	65.944			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 15	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	1.34E 3	-9.27E 3	1.767	0.172	0.006	-19.011			
		5:KOMB B. MA	1.94E 3	-2.87E 3	4.232	2.963	-0.000	56.741			
188	72	1:BEBAN MATI	-523.110	3.93E 3	-16.703	-3.394	0.058	35.606			
		2:BEBAN HIDL	-234.199	1.63E 3	-5.249	-1.521	0.017	15.693			
		3:BEBAN GEM	-847.433	-3.57E 3	1.898	-3.145	-0.038	-93.311			
		4:KOMBINASI	-1E 3	7.34E 3	-28.443	-6.506	0.098	67.835			
		5:KOMB B. MA	-1.55E 3	1.17E 3	-17.859	-7.609	0.029	-52.955			
	13127	1:BEBAN MATI	523.110	-3.71E 3	16.703	3.394	0.065	-7.497			
		2:BEBAN HIDL	234.199	-1.63E 3	5.249	1.521	0.021	-3.669			
		3:BEBAN GEM	847.433	3.57E 3	-1.898	3.145	0.024	67.053			
		4:KOMBINASI	1E 3	-7.07E 3	28.443	6.506	0.112	-14.866			
		5:KOMB B. MA	1.55E 3	-941.341	17.859	7.609	0.103	60.707			
189	74	1:BEBAN MATI	-219.057	2.27E 3	-15.390	-0.318	0.083	11.136			
		2:BEBAN HIDL	-55.534	279.982	-4.131	-0.880	0.022	1.794			
		3:BEBAN GEM	-1.35E 3	-7.44E 3	-15.695	-1.600	0.182	-124.885			
		4:KOMBINASI	-351.723	3.17E 3	-25.078	-1.790	0.134	16.233			
		5:KOMB B. MA	-1.67E 3	-5.38E 3	-34.349	-2.526	0.287	-118.918			
	12895	1:BEBAN MATI	219.057	-1.14E 3	15.390	0.318	0.068	5.579			
		2:BEBAN HIDL	55.534	-279.982	4.131	0.880	0.019	0.951			
		3:BEBAN GEM	1.35E 3	7.44E 3	15.695	1.600	-0.028	51.881			
		4:KOMBINASI	351.723	-1.82E 3	25.078	1.790	0.112	8.218			
		5:KOMB B. MA	1.67E 3	6.51E 3	34.349	2.526	0.050	60.625			
190	76	1:BEBAN MATI	-1.05E 3	6.75E 3	24.270	-0.788	-0.208	66.820			
		2:BEBAN HIDL	-260.644	1.26E 3	6.032	1.162	-0.052	14.471			
		3:BEBAN GEM	-1.32E 3	-3E 3	45.598	-3.773	-0.399	-89.690			
		4:KOMBINASI	-1.68E 3	10.1E 3	38.775	0.913	-0.333	103.338			
		5:KOMB B. MA	-2.6E 3	4.35E 3	75.767	-4.053	-0.658	-18.672			
	12904	1:BEBAN MATI	1.05E 3	-5.07E 3	-24.270	0.788	-0.149	20.121			
		2:BEBAN HIDL	260.644	-1.26E 3	-6.032	-1.162	-0.037	4.027			
		3:BEBAN GEM	1.32E 3	3E 3	-45.598	3.773	-0.272	45.504			
		4:KOMBINASI	1.68E 3	-8.09E 3	-38.775	-0.913	-0.238	30.588			
		5:KOMB B. MA	2.6E 3	-2.67E 3	-75.767	4.053	-0.457	70.316			
191	78	1:BEBAN MATI	-1.05E 3	6.75E 3	-24.270	0.788	0.208	66.820			
		2:BEBAN HIDL	-260.644	1.26E 3	-6.032	-1.162	0.052	14.471			
		3:BEBAN GEM	-1.54E 3	-3.32E 3	-30.246	-2.253	0.322	-93.286			
		4:KOMBINASI	-1.68E 3	10.1E 3	-38.775	-0.913	0.333	103.338			
		5:KOMB B. MA	-2.82E 3	4.02E 3	-59.647	-2.274	0.577	-22.447			
	12908	1:BEBAN MATI	1.05E 3	-5.07E 3	24.270	-0.788	0.149	20.121			
		2:BEBAN HIDL	260.644	-1.26E 3	6.032	1.162	0.037	4.027			
		3:BEBAN GEM	1.54E 3	3.32E 3	30.246	2.253	0.123	44.378			
		4:KOMBINASI	1.68E 3	-8.09E 3	38.775	0.913	0.238	30.588			
		5:KOMB B. MA	2.82E 3	-2.33E 3	59.647	2.274	0.300	69.133			
192	80	1:BEBAN MATI	-219.057	2.27E 3	15.390	0.318	-0.083	11.136			
		2:BEBAN HIDL	-55.534	279.982	4.131	0.880	-0.022	1.794			
		3:BEBAN GEM	-1.16E 3	-7.34E 3	38.901	-0.085	-0.270	-122.435			
		4:KOMBINASI	-351.723	3.17E 3	25.078	1.790	-0.134	16.233			
		5:KOMB B. MA	-1.47E 3	-5.27E 3	58.714	0.757	-0.380	-116.345			
	13357	1:BEBAN MATI	219.057	-1.14E 3	-15.390	-0.318	-0.068	5.579			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

16

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	55.534	-279.982	-4.131	-0.880	-0.019	0.951			
		3:BEBAN GEM	1.16E 3	7.34E 3	-38.901	0.085	-0.111	50.482			
		4:KOMBINASI	351.723	-1.82E 3	-25.078	-1.790	-0.112	8.218			
		5:KOMB B. MA	1.47E 3	6.39E 3	-58.714	-0.757	-0.196	59.157			
193	82	1:BEBAN MATI	-523.110	3.93E 3	16.703	3.394	-0.058	35.606			
		2:BEBAN HIDL	-234.199	1.63E 3	5.249	1.521	-0.017	15.693			
		3:BEBAN GEM	-941.726	-2.99E 3	14.753	-2.562	-0.062	-86.670			
		4:KOMBINASI	-1E 3	7.34E 3	28.443	6.506	-0.098	67.835			
		5:KOMB B. MA	-1.65E 3	1.78E 3	35.343	1.616	-0.134	-45.982			
	13531	1:BEBAN MATI	523.110	-3.71E 3	-16.703	-3.394	-0.065	-7.497			
		2:BEBAN HIDL	234.199	-1.63E 3	-5.249	-1.521	-0.021	-3.669			
		3:BEBAN GEM	941.726	2.99E 3	-14.753	2.562	-0.047	64.686			
		4:KOMBINASI	1E 3	-7.07E 3	-28.443	-6.506	-0.112	-14.866			
		5:KOMB B. MA	1.65E 3	-1.55E 3	-35.343	-1.616	-0.126	58.222			
194	84	1:BEBAN MATI	-702.767	5.14E 3	1.315	0.231	-0.005	46.728			
		2:BEBAN HIDL	-310.877	2.11E 3	0.118	-0.065	-0.001	20.069			
		3:BEBAN GEM	-993.777	-3.16E 3	18.465	-2.530	-0.093	-88.025			
		4:KOMBINASI	-1.34E 3	9.54E 3	1.767	0.172	-0.007	88.183			
		5:KOMB B. MA	-1.93E 3	3.08E 3	20.774	-2.465	-0.103	-33.657			
	13320	1:BEBAN MATI	702.767	-4.91E 3	-1.315	-0.231	-0.005	-9.766			
		2:BEBAN HIDL	310.877	-2.11E 3	-0.118	0.065	-0.000	-4.557			
		3:BEBAN GEM	993.777	3.16E 3	-18.465	2.530	-0.042	64.763			
		4:KOMBINASI	1.34E 3	-9.27E 3	-1.767	-0.172	-0.006	-19.011			
		5:KOMB B. MA	1.93E 3	-2.86E 3	-20.774	2.465	-0.050	55.501			
195	86	1:BEBAN MATI	-779.793	4.79E 3	-46.730	-4.454	0.229	40.810			
		2:BEBAN HIDL	-198.071	900.907	-12.583	-2.868	0.060	8.846			
		3:BEBAN GEM	-1.58E 3	-2.99E 3	-21.193	-1.392	0.221	-88.965			
		4:KOMBINASI	-1.25E 3	7.19E 3	-76.209	-9.935	0.371	63.125			
		5:KOMB B. MA	-2.56E 3	2.19E 3	-76.533	-7.637	0.497	-47.296			
	13315	1:BEBAN MATI	779.793	-3.95E 3	46.730	4.454	0.115	-8.684			
		2:BEBAN HIDL	198.071	-900.907	12.583	2.868	0.032	-2.220			
		3:BEBAN GEM	1.58E 3	2.99E 3	21.193	1.392	-0.065	67.001			
		4:KOMBINASI	1.25E 3	-6.18E 3	76.209	9.935	0.190	-13.972			
		5:KOMB B. MA	2.56E 3	-1.35E 3	76.533	7.637	0.066	60.335			
196	68	1:BEBAN MATI	-336.910	3.39E 3	-25.280	-4.577	0.125	22.158			
		2:BEBAN HIDL	-91.297	515.319	-6.542	-2.749	0.033	4.056			
		3:BEBAN GEM	-139.675	-1.11E 3	-38.087	5.909	0.147	-27.936			
		4:KOMBINASI	-550.368	4.89E 3	-40.804	-9.891	0.203	33.080			
		5:KOMB B. MA	-538.347	2.54E 3	-69.196	-0.022	0.300	-4.741			
	12851	1:BEBAN MATI	336.910	-2.04E 3	25.280	4.577	0.172	9.785			
		2:BEBAN HIDL	91.297	-515.319	6.542	2.749	0.044	2.008			
		3:BEBAN GEM	139.675	1.11E 3	38.087	-5.909	0.301	14.928			
		4:KOMBINASI	550.368	-3.27E 3	40.804	9.891	0.277	14.954			
		5:KOMB B. MA	538.347	-1.19E 3	69.196	0.022	0.515	26.664			
199	88	1:BEBAN MATI	-340.457	3.05E 3	0.089	0.190	0.003	21.740			
		2:BEBAN HIDL	-166.746	1.22E 3	0.096	0.093	0.000	9.554			
		3:BEBAN GEM	-159.556	-1.16E 3	-17.154	6.494	0.095	-27.643			
		4:KOMBINASI	-675.342	5.62E 3	0.261	0.376	0.005	41.373			



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Job No 1	Sheet No 17	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-608.038	2.57E 3	-17.865	7.064	0.103	-1.553			
	12887	1:BEBAN MATI	340.457	-2.69E 3	-0.089	-0.190	-0.004	12.084			
		2:BEBAN HIDL	166.746	-1.22E 3	-0.096	-0.093	-0.002	4.859			
		3:BEBAN GEM	159.556	1.16E 3	17.154	-6.494	0.107	14.018			
		4:KOMBINASI	675.342	-5.19E 3	-0.261	-0.376	-0.008	22.276			
		5:KOMB B. MA	608.038	-2.21E 3	17.865	-7.064	0.107	29.719			
202	90	1:BEBAN MATI	-442.751	4.62E 3	-0.503	-0.063	0.003	31.064			
		2:BEBAN HIDL	-163.455	1.23E 3	-0.137	0.000	0.001	9.557			
		3:BEBAN GEM	-265.827	-1.21E 3	-20.352	6.228	0.116	-28.195			
		4:KOMBINASI	-792.829	7.51E 3	-0.823	-0.076	0.006	52.569			
		5:KOMB B. MA	-819.942	4.09E 3	-21.955	6.476	0.126	7.193			
	12970	1:BEBAN MATI	442.751	-3.27E 3	0.503	0.063	0.002	15.401			
		2:BEBAN HIDL	163.455	-1.23E 3	0.137	-0.000	0.001	4.876			
		3:BEBAN GEM	265.827	1.21E 3	20.352	-6.228	0.123	13.940			
		4:KOMBINASI	792.829	-5.89E 3	0.823	0.076	0.004	26.283			
		5:KOMB B. MA	819.942	-2.74E 3	21.955	-6.476	0.132	32.964			
205	92	1:BEBAN MATI	-445.814	4.64E 3	-0.048	0.045	0.000	31.135			
		2:BEBAN HIDL	-164.371	1.23E 3	-0.168	-0.023	0.001	9.583			
		3:BEBAN GEM	-276.656	-1.2E 3	-17.310	6.197	0.092	-28.317			
		4:KOMBINASI	-797.971	7.53E 3	-0.327	0.017	0.002	52.694			
		5:KOMB B. MA	-834.925	4.11E 3	-18.325	6.538	0.097	7.151			
	12996	1:BEBAN MATI	445.814	-3.28E 3	0.048	-0.045	0.000	15.466			
		2:BEBAN HIDL	164.371	-1.23E 3	0.168	0.023	0.001	4.895			
		3:BEBAN GEM	276.656	1.2E 3	17.310	-6.197	0.112	14.140			
		4:KOMBINASI	797.971	-5.91E 3	0.327	-0.017	0.002	26.392			
		5:KOMB B. MA	834.925	-2.76E 3	18.325	-6.538	0.118	33.250			
206	69	1:BEBAN MATI	-320.139	2.94E 3	2.997	0.900	-0.011	20.912			
		2:BEBAN HIDL	-151.198	1.16E 3	0.536	0.518	-0.001	9.070			
		3:BEBAN GEM	-292.615	-1.35E 3	-15.099	6.751	0.087	-29.432			
		4:KOMBINASI	-626.084	5.38E 3	4.454	1.909	-0.015	39.607			
		5:KOMB B. MA	-718.104	2.22E 3	-12.535	8.300	0.079	-4.550			
	12918	1:BEBAN MATI	320.139	-2.58E 3	-2.997	-0.900	-0.024	11.526			
		2:BEBAN HIDL	151.198	-1.16E 3	-0.536	-0.518	-0.005	4.566			
		3:BEBAN GEM	292.615	1.35E 3	15.099	-6.751	0.091	13.554			
		4:KOMBINASI	626.084	-4.95E 3	-4.454	-1.909	-0.037	21.137			
		5:KOMB B. MA	718.104	-1.85E 3	12.535	-8.300	0.069	28.498			
281	118	1:BEBAN MATI	-349.519	3.35E 3	17.315	2.712	-0.103	21.847			
		2:BEBAN HIDL	-81.946	486.142	4.222	1.803	-0.025	3.834			
		3:BEBAN GEM	-702.730	-1.22E 3	-15.650	5.913	-0.024	-29.941			
		4:KOMBINASI	-550.536	4.79E 3	27.534	6.139	-0.163	32.351			
		5:KOMB B. MA	-1.14E 3	2.36E 3	3.416	10.002	-0.143	-7.291			
	12934	1:BEBAN MATI	349.519	-1.99E 3	-17.315	-2.712	-0.101	9.571			
		2:BEBAN HIDL	81.946	-486.142	-4.222	-1.803	-0.025	1.887			
		3:BEBAN GEM	702.730	1.22E 3	15.650	-5.913	0.208	15.582			
		4:KOMBINASI	550.536	-3.17E 3	-27.534	-6.139	-0.161	14.505			
		5:KOMB B. MA	1.14E 3	-1.01E 3	-3.416	-10.002	0.103	27.065			
294	128	1:BEBAN MATI	-396.487	2.34E 3	13.943	7.756	-0.101	21.781			
		2:BEBAN HIDL	-171.768	838.209	5.772	4.247	-0.042	8.434			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 18	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-855.395	-949.457	2.241	5.679	-0.124	-27.660			
		4:KOMBINASI	-750.614	4.15E 3	25.968	16.102	-0.188	39.632			
		5:KOMB B. MA	-1.4E 3	1.85E 3	19.759	16.266	-0.256	-2.201			
	13266	1:BEBAN MATI	396.487	-1.89E 3	-13.943	-7.756	-0.104	9.336			
		2:BEBAN HIDL	171.768	-838.209	-5.772	-4.247	-0.043	3.896			
		3:BEBAN GEM	855.395	949.457	-2.241	-5.679	0.091	13.693			
		4:KOMBINASI	750.614	-3.61E 3	-25.968	-16.102	-0.193	17.436			
		5:KOMB B. MA	1.4E 3	-1.4E 3	-19.759	-16.266	-0.034	26.051			
307	132	1:BEBAN MATI	2.451	876.723	-0.944	0.150	0.007	1.612			
		2:BEBAN HIDL	-0.410	391.093	-0.082	0.007	0.001	1.066			
		3:BEBAN GEM	35.281	14.566	-2.105	-0.309	0.017	-1.892			
		4:KOMBINASI	2.286	1.68E 3	-1.264	0.191	0.010	3.640			
		5:KOMB B. MA	39.251	1.13E 3	-3.203	-0.170	0.025	0.266			
	12869	1:BEBAN MATI	-2.451	-646.071	0.944	-0.150	0.004	7.348			
		2:BEBAN HIDL	0.410	-391.093	0.082	-0.007	0.000	3.536			
		3:BEBAN GEM	-35.281	-14.566	2.105	0.309	0.008	2.063			
		4:KOMBINASI	-2.286	-1.4E 3	1.264	-0.191	0.005	14.475			
		5:KOMB B. MA	-39.251	-896.022	3.203	0.170	0.012	11.636			
345	152	1:BEBAN MATI	6.943	914.804	-0.144	-0.000	0.001	1.365			
		2:BEBAN HIDL	2.126	402.937	-0.057	0.001	0.000	0.989			
		3:BEBAN GEM	-23.210	9.380	-4.636	-0.313	0.035	-1.967			
		4:KOMBINASI	11.733	1.74E 3	-0.263	0.001	0.002	3.220			
		5:KOMB B. MA	-16.153	1.17E 3	-5.045	-0.328	0.038	-0.107			
	12983	1:BEBAN MATI	-6.943	-684.153	0.144	0.000	0.001	8.043			
		2:BEBAN HIDL	-2.126	-402.937	0.057	-0.001	0.000	3.753			
		3:BEBAN GEM	23.210	-9.380	4.636	0.313	0.020	2.077			
		4:KOMBINASI	-11.733	-1.47E 3	0.263	-0.001	0.001	15.656			
		5:KOMB B. MA	16.153	-935.764	5.045	0.328	0.022	12.476			
364	162	1:BEBAN MATI	5.543	904.744	0.122	0.128	-0.001	1.574			
		2:BEBAN HIDL	1.217	406.224	-0.037	-0.008	0.000	1.035			
		3:BEBAN GEM	-37.803	12.060	-5.092	-0.321	0.036	-1.945			
		4:KOMBINASI	8.598	1.74E 3	0.087	0.141	-0.001	3.546			
		5:KOMB B. MA	-33.420	1.16E 3	-5.247	-0.213	0.038	0.154			
	13009	1:BEBAN MATI	-5.543	-674.092	-0.122	-0.128	-0.001	7.715			
		2:BEBAN HIDL	-1.217	-406.224	0.037	0.008	0.000	3.745			
		3:BEBAN GEM	37.803	-12.060	5.092	0.321	0.024	2.086			
		4:KOMBINASI	-8.598	-1.46E 3	-0.087	-0.141	-0.000	15.251			
		5:KOMB B. MA	33.420	-930.489	5.247	0.213	0.024	12.153			
383	172	1:BEBAN MATI	-7.995	825.218	0.986	-0.179	-0.008	2.154			
		2:BEBAN HIDL	-3.737	344.820	0.180	0.017	-0.001	1.218			
		3:BEBAN GEM	-49.455	0.187	-5.038	-0.335	0.035	-2.759			
		4:KOMBINASI	-15.573	1.54E 3	1.472	-0.188	-0.011	4.534			
		5:KOMB B. MA	-62.165	1.03E 3	-4.196	-0.520	0.029	-0.011			
	12926	1:BEBAN MATI	7.995	-594.567	-0.986	0.179	-0.004	6.200			
		2:BEBAN HIDL	3.737	-344.820	-0.180	-0.017	-0.001	2.840			
		3:BEBAN GEM	49.455	-0.187	5.038	0.335	0.024	2.761			
		4:KOMBINASI	15.573	-1.27E 3	-1.472	0.188	-0.006	11.983			
		5:KOMB B. MA	62.165	-801.655	4.196	0.520	0.021	10.802			



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Job No 1	Sheet No 19	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
405	189	1:BEBAN MATI	-3.515	-76.232	0.527	-1.390	-0.004	-0.813			
		2:BEBAN HIDL	-2.475	33.355	-0.058	-0.276	0.001	-0.341			
		3:BEBAN GEM	-130.758	-202.646	3.082	-0.586	-0.033	-0.030			
		4:KOMBINASI	-8.178	-38.110	0.540	-2.110	-0.003	-1.521			
		5:KOMB B. MA	-142.296	-268.997	3.729	-2.171	-0.038	-1.049			
13067		1:BEBAN MATI	3.515	364.547	-0.527	1.390	-0.004	-2.429			
		2:BEBAN HIDL	2.475	-33.355	0.058	0.276	0.000	0.831			
		3:BEBAN GEM	130.758	202.646	-3.082	0.586	-0.012	-2.951			
		4:KOMBINASI	8.178	384.088	-0.540	2.110	-0.005	-1.584			
		5:KOMB B. MA	142.296	557.312	-3.729	2.171	-0.017	-5.028			
428	201	1:BEBAN MATI	-3.515	-76.232	-0.527	1.390	0.004	-0.813			
		2:BEBAN HIDL	-2.475	33.355	0.058	0.276	-0.001	-0.341			
		3:BEBAN GEM	-160.257	-129.349	-1.343	0.377	0.013	0.280			
		4:KOMBINASI	-8.178	-38.111	-0.540	2.110	0.003	-1.521			
		5:KOMB B. MA	-173.270	-192.036	-1.902	1.952	0.017	-0.724			
13471		1:BEBAN MATI	3.515	364.547	0.527	-1.390	0.004	-2.429			
		2:BEBAN HIDL	2.475	-33.355	-0.058	-0.276	-0.000	0.831			
		3:BEBAN GEM	160.257	129.349	1.343	-0.377	0.007	-2.183			
		4:KOMBINASI	8.178	384.088	0.540	-2.110	0.005	-1.584			
		5:KOMB B. MA	173.270	480.350	1.902	-1.952	0.011	-4.222			
484	230	1:BEBAN MATI	45.6E 3	-211.114	46.039	-0.001	-0.715	-3.445			
		2:BEBAN HIDL	8.88E 3	11.853	26.857	0.002	-0.448	0.188			
		3:BEBAN GEM	2.3E 3	1.21E 3	-5.22E 3	0.124	135.129	34.051			
		4:KOMBINASI	68.9E 3	-234.372	98.218	0.002	-1.575	-3.833			
		5:KOMB B. MA	53.3E 3	1.06E 3	-5.42E 3	0.131	140.902	32.421			
135		1:BEBAN MATI	-43.7E 3	211.114	-46.039	0.001	-1.543	-6.907			
		2:BEBAN HIDL	-8.88E 3	-11.853	-26.857	-0.002	-0.868	0.393			
		3:BEBAN GEM	-2.3E 3	-1.21E 3	5.22E 3	-0.124	120.865	25.105			
		4:KOMBINASI	-66.6E 3	234.372	-98.218	-0.002	-3.241	-7.659			
		5:KOMB B. MA	-51.4E 3	-1.06E 3	5.42E 3	-0.131	124.845	19.689			
485	231	1:BEBAN MATI	45.6E 3	211.113	46.039	0.001	-0.715	3.445			
		2:BEBAN HIDL	8.88E 3	-11.853	26.857	-0.002	-0.448	-0.188			
		3:BEBAN GEM	312.689	1.05E 3	-5.14E 3	-0.266	133.167	30.919			
		4:KOMBINASI	68.9E 3	234.371	98.218	-0.002	-1.575	3.833			
		5:KOMB B. MA	51.2E 3	1.31E 3	-5.33E 3	-0.280	138.842	35.797			
138		1:BEBAN MATI	-43.7E 3	-211.113	-46.039	-0.001	-1.543	6.907			
		2:BEBAN HIDL	-8.88E 3	11.853	-26.857	0.002	-0.868	-0.393			
		3:BEBAN GEM	-312.689	-1.05E 3	5.14E 3	0.266	118.861	20.615			
		4:KOMBINASI	-66.6E 3	-234.371	-98.218	0.002	-3.241	7.659			
		5:KOMB B. MA	-49.3E 3	-1.31E 3	5.33E 3	0.280	122.740	28.317			
15390	68	1:BEBAN MATI	25.7E 3	-1.05E 3	1.71E 3	-0.028	-31.018	-18.748			
		2:BEBAN HIDL	4.02E 3	-279.422	440.294	-0.007	-7.989	-4.992			
		3:BEBAN GEM	-4.6E 3	610.162	-1.8E 3	-0.098	20.404	7.844			
		4:KOMBINASI	37.3E 3	-1.7E 3	2.76E 3	-0.044	-50.003	-30.485			
		5:KOMB B. MA	23.3E 3	-572.919	84.090	-0.135	-14.386	-13.507			
12717		1:BEBAN MATI	-24.4E 3	1.05E 3	-1.71E 3	0.028	-27.720	-17.151			
		2:BEBAN HIDL	-4.02E 3	279.422	-440.294	0.007	-7.124	-4.599			
		3:BEBAN GEM	4.6E 3	-610.162	1.8E 3	0.098	41.424	13.098			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

20

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-35.7E 3	1.7E 3	-2.76E 3	0.044	-44.662	-27.940			
		5:KOMB B. MA	-22E 3	572.919	-84.090	0.135	11.500	-6.157			
15391	69	1:BEBAN MATI	36.2E 3	-1.11E 3	-468.844	0.005	8.070	-19.740			
		2:BEBAN HIDL	7.6E 3	-515.972	-121.705	0.001	2.093	-9.185			
		3:BEBAN GEM	-3.1E 3	707.869	-3.98E 3	-0.023	63.511	9.651			
		4:KOMBINASI	55.6E 3	-2.15E 3	-757.340	0.008	13.032	-38.384			
		5:KOMB B. MA	37.5E 3	-672.737	-4.72E 3	-0.019	76.012	-15.117			
	12718	1:BEBAN MATI	-34.9E 3	1.11E 3	468.844	-0.005	8.022	-18.236			
		2:BEBAN HIDL	-7.6E 3	515.972	121.705	-0.001	2.084	-8.525			
		3:BEBAN GEM	3.1E 3	-707.869	3.98E 3	0.023	73.044	14.645			
		4:KOMBINASI	-54E 3	2.15E 3	757.340	-0.008	12.962	-35.523			
		5:KOMB B. MA	-36.2E 3	672.737	4.72E 3	0.019	85.969	-7.973			
15392	70	1:BEBAN MATI	37.5E 3	38.646	2.1E 3	-0.005	-37.888	0.851			
		2:BEBAN HIDL	8.65E 3	-3.277	931.493	-0.001	-16.854	-0.004			
		3:BEBAN GEM	-3.44E 3	1.1E 3	-1.92E 3	-0.047	22.832	17.420			
		4:KOMBINASI	58.9E 3	41.131	4.01E 3	-0.009	-72.431	1.015			
		5:KOMB B. MA	39.1E 3	1.19E 3	637.554	-0.056	-24.026	19.140			
	12719	1:BEBAN MATI	-36.2E 3	-38.646	-2.1E 3	0.005	-34.072	0.475			
		2:BEBAN HIDL	-8.65E 3	3.277	-931.493	0.001	-15.118	-0.108			
		3:BEBAN GEM	3.44E 3	-1.1E 3	1.92E 3	0.047	43.130	20.317			
		4:KOMBINASI	-57.3E 3	-41.131	-4.01E 3	0.009	-65.076	0.397			
		5:KOMB B. MA	-37.8E 3	-1.19E 3	-637.554	0.056	2.144	21.744			
15393	71	1:BEBAN MATI	49.1E 3	84.529	-557.143	0.000	9.551	1.609			
		2:BEBAN HIDL	16E 3	0.114	-254.637	-0.001	4.374	0.086			
		3:BEBAN GEM	-1.66E 3	1.25E 3	-4.17E 3	-0.037	67.107	20.167			
		4:KOMBINASI	84.5E 3	101.617	-1.08E 3	-0.001	18.460	2.068			
		5:KOMB B. MA	56.9E 3	1.4E 3	-5.09E 3	-0.040	82.638	22.836			
	12720	1:BEBAN MATI	-47.7E 3	-84.529	557.143	-0.000	9.571	1.292			
		2:BEBAN HIDL	-16E 3	-0.114	254.637	0.001	4.366	-0.082			
		3:BEBAN GEM	1.66E 3	-1.25E 3	4.17E 3	0.037	75.918	22.675			
		4:KOMBINASI	-82.9E 3	-101.617	1.08E 3	0.001	18.472	1.420			
		5:KOMB B. MA	-55.6E 3	-1.4E 3	5.09E 3	0.040	91.905	25.052			
15394	72	1:BEBAN MATI	31.2E 3	492.731	1.58E 3	-0.010	-28.515	8.445			
		2:BEBAN HIDL	6.75E 3	148.098	719.335	-0.004	-13.038	2.532			
		3:BEBAN GEM	-4.97E 3	1.29E 3	-2.06E 3	-0.061	25.769	21.036			
		4:KOMBINASI	48.3E 3	828.234	3.05E 3	-0.019	-55.079	14.185			
		5:KOMB B. MA	30E 3	1.93E 3	-147.986	-0.077	-9.281	32.052			
	12721	1:BEBAN MATI	-29.9E 3	-492.731	-1.58E 3	0.010	-25.757	8.468			
		2:BEBAN HIDL	-6.75E 3	-148.098	-719.335	0.004	-11.652	2.551			
		3:BEBAN GEM	4.97E 3	-1.29E 3	2.06E 3	0.061	44.865	23.183			
		4:KOMBINASI	-46.6E 3	-828.234	-3.05E 3	0.019	-49.552	14.243			
		5:KOMB B. MA	-28.7E 3	-1.93E 3	147.986	0.077	14.360	34.340			
15395	73	1:BEBAN MATI	43.3E 3	370.693	-498.155	-0.001	8.565	6.808			
		2:BEBAN HIDL	13.5E 3	220.592	-213.761	-0.001	3.677	3.951			
		3:BEBAN GEM	-2.15E 3	1.26E 3	-4.1E 3	-0.034	65.856	20.373			
		4:KOMBINASI	73.5E 3	797.779	-939.804	-0.003	16.162	14.492			
		5:KOMB B. MA	49.1E 3	1.83E 3	-4.94E 3	-0.037	79.921	30.570			
	12722	1:BEBAN MATI	-42E 3	-370.693	498.155	0.001	8.533	5.916			



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Job No 1	Sheet No 21	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-13.5E 3	-220.592	213.761	0.001	3.660	3.620			
		3:BEBAN GEM	2.15E 3	-1.26E 3	4.1E 3	0.034	75.035	22.951			
		4:KOMBINASI	-71.9E 3	-797.779	939.804	0.003	16.095	12.891			
		5:KOMB B. MA	-47.8E 3	-1.83E 3	4.94E 3	0.037	89.516	32.186			
15396	74	1:BEBAN MATI	17E 3	517.167	543.101	-0.010	-9.419	8.959			
		2:BEBAN HIDL	2.05E 3	128.308	138.560	-0.004	-2.402	2.207			
		3:BEBAN GEM	-6.32E 3	657.826	-2.75E 3	-0.019	39.601	8.646			
		4:KOMBINASI	23.7E 3	825.893	873.417	-0.018	-15.146	14.283			
		5:KOMB B. MA	11.6E 3	1.28E 3	-2.27E 3	-0.032	30.721	19.362			
	12723	1:BEBAN MATI	-15.7E 3	-517.167	-543.101	0.010	-9.222	8.792			
		2:BEBAN HIDL	-2.05E 3	-128.308	-138.560	0.004	-2.354	2.197			
		3:BEBAN GEM	6.32E 3	-657.826	2.75E 3	0.019	54.959	13.933			
		4:KOMBINASI	-22.1E 3	-825.893	-873.417	0.018	-14.832	14.065			
		5:KOMB B. MA	-10.3E 3	-1.28E 3	2.27E 3	0.032	47.073	24.739			
15397	75	1:BEBAN MATI	56.9E 3	-1.29E 3	-633.443	-0.003	11.110	-22.615			
		2:BEBAN HIDL	15.4E 3	-452.139	-220.790	-0.001	3.893	-7.990			
		3:BEBAN GEM	-498.507	1.22E 3	-4E 3	-0.036	63.605	19.588			
		4:KOMBINASI	93E 3	-2.27E 3	-1.11E 3	-0.006	19.561	-39.922			
		5:KOMB B. MA	65.6E 3	-281.170	-4.97E 3	-0.041	80.230	-6.841			
	12724	1:BEBAN MATI	-55.6E 3	1.29E 3	633.443	0.003	10.632	-21.677			
		2:BEBAN HIDL	-15.4E 3	452.139	220.790	0.001	3.685	-7.529			
		3:BEBAN GEM	498.507	-1.22E 3	4E 3	0.036	73.800	22.272			
		4:KOMBINASI	-91.4E 3	2.27E 3	1.11E 3	0.006	18.655	-38.060			
		5:KOMB B. MA	-64.3E 3	281.170	4.97E 3	0.041	90.333	-2.810			
15398	76	1:BEBAN MATI	35.4E 3	-1.73E 3	2.71E 3	-0.032	-48.915	-31.592			
		2:BEBAN HIDL	6.16E 3	-418.097	665.891	-0.008	-11.939	-7.653			
		3:BEBAN GEM	-4.34E 3	630.696	-1.8E 3	-0.087	20.508	8.362			
		4:KOMBINASI	52.4E 3	-2.74E 3	4.32E 3	-0.051	-77.801	-50.156			
		5:KOMB B. MA	34.6E 3	-1.32E 3	1.22E 3	-0.128	-34.545	-27.404			
	12725	1:BEBAN MATI	-34.1E 3	1.73E 3	-2.71E 3	0.032	-44.176	-27.712			
		2:BEBAN HIDL	-6.16E 3	418.097	-665.891	0.008	-10.916	-6.697			
		3:BEBAN GEM	4.34E 3	-630.696	1.8E 3	0.087	41.321	13.285			
		4:KOMBINASI	-50.8E 3	2.74E 3	-4.32E 3	0.051	-70.477	-43.970			
		5:KOMB B. MA	-33.2E 3	1.32E 3	-1.22E 3	0.128	-7.338	-17.781			
15399	77	1:BEBAN MATI	70.3E 3	104.776	-739.143	-0.000	13.134	2.072			
		2:BEBAN HIDL	19.6E 3	38.454	-267.792	-0.000	4.824	0.768			
		3:BEBAN GEM	-1.24E 3	1.08E 3	-4.02E 3	-0.035	63.859	16.775			
		4:KOMBINASI	116E 3	187.258	-1.32E 3	-0.000	23.479	3.716			
		5:KOMB B. MA	80.7E 3	1.26E 3	-5.12E 3	-0.037	83.080	20.147			
	12726	1:BEBAN MATI	-68.9E 3	-104.776	739.143	0.000	12.236	1.524			
		2:BEBAN HIDL	-19.6E 3	-38.454	267.792	0.000	4.367	0.552			
		3:BEBAN GEM	1.24E 3	-1.08E 3	4.02E 3	0.035	74.130	20.177			
		4:KOMBINASI	-114E 3	-187.258	1.32E 3	0.000	21.671	2.712			
		5:KOMB B. MA	-79.4E 3	-1.26E 3	5.12E 3	0.037	92.693	23.041			
15400	78	1:BEBAN MATI	35.4E 3	1.73E 3	2.71E 3	0.032	-48.915	31.592			
		2:BEBAN HIDL	6.16E 3	418.097	665.891	0.008	-11.939	7.653			
		3:BEBAN GEM	-2.65E 3	494.713	-1.86E 3	0.074	21.677	5.665			
		4:KOMBINASI	52.4E 3	2.74E 3	4.32E 3	0.051	-77.801	50.156			



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Job No

1

Sheet No

22

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	36.4E 3	2.5E 3	1.16E 3	0.114	-33.318	42.133			
	12727	1:BEBAN MATI	-34.1E 3	-1.73E 3	-2.71E 3	-0.032	-44.176	27.712			
		2:BEBAN HIDL	-6.16E 3	-418.097	-665.891	-0.008	-10.916	6.697			
		3:BEBAN GEM	2.65E 3	-494.713	1.86E 3	-0.074	42.138	11.315			
		4:KOMBINASI	-50.8E 3	-2.74E 3	-4.32E 3	-0.051	-70.477	43.970			
		5:KOMB B. MA	-35E 3	-2.5E 3	-1.16E 3	-0.114	-6.480	43.611			
15401	79	1:BEBAN MATI	70.3E 3	-104.775	-739.143	0.000	13.134	-2.072			
		2:BEBAN HIDL	19.6E 3	-38.453	-267.791	0.000	4.824	-0.768			
		3:BEBAN GEM	-1.29E 3	1.07E 3	-4.01E 3	-0.035	63.643	16.653			
		4:KOMBINASI	116E 3	-187.254	-1.32E 3	0.000	23.479	-3.716			
		5:KOMB B. MA	80.7E 3	997.303	-5.11E 3	-0.036	82.853	14.952			
	12728	1:BEBAN MATI	-68.9E 3	104.775	739.143	-0.000	12.236	-1.524			
		2:BEBAN HIDL	-19.6E 3	38.453	267.791	-0.000	4.367	-0.552			
		3:BEBAN GEM	1.29E 3	-1.07E 3	4.01E 3	0.035	73.873	20.127			
		4:KOMBINASI	-114E 3	187.254	1.32E 3	-0.000	21.671	-2.712			
		5:KOMB B. MA	-79.3E 3	-997.303	5.11E 3	0.036	92.423	19.278			
15402	80	1:BEBAN MATI	17E 3	-517.167	543.101	0.010	-9.419	-8.959			
		2:BEBAN HIDL	2.05E 3	-128.308	138.560	0.004	-2.402	-2.207			
		3:BEBAN GEM	-9.39E 3	665.510	-2.69E 3	-0.027	38.679	9.322			
		4:KOMBINASI	23.7E 3	-825.893	873.417	0.018	-15.146	-14.283			
		5:KOMB B. MA	8.38E 3	104.634	-2.2E 3	-0.016	29.753	-0.495			
	12729	1:BEBAN MATI	-15.7E 3	517.167	-543.101	-0.010	-9.222	-8.792			
		2:BEBAN HIDL	-2.05E 3	128.308	-138.560	-0.004	-2.354	-2.197			
		3:BEBAN GEM	9.39E 3	-665.510	2.69E 3	0.027	53.725	13.520			
		4:KOMBINASI	-22.1E 3	825.893	-873.417	-0.018	-14.832	-14.065			
		5:KOMB B. MA	-7.04E 3	-104.634	2.2E 3	0.016	45.777	4.087			
15403	81	1:BEBAN MATI	56.9E 3	1.29E 3	-633.443	0.003	11.110	22.615			
		2:BEBAN HIDL	15.4E 3	452.138	-220.790	0.001	3.893	7.990			
		3:BEBAN GEM	-2.24E 3	1.23E 3	-3.97E 3	-0.032	63.114	19.760			
		4:KOMBINASI	93E 3	2.27E 3	-1.11E 3	0.006	19.561	39.922			
		5:KOMB B. MA	63.8E 3	2.85E 3	-4.93E 3	-0.030	79.715	48.156			
	12730	1:BEBAN MATI	-55.6E 3	-1.29E 3	633.443	-0.003	10.632	21.677			
		2:BEBAN HIDL	-15.4E 3	-452.138	220.790	-0.001	3.685	7.529			
		3:BEBAN GEM	2.24E 3	-1.23E 3	3.97E 3	0.032	73.139	22.452			
		4:KOMBINASI	-91.4E 3	-2.27E 3	1.11E 3	-0.006	18.655	38.060			
		5:KOMB B. MA	-62.5E 3	-2.85E 3	4.93E 3	0.030	89.639	49.769			
15404	82	1:BEBAN MATI	31.2E 3	-492.731	1.58E 3	0.010	-28.515	-8.445			
		2:BEBAN HIDL	6.75E 3	-148.098	719.334	0.004	-13.038	-2.532			
		3:BEBAN GEM	-3.22E 3	1.17E 3	-1.86E 3	-0.019	22.071	19.145			
		4:KOMBINASI	48.3E 3	-828.233	3.05E 3	0.019	-55.079	-14.185			
		5:KOMB B. MA	31.9E 3	651.796	55.426	-0.007	-13.163	10.138			
	12731	1:BEBAN MATI	-29.9E 3	492.731	-1.58E 3	-0.010	-25.757	-8.468			
		2:BEBAN HIDL	-6.75E 3	148.098	-719.334	-0.004	-11.652	-2.551			
		3:BEBAN GEM	3.22E 3	-1.17E 3	1.86E 3	0.019	41.913	21.173			
		4:KOMBINASI	-46.6E 3	828.233	-3.05E 3	-0.019	-49.551	-14.243			
		5:KOMB B. MA	-30.5E 3	-651.796	-55.426	0.007	11.261	12.234			
15405	83	1:BEBAN MATI	43.3E 3	-370.692	-498.155	0.001	8.565	-6.808			
		2:BEBAN HIDL	13.5E 3	-220.592	-213.761	0.001	3.677	-3.951			



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Job No

1

Sheet No

23

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.15E 3	1.29E 3	-4.05E 3	-0.033	64.964	20.913			
		4:KOMBINASI	73.5E 3	-797.777	-939.804	0.003	16.162	-14.492			
		5:KOMB B. MA	50.2E 3	853.439	-4.88E 3	-0.033	78.984	12.780			
	12732	1:BEBAN MATI	-42E 3	370.692	498.155	-0.001	8.533	-5.916			
		2:BEBAN HIDL	-13.5E 3	220.592	213.761	-0.001	3.660	-3.620			
		3:BEBAN GEM	1.15E 3	-1.29E 3	4.05E 3	0.033	73.973	23.429			
		4:KOMBINASI	-71.9E 3	797.777	939.804	-0.003	16.095	-12.891			
		5:KOMB B. MA	-48.8E 3	-853.439	4.88E 3	0.033	88.400	16.513			
15406	84	1:BEBAN MATI	37.5E 3	-38.648	2.1E 3	0.005	-37.888	-0.851			
		2:BEBAN HIDL	8.65E 3	3.277	931.494	0.001	-16.854	0.004			
		3:BEBAN GEM	-3.55E 3	1.16E 3	-1.92E 3	-0.024	23.116	18.771			
		4:KOMBINASI	58.9E 3	-41.135	4.01E 3	0.009	-72.431	-1.015			
		5:KOMB B. MA	39E 3	1.19E 3	642.808	-0.019	-23.728	18.861			
	12733	1:BEBAN MATI	-36.2E 3	38.648	-2.1E 3	-0.005	-34.072	-0.475			
		2:BEBAN HIDL	-8.65E 3	-3.277	-931.494	-0.001	-15.118	0.108			
		3:BEBAN GEM	3.55E 3	-1.16E 3	1.92E 3	0.024	42.674	21.169			
		4:KOMBINASI	-57.3E 3	41.135	-4.01E 3	-0.009	-65.076	-0.397			
		5:KOMB B. MA	-37.6E 3	-1.19E 3	-642.808	0.019	1.665	21.817			
15407	85	1:BEBAN MATI	49.1E 3	-84.531	-557.143	-0.000	9.551	-1.609			
		2:BEBAN HIDL	16E 3	-0.115	-254.637	0.001	4.374	-0.086			
		3:BEBAN GEM	-1.83E 3	1.24E 3	-4.09E 3	-0.031	65.960	19.949			
		4:KOMBINASI	84.5E 3	-101.622	-1.08E 3	0.001	18.460	-2.068			
		5:KOMB B. MA	56.8E 3	1.22E 3	-5.01E 3	-0.032	81.434	19.286			
	12734	1:BEBAN MATI	-47.7E 3	84.531	557.143	0.000	9.571	-1.292			
		2:BEBAN HIDL	-16E 3	0.115	254.637	-0.001	4.366	0.082			
		3:BEBAN GEM	1.83E 3	-1.24E 3	4.09E 3	0.031	74.513	22.546			
		4:KOMBINASI	-82.9E 3	101.622	1.08E 3	-0.001	18.472	-1.420			
		5:KOMB B. MA	-55.4E 3	-1.22E 3	5.01E 3	0.032	90.430	22.430			
15408	86	1:BEBAN MATI	25.7E 3	1.05E 3	1.71E 3	0.028	-31.018	18.749			
		2:BEBAN HIDL	4.02E 3	279.422	440.295	0.007	-7.989	4.992			
		3:BEBAN GEM	-2E 3	568.008	-1.73E 3	0.067	19.346	7.142			
		4:KOMBINASI	37.3E 3	1.7E 3	2.76E 3	0.044	-50.003	30.485			
		5:KOMB B. MA	26E 3	1.81E 3	163.936	0.102	-15.498	29.242			
	12735	1:BEBAN MATI	-24.4E 3	-1.05E 3	-1.71E 3	-0.028	-27.720	17.152			
		2:BEBAN HIDL	-4.02E 3	-279.422	-440.295	-0.007	-7.124	4.599			
		3:BEBAN GEM	2E 3	-568.008	1.73E 3	-0.067	39.872	12.354			
		4:KOMBINASI	-35.7E 3	-1.7E 3	-2.76E 3	-0.044	-44.662	27.940			
		5:KOMB B. MA	-24.7E 3	-1.81E 3	-163.936	-0.102	9.871	32.883			
15409	87	1:BEBAN MATI	36.2E 3	1.11E 3	-468.844	-0.005	8.070	19.740			
		2:BEBAN HIDL	7.6E 3	515.973	-121.705	-0.001	2.093	9.185			
		3:BEBAN GEM	-246.954	638.950	-3.88E 3	-0.046	62.060	8.221			
		4:KOMBINASI	55.6E 3	2.15E 3	-757.340	-0.008	13.032	38.384			
		5:KOMB B. MA	40.5E 3	2.09E 3	-4.62E 3	-0.054	74.488	33.883			
	12736	1:BEBAN MATI	-34.9E 3	-1.11E 3	468.844	0.005	8.022	18.236			
		2:BEBAN HIDL	-7.6E 3	-515.973	121.705	0.001	2.084	8.525			
		3:BEBAN GEM	246.954	-638.950	3.88E 3	0.046	71.281	13.710			
		4:KOMBINASI	-54E 3	-2.15E 3	757.340	0.008	12.962	35.523			
		5:KOMB B. MA	-39.2E 3	-2.09E 3	4.62E 3	0.054	84.118	37.746			



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Job No 1	Sheet No 24	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15410	88	1:BEBAN MATI	39.6E 3	-1.19E 3	-127.546	0.001	2.633	-21.140			
		2:BEBAN HIDL	8.53E 3	-567.798	-35.705	-0.000	0.743	-10.099			
		3:BEBAN GEM	-1.02E 3	635.572	-3.71E 3	-0.029	58.351	8.300			
		4:KOMBINASI	61.1E 3	-2.33E 3	-210.184	0.001	4.348	-41.526			
		5:KOMB B. MA	43.6E 3	-859.780	-4.05E 3	-0.029	64.347	-18.484			
12737		1:BEBAN MATI	-38.2E 3	1.19E 3	127.546	-0.001	1.745	-19.583			
		2:BEBAN HIDL	-8.53E 3	567.798	35.705	0.000	0.483	-9.390			
		3:BEBAN GEM	1.02E 3	-635.572	3.71E 3	0.029	69.118	13.515			
		4:KOMBINASI	-59.5E 3	2.33E 3	210.184	-0.001	2.866	-38.523			
		5:KOMB B. MA	-42.3E 3	859.780	4.05E 3	0.029	74.609	-11.026			
15411	89	1:BEBAN MATI	39.6E 3	1.19E 3	-127.546	-0.001	2.633	21.140			
		2:BEBAN HIDL	8.53E 3	567.799	-35.706	0.000	0.743	10.099			
		3:BEBAN GEM	1.71E 3	677.939	-3.64E 3	-0.032	57.358	9.265			
		4:KOMBINASI	61.1E 3	2.33E 3	-210.184	-0.001	4.348	41.526			
		5:KOMB B. MA	46.5E 3	2.24E 3	-3.97E 3	-0.035	63.304	36.928			
12738		1:BEBAN MATI	-38.2E 3	-1.19E 3	127.546	0.001	1.745	19.583			
		2:BEBAN HIDL	-8.53E 3	-567.799	35.706	-0.000	0.483	9.390			
		3:BEBAN GEM	-1.71E 3	-677.939	3.64E 3	0.032	67.656	14.004			
		4:KOMBINASI	-59.5E 3	-2.33E 3	210.184	0.001	2.866	38.523			
		5:KOMB B. MA	-45.1E 3	-2.24E 3	3.97E 3	0.035	73.073	39.921			
15412	90	1:BEBAN MATI	42.6E 3	-1.54E 3	10.998	-0.000	-0.223	-27.435			
		2:BEBAN HIDL	8.37E 3	-563.313	-0.419	-0.000	-0.009	-10.010			
		3:BEBAN GEM	-1.36E 3	656.520	-3.54E 3	-0.028	54.550	8.695			
		4:KOMBINASI	64.5E 3	-2.75E 3	12.527	-0.001	-0.282	-48.937			
		5:KOMB B. MA	46.2E 3	-1.19E 3	-3.7E 3	-0.029	57.049	-24.310			
12739		1:BEBAN MATI	-41.3E 3	1.54E 3	-10.998	0.000	-0.154	-25.343			
		2:BEBAN HIDL	-8.37E 3	563.313	0.419	0.000	0.024	-9.325			
		3:BEBAN GEM	1.36E 3	-656.520	3.54E 3	0.028	66.863	13.839			
		4:KOMBINASI	-62.9E 3	2.75E 3	-12.527	0.001	-0.148	-45.331			
		5:KOMB B. MA	-44.9E 3	1.19E 3	3.7E 3	0.029	70.066	-16.407			
15413	91	1:BEBAN MATI	42.6E 3	1.54E 3	10.998	0.000	-0.223	27.435			
		2:BEBAN HIDL	8.37E 3	563.314	-0.419	0.000	-0.009	10.010			
		3:BEBAN GEM	1.39E 3	663.406	-3.46E 3	-0.036	53.515	8.875			
		4:KOMBINASI	64.5E 3	2.75E 3	12.527	0.001	-0.282	48.937			
		5:KOMB B. MA	49.1E 3	2.57E 3	-3.63E 3	-0.037	55.962	42.759			
12740		1:BEBAN MATI	-41.3E 3	-1.54E 3	-10.998	-0.000	-0.154	25.343			
		2:BEBAN HIDL	-8.37E 3	-563.314	0.419	-0.000	0.024	9.325			
		3:BEBAN GEM	-1.39E 3	-663.406	3.46E 3	0.036	65.366	13.896			
		4:KOMBINASI	-62.9E 3	-2.75E 3	-12.527	-0.001	-0.148	45.331			
		5:KOMB B. MA	-47.8E 3	-2.57E 3	3.63E 3	0.037	68.494	45.528			
15414	92	1:BEBAN MATI	42.8E 3	-1.54E 3	-3.369	0.000	0.010	-27.489			
		2:BEBAN HIDL	8.42E 3	-563.923	10.618	-0.000	-0.194	-10.030			
		3:BEBAN GEM	-1.38E 3	663.097	-3.52E 3	-0.029	54.093	8.779			
		4:KOMBINASI	64.9E 3	-2.75E 3	12.946	-0.000	-0.298	-49.034			
		5:KOMB B. MA	46.4E 3	-1.18E 3	-3.69E 3	-0.031	56.691	-24.289			
12741		1:BEBAN MATI	-41.5E 3	1.54E 3	3.369	-0.000	0.105	-25.348			
		2:BEBAN HIDL	-8.42E 3	563.923	-10.618	0.000	-0.170	-9.326			
		3:BEBAN GEM	1.38E 3	-663.097	3.52E 3	0.029	66.624	13.981			



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Job No 1	Sheet No 25	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-63.2E 3	2.75E 3	-12.946	0.000	-0.146	-45.339			
		5:KOMB B. MA	-45.1E 3	1.18E 3	3.69E 3	0.031	69.959	-16.264			
15415	93	1:BEBAN MATI	42.8E 3	1.54E 3	-3.369	-0.000	0.010	27.489			
		2:BEBAN HIDL	8.42E 3	563.924	10.618	0.000	-0.194	10.030			
		3:BEBAN GEM	1.4E 3	667.080	-3.44E 3	-0.037	53.007	8.878			
		4:KOMBINASI	64.9E 3	2.75E 3	12.946	0.000	-0.298	49.035			
		5:KOMB B. MA	49.3E 3	2.58E 3	-3.61E 3	-0.039	55.551	42.828			
	12742	1:BEBAN MATI	-41.5E 3	-1.54E 3	3.369	0.000	0.105	25.348			
		2:BEBAN HIDL	-8.42E 3	-563.924	-10.618	-0.000	-0.170	9.326			
		3:BEBAN GEM	-1.4E 3	-667.080	3.44E 3	0.037	65.082	14.019			
		4:KOMBINASI	-63.2E 3	-2.75E 3	-12.946	-0.000	-0.146	45.339			
		5:KOMB B. MA	-48E 3	-2.58E 3	3.61E 3	0.039	68.339	45.663			
15416	94	1:BEBAN MATI	60.1E 3	92.094	-29.834	-0.000	0.477	1.804			
		2:BEBAN HIDL	17.8E 3	-2.806	17.363	-0.001	-0.309	0.045			
		3:BEBAN GEM	102.437	1.23E 3	-3.71E 3	-0.035	57.718	19.802			
		4:KOMBINASI	101E 3	106.023	-8.020	-0.001	0.077	2.237			
		5:KOMB B. MA	70.9E 3	1.38E 3	-3.91E 3	-0.037	60.896	22.623			
	12743	1:BEBAN MATI	-58.8E 3	-92.094	29.834	0.000	0.547	1.357			
		2:BEBAN HIDL	-17.8E 3	2.806	-17.363	0.001	-0.287	-0.141			
		3:BEBAN GEM	-102.437	-1.23E 3	3.71E 3	0.035	69.467	22.327			
		4:KOMBINASI	-99E 3	-106.023	8.020	0.001	0.198	1.402			
		5:KOMB B. MA	-69.5E 3	-1.38E 3	3.91E 3	0.037	73.315	24.715			
15417	95	1:BEBAN MATI	59.9E 3	100.056	30.673	-0.000	-0.584	1.865			
		2:BEBAN HIDL	17.6E 3	3.325	-0.501	-0.001	-0.031	0.114			
		3:BEBAN GEM	100.860	1.21E 3	-3.72E 3	-0.034	58.109	19.549			
		4:KOMBINASI	100E 3	125.387	36.005	-0.001	-0.751	2.422			
		5:KOMB B. MA	70.6E 3	1.38E 3	-3.88E 3	-0.037	60.412	22.461			
	12744	1:BEBAN MATI	-58.5E 3	-100.056	-30.673	0.000	-0.468	1.569			
		2:BEBAN HIDL	-17.6E 3	-3.325	0.501	0.001	0.049	-0.000			
		3:BEBAN GEM	-100.860	-1.21E 3	3.72E 3	0.034	69.654	22.073			
		4:KOMBINASI	-98.5E 3	-125.387	-36.005	0.001	-0.484	1.882			
		5:KOMB B. MA	-69.2E 3	-1.38E 3	3.88E 3	0.037	72.697	24.746			
15418	96	1:BEBAN MATI	53.8E 3	86.272	-161.778	-0.003	3.308	1.560			
		2:BEBAN HIDL	18E 3	-0.746	-65.517	-0.001	1.363	0.041			
		3:BEBAN GEM	435.479	1.2E 3	-3.92E 3	-0.040	62.355	19.438			
		4:KOMBINASI	93.3E 3	102.334	-298.962	-0.006	6.149	1.937			
		5:KOMB B. MA	65E 3	1.35E 3	-4.32E 3	-0.046	69.598	21.994			
	12745	1:BEBAN MATI	-52.4E 3	-86.272	161.778	0.003	2.245	1.402			
		2:BEBAN HIDL	-18E 3	0.746	65.517	0.001	0.886	-0.067			
		3:BEBAN GEM	-435.479	-1.2E 3	3.92E 3	0.040	72.240	21.917			
		4:KOMBINASI	-91.7E 3	-102.334	298.962	0.006	4.112	1.575			
		5:KOMB B. MA	-63.7E 3	-1.35E 3	4.32E 3	0.046	78.629	24.375			
15419	97	1:BEBAN MATI	53.2E 3	505.719	-43.594	-0.001	0.791	9.245			
		2:BEBAN HIDL	15.1E 3	234.883	4.845	-0.001	-0.049	4.206			
		3:BEBAN GEM	-464.075	1.26E 3	-3.68E 3	-0.035	57.202	20.418			
		4:KOMBINASI	87.9E 3	982.675	-44.561	-0.002	0.871	17.824			
		5:KOMB B. MA	61.8E 3	1.97E 3	-3.9E 3	-0.038	60.824	33.208			
	12746	1:BEBAN MATI	-51.9E 3	-505.719	43.594	0.001	0.705	8.113			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-15.1E 3	-234.883	-4.845	0.001	-0.118	3.856			
		3:BEBAN GEM	464.075	-1.26E 3	3.68E 3	0.035	68.972	22.923			
		4:KOMBINASI	-86.3E 3	-982.675	44.561	0.002	0.658	15.904			
		5:KOMB B. MA	-60.4E 3	-1.97E 3	3.9E 3	0.038	73.056	34.495			
15420	98	1:BEBAN MATI	47E 3	776.262	654.445	-0.009	-11.640	14.019			
		2:BEBAN HIDL	12.1E 3	363.508	294.775	-0.004	-5.294	6.480			
		3:BEBAN GEM	-560.462	1.25E 3	-3.62E 3	-0.036	56.259	20.218			
		4:KOMBINASI	75.8E 3	1.51E 3	1.26E 3	-0.017	-22.440	27.191			
		5:KOMB B. MA	53.7E 3	2.31E 3	-2.97E 3	-0.050	44.255	39.136			
	12747	1:BEBAN MATI	-45.6E 3	-776.262	-654.445	0.009	-10.822	12.624			
		2:BEBAN HIDL	-12.1E 3	-363.508	-294.775	0.004	-4.823	5.997			
		3:BEBAN GEM	560.462	-1.25E 3	3.62E 3	0.036	68.125	22.734			
		4:KOMBINASI	-74.2E 3	-1.51E 3	-1.26E 3	0.017	-20.704	24.745			
		5:KOMB B. MA	-52.3E 3	-2.31E 3	2.97E 3	0.050	57.815	40.094			
15421	99	1:BEBAN MATI	39.4E 3	812.616	-551.758	0.001	10.152	14.468			
		2:BEBAN HIDL	11.8E 3	404.220	-289.337	0.000	5.342	7.137			
		3:BEBAN GEM	461.041	1.15E 3	-3.7E 3	-0.044	57.952	18.515			
		4:KOMBINASI	66.2E 3	1.62E 3	-1.13E 3	0.002	20.730	28.780			
		5:KOMB B. MA	47E 3	2.26E 3	-4.61E 3	-0.045	74.207	38.191			
	12748	1:BEBAN MATI	-38.1E 3	-812.616	551.758	-0.001	8.786	13.424			
		2:BEBAN HIDL	-11.8E 3	-404.220	289.337	-0.000	4.589	6.738			
		3:BEBAN GEM	-461.041	-1.15E 3	3.7E 3	0.044	68.954	20.976			
		4:KOMBINASI	-64.6E 3	-1.62E 3	1.13E 3	-0.002	17.885	26.889			
		5:KOMB B. MA	-45.7E 3	-2.26E 3	4.61E 3	0.045	83.942	39.491			
15422	100	1:BEBAN MATI	69E 3	-1.66E 3	-55.881	-0.000	0.966	-29.189			
		2:BEBAN HIDL	17.3E 3	-509.870	6.303	-0.000	-0.091	-9.022			
		3:BEBAN GEM	861.153	1.21E 3	-3.74E 3	-0.035	58.407	19.387			
		4:KOMBINASI	110E 3	-2.81E 3	-56.971	-0.001	1.013	-49.462			
		5:KOMB B. MA	80.3E 3	-698.582	-3.97E 3	-0.037	62.239	-14.246			
	12749	1:BEBAN MATI	-67.6E 3	1.66E 3	55.881	0.000	0.952	-27.813			
		2:BEBAN HIDL	-17.3E 3	509.870	-6.303	0.000	-0.125	-8.479			
		3:BEBAN GEM	-861.153	-1.21E 3	3.74E 3	0.035	69.802	22.065			
		4:KOMBINASI	-109E 3	2.81E 3	56.971	0.001	0.942	-46.942			
		5:KOMB B. MA	-78.9E 3	698.582	3.97E 3	0.037	74.169	-9.731			
15423	101	1:BEBAN MATI	63.4E 3	-1.93E 3	557.200	0.007	-9.829	-34.029			
		2:BEBAN HIDL	14.5E 3	-651.883	278.779	0.002	-4.959	-11.547			
		3:BEBAN GEM	619.021	1.13E 3	-3.59E 3	-0.040	55.465	18.026			
		4:KOMBINASI	99.3E 3	-3.36E 3	1.11E 3	0.012	-19.729	-59.309			
		5:KOMB B. MA	72.8E 3	-1.13E 3	-3.04E 3	-0.034	45.434	-22.029			
	12750	1:BEBAN MATI	-62.1E 3	1.93E 3	-557.200	-0.007	-9.296	-32.297			
		2:BEBAN HIDL	-14.5E 3	651.883	-278.779	-0.002	-4.610	-10.828			
		3:BEBAN GEM	-619.021	-1.13E 3	3.59E 3	0.040	67.676	20.911			
		4:KOMBINASI	-97.7E 3	3.36E 3	-1.11E 3	-0.012	-18.531	-56.081			
		5:KOMB B. MA	-71.4E 3	1.13E 3	3.04E 3	0.034	58.998	-16.836			
15424	102	1:BEBAN MATI	44.2E 3	-1.49E 3	849.508	-0.009	-14.656	-26.234			
		2:BEBAN HIDL	10.4E 3	-518.762	185.872	-0.005	-3.155	-9.211			
		3:BEBAN GEM	5.22E 3	1.09E 3	-4.33E 3	-0.025	69.708	17.151			
		4:KOMBINASI	69.7E 3	-2.61E 3	1.32E 3	-0.019	-22.636	-46.218			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 27	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	55.9E 3	-657.486	-3.58E 3	-0.038	56.644	-13.751			
	12751	1:BEBAN MATI	-42.9E 3	1.49E 3	-849.508	0.009	-14.501	-24.768			
		2:BEBAN HIDL	-10.4E 3	518.762	-185.872	0.005	-3.225	-8.595			
		3:BEBAN GEM	-5.22E 3	-1.09E 3	4.33E 3	0.025	78.774	20.104			
		4:KOMBINASI	-68.1E 3	2.61E 3	-1.32E 3	0.019	-22.561	-43.474			
		5:KOMB B. MA	-54.6E 3	657.486	3.58E 3	0.038	66.277	-8.816			
15425	103	1:BEBAN MATI	85.4E 3	120.078	-56.473	-0.000	0.854	2.389			
		2:BEBAN HIDL	22E 3	39.506	22.361	-0.000	-0.446	0.794			
		3:BEBAN GEM	19.611	1.06E 3	-3.79E 3	-0.033	59.414	16.483			
		4:KOMBINASI	138E 3	207.303	-31.990	-0.000	0.312	4.137			
		5:KOMB B. MA	98.6E 3	1.26E 3	-4.02E 3	-0.034	62.971	20.173			
	12752	1:BEBAN MATI	-84E 3	-120.078	56.473	0.000	1.084	1.732			
		2:BEBAN HIDL	-22E 3	-39.506	-22.361	0.000	-0.322	0.562			
		3:BEBAN GEM	-19.611	-1.06E 3	3.79E 3	0.033	70.592	19.885			
		4:KOMBINASI	-136E 3	-207.303	31.990	0.000	0.786	2.978			
		5:KOMB B. MA	-97.2E 3	-1.26E 3	4.02E 3	0.034	75.013	22.949			
15426	104	1:BEBAN MATI	85.3E 3	136.431	78.562	0.000	-1.418	2.780			
		2:BEBAN HIDL	22.1E 3	50.189	-18.353	-0.000	0.332	1.026			
		3:BEBAN GEM	43.410	1.05E 3	-3.78E 3	-0.029	59.296	16.399			
		4:KOMBINASI	138E 3	244.021	64.910	-0.000	-1.171	4.978			
		5:KOMB B. MA	98.6E 3	1.27E 3	-3.91E 3	-0.031	61.041	20.615			
	12753	1:BEBAN MATI	-83.9E 3	-136.431	-78.562	-0.000	-1.278	1.902			
		2:BEBAN HIDL	-22.1E 3	-50.189	18.353	0.000	0.298	0.697			
		3:BEBAN GEM	-43.410	-1.05E 3	3.78E 3	0.029	70.597	19.737			
		4:KOMBINASI	-136E 3	-244.021	-64.910	0.000	-1.057	3.397			
		5:KOMB B. MA	-97.2E 3	-1.27E 3	3.91E 3	0.031	73.027	23.044			
15427	105	1:BEBAN MATI	76.2E 3	-88.725	-171.433	0.004	3.789	-1.230			
		2:BEBAN HIDL	20.7E 3	-97.699	128.482	0.001	-2.105	-1.628			
		3:BEBAN GEM	626.962	1.07E 3	-3.97E 3	-0.024	63.298	16.657			
		4:KOMBINASI	125E 3	-262.789	-0.149	0.005	1.179	-4.080			
		5:KOMB B. MA	89.3E 3	975.477	-4.26E 3	-0.022	68.989	15.284			
	12754	1:BEBAN MATI	-74.8E 3	88.725	171.433	-0.004	2.095	-1.816			
		2:BEBAN HIDL	-20.7E 3	97.699	-128.482	-0.001	-2.305	-1.726			
		3:BEBAN GEM	-626.962	-1.07E 3	3.97E 3	0.024	72.936	20.046			
		4:KOMBINASI	-123E 3	262.789	0.149	-0.005	-1.174	-4.940			
		5:KOMB B. MA	-87.9E 3	-975.477	4.26E 3	0.022	77.295	18.198			
15428	106	1:BEBAN MATI	85.4E 3	-120.075	-56.473	0.000	0.854	-2.389			
		2:BEBAN HIDL	22E 3	-39.504	22.361	0.000	-0.446	-0.794			
		3:BEBAN GEM	-29.066	1.06E 3	-3.77E 3	-0.033	59.210	16.393			
		4:KOMBINASI	138E 3	-207.297	-31.990	0.000	0.312	-4.137			
		5:KOMB B. MA	98.5E 3	964.764	-4.01E 3	-0.034	62.757	14.348			
	12755	1:BEBAN MATI	-84E 3	120.075	56.473	-0.000	1.084	-1.732			
		2:BEBAN HIDL	-22E 3	39.504	-22.361	-0.000	-0.322	-0.562			
		3:BEBAN GEM	29.066	-1.06E 3	3.77E 3	0.033	70.353	19.844			
		4:KOMBINASI	-136E 3	207.297	31.990	-0.000	0.786	-2.978			
		5:KOMB B. MA	-97.2E 3	-964.764	4.01E 3	0.034	74.762	18.766			
15429	107	1:BEBAN MATI	85.3E 3	-136.429	78.562	-0.000	-1.418	-2.780			
		2:BEBAN HIDL	22.1E 3	-50.188	-18.353	0.000	0.332	-1.026			



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Job No 1	Sheet No 28	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-6.280	1.05E 3	-3.78E 3	-0.033	59.243	16.349			
		4:KOMBINASI	138E 3	-244.015	64.910	0.000	-1.171	-4.978			
		5:KOMB B. MA	98.5E 3	935.563	-3.9E 3	-0.035	60.986	13.771			
	12756	1:BEBAN MATI	-83.9E 3	136.429	-78.562	0.000	-1.278	-1.902			
		2:BEBAN HIDL	-22.1E 3	50.188	18.353	-0.000	0.298	-0.696			
		3:BEBAN GEM	6.280	-1.05E 3	3.78E 3	0.033	70.430	19.677			
		4:KOMBINASI	-136E 3	244.015	-64.910	-0.000	-1.057	-3.397			
		5:KOMB B. MA	-97.2E 3	-935.563	3.9E 3	0.035	72.852	18.341			
15430	108	1:BEBAN MATI	76.2E 3	88.727	-171.433	-0.004	3.789	1.230			
		2:BEBAN HIDL	20.7E 3	97.701	128.481	-0.001	-2.105	1.628			
		3:BEBAN GEM	328.877	1.08E 3	-3.9E 3	-0.034	62.000	17.046			
		4:KOMBINASI	125E 3	262.794	-0.150	-0.005	1.179	4.080			
		5:KOMB B. MA	89E 3	1.28E 3	-4.19E 3	-0.040	67.626	20.105			
	12757	1:BEBAN MATI	-74.8E 3	-88.727	171.433	0.004	2.095	1.816			
		2:BEBAN HIDL	-20.7E 3	-97.701	-128.481	0.001	-2.305	1.726			
		3:BEBAN GEM	-328.877	-1.08E 3	3.9E 3	0.034	71.957	19.864			
		4:KOMBINASI	-123E 3	-262.794	0.150	0.005	-1.174	4.940			
		5:KOMB B. MA	-87.6E 3	-1.28E 3	4.19E 3	0.040	76.266	23.708			
15431	109	1:BEBAN MATI	69E 3	1.66E 3	-55.881	0.000	0.966	29.189			
		2:BEBAN HIDL	17.3E 3	509.869	6.303	0.000	-0.091	9.021			
		3:BEBAN GEM	-845.757	1.21E 3	-3.7E 3	-0.031	57.846	19.397			
		4:KOMBINASI	110E 3	2.81E 3	-56.972	0.001	1.013	49.461			
		5:KOMB B. MA	78.5E 3	3.23E 3	-3.94E 3	-0.033	61.650	54.969			
	12758	1:BEBAN MATI	-67.6E 3	-1.66E 3	55.881	-0.000	0.952	27.813			
		2:BEBAN HIDL	-17.3E 3	-509.869	-6.303	-0.000	-0.125	8.479			
		3:BEBAN GEM	845.757	-1.21E 3	3.7E 3	0.031	69.105	22.054			
		4:KOMBINASI	-109E 3	-2.81E 3	56.972	-0.001	0.942	46.942			
		5:KOMB B. MA	-77.1E 3	-3.23E 3	3.94E 3	0.033	73.437	56.057			
15432	110	1:BEBAN MATI	63.4E 3	1.93E 3	557.200	-0.007	-9.829	34.029			
		2:BEBAN HIDL	14.5E 3	651.881	278.779	-0.002	-4.959	11.547			
		3:BEBAN GEM	-905.190	1.21E 3	-3.61E 3	-0.027	56.031	19.417			
		4:KOMBINASI	99.3E 3	3.36E 3	1.11E 3	-0.012	-19.729	59.309			
		5:KOMB B. MA	71.2E 3	3.59E 3	-3.06E 3	-0.037	46.029	61.344			
	12759	1:BEBAN MATI	-62.1E 3	-1.93E 3	-557.200	0.007	-9.296	32.297			
		2:BEBAN HIDL	-14.5E 3	-651.881	-278.779	0.002	-4.610	10.828			
		3:BEBAN GEM	905.190	-1.21E 3	3.61E 3	0.027	67.819	21.998			
		4:KOMBINASI	-97.7E 3	-3.36E 3	-1.11E 3	0.012	-18.531	56.081			
		5:KOMB B. MA	-69.8E 3	-3.59E 3	3.06E 3	0.037	59.148	61.892			
15433	111	1:BEBAN MATI	44.2E 3	1.49E 3	849.507	0.009	-14.656	26.234			
		2:BEBAN HIDL	10.4E 3	518.761	185.871	0.005	-3.155	9.211			
		3:BEBAN GEM	3.81E 3	1.1E 3	-4.28E 3	-0.038	68.845	17.258			
		4:KOMBINASI	69.7E 3	2.61E 3	1.32E 3	0.019	-22.636	46.218			
		5:KOMB B. MA	54.5E 3	2.95E 3	-3.53E 3	-0.028	55.738	49.881			
	12760	1:BEBAN MATI	-42.9E 3	-1.49E 3	-849.507	-0.009	-14.501	24.768			
		2:BEBAN HIDL	-10.4E 3	-518.761	-185.871	-0.005	-3.225	8.595			
		3:BEBAN GEM	-3.81E 3	-1.1E 3	4.28E 3	0.038	77.888	20.349			
		4:KOMBINASI	-68.1E 3	-2.61E 3	-1.32E 3	-0.019	-22.561	43.473			
		5:KOMB B. MA	-53.1E 3	-2.95E 3	3.53E 3	0.028	65.346	51.291			



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Job No 1	Sheet No 29	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15434	112	1:BEBAN MATI	53.2E 3	-505.718	-43.594	0.001	0.791	-9.245			
		2:BEBAN HIDL	15.1E 3	-234.883	4.845	0.001	-0.049	-4.206			
		3:BEBAN GEM	506.350	1.26E 3	-3.63E 3	-0.031	56.563	20.350			
		4:KOMBINASI	87.9E 3	-982.673	-44.561	0.002	0.871	-17.824			
		5:KOMB B. MA	62.8E 3	675.766	-3.85E 3	-0.031	60.153	9.598			
12761	12761	1:BEBAN MATI	-51.9E 3	505.718	43.594	-0.001	0.705	-8.113			
		2:BEBAN HIDL	-15.1E 3	234.883	-4.845	-0.001	-0.118	-3.856			
		3:BEBAN GEM	-506.350	-1.26E 3	3.63E 3	0.031	68.069	22.879			
		4:KOMBINASI	-86.3E 3	982.673	44.561	-0.002	0.658	-15.904			
		5:KOMB B. MA	-61.4E 3	-675.766	3.85E 3	0.031	72.107	13.596			
15435	113	1:BEBAN MATI	47E 3	-776.261	654.445	0.009	-11.640	-14.019			
		2:BEBAN HIDL	12.1E 3	-363.508	294.775	0.004	-5.294	-6.480			
		3:BEBAN GEM	245.160	1.2E 3	-3.52E 3	-0.029	54.478	19.263			
		4:KOMBINASI	75.8E 3	-1.51E 3	1.26E 3	0.017	-22.440	-27.191			
		5:KOMB B. MA	54.5E 3	264.667	-2.87E 3	-0.019	42.385	2.318			
12762	12762	1:BEBAN MATI	-45.6E 3	776.261	-654.445	-0.009	-10.822	-12.624			
		2:BEBAN HIDL	-12.1E 3	363.508	-294.775	-0.004	-4.823	-5.997			
		3:BEBAN GEM	-245.160	-1.2E 3	3.52E 3	0.029	66.425	21.894			
		4:KOMBINASI	-74.2E 3	1.51E 3	-1.26E 3	-0.017	-20.704	-24.744			
		5:KOMB B. MA	-53.2E 3	-264.667	2.87E 3	0.019	56.030	6.766			
15436	114	1:BEBAN MATI	39.4E 3	-812.616	-551.757	-0.001	10.152	-14.468			
		2:BEBAN HIDL	11.8E 3	-404.220	-289.337	-0.000	5.342	-7.137			
		3:BEBAN GEM	1.75E 3	1.32E 3	-3.83E 3	-0.018	60.853	21.579			
		4:KOMBINASI	66.2E 3	-1.62E 3	-1.13E 3	-0.002	20.730	-28.780			
		5:KOMB B. MA	48.4E 3	335.608	-4.75E 3	-0.020	77.253	3.908			
12763	12763	1:BEBAN MATI	-38.1E 3	812.616	551.757	0.001	8.786	-13.424			
		2:BEBAN HIDL	-11.8E 3	404.220	289.337	0.000	4.589	-6.738			
		3:BEBAN GEM	-1.75E 3	-1.32E 3	3.83E 3	0.018	70.659	23.884			
		4:KOMBINASI	-64.6E 3	1.62E 3	1.13E 3	0.002	17.885	-26.889			
		5:KOMB B. MA	-47E 3	-335.608	4.75E 3	0.020	85.732	7.611			
15437	115	1:BEBAN MATI	60.1E 3	-92.098	-29.834	0.000	0.477	-1.804			
		2:BEBAN HIDL	17.8E 3	2.805	17.363	0.001	-0.309	-0.045			
		3:BEBAN GEM	-97.397	1.23E 3	-3.64E 3	-0.031	56.795	19.797			
		4:KOMBINASI	101E 3	-106.029	-8.021	0.001	0.077	-2.237			
		5:KOMB B. MA	70.7E 3	1.2E 3	-3.84E 3	-0.032	59.926	18.956			
12764	12764	1:BEBAN MATI	-58.8E 3	92.098	29.834	-0.000	0.547	-1.357			
		2:BEBAN HIDL	-17.8E 3	-2.805	-17.363	-0.001	-0.287	0.141			
		3:BEBAN GEM	97.397	-1.23E 3	3.64E 3	0.031	68.205	22.315			
		4:KOMBINASI	-99E 3	106.029	8.021	-0.001	0.198	-1.402			
		5:KOMB B. MA	-69.3E 3	-1.2E 3	3.84E 3	0.032	71.991	22.158			
15438	116	1:BEBAN MATI	59.9E 3	-100.060	30.673	0.000	-0.584	-1.865			
		2:BEBAN HIDL	17.6E 3	-3.326	-0.501	0.001	-0.031	-0.114			
		3:BEBAN GEM	-90.359	1.22E 3	-3.66E 3	-0.028	57.274	19.801			
		4:KOMBINASI	100E 3	-125.393	36.006	0.001	-0.751	-2.422			
		5:KOMB B. MA	70.4E 3	1.18E 3	-3.82E 3	-0.029	59.534	18.857			
12765	12765	1:BEBAN MATI	-58.5E 3	100.060	-30.673	-0.000	-0.468	-1.569			
		2:BEBAN HIDL	-17.6E 3	3.326	0.501	-0.001	0.049	0.000			
		3:BEBAN GEM	90.359	-1.22E 3	3.66E 3	0.028	68.469	22.181			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-98.5E 3	125.393	-36.006	-0.001	-0.484	-1.882			
		5:KOMB B. MA	-69E 3	-1.18E 3	3.82E 3	0.029	71.453	21.722			
15439	117	1:BEBAN MATI	53.8E 3	-86.275	-161.778	0.003	3.308	-1.560			
		2:BEBAN HIDL	18E 3	0.744	-65.518	0.001	1.363	-0.041			
		3:BEBAN GEM	253.170	1.21E 3	-3.85E 3	-0.021	61.217	19.620			
		4:KOMBINASI	93.3E 3	-102.339	-298.962	0.006	6.149	-1.937			
		5:KOMB B. MA	64.8E 3	1.19E 3	-4.24E 3	-0.018	68.403	19.017			
	12766	1:BEBAN MATI	-52.4E 3	86.275	161.778	-0.003	2.245	-1.402			
		2:BEBAN HIDL	-18E 3	-0.744	65.518	-0.001	0.886	0.067			
		3:BEBAN GEM	-253.170	-1.21E 3	3.85E 3	0.021	70.837	21.979			
		4:KOMBINASI	-91.7E 3	102.339	298.962	-0.006	4.112	-1.575			
		5:KOMB B. MA	-63.5E 3	-1.19E 3	4.24E 3	0.018	77.156	21.716			
15440	118	1:BEBAN MATI	22.6E 3	-966.785	-1.03E 3	0.003	18.445	-17.333			
		2:BEBAN HIDL	3.2E 3	-231.271	-252.238	0.000	4.498	-4.128			
		3:BEBAN GEM	3.35E 3	562.034	-2.14E 3	-0.116	27.355	6.718			
		4:KOMBINASI	32.2E 3	-1.53E 3	-1.64E 3	0.003	29.331	-27.404			
		5:KOMB B. MA	28E 3	-515.411	-3.43E 3	-0.119	49.866	-12.756			
	12767	1:BEBAN MATI	-21.3E 3	966.785	1.03E 3	-0.003	16.970	-15.850			
		2:BEBAN HIDL	-3.2E 3	231.271	252.238	-0.000	4.159	-3.810			
		3:BEBAN GEM	-3.35E 3	-562.034	2.14E 3	0.116	46.219	12.573			
		4:KOMBINASI	-30.6E 3	1.53E 3	1.64E 3	-0.003	27.019	-25.116			
		5:KOMB B. MA	-26.7E 3	515.411	3.43E 3	0.119	67.995	-4.934			
15441	119	1:BEBAN MATI	32.9E 3	52.363	-1.23E 3	0.002	21.890	1.022			
		2:BEBAN HIDL	6.77E 3	5.847	-538.786	-0.001	9.600	0.128			
		3:BEBAN GEM	5.05E 3	1.21E 3	-2.33E 3	-0.035	31.138	19.420			
		4:KOMBINASI	50.3E 3	72.190	-2.33E 3	0.002	41.628	1.431			
		5:KOMB B. MA	42.3E 3	1.32E 3	-4E 3	-0.034	60.345	21.490			
	12768	1:BEBAN MATI	-31.6E 3	-52.363	1.23E 3	-0.002	20.197	0.775			
		2:BEBAN HIDL	-6.77E 3	-5.847	538.786	0.001	8.893	0.073			
		3:BEBAN GEM	-5.05E 3	-1.21E 3	2.33E 3	0.035	48.902	22.048			
		4:KOMBINASI	-48.7E 3	-72.190	2.33E 3	-0.002	38.465	1.047			
		5:KOMB B. MA	-40.9E 3	-1.32E 3	4E 3	0.034	76.880	23.969			
15442	120	1:BEBAN MATI	29.5E 3	302.506	-1.04E 3	0.007	18.497	5.783			
		2:BEBAN HIDL	5.81E 3	92.944	-442.749	0.002	7.842	1.797			
		3:BEBAN GEM	3.98E 3	1.28E 3	-2.34E 3	-0.033	31.367	20.622			
		4:KOMBINASI	44.7E 3	511.718	-1.96E 3	0.011	34.743	9.815			
		5:KOMB B. MA	37.2E 3	1.71E 3	-3.77E 3	-0.027	56.138	28.515			
	12769	1:BEBAN MATI	-28.2E 3	-302.506	1.04E 3	-0.007	17.298	4.600			
		2:BEBAN HIDL	-5.81E 3	-92.944	442.749	-0.002	7.355	1.393			
		3:BEBAN GEM	-3.98E 3	-1.28E 3	2.34E 3	0.033	48.954	23.429			
		4:KOMBINASI	-43.1E 3	-511.718	1.96E 3	-0.011	32.526	7.749			
		5:KOMB B. MA	-35.8E 3	-1.71E 3	3.77E 3	0.027	73.113	30.036			
15443	121	1:BEBAN MATI	49.7E 3	-1.74E 3	-397.049	-0.006	6.731	-30.485			
		2:BEBAN HIDL	12.2E 3	-654.019	-16.832	-0.003	0.160	-11.515			
		3:BEBAN GEM	2.27E 3	1.27E 3	-4.04E 3	-0.018	64.527	20.350			
		4:KOMBINASI	79.1E 3	-3.13E 3	-503.390	-0.011	8.333	-55.006			
		5:KOMB B. MA	59.4E 3	-796.661	-4.65E 3	-0.027	74.580	-16.027			
	12770	1:BEBAN MATI	-48.4E 3	1.74E 3	397.049	0.006	6.897	-29.083			



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Job No 1	Sheet No 31	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-12.2E 3	654.019	16.832	0.003	0.418	-10.933			
		3:BEBAN GEM	-2.27E 3	-1.27E 3	4.04E 3	0.018	74.093	23.167			
		4:KOMBINASI	-77.5E 3	3.13E 3	503.390	0.011	8.945	-52.392			
		5:KOMB B. MA	-58E 3	796.661	4.65E 3	0.027	84.945	-11.317			
15444	122	1:BEBAN MATI	69.9E 3	111.976	236.557	0.000	-4.705	2.282			
		2:BEBAN HIDL	20E 3	42.618	356.882	0.000	-6.570	0.879			
		3:BEBAN GEM	971.989	1.08E 3	-4.17E 3	-0.038	67.208	16.807			
		4:KOMBINASI	116E 3	202.560	854.880	0.000	-16.157	4.145			
		5:KOMB B. MA	82.9E 3	1.27E 3	-3.93E 3	-0.039	61.921	20.457			
	12771	1:BEBAN MATI	-68.6E 3	-111.976	-236.557	-0.000	-3.415	1.561			
		2:BEBAN HIDL	-20E 3	-42.618	-356.882	-0.000	-5.680	0.584			
		3:BEBAN GEM	-971.989	-1.08E 3	4.17E 3	0.038	76.016	20.256			
		4:KOMBINASI	-114E 3	-202.560	-854.880	-0.000	-13.185	2.808			
		5:KOMB B. MA	-81.6E 3	-1.27E 3	3.93E 3	0.039	72.994	23.180			
15445	123	1:BEBAN MATI	69.9E 3	-111.975	236.557	-0.000	-4.705	-2.282			
		2:BEBAN HIDL	20E 3	-42.617	356.883	-0.000	-6.570	-0.879			
		3:BEBAN GEM	902.770	1.08E 3	-4.17E 3	-0.037	67.139	16.813			
		4:KOMBINASI	116E 3	-202.558	854.880	-0.000	-16.157	-4.144			
		5:KOMB B. MA	82.9E 3	997.937	-3.92E 3	-0.039	61.850	14.844			
	12772	1:BEBAN MATI	-68.6E 3	111.975	-236.557	0.000	-3.415	-1.561			
		2:BEBAN HIDL	-20E 3	42.617	-356.883	0.000	-5.680	-0.584			
		3:BEBAN GEM	-902.770	-1.08E 3	4.17E 3	0.037	75.863	20.305			
		4:KOMBINASI	-114E 3	202.558	-854.880	0.000	-13.185	-2.808			
		5:KOMB B. MA	-81.5E 3	-997.937	3.92E 3	0.039	72.833	19.408			
15446	124	1:BEBAN MATI	49.7E 3	1.74E 3	-397.048	0.006	6.731	30.485			
		2:BEBAN HIDL	12.2E 3	654.019	-16.832	0.003	0.160	11.515			
		3:BEBAN GEM	726.921	1.13E 3	-3.93E 3	-0.051	62.635	17.879			
		4:KOMBINASI	79.1E 3	3.13E 3	-503.389	0.011	8.333	55.006			
		5:KOMB B. MA	57.8E 3	3.31E 3	-4.53E 3	-0.046	72.593	56.167			
	12773	1:BEBAN MATI	-48.4E 3	-1.74E 3	397.048	-0.006	6.897	29.083			
		2:BEBAN HIDL	-12.2E 3	-654.019	16.832	-0.003	0.418	10.933			
		3:BEBAN GEM	-726.921	-1.13E 3	3.93E 3	0.051	72.272	20.855			
		4:KOMBINASI	-77.5E 3	-3.13E 3	503.389	-0.011	8.945	52.392			
		5:KOMB B. MA	-56.4E 3	-3.31E 3	4.53E 3	0.046	83.034	57.540			
15447	125	1:BEBAN MATI	29.5E 3	-302.506	-1.04E 3	-0.007	18.497	-5.783			
		2:BEBAN HIDL	5.81E 3	-92.944	-442.749	-0.002	7.842	-1.797			
		3:BEBAN GEM	4.97E 3	1.18E 3	-2.33E 3	-0.026	31.337	18.847			
		4:KOMBINASI	44.7E 3	-511.717	-1.96E 3	-0.011	34.743	-9.815			
		5:KOMB B. MA	38.2E 3	879.722	-3.75E 3	-0.034	56.106	12.928			
	12774	1:BEBAN MATI	-28.2E 3	302.506	1.04E 3	0.007	17.298	-4.600			
		2:BEBAN HIDL	-5.81E 3	92.944	442.749	0.002	7.355	-1.393			
		3:BEBAN GEM	-4.97E 3	-1.18E 3	2.33E 3	0.026	48.473	21.622			
		4:KOMBINASI	-43.1E 3	511.717	1.96E 3	0.011	32.526	-7.749			
		5:KOMB B. MA	-36.9E 3	-879.722	3.75E 3	0.034	72.608	17.267			
15448	126	1:BEBAN MATI	32.9E 3	-52.365	-1.23E 3	-0.002	21.890	-1.022			
		2:BEBAN HIDL	6.77E 3	-5.847	-538.786	0.001	9.600	-0.128			
		3:BEBAN GEM	4.77E 3	1.17E 3	-2.28E 3	-0.027	30.363	18.662			
		4:KOMBINASI	50.3E 3	-72.194	-2.33E 3	-0.002	41.628	-1.431			



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Job No 1	Sheet No 32	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	42E 3	1.18E 3	-3.94E 3	-0.030	59.531	18.497			
	12775	1:BEBAN MATI	-31.6E 3	52.365	1.23E 3	0.002	20.197	-0.775			
		2:BEBAN HIDL	-6.77E 3	5.847	538.786	-0.001	8.893	-0.073			
		3:BEBAN GEM	-4.77E 3	-1.17E 3	2.28E 3	0.027	47.792	21.647			
		4:KOMBINASI	-48.7E 3	72.194	2.33E 3	0.002	38.465	-1.047			
		5:KOMB B. MA	-40.6E 3	-1.18E 3	3.94E 3	0.030	75.715	21.911			
15449	127	1:BEBAN MATI	22.6E 3	966.787	-1.03E 3	-0.003	18.445	17.333			
		2:BEBAN HIDL	3.2E 3	231.271	-252.238	-0.000	4.498	4.128			
		3:BEBAN GEM	5.91E 3	658.477	-2.15E 3	-0.002	27.843	8.517			
		4:KOMBINASI	32.2E 3	1.53E 3	-1.64E 3	-0.003	29.331	27.404			
		5:KOMB B. MA	30.7E 3	1.8E 3	-3.44E 3	-0.005	50.379	28.752			
	12776	1:BEBAN MATI	-21.3E 3	-966.787	1.03E 3	0.003	16.970	15.850			
		2:BEBAN HIDL	-3.2E 3	-231.271	252.238	0.000	4.159	3.810			
		3:BEBAN GEM	-5.91E 3	-658.477	2.15E 3	0.002	45.797	14.084			
		4:KOMBINASI	-30.6E 3	-1.53E 3	1.64E 3	0.003	27.019	25.116			
		5:KOMB B. MA	-29.4E 3	-1.8E 3	3.44E 3	0.005	67.553	32.925			
15450	128	1:BEBAN MATI	19.4E 3	-1.19E 3	-1.25E 3	0.000	22.350	-21.475			
		2:BEBAN HIDL	5.05E 3	-511.392	-518.758	-0.001	9.386	-9.258			
		3:BEBAN GEM	2.39E 3	454.474	-1.72E 3	-0.161	18.743	4.416			
		4:KOMBINASI	31.4E 3	-2.25E 3	-2.33E 3	-0.001	41.837	-40.583			
		5:KOMB B. MA	25E 3	-1.02E 3	-3.37E 3	-0.169	47.662	-22.393			
	12777	1:BEBAN MATI	-18.1E 3	1.19E 3	1.25E 3	-0.000	20.571	-19.431			
		2:BEBAN HIDL	-5.05E 3	511.392	518.758	0.001	8.420	-8.295			
		3:BEBAN GEM	-2.39E 3	-454.474	1.72E 3	0.161	40.420	11.183			
		4:KOMBINASI	-29.8E 3	2.25E 3	2.33E 3	0.001	38.157	-36.589			
		5:KOMB B. MA	-23.6E 3	1.02E 3	3.37E 3	0.169	68.064	-12.666			
15451	129	1:BEBAN MATI	33.7E 3	79.761	-2.25E 3	0.002	40.461	1.695			
		2:BEBAN HIDL	10.7E 3	36.582	-1.06E 3	0.001	19.214	0.781			
		3:BEBAN GEM	3.6E 3	1.07E 3	-1.91E 3	-0.037	22.637	16.654			
		4:KOMBINASI	57.5E 3	154.244	-4.4E 3	0.003	79.296	3.283			
		5:KOMB B. MA	43.9E 3	1.22E 3	-4.9E 3	-0.037	75.758	19.650			
	12778	1:BEBAN MATI	-32.3E 3	-79.761	2.25E 3	-0.002	36.922	1.043			
		2:BEBAN HIDL	-10.7E 3	-36.582	1.06E 3	-0.001	17.200	0.475			
		3:BEBAN GEM	-3.6E 3	-1.07E 3	1.91E 3	0.037	42.967	20.025			
		4:KOMBINASI	-55.9E 3	-154.244	4.4E 3	-0.003	71.827	2.011			
		5:KOMB B. MA	-42.5E 3	-1.22E 3	4.9E 3	0.037	92.357	22.354			
15452	130	1:BEBAN MATI	33.7E 3	-79.760	-2.25E 3	-0.002	40.461	-1.695			
		2:BEBAN HIDL	10.7E 3	-36.582	-1.06E 3	-0.001	19.214	-0.781			
		3:BEBAN GEM	3.42E 3	1.05E 3	-1.9E 3	-0.032	22.490	16.261			
		4:KOMBINASI	57.5E 3	-154.243	-4.4E 3	-0.003	79.296	-3.283			
		5:KOMB B. MA	43.7E 3	1E 3	-4.89E 3	-0.036	75.603	14.910			
	12779	1:BEBAN MATI	-32.3E 3	79.760	2.25E 3	0.002	36.922	-1.043			
		2:BEBAN HIDL	-10.7E 3	36.582	1.06E 3	0.001	17.200	-0.475			
		3:BEBAN GEM	-3.42E 3	-1.05E 3	1.9E 3	0.032	42.774	19.802			
		4:KOMBINASI	-55.9E 3	154.243	4.4E 3	0.003	71.827	-2.011			
		5:KOMB B. MA	-42.3E 3	-1E 3	4.89E 3	0.036	92.155	19.465			
15453	131	1:BEBAN MATI	19.4E 3	1.19E 3	-1.25E 3	-0.000	22.350	21.475			
		2:BEBAN HIDL	5.05E 3	511.391	-518.758	0.001	9.386	9.258			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 33	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	4.2E 3	561.452	-1.72E 3	0.023	18.949	6.558			
		4:KOMBINASI	31.4E 3	2.25E 3	-2.33E 3	0.001	41.837	40.583			
		5:KOMB B. MA	26.9E 3	2.09E 3	-3.37E 3	0.024	47.878	33.916			
	12780	1:BEBAN MATI	-18.1E 3	-1.19E 3	1.25E 3	0.000	20.571	19.431			
		2:BEBAN HIDL	-5.05E 3	-511.391	518.758	-0.001	8.420	8.295			
		3:BEBAN GEM	-4.2E 3	-561.452	1.72E 3	-0.023	40.060	12.712			
		4:KOMBINASI	-29.8E 3	-2.25E 3	2.33E 3	-0.001	38.157	36.589			
		5:KOMB B. MA	-25.5E 3	-2.09E 3	3.37E 3	-0.024	67.686	37.756			
15454	135	1:BEBAN MATI	31.9E 3	-723.941	239.077	0.000	-3.646	-13.026			
		2:BEBAN HIDL	6.23E 3	38.522	116.951	-0.003	-1.897	0.732			
		3:BEBAN GEM	701.279	554.572	-5.13E 3	-0.056	85.690	6.795			
		4:KOMBINASI	48.2E 3	-807.094	474.014	-0.005	-7.411	-14.460			
		5:KOMB B. MA	36.4E 3	-118.528	-5.08E 3	-0.061	85.191	-5.452			
	12781	1:BEBAN MATI	-30.5E 3	723.941	-239.077	-0.000	-4.560	-11.822			
		2:BEBAN HIDL	-6.23E 3	-38.522	-116.951	0.003	-2.117	0.590			
		3:BEBAN GEM	-701.279	-554.572	5.13E 3	0.056	90.490	12.239			
		4:KOMBINASI	-46.6E 3	807.094	-474.014	0.005	-8.859	-13.242			
		5:KOMB B. MA	-35E 3	118.528	5.08E 3	0.061	89.184	1.383			
15455	138	1:BEBAN MATI	31.9E 3	723.940	239.077	-0.000	-3.646	13.026			
		2:BEBAN HIDL	6.23E 3	-38.523	116.951	0.003	-1.897	-0.732			
		3:BEBAN GEM	-452.679	330.981	-5.04E 3	-0.005	84.156	2.374			
		4:KOMBINASI	48.2E 3	807.092	474.014	0.005	-7.411	14.460			
		5:KOMB B. MA	35.1E 3	1.05E 3	-4.99E 3	-0.004	83.580	15.079			
	12782	1:BEBAN MATI	-30.5E 3	-723.940	-239.077	0.000	-4.560	11.822			
		2:BEBAN HIDL	-6.23E 3	38.523	-116.951	-0.003	-2.117	-0.590			
		3:BEBAN GEM	452.679	-330.981	5.04E 3	0.005	88.916	8.986			
		4:KOMBINASI	-46.6E 3	-807.092	-474.014	-0.005	-8.859	13.242			
		5:KOMB B. MA	-33.8E 3	-1.05E 3	4.99E 3	0.004	87.531	20.904			
15456	76	1:BEBAN MATI	-486.696	4.89E 3	-25.053	-3.445	0.152	44.647			
		2:BEBAN HIDL	-115.580	840.445	-6.072	-2.244	0.036	9.086			
		3:BEBAN GEM	16.125	-861.728	-1.823	8.484	-0.036	-25.808			
		4:KOMBINASI	-768.963	7.21E 3	-39.778	-7.725	0.240	68.114			
		5:KOMB B. MA	-539.113	4.49E 3	-30.610	4.117	0.136	23.000			
	12902	1:BEBAN MATI	486.696	-3.2E 3	25.053	3.445	0.217	14.811			
		2:BEBAN HIDL	115.580	-840.445	6.072	2.244	0.053	3.277			
		3:BEBAN GEM	-16.125	861.728	1.823	-8.484	0.062	13.132			
		4:KOMBINASI	768.963	-5.18E 3	39.778	7.725	0.345	23.017			
		5:KOMB B. MA	539.113	-2.8E 3	30.610	-4.117	0.314	30.567			
15457	12783	1:BEBAN MATI	-251.402	-590.385	-0.251	-0.668	0.007	-30.073			
		2:BEBAN HIDL	-83.356	-320.087	-0.132	-0.770	0.003	-7.489			
		3:BEBAN GEM	-260.045	-2.3E 3	1.837	1.961	-0.010	0.869			
		4:KOMBINASI	-435.053	-1.22E 3	-0.512	-2.033	0.012	-48.071			
		5:KOMB B. MA	-574.463	-3.2E 3	1.599	0.929	-0.003	-33.655			
	12961	1:BEBAN MATI	251.402	1.72E 3	0.251	0.668	-0.004	18.765			
		2:BEBAN HIDL	83.356	320.087	0.132	0.770	-0.002	4.350			
		3:BEBAN GEM	260.045	2.3E 3	-1.837	-1.961	-0.008	-23.419			
		4:KOMBINASI	435.053	2.57E 3	0.512	2.033	-0.007	29.479			
		5:KOMB B. MA	574.463	4.32E 3	-1.599	-0.929	-0.013	-3.214			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 34	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15458	12784	1:BEBAN MATI	-251.402	-590.385	0.251	0.668	-0.007	-30.073			
		2:BEBAN HIDL	-83.356	-320.086	0.132	0.770	-0.003	-7.489			
		3:BEBAN GEM	-666.612	-2.19E 3	-4.590	0.272	0.031	0.508			
		4:KOMBINASI	-435.053	-1.22E 3	0.512	2.033	-0.012	-48.071			
		5:KOMB B. MA	-1E 3	-3.09E 3	-4.489	1.416	0.024	-34.033			
	13407	1:BEBAN MATI	251.402	1.72E 3	-0.251	-0.668	0.004	18.765			
		2:BEBAN HIDL	83.356	320.086	-0.132	-0.770	0.002	4.350			
		3:BEBAN GEM	666.612	2.19E 3	4.590	-0.272	0.014	-22.020			
		4:KOMBINASI	435.053	2.57E 3	-0.512	-2.033	0.007	29.479			
		5:KOMB B. MA	1E 3	4.21E 3	4.489	-1.416	0.020	-1.745			
15459	12783	1:BEBAN MATI	11.743	897.728	-0.087	-0.152	0.000	1.529			
		2:BEBAN HIDL	3.483	403.273	0.003	-0.004	-0.000	0.995			
		3:BEBAN GEM	24.194	8.703	-8.462	-0.321	0.059	-1.966			
		4:KOMBINASI	19.664	1.72E 3	-0.100	-0.188	0.000	3.427			
		5:KOMB B. MA	39.236	1.15E 3	-8.970	-0.491	0.063	0.062			
	12957	1:BEBAN MATI	-11.743	-667.077	0.087	0.152	0.001	7.679			
		2:BEBAN HIDL	-3.483	-403.273	-0.003	0.004	0.000	3.750			
		3:BEBAN GEM	-24.194	-8.703	8.462	0.321	0.040	2.068			
		4:KOMBINASI	-19.664	-1.45E 3	0.100	0.188	0.001	15.215			
		5:KOMB B. MA	-39.236	-918.179	8.970	0.491	0.043	12.100			
15460	12785	1:BEBAN MATI	-249.766	-793.976	6.448	0.969	-0.048	-40.226			
		2:BEBAN HIDL	-57.024	-418.855	1.568	1.055	-0.012	-10.207			
		3:BEBAN GEM	507.566	-962.901	-1.035	-4.729	-0.011	-0.191			
		4:KOMBINASI	-390.957	-1.62E 3	10.247	2.852	-0.077	-64.603			
		5:KOMB B. MA	248.964	-2.06E 3	6.302	-3.363	-0.067	-46.551			
	12906	1:BEBAN MATI	249.766	2.48E 3	-6.448	-0.969	-0.047	16.132			
		2:BEBAN HIDL	57.024	418.855	-1.568	-1.055	-0.011	4.046			
		3:BEBAN GEM	-507.566	962.901	1.035	4.729	0.026	-13.973			
		4:KOMBINASI	390.957	3.65E 3	-10.247	-2.852	-0.074	25.831			
		5:KOMB B. MA	-248.964	3.74E 3	-6.302	3.363	-0.026	3.887			
15461	12786	1:BEBAN MATI	-102.569	-624.568	-3.968	-2.660	0.028	-17.265			
		2:BEBAN HIDL	-45.576	-363.291	-1.851	-1.531	0.013	-7.468			
		3:BEBAN GEM	-1.33E 3	-651.438	3.592	-1.381	-0.041	-0.130			
		4:KOMBINASI	-196.004	-1.33E 3	-7.723	-5.642	0.053	-32.668			
		5:KOMB B. MA	-1.53E 3	-1.53E 3	-1.307	-5.029	-0.008	-21.883			
	13290	1:BEBAN MATI	102.569	1.08E 3	3.968	2.660	0.031	4.764			
		2:BEBAN HIDL	45.576	363.291	1.851	1.531	0.015	2.124			
		3:BEBAN GEM	1.33E 3	651.438	-3.592	1.381	-0.012	-9.452			
		4:KOMBINASI	196.004	1.87E 3	7.723	5.642	0.060	9.116			
		5:KOMB B. MA	1.53E 3	1.98E 3	1.307	5.029	0.027	-3.886			
15462	12785	1:BEBAN MATI	-16.706	1.02E 3	-0.000	0.000	0.000	1.415			
		2:BEBAN HIDL	-5.022	383.915	-0.000	-0.000	0.000	1.109			
		3:BEBAN GEM	-131.779	90.008	3.963	0.324	-0.033	-7.308			
		4:KOMBINASI	-28.082	1.84E 3	-0.000	0.000	0.000	3.472			
		5:KOMB B. MA	-158.087	1.35E 3	4.161	0.340	-0.035	-5.593			
	12905	1:BEBAN MATI	16.706	-734.467	0.000	-0.000	0.000	11.510			
		2:BEBAN HIDL	5.022	-383.915	0.000	0.000	0.000	4.538			
		3:BEBAN GEM	131.779	-90.008	-3.963	-0.324	-0.025	8.632			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 35	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	28.082	-1.5E 3	0.000	-0.000	0.000	21.073			
		5:KOMB B. MA	158.087	-1.06E 3	-4.161	-0.340	-0.026	23.296			
15463	88	1:BEBAN MATI	-340.771	4.83E 3	25.598	3.252	-0.133	53.981			
		2:BEBAN HIDL	-122.684	848.998	12.146	2.094	-0.063	11.453			
		3:BEBAN GEM	-1.09E 3	-2.56E 3	33.185	-3.643	-0.214	-70.810			
		4:KOMBINASI	-605.219	7.15E 3	50.152	7.253	-0.261	83.101			
		5:KOMB B. MA	-1.55E 3	2.65E 3	67.730	0.684	-0.396	-13.499			
	12948	1:BEBAN MATI	340.771	-3.7E 3	-25.598	-3.252	-0.118	-12.175			
		2:BEBAN HIDL	122.684	-848.998	-12.146	-2.094	-0.056	-3.127			
		3:BEBAN GEM	1.09E 3	2.56E 3	-33.185	3.643	-0.111	45.720			
		4:KOMBINASI	605.219	-5.8E 3	-50.152	-7.253	-0.231	-19.614			
		5:KOMB B. MA	1.55E 3	-1.52E 3	-67.730	-0.684	-0.268	33.954			
15464	132	1:BEBAN MATI	-332.868	-865.295	2.403	-1.099	-0.004	-35.111			
		2:BEBAN HIDL	-87.082	-358.654	0.501	-0.618	0.001	-8.908			
		3:BEBAN GEM	-773.739	-2.77E 3	8.861	1.947	-0.042	-5.699			
		4:KOMBINASI	-538.773	-1.61E 3	3.685	-2.309	-0.003	-56.386			
		5:KOMB B. MA	-1.2E 3	-3.99E 3	12.008	0.574	-0.048	-46.440			
	12873	1:BEBAN MATI	332.868	1.71E 3	-2.403	1.099	-0.014	25.643			
		2:BEBAN HIDL	87.082	358.654	-0.501	0.618	-0.005	6.270			
		3:BEBAN GEM	773.739	2.77E 3	-8.861	-1.947	-0.023	-14.709			
		4:KOMBINASI	538.773	2.62E 3	-3.685	2.309	-0.024	40.804			
		5:KOMB B. MA	1.2E 3	4.84E 3	-12.008	-0.574	-0.041	13.961			
15465	12787	1:BEBAN MATI	-224.844	-1.28E 3	-0.427	0.176	0.003	-29.668			
		2:BEBAN HIDL	-95.121	-637.543	-0.001	0.035	0.000	-12.532			
		3:BEBAN GEM	461.158	-3.62E 3	3.226	1.305	-0.011	7.316			
		4:KOMBINASI	-422.006	-2.56E 3	-0.513	0.267	0.004	-55.653			
		5:KOMB B. MA	202.299	-5.47E 3	2.961	1.567	-0.008	-29.505			
	12933	1:BEBAN MATI	224.844	1.64E 3	0.427	-0.176	0.002	12.452			
		2:BEBAN HIDL	95.121	637.543	0.001	-0.035	-0.000	5.030			
		3:BEBAN GEM	-461.158	3.62E 3	-3.226	-1.305	-0.027	-49.934			
		4:KOMBINASI	422.006	2.99E 3	0.513	-0.267	0.002	22.990			
		5:KOMB B. MA	-202.299	5.83E 3	-2.961	-1.567	-0.026	-36.961			
15466	71	1:BEBAN MATI	-109.822	3.93E 3	-1.440	-0.193	0.008	44.260			
		2:BEBAN HIDL	-35.761	1.53E 3	0.104	-0.039	-0.001	17.854			
		3:BEBAN GEM	80.229	-4.14E 3	14.898	-2.382	-0.085	-85.952			
		4:KOMBINASI	-189.004	7.16E 3	-1.561	-0.293	0.008	81.679			
		5:KOMB B. MA	-47.038	501.010	14.266	-2.717	-0.082	-35.277			
	12925	1:BEBAN MATI	109.822	-3.56E 3	1.440	0.193	0.009	-0.190			
		2:BEBAN HIDL	35.761	-1.53E 3	-0.104	0.039	-0.000	0.185			
		3:BEBAN GEM	-80.229	4.14E 3	-14.898	2.382	-0.090	37.268			
		4:KOMBINASI	189.004	-6.73E 3	1.561	0.293	0.010	0.069			
		5:KOMB B. MA	47.038	-140.617	-14.266	2.717	-0.086	39.052			
15467	12788	1:BEBAN MATI	-252.868	-1.66E 3	0.103	0.207	0.001	-40.881			
		2:BEBAN HIDL	-97.384	-751.171	0.193	0.017	-0.000	-17.773			
		3:BEBAN GEM	73.689	-2E 3	18.639	0.824	-0.092	-1.635			
		4:KOMBINASI	-459.255	-3.19E 3	0.434	0.276	-0.000	-77.493			
		5:KOMB B. MA	-233.924	-4.21E 3	19.791	1.083	-0.097	-53.261			
	13016	1:BEBAN MATI	252.868	1.96E 3	-0.103	-0.207	-0.002	23.129			



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Job No 1	Sheet No 36	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	97.384	751.171	-0.193	-0.017	-0.001	10.406			
		3:BEBAN GEM	-73.689	2E 3	-18.639	-0.824	-0.090	-17.937			
		4:KOMBINASI	459.255	3.55E 3	-0.434	-0.276	-0.004	44.405			
		5:KOMB B. MA	233.924	4.51E 3	-19.791	-1.083	-0.097	10.539			
15468	94	1:BEBAN MATI	-234.104	4.96E 3	-0.673	-0.312	0.001	59.588			
		2:BEBAN HIDL	-91.498	2.02E 3	0.363	-0.032	-0.002	25.650			
		3:BEBAN GEM	-272.695	-2.6E 3	28.686	-2.364	-0.152	-68.522			
		4:KOMBINASI	-427.321	9.17E 3	-0.226	-0.425	-0.002	112.546			
		5:KOMB B. MA	-575.332	3.44E 3	29.665	-2.813	-0.159	3.030			
	13003	1:BEBAN MATI	234.104	-4.66E 3	0.673	0.312	0.005	-12.462			
		2:BEBAN HIDL	91.498	-2.02E 3	-0.363	0.032	-0.001	-5.872			
		3:BEBAN GEM	272.695	2.6E 3	-28.686	2.364	-0.130	43.043			
		4:KOMBINASI	427.321	-8.81E 3	0.226	0.425	0.005	-24.349			
		5:KOMB B. MA	575.332	-3.14E 3	-29.665	2.813	-0.132	29.210			
15469	12789	1:BEBAN MATI	-254.239	-1.72E 3	0.661	0.146	-0.002	-40.258			
		2:BEBAN HIDL	-91.019	-801.105	0.251	-0.003	-0.001	-17.179			
		3:BEBAN GEM	-127.494	-2.12E 3	18.680	0.813	-0.094	0.055			
		4:KOMBINASI	-450.717	-3.35E 3	1.195	0.170	-0.004	-75.797			
		5:KOMB B. MA	-442.719	-4.42E 3	20.426	0.998	-0.101	-50.509			
	12990	1:BEBAN MATI	254.239	2.02E 3	-0.661	-0.146	-0.004	21.895			
		2:BEBAN HIDL	91.019	801.105	-0.251	0.003	-0.002	9.323			
		3:BEBAN GEM	127.494	2.12E 3	-18.680	-0.813	-0.090	-20.802			
		4:KOMBINASI	450.717	3.71E 3	-1.195	-0.170	-0.008	41.191			
		5:KOMB B. MA	442.719	4.72E 3	-20.426	-0.998	-0.099	5.647			
15470	95	1:BEBAN MATI	-251.200	4.94E 3	-0.132	-0.238	-0.001	59.447			
		2:BEBAN HIDL	-88.312	1.98E 3	0.432	0.006	-0.003	25.021			
		3:BEBAN GEM	-377.552	-2.72E 3	34.989	-2.331	-0.177	-70.695			
		4:KOMBINASI	-442.738	9.1E 3	0.533	-0.275	-0.006	111.369			
		5:KOMB B. MA	-700.616	3.27E 3	36.865	-2.681	-0.189	0.230			
	12977	1:BEBAN MATI	251.200	-4.64E 3	0.132	0.238	0.002	-12.454			
		2:BEBAN HIDL	88.312	-1.98E 3	-0.432	-0.006	-0.002	-5.570			
		3:BEBAN GEM	377.552	2.72E 3	-34.989	2.331	-0.166	43.979			
		4:KOMBINASI	442.738	-8.74E 3	-0.533	0.275	0.001	-23.857			
		5:KOMB B. MA	700.616	-2.97E 3	-36.865	2.681	-0.173	30.382			
15471	12790	1:BEBAN MATI	-269.434	-1.65E 3	0.822	0.136	-0.004	-39.890			
		2:BEBAN HIDL	-98.999	-792.006	0.216	0.017	-0.001	-17.187			
		3:BEBAN GEM	-268.548	-2.04E 3	33.997	0.823	-0.174	0.802			
		4:KOMBINASI	-481.718	-3.25E 3	1.332	0.191	-0.007	-75.368			
		5:KOMB B. MA	-610.809	-4.27E 3	36.649	1.011	-0.188	-49.361			
	12964	1:BEBAN MATI	269.434	1.95E 3	-0.822	-0.136	-0.004	22.232			
		2:BEBAN HIDL	98.999	792.006	-0.216	-0.017	-0.001	9.420			
		3:BEBAN GEM	268.548	2.04E 3	-33.997	-0.823	-0.159	-20.798			
		4:KOMBINASI	481.718	3.61E 3	-1.332	-0.191	-0.006	41.752			
		5:KOMB B. MA	610.809	4.57E 3	-36.649	-1.011	-0.171	6.047			
15472	96	1:BEBAN MATI	-245.894	4.86E 3	-1.489	-0.296	0.007	61.838			
		2:BEBAN HIDL	-90.193	2E 3	-0.401	-0.060	0.002	25.994			
		3:BEBAN GEM	-665.662	-2.68E 3	35.673	-2.326	-0.207	-68.220			
		4:KOMBINASI	-439.382	9.04E 3	-2.427	-0.452	0.011	115.796			



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Job No 1	Sheet No 37	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-998.955	3.25E 3	35.727	-2.775	-0.210	5.804			
	12951	1:BEBAN MATI	245.894	-4.56E 3	1.489	0.296	0.008	-15.635			
		2:BEBAN HIDL	90.193	-2E 3	0.401	0.060	0.002	-6.337			
		3:BEBAN GEM	665.662	2.68E 3	-35.673	2.326	-0.143	41.914			
		4:KOMBINASI	439.382	-8.68E 3	2.427	0.452	0.013	-28.901			
		5:KOMB B. MA	998.955	-2.95E 3	-35.727	2.775	-0.141	24.572			
15473	12791	1:BEBAN MATI	-308.801	-1.9E 3	-0.230	0.102	0.001	-45.723			
		2:BEBAN HIDL	-125.835	-832.442	-0.516	-0.032	0.003	-19.670			
		3:BEBAN GEM	-453.304	-2.48E 3	2.275	0.709	-0.017	-6.256			
		4:KOMBINASI	-571.897	-3.61E 3	-1.102	0.071	0.005	-86.340			
		5:KOMB B. MA	-860.271	-5E 3	1.849	0.827	-0.016	-64.095			
	12876	1:BEBAN MATI	308.801	2.12E 3	0.230	-0.102	0.001	30.938			
		2:BEBAN HIDL	125.835	832.442	0.516	0.032	0.001	13.548			
		3:BEBAN GEM	453.304	2.48E 3	-2.275	-0.709	0.001	-11.992			
		4:KOMBINASI	571.897	3.88E 3	1.102	-0.071	0.003	58.802			
		5:KOMB B. MA	860.271	5.23E 3	-1.849	-0.827	0.002	26.475			
15474	12792	1:BEBAN MATI	-179.869	-1.01E 3	-2.163	0.299	0.012	-24.557			
		2:BEBAN HIDL	-75.654	-499.660	-0.742	0.313	0.004	-10.081			
		3:BEBAN GEM	461.258	-3.71E 3	5.521	0.776	-0.036	6.550			
		4:KOMBINASI	-336.890	-2.01E 3	-3.782	0.860	0.021	-45.599			
		5:KOMB B. MA	259.059	-5.2E 3	3.189	1.301	-0.023	-23.729			
	13167	1:BEBAN MATI	179.869	1.37E 3	2.163	-0.299	0.013	10.591			
		2:BEBAN HIDL	75.654	499.660	0.742	-0.313	0.004	4.201			
		3:BEBAN GEM	-461.258	3.71E 3	-5.521	-0.776	-0.029	-50.201			
		4:KOMBINASI	336.890	2.44E 3	3.782	-0.860	0.023	19.431			
		5:KOMB B. MA	-259.059	5.56E 3	-3.189	-1.301	-0.015	-39.599			
15475	73	1:BEBAN MATI	-112.564	3.43E 3	-2.988	-0.680	0.015	38.085			
		2:BEBAN HIDL	-41.415	1.29E 3	-1.976	-0.399	0.011	14.831			
		3:BEBAN GEM	-42.415	-4.09E 3	35.198	-1.892	-0.220	-86.122			
		4:KOMBINASI	-201.341	6.17E 3	-6.748	-1.455	0.035	69.431			
		5:KOMB B. MA	-181.949	-96.316	32.783	-2.906	-0.210	-43.444			
	13160	1:BEBAN MATI	112.564	-3.07E 3	2.988	0.680	0.020	0.122			
		2:BEBAN HIDL	41.415	-1.29E 3	1.976	0.399	0.013	0.326			
		3:BEBAN GEM	42.415	4.09E 3	-35.198	1.892	-0.194	37.974			
		4:KOMBINASI	201.341	-5.74E 3	6.748	1.455	0.044	0.668			
		5:KOMB B. MA	181.949	456.710	-32.783	2.906	-0.176	40.190			
15476	12793	1:BEBAN MATI	-213.298	-1.5E 3	-11.997	-0.355	0.049	-35.628			
		2:BEBAN HIDL	-83.797	-665.633	-4.281	-0.060	0.017	-14.866			
		3:BEBAN GEM	162.976	-2.04E 3	1.579	0.485	-0.050	-0.956			
		4:KOMBINASI	-390.034	-2.87E 3	-21.245	-0.521	0.086	-66.538			
		5:KOMB B. MA	-92.451	-4.04E 3	-12.907	0.119	0.007	-45.551			
	13229	1:BEBAN MATI	213.298	1.8E 3	11.997	0.355	0.069	19.418			
		2:BEBAN HIDL	83.797	665.633	4.281	0.060	0.025	8.338			
		3:BEBAN GEM	-162.976	2.04E 3	-1.579	-0.485	0.034	-19.022			
		4:KOMBINASI	390.034	3.23E 3	21.245	0.521	0.122	36.643			
		5:KOMB B. MA	92.451	4.34E 3	12.907	-0.119	0.120	4.448			
15477	97	1:BEBAN MATI	-226.525	4.21E 3	-15.969	-1.278	0.070	51.376			
		2:BEBAN HIDL	-89.207	1.64E 3	-6.368	-0.828	0.028	21.291			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 38	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-175.956	-2.56E 3	30.072	-1.693	-0.203	-68.934			
		4:KOMBINASI	-414.561	7.67E 3	-29.352	-2.858	0.130	95.718			
		5:KOMB B. MA	-464.803	2.5E 3	11.785	-3.553	-0.126	-8.229			
	13218	1:BEBAN MATI	226.525	-3.91E 3	15.969	1.278	0.086	-11.544			
		2:BEBAN HIDL	89.207	-1.64E 3	6.368	0.828	0.034	-5.233			
		3:BEBAN GEM	175.956	2.56E 3	-30.072	1.693	-0.092	43.815			
		4:KOMBINASI	414.561	-7.31E 3	29.352	2.858	0.158	-22.225			
		5:KOMB B. MA	464.803	-2.2E 3	-11.785	3.553	0.010	31.322			
15478	12794	1:BEBAN MATI	-217.661	-1.64E 3	-11.112	-0.507	0.041	-36.023			
		2:BEBAN HIDL	-82.528	-748.702	-3.718	-0.061	0.014	-14.984			
		3:BEBAN GEM	-241.894	-2.18E 3	18.344	0.393	-0.118	0.212			
		4:KOMBINASI	-393.239	-3.16E 3	-19.283	-0.706	0.071	-67.202			
		5:KOMB B. MA	-521.166	-4.37E 3	5.918	-0.130	-0.074	-44.791			
	13207	1:BEBAN MATI	217.661	1.94E 3	11.112	0.507	0.068	18.504			
		2:BEBAN HIDL	82.528	748.702	3.718	0.061	0.023	7.642			
		3:BEBAN GEM	241.894	2.18E 3	-18.344	-0.393	-0.062	-21.554			
		4:KOMBINASI	393.239	3.52E 3	19.283	0.706	0.118	34.431			
		5:KOMB B. MA	521.166	4.67E 3	-5.918	0.130	0.016	0.456			
15479	98	1:BEBAN MATI	-356.438	4.07E 3	-11.845	-0.748	0.044	46.067			
		2:BEBAN HIDL	-144.009	1.55E 3	-4.833	-0.548	0.019	18.416			
		3:BEBAN GEM	-1.41E 3	-2.64E 3	-2.612	-1.460	-0.053	-71.076			
		4:KOMBINASI	-658.140	7.37E 3	-21.946	-1.773	0.083	84.746			
		5:KOMB B. MA	-1.92E 3	2.23E 3	-17.488	-2.609	-0.001	-17.513			
	13196	1:BEBAN MATI	356.438	-3.77E 3	11.845	0.748	0.072	-7.653			
		2:BEBAN HIDL	144.009	-1.55E 3	4.833	0.548	0.029	-3.183			
		3:BEBAN GEM	1.41E 3	2.64E 3	2.612	1.460	0.079	45.220			
		4:KOMBINASI	658.140	-7.01E 3	21.946	1.773	0.133	-14.276			
		5:KOMB B. MA	1.92E 3	-1.93E 3	17.488	2.609	0.172	37.918			
15480	12795	1:BEBAN MATI	-162.054	-663.610	0.289	1.703	-0.007	-17.026			
		2:BEBAN HIDL	-50.554	-322.448	0.169	0.907	-0.003	-6.213			
		3:BEBAN GEM	-726.674	-2.23E 3	8.072	-0.168	-0.043	0.195			
		4:KOMBINASI	-275.351	-1.31E 3	0.617	3.496	-0.013	-30.372			
		5:KOMB B. MA	-955.394	-3.2E 3	8.867	2.071	-0.054	-20.549			
	13185	1:BEBAN MATI	162.054	963.938	-0.289	-1.703	0.004	9.046			
		2:BEBAN HIDL	50.554	322.448	-0.169	-0.907	0.001	3.051			
		3:BEBAN GEM	726.674	2.23E 3	-8.072	0.168	-0.036	-22.105			
		4:KOMBINASI	275.351	1.67E 3	-0.617	-3.496	0.007	15.736			
		5:KOMB B. MA	955.394	3.5E 3	-8.867	-2.071	-0.033	-12.335			
15481	99	1:BEBAN MATI	-223.129	2.53E 3	-25.266	-4.652	0.139	34.109			
		2:BEBAN HIDL	-71.927	850.978	-10.907	-2.344	0.060	12.748			
		3:BEBAN GEM	705.717	-2.55E 3	144.986	-0.591	-0.816	-69.616			
		4:KOMBINASI	-382.838	4.4E 3	-47.771	-9.333	0.263	61.328			
		5:KOMB B. MA	474.717	366.639	120.425	-6.678	-0.682	-31.339			
	13174	1:BEBAN MATI	223.129	-2.23E 3	25.266	4.652	0.109	-10.756			
		2:BEBAN HIDL	71.927	-850.978	10.907	2.344	0.047	-4.403			
		3:BEBAN GEM	-705.717	2.55E 3	-144.986	0.591	-0.606	44.629			
		4:KOMBINASI	382.838	-4.04E 3	47.771	9.333	0.206	-19.952			
		5:KOMB B. MA	-474.717	-66.311	-120.425	6.678	-0.499	33.462			



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Job No 1	Sheet No 39	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15482	12796	1:BEBAN MATI	-259.759	-1.18E 3	-8.402	1.071	0.026	-33.338			
		2:BEBAN HIDL	-106.936	-554.442	-3.355	0.373	0.010	-14.917			
		3:BEBAN GEM	170.101	-2.23E 3	45.763	1.517	-0.175	-1.192			
		4:KOMBINASI	-482.808	-2.31E 3	-15.450	1.882	0.048	-63.873			
		5:KOMB B. MA	-145.315	-3.85E 3	37.637	2.888	-0.152	-43.541			
	13142	1:BEBAN MATI	259.759	1.41E 3	8.402	-1.071	0.036	23.816			
		2:BEBAN HIDL	106.936	554.442	3.355	-0.373	0.014	10.839			
		3:BEBAN GEM	-170.101	2.23E 3	-45.763	-1.517	-0.161	-15.174			
		4:KOMBINASI	482.808	2.58E 3	15.450	-1.882	0.065	45.922			
		5:KOMB B. MA	145.315	4.08E 3	-37.637	-2.888	-0.125	14.387			
15483	121	1:BEBAN MATI	-227.843	2.69E 3	22.606	7.343	-0.169	33.407			
		2:BEBAN HIDL	-102.252	964.013	8.347	3.897	-0.063	13.071			
		3:BEBAN GEM	-624.425	-2.99E 3	80.152	-1.735	-0.598	-77.037			
		4:KOMBINASI	-437.014	4.77E 3	40.483	15.046	-0.303	61.003			
		5:KOMB B. MA	-944.840	131.314	111.775	7.859	-0.835	-39.639			
	13269	1:BEBAN MATI	227.843	-2.24E 3	-22.606	-7.343	-0.163	2.886			
		2:BEBAN HIDL	102.252	-964.013	-8.347	-3.897	-0.060	1.110			
		3:BEBAN GEM	624.425	2.99E 3	-80.152	1.735	-0.581	33.053			
		4:KOMBINASI	437.014	-4.23E 3	-40.483	-15.046	-0.292	5.239			
		5:KOMB B. MA	944.840	319.176	-111.775	-7.859	-0.810	38.257			
15484	12797	1:BEBAN MATI	-216.263	-1.05E 3	-0.107	0.063	0.001	-29.265			
		2:BEBAN HIDL	-66.895	-635.141	0.108	0.076	-0.000	-9.359			
		3:BEBAN GEM	-182.175	-2.94E 3	14.687	1.275	-0.103	0.831			
		4:KOMBINASI	-366.548	-2.27E 3	0.045	0.196	0.001	-50.094			
		5:KOMB B. MA	-447.684	-4.52E 3	15.379	1.447	-0.107	-34.009			
	13238	1:BEBAN MATI	216.263	2.4E 3	0.107	-0.063	-0.000	9.010			
		2:BEBAN HIDL	66.895	635.141	-0.108	-0.076	-0.001	1.885			
		3:BEBAN GEM	182.175	2.94E 3	-14.687	-1.275	-0.070	-35.485			
		4:KOMBINASI	366.548	3.89E 3	-0.045	-0.196	-0.002	13.829			
		5:KOMB B. MA	447.684	5.87E 3	-15.379	-1.447	-0.074	-27.118			
15485	75	1:BEBAN MATI	-120.184	5.28E 3	13.137	1.323	-0.078	53.234			
		2:BEBAN HIDL	-42.096	1.32E 3	4.584	0.429	-0.027	15.111			
		3:BEBAN GEM	-113.167	-3.57E 3	30.365	-2.290	-0.191	-78.713			
		4:KOMBINASI	-211.575	8.45E 3	23.098	2.274	-0.137	88.058			
		5:KOMB B. MA	-264.268	2.32E 3	47.770	-0.825	-0.295	-20.349			
	13235	1:BEBAN MATI	120.184	-3.93E 3	-13.137	-1.323	-0.077	1.008			
		2:BEBAN HIDL	42.096	-1.32E 3	-4.584	-0.429	-0.027	0.395			
		3:BEBAN GEM	113.167	3.57E 3	-30.365	2.290	-0.166	36.674			
		4:KOMBINASI	211.575	-6.83E 3	-23.098	-2.274	-0.135	1.841			
		5:KOMB B. MA	264.268	-973.657	-47.770	0.825	-0.267	39.753			
15486	12798	1:BEBAN MATI	-251.879	-1.38E 3	-1.068	-0.749	0.006	-44.798			
		2:BEBAN HIDL	-89.984	-766.238	-0.364	-0.197	0.002	-15.709			
		3:BEBAN GEM	200.927	-2.03E 3	19.290	1.206	-0.146	-0.782			
		4:KOMBINASI	-446.229	-2.88E 3	-1.863	-1.214	0.011	-78.893			
		5:KOMB B. MA	-94.896	-3.97E 3	18.968	0.400	-0.146	-55.044			
	13103	1:BEBAN MATI	251.879	3.06E 3	1.068	0.749	0.009	12.128			
		2:BEBAN HIDL	89.984	766.238	0.364	0.197	0.003	4.438			
		3:BEBAN GEM	-200.927	2.03E 3	-19.290	-1.206	-0.137	-29.105			



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Job No 1	Sheet No 40	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	446.229	4.9E 3	1.863	1.214	0.017	21.654			
		5:KOMB B. MA	94.896	5.66E 3	-18.968	-0.400	-0.133	-15.770			
15487	100	1:BEBAN MATI	-229.629	6.31E 3	9.763	1.383	-0.069	71.276			
		2:BEBAN HIDL	-85.625	1.66E 3	3.008	0.532	-0.021	21.841			
		3:BEBAN GEM	179.063	-2.49E 3	24.006	-2.492	-0.185	-68.066			
		4:KOMBINASI	-412.554	10.2E 3	16.528	2.511	-0.116	120.477			
		5:KOMB B. MA	-92.988	4.69E 3	36.774	-0.914	-0.275	12.911			
	13097	1:BEBAN MATI	229.629	-4.62E 3	-9.763	-1.383	-0.075	9.096			
		2:BEBAN HIDL	85.625	-1.66E 3	-3.008	-0.532	-0.023	2.621			
		3:BEBAN GEM	-179.063	2.49E 3	-24.006	2.492	-0.168	31.390			
		4:KOMBINASI	412.554	-8.2E 3	-16.528	-2.511	-0.127	15.109			
		5:KOMB B. MA	92.988	-3E 3	-36.774	0.914	-0.265	43.628			
15488	12799	1:BEBAN MATI	-234.236	-1.55E 3	-3.213	-0.363	0.022	-45.468			
		2:BEBAN HIDL	-81.622	-844.271	-0.952	-0.113	0.006	-15.709			
		3:BEBAN GEM	714.292	-2.13E 3	17.884	1.219	-0.127	-0.334			
		4:KOMBINASI	-411.679	-3.21E 3	-5.378	-0.617	0.037	-79.696			
		5:KOMB B. MA	466.797	-4.29E 3	14.994	0.849	-0.108	-55.244			
	13091	1:BEBAN MATI	234.236	3.24E 3	3.213	0.363	0.025	10.287			
		2:BEBAN HIDL	81.622	844.271	0.952	0.113	0.008	3.290			
		3:BEBAN GEM	-714.292	2.13E 3	-17.884	-1.219	-0.136	-31.031			
		4:KOMBINASI	411.679	5.23E 3	5.378	0.617	0.042	17.608			
		5:KOMB B. MA	-466.797	5.98E 3	-14.994	-0.849	-0.113	-20.321			
15489	101	1:BEBAN MATI	-351.681	6.23E 3	8.453	0.991	-0.055	67.593			
		2:BEBAN HIDL	-128.994	1.58E 3	2.840	0.221	-0.018	19.168			
		3:BEBAN GEM	1.16E 3	-2.57E 3	9.360	-2.669	-0.085	-70.688			
		4:KOMBINASI	-628.408	10E 3	14.689	1.544	-0.095	111.782			
		5:KOMB B. MA	787.675	4.48E 3	19.986	-1.678	-0.155	4.872			
	13085	1:BEBAN MATI	351.681	-4.54E 3	-8.453	-0.991	-0.069	11.675			
		2:BEBAN HIDL	128.994	-1.58E 3	-2.840	-0.221	-0.023	4.073			
		3:BEBAN GEM	-1.16E 3	2.57E 3	-9.360	2.669	-0.053	32.871			
		4:KOMBINASI	628.408	-7.98E 3	-14.689	-1.544	-0.121	20.527			
		5:KOMB B. MA	-787.675	-2.79E 3	-19.986	1.678	-0.139	48.633			
15490	12800	1:BEBAN MATI	-156.076	-981.917	-3.874	-1.404	0.027	-32.313			
		2:BEBAN HIDL	-45.482	-502.164	-1.228	-1.101	0.008	-7.932			
		3:BEBAN GEM	261.747	-2.13E 3	16.116	1.849	-0.108	1.857			
		4:KOMBINASI	-260.063	-1.98E 3	-6.614	-3.446	0.045	-51.467			
		5:KOMB B. MA	91.468	-3.52E 3	12.311	-0.123	-0.082	-35.123			
	13079	1:BEBAN MATI	156.076	2.67E 3	3.874	1.404	0.030	5.454			
		2:BEBAN HIDL	45.482	502.164	1.228	1.101	0.010	0.546			
		3:BEBAN GEM	-261.747	2.13E 3	-16.116	-1.849	-0.129	-33.184			
		4:KOMBINASI	260.063	4.01E 3	6.614	3.446	0.052	7.418			
		5:KOMB B. MA	-91.468	5.21E 3	-12.311	0.123	-0.099	-29.062			
15491	102	1:BEBAN MATI	-378.495	4.61E 3	20.731	4.627	-0.161	46.475			
		2:BEBAN HIDL	-126.946	765.986	6.910	2.600	-0.055	9.261			
		3:BEBAN GEM	-2.43E 3	-2.39E 3	60.843	-2.560	-0.606	-64.266			
		4:KOMBINASI	-657.307	6.76E 3	35.933	9.712	-0.281	70.588			
		5:KOMB B. MA	-3.01E 3	2.56E 3	88.761	3.499	-0.831	-15.448			
	13073	1:BEBAN MATI	378.495	-2.93E 3	-20.731	-4.627	-0.144	8.994			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 41	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	126.946	-765.986	-6.910	-2.600	-0.047	2.007			
		3:BEBAN GEM	2.43E 3	2.39E 3	-60.843	2.560	-0.289	29.071			
		4:KOMBINASI	657.307	-4.74E 3	-35.933	-9.712	-0.248	14.003			
		5:KOMB B. MA	3.01E 3	-874.180	-88.761	-3.499	-0.475	40.722			
15492	135	1:BEBAN MATI	-80.854	2.25E 3	-3.580	0.687	0.013	12.303			
		2:BEBAN HIDL	-57.007	471.257	-3.018	0.368	0.013	3.268			
		3:BEBAN GEM	-1.29E 3	-6.39E 3	193.972	-1.160	-1.041	-87.148			
		4:KOMBINASI	-188.237	3.46E 3	-9.125	1.413	0.037	19.993			
		5:KOMB B. MA	-1.47E 3	-4.17E 3	198.279	-0.310	-1.072	-77.241			
	12940	1:BEBAN MATI	80.854	-1.13E 3	3.580	-0.687	0.022	4.292			
		2:BEBAN HIDL	57.007	-471.257	3.018	-0.368	0.016	1.353			
		3:BEBAN GEM	1.29E 3	6.39E 3	-193.972	1.160	-0.861	24.455			
		4:KOMBINASI	188.237	-2.11E 3	9.125	-1.413	0.052	7.316			
		5:KOMB B. MA	1.47E 3	5.3E 3	-198.279	0.310	-0.873	30.782			
15493	122	1:BEBAN MATI	-227.702	4.83E 3	-0.432	-0.140	0.002	56.383			
		2:BEBAN HIDL	-132.481	2.1E 3	-0.164	-0.062	0.001	25.440			
		3:BEBAN GEM	873.241	-3.06E 3	15.926	-1.774	-0.123	-74.779			
		4:KOMBINASI	-485.212	9.17E 3	-0.781	-0.267	0.004	108.364			
		5:KOMB B. MA	609.713	2.88E 3	16.192	-2.039	-0.126	-6.871			
	13281	1:BEBAN MATI	227.702	-4.38E 3	0.432	0.140	0.004	11.407			
		2:BEBAN HIDL	132.481	-2.1E 3	0.164	0.062	0.002	5.495			
		3:BEBAN GEM	-873.241	3.06E 3	-15.926	1.774	-0.111	29.736			
		4:KOMBINASI	485.212	-8.62E 3	0.781	0.267	0.007	22.480			
		5:KOMB B. MA	-609.713	-2.43E 3	-16.192	2.039	-0.112	45.926			
15494	12801	1:BEBAN MATI	-142.373	-1.51E 3	0.585	0.069	-0.003	-31.857			
		2:BEBAN HIDL	-36.512	-831.517	0.296	0.025	-0.002	-9.685			
		3:BEBAN GEM	1.39E 3	-2.85E 3	21.504	1.265	-0.137	-0.331			
		4:KOMBINASI	-229.267	-3.14E 3	1.177	0.124	-0.007	-53.724			
		5:KOMB B. MA	1.29E 3	-5E 3	23.343	1.413	-0.148	-38.016			
	13249	1:BEBAN MATI	142.373	2.86E 3	-0.585	-0.069	-0.003	6.194			
		2:BEBAN HIDL	36.512	831.517	-0.296	-0.025	-0.002	-0.101			
		3:BEBAN GEM	-1.39E 3	2.85E 3	-21.504	-1.265	-0.116	-33.208			
		4:KOMBINASI	229.267	4.76E 3	-1.177	-0.124	-0.007	7.272			
		5:KOMB B. MA	-1.29E 3	6.35E 3	-23.343	-1.413	-0.126	-28.734			
15495	77	1:BEBAN MATI	-81.247	5.74E 3	-0.881	-0.212	0.005	59.124			
		2:BEBAN HIDL	-23.316	1.44E 3	-0.260	-0.084	0.001	16.821			
		3:BEBAN GEM	1.46E 3	-3.63E 3	36.435	-2.251	-0.233	-78.072			
		4:KOMBINASI	-134.803	9.19E 3	-1.473	-0.388	0.008	97.863			
		5:KOMB B. MA	1.44E 3	2.79E 3	37.220	-2.625	-0.239	-12.759			
	13243	1:BEBAN MATI	81.247	-4.39E 3	0.881	0.212	0.005	0.444			
		2:BEBAN HIDL	23.316	-1.44E 3	0.260	0.084	0.002	0.129			
		3:BEBAN GEM	-1.46E 3	3.63E 3	-36.435	2.251	-0.196	35.340			
		4:KOMBINASI	134.803	-7.57E 3	1.473	0.388	0.009	0.739			
		5:KOMB B. MA	-1.44E 3	-1.44E 3	-37.220	2.625	-0.199	37.628			
15496	12802	1:BEBAN MATI	-252.987	-1.77E 3	0.081	0.096	-0.000	-51.928			
		2:BEBAN HIDL	-86.696	-906.070	0.067	0.027	-0.000	-18.400			
		3:BEBAN GEM	1.85E 3	-1.95E 3	30.589	1.001	-0.237	-0.523			
		4:KOMBINASI	-442.298	-3.58E 3	0.203	0.158	-0.001	-91.754			



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Job No 1	Sheet No 42	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	1.63E 3	-4.36E 3	32.240	1.163	-0.249	-63.518			
	13058	1:BEBAN MATI	252.987	3.46E 3	-0.081	-0.096	-0.001	13.456			
		2:BEBAN HIDL	86.696	906.070	-0.067	-0.027	-0.001	5.072			
		3:BEBAN GEM	-1.85E 3	1.95E 3	-30.589	-1.001	-0.213	-28.131			
		4:KOMBINASI	442.298	5.6E 3	-0.203	-0.158	-0.002	24.262			
		5:KOMB B. MA	-1.63E 3	6.05E 3	-32.240	-1.163	-0.225	-13.038			
15497	103	1:BEBAN MATI	-223.668	6.99E 3	-0.648	-0.155	0.004	80.075			
		2:BEBAN HIDL	-79.819	1.9E 3	-0.169	-0.053	0.001	24.929			
		3:BEBAN GEM	1.06E 3	-2.68E 3	-8.496	-2.059	0.068	-69.022			
		4:KOMBINASI	-396.112	11.4E 3	-1.048	-0.271	0.007	135.976			
		5:KOMB B. MA	841.939	5.32E 3	-9.670	-2.349	0.077	22.558			
	13051	1:BEBAN MATI	223.668	-5.3E 3	0.648	0.155	0.005	10.371			
		2:BEBAN HIDL	79.819	-1.9E 3	0.169	0.053	0.001	3.058			
		3:BEBAN GEM	-1.06E 3	2.68E 3	8.496	2.059	0.057	29.663			
		4:KOMBINASI	396.112	-9.41E 3	1.048	0.271	0.009	17.338			
		5:KOMB B. MA	-841.939	-3.64E 3	9.670	2.349	0.066	43.352			
15498	12803	1:BEBAN MATI	-233.567	-1.9E 3	-0.120	0.122	0.001	-51.734			
		2:BEBAN HIDL	-72.308	-944.884	0.010	0.046	0.000	-17.444			
		3:BEBAN GEM	437.923	-2.01E 3	-60.877	1.009	0.460	-0.031			
		4:KOMBINASI	-395.974	-3.79E 3	-0.127	0.221	0.002	-89.992			
		5:KOMB B. MA	182.866	-4.58E 3	-64.035	1.210	0.485	-62.233			
	13044	1:BEBAN MATI	233.567	3.59E 3	0.120	-0.122	0.000	11.348			
		2:BEBAN HIDL	72.308	944.884	-0.010	-0.046	-0.000	3.545			
		3:BEBAN GEM	-437.923	2.01E 3	60.877	-1.009	0.435	-29.513			
		4:KOMBINASI	395.974	5.82E 3	0.127	-0.221	-0.000	19.290			
		5:KOMB B. MA	-182.866	6.27E 3	64.035	-1.210	0.457	-17.513			
15499	104	1:BEBAN MATI	-239.754	6.97E 3	-1.285	-0.198	0.009	79.902			
		2:BEBAN HIDL	-70.329	1.85E 3	-0.371	-0.063	0.002	24.274			
		3:BEBAN GEM	-1.51E 3	-2.72E 3	85.881	-2.045	-0.661	-69.896			
		4:KOMBINASI	-400.232	11.3E 3	-2.136	-0.339	0.014	134.720			
		5:KOMB B. MA	-1.86E 3	5.23E 3	88.668	-2.384	-0.684	21.075			
	13037	1:BEBAN MATI	239.754	-5.29E 3	1.285	0.198	0.010	10.281			
		2:BEBAN HIDL	70.329	-1.85E 3	0.371	0.063	0.003	2.896			
		3:BEBAN GEM	1.51E 3	2.72E 3	-85.881	2.045	-0.602	29.871			
		4:KOMBINASI	400.232	-9.3E 3	2.136	0.339	0.017	16.972			
		5:KOMB B. MA	1.86E 3	-3.54E 3	-88.668	2.384	-0.620	43.384			
15500	12804	1:BEBAN MATI	-235.970	-1.74E 3	-0.924	0.065	0.008	-49.915			
		2:BEBAN HIDL	-77.874	-976.479	-0.149	0.041	0.002	-18.199			
		3:BEBAN GEM	-1.17E 3	-1.95E 3	54.992	1.007	-0.395	0.678			
		4:KOMBINASI	-407.762	-3.65E 3	-1.346	0.143	0.012	-89.016			
		5:KOMB B. MA	-1.51E 3	-4.37E 3	56.729	1.147	-0.406	-60.122			
	13030	1:BEBAN MATI	235.970	3.42E 3	0.924	-0.065	0.005	11.964			
		2:BEBAN HIDL	77.874	976.479	0.149	-0.041	0.001	3.835			
		3:BEBAN GEM	1.17E 3	1.95E 3	-54.992	-1.007	-0.414	-29.399			
		4:KOMBINASI	407.762	5.67E 3	1.346	-0.143	0.007	20.493			
		5:KOMB B. MA	1.51E 3	6.06E 3	-56.729	-1.147	-0.429	-16.604			
15501	105	1:BEBAN MATI	-241.420	6.88E 3	-0.978	-0.545	0.008	82.184			
		2:BEBAN HIDL	-90.564	1.88E 3	0.217	-0.355	-0.001	24.088			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

43

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-804.535	-2.67E 3	33.237	-2.023	-0.250	-67.544			
		4:KOMBINASI	-434.606	11.3E 3	-0.826	-1.221	0.007	137.162			
		5:KOMB B. MA	-1.14E 3	5.2E 3	34.051	-2.882	-0.255	25.715			
	13023	1:BEBAN MATI	241.420	-5.19E 3	0.978	0.545	0.007	6.543			
		2:BEBAN HIDL	90.564	-1.88E 3	-0.217	0.355	-0.002	3.508			
		3:BEBAN GEM	804.535	2.67E 3	-33.237	2.023	-0.239	28.243			
		4:KOMBINASI	434.606	-9.23E 3	0.826	1.221	0.005	13.466			
		5:KOMB B. MA	1.14E 3	-3.51E 3	-34.051	2.882	-0.246	38.303			
15502	12805	1:BEBAN MATI	-414.497	-2.73E 3	-1.516	0.488	0.016	-64.543			
		2:BEBAN HIDL	-96.368	-828.073	-0.615	-0.791	0.006	-15.802			
		3:BEBAN GEM	-216.053	-2.38E 3	-8.857	0.949	0.163	-4.917			
		4:KOMBINASI	-651.585	-4.6E 3	-2.803	-0.680	0.029	-102.734			
		5:KOMB B. MA	-699.173	-5.72E 3	-11.184	1.010	0.191	-79.187			
	12912	1:BEBAN MATI	414.497	4.42E 3	1.516	-0.488	0.006	12.010			
		2:BEBAN HIDL	96.368	828.073	0.615	0.791	0.003	3.621			
		3:BEBAN GEM	216.053	2.38E 3	8.857	-0.949	-0.033	-30.050			
		4:KOMBINASI	651.585	6.62E 3	2.803	0.680	0.012	20.204			
		5:KOMB B. MA	699.173	7.41E 3	11.184	-1.010	-0.027	-17.370			
15503	123	1:BEBAN MATI	-227.702	4.83E 3	0.432	0.140	-0.002	56.383			
		2:BEBAN HIDL	-132.481	2.1E 3	0.164	0.062	-0.001	25.440			
		3:BEBAN GEM	917.765	-3.06E 3	-17.806	-1.781	0.142	-74.623			
		4:KOMBINASI	-485.212	9.17E 3	0.781	0.267	-0.004	108.364			
		5:KOMB B. MA	656.463	2.88E 3	-18.166	-1.693	0.147	-6.708			
	13295	1:BEBAN MATI	227.702	-4.38E 3	-0.432	-0.140	-0.004	11.407			
		2:BEBAN HIDL	132.481	-2.1E 3	-0.164	-0.062	-0.002	5.495			
		3:BEBAN GEM	-917.765	3.06E 3	17.806	1.781	0.119	29.626			
		4:KOMBINASI	485.212	-8.62E 3	-0.781	-0.267	-0.007	22.480			
		5:KOMB B. MA	-656.463	-2.43E 3	18.166	1.693	0.120	45.811			
15504	12806	1:BEBAN MATI	-142.373	-1.51E 3	-0.585	-0.069	0.003	-31.857			
		2:BEBAN HIDL	-36.512	-831.517	-0.296	-0.025	0.002	-9.685			
		3:BEBAN GEM	1.43E 3	-2.85E 3	-34.355	1.254	0.213	-0.512			
		4:KOMBINASI	-229.267	-3.14E 3	-1.177	-0.124	0.007	-53.724			
		5:KOMB B. MA	1.33E 3	-5E 3	-36.836	1.232	0.228	-38.205			
	13261	1:BEBAN MATI	142.373	2.86E 3	0.585	0.069	0.003	6.194			
		2:BEBAN HIDL	36.512	831.517	0.296	0.025	0.002	-0.101			
		3:BEBAN GEM	-1.43E 3	2.85E 3	34.355	-1.254	0.191	-33.007			
		4:KOMBINASI	229.267	4.76E 3	1.177	0.124	0.007	7.272			
		5:KOMB B. MA	-1.33E 3	6.35E 3	36.836	-1.232	0.205	-28.523			
15505	79	1:BEBAN MATI	-81.248	5.74E 3	0.881	0.212	-0.005	59.124			
		2:BEBAN HIDL	-23.316	1.44E 3	0.260	0.084	-0.001	16.821			
		3:BEBAN GEM	1.5E 3	-3.6E 3	-46.237	-2.257	0.295	-77.569			
		4:KOMBINASI	-134.803	9.19E 3	1.473	0.388	-0.008	97.863			
		5:KOMB B. MA	1.48E 3	2.82E 3	-47.512	-2.108	0.303	-12.231			
	13255	1:BEBAN MATI	81.248	-4.39E 3	-0.881	-0.212	-0.005	0.444			
		2:BEBAN HIDL	23.316	-1.44E 3	-0.260	-0.084	-0.002	0.129			
		3:BEBAN GEM	-1.5E 3	3.6E 3	46.237	2.257	0.250	35.229			
		4:KOMBINASI	134.803	-7.57E 3	-1.473	-0.388	-0.009	0.739			
		5:KOMB B. MA	-1.48E 3	-1.47E 3	47.512	2.108	0.256	37.511			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 44	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15506	12807	1:BEBAN MATI	-252.987	-1.77E 3	-0.081	-0.096	0.000	-51.928			
		2:BEBAN HIDL	-86.696	-906.068	-0.067	-0.027	0.000	-18.400			
		3:BEBAN GEM	1.92E 3	-1.95E 3	-61.534	1.009	0.467	-0.697			
		4:KOMBINASI	-442.298	-3.58E 3	-0.203	-0.158	0.001	-91.754			
		5:KOMB B. MA	1.71E 3	-4.36E 3	-64.731	0.947	0.490	-63.700			
13061	13061	1:BEBAN MATI	252.987	3.46E 3	0.081	0.096	0.001	13.456			
		2:BEBAN HIDL	86.696	906.068	0.067	0.027	0.001	5.072			
		3:BEBAN GEM	-1.92E 3	1.95E 3	61.534	-1.009	0.438	-28.011			
		4:KOMBINASI	442.298	5.6E 3	0.203	0.158	0.002	24.262			
		5:KOMB B. MA	-1.71E 3	6.05E 3	64.731	-0.947	0.462	-12.912			
15507	106	1:BEBAN MATI	-223.668	6.99E 3	0.648	0.155	-0.004	80.075			
		2:BEBAN HIDL	-79.819	1.9E 3	0.169	0.053	-0.001	24.929			
		3:BEBAN GEM	549.176	-2.65E 3	-14.799	-2.066	0.062	-68.579			
		4:KOMBINASI	-396.112	11.4E 3	1.048	0.271	-0.007	135.976			
		5:KOMB B. MA	305.075	5.35E 3	-14.789	-1.982	0.061	23.024			
	13054	13054	1:BEBAN MATI	223.668	-5.3E 3	-0.648	-0.155	-0.005	10.371		
			2:BEBAN HIDL	79.819	-1.9E 3	-0.169	-0.053	-0.001	3.058		
			3:BEBAN GEM	-549.176	2.65E 3	14.799	2.066	0.155	29.588		
			4:KOMBINASI	396.112	-9.41E 3	-1.048	-0.271	-0.009	17.338		
			5:KOMB B. MA	-305.075	-3.66E 3	14.789	1.982	0.157	43.274		
15508	12808	1:BEBAN MATI	-233.567	-1.9E 3	0.120	-0.122	-0.001	-51.734			
		2:BEBAN HIDL	-72.308	-944.883	-0.010	-0.046	-0.000	-17.444			
		3:BEBAN GEM	-562.457	-2.01E 3	54.313	0.998	-0.324	-0.164			
		4:KOMBINASI	-395.974	-3.79E 3	0.127	-0.221	-0.002	-89.992			
		5:KOMB B. MA	-867.532	-4.58E 3	57.143	0.898	-0.341	-62.372			
	13047	13047	1:BEBAN MATI	233.567	3.59E 3	-0.120	0.122	-0.000	11.348		
			2:BEBAN HIDL	72.308	944.883	0.010	0.046	0.000	3.545		
			3:BEBAN GEM	562.457	2.01E 3	-54.313	-0.998	-0.475	-29.385		
			4:KOMBINASI	395.974	5.82E 3	-0.127	0.221	0.000	19.290		
			5:KOMB B. MA	867.532	6.27E 3	-57.143	-0.898	-0.499	-17.379		
15509	107	1:BEBAN MATI	-239.754	6.97E 3	1.285	0.198	-0.009	79.902			
		2:BEBAN HIDL	-70.329	1.85E 3	0.371	0.063	-0.002	24.274			
		3:BEBAN GEM	-1.45E 3	-2.7E 3	-26.377	-2.021	0.212	-69.380			
		4:KOMBINASI	-400.232	11.3E 3	2.136	0.339	-0.014	134.720			
		5:KOMB B. MA	-1.8E 3	5.25E 3	-26.188	-1.886	0.213	21.617			
	13040	13040	1:BEBAN MATI	239.754	-5.29E 3	-1.285	-0.198	-0.010	10.281		
			2:BEBAN HIDL	70.329	-1.85E 3	-0.371	-0.063	-0.003	2.896		
			3:BEBAN GEM	1.45E 3	2.7E 3	26.377	2.021	0.176	29.730		
			4:KOMBINASI	400.232	-9.3E 3	-2.136	-0.339	-0.017	16.972		
			5:KOMB B. MA	1.8E 3	-3.56E 3	26.188	1.886	0.172	43.236		
15510	12809	1:BEBAN MATI	-235.970	-1.74E 3	0.924	-0.065	-0.008	-49.915			
		2:BEBAN HIDL	-77.874	-976.478	0.149	-0.041	-0.002	-18.199			
		3:BEBAN GEM	-1.14E 3	-1.97E 3	-30.830	0.970	0.220	0.353			
		4:KOMBINASI	-407.762	-3.65E 3	1.346	-0.143	-0.012	-89.015			
		5:KOMB B. MA	-1.48E 3	-4.39E 3	-31.358	0.929	0.221	-60.464			
	13033	13033	1:BEBAN MATI	235.970	3.42E 3	-0.924	0.065	-0.005	11.964		
			2:BEBAN HIDL	77.874	976.478	-0.149	0.041	-0.001	3.835		
			3:BEBAN GEM	1.14E 3	1.97E 3	30.830	-0.970	0.234	-29.270		



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 45	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	407.762	5.67E 3	-1.346	0.143	-0.007	20.493			
		5:KOMB B. MA	1.48E 3	6.07E 3	31.358	-0.929	0.240	-16.469			
15511	108	1:BEBAN MATI	-241.420	6.88E 3	0.978	0.545	-0.008	82.184			
		2:BEBAN HIDL	-90.564	1.88E 3	-0.217	0.355	0.001	24.088			
		3:BEBAN GEM	-958.929	-2.66E 3	-10.990	-1.861	0.078	-67.716			
		4:KOMBINASI	-434.606	11.3E 3	0.826	1.221	-0.007	137.161			
		5:KOMB B. MA	-1.3E 3	5.21E 3	-10.692	-1.196	0.075	25.535			
	13026	1:BEBAN MATI	241.420	-5.19E 3	-0.978	-0.545	-0.007	6.544			
		2:BEBAN HIDL	90.564	-1.88E 3	0.217	-0.355	0.002	3.508			
		3:BEBAN GEM	958.929	2.66E 3	10.990	1.861	0.084	28.598			
		4:KOMBINASI	434.606	-9.23E 3	-0.826	-1.221	-0.005	13.466			
		5:KOMB B. MA	1.3E 3	-3.52E 3	10.692	1.196	0.082	38.677			
15512	12810	1:BEBAN MATI	-414.497	-2.73E 3	1.516	-0.488	-0.016	-64.543			
		2:BEBAN HIDL	-96.368	-828.073	0.615	0.791	-0.006	-15.802			
		3:BEBAN GEM	-610.641	-2.2E 3	13.893	1.397	-0.198	-1.950			
		4:KOMBINASI	-651.585	-4.6E 3	2.803	0.680	-0.029	-102.734			
		5:KOMB B. MA	-1.11E 3	-5.53E 3	16.473	1.454	-0.228	-76.072			
	12915	1:BEBAN MATI	414.497	4.42E 3	-1.516	0.488	-0.006	12.010			
		2:BEBAN HIDL	96.368	828.073	-0.615	-0.791	-0.003	3.621			
		3:BEBAN GEM	610.641	2.2E 3	-13.893	-1.397	-0.006	-30.379			
		4:KOMBINASI	651.585	6.62E 3	-2.803	-0.680	-0.012	20.204			
		5:KOMB B. MA	1.11E 3	7.22E 3	-16.473	-1.454	-0.014	-17.716			
15513	124	1:BEBAN MATI	-227.843	2.69E 3	-22.606	-7.343	0.169	33.407			
		2:BEBAN HIDL	-102.252	964.013	-8.347	-3.897	0.063	13.071			
		3:BEBAN GEM	-1.28E 3	-2.92E 3	-97.446	0.122	0.750	-75.494			
		4:KOMBINASI	-437.015	4.77E 3	-40.483	-15.046	0.303	61.003			
		5:KOMB B. MA	-1.64E 3	206.760	-129.933	-9.553	0.995	-38.019			
	13312	1:BEBAN MATI	227.843	-2.24E 3	22.606	7.343	0.163	2.886			
		2:BEBAN HIDL	102.252	-964.013	8.347	3.897	0.060	1.110			
		3:BEBAN GEM	1.28E 3	2.92E 3	97.446	-0.122	0.683	32.567			
		4:KOMBINASI	437.015	-4.23E 3	40.483	15.046	0.292	5.239			
		5:KOMB B. MA	1.64E 3	243.731	129.933	9.553	0.917	37.747			
15514	12811	1:BEBAN MATI	-216.263	-1.05E 3	0.107	-0.063	-0.001	-29.265			
		2:BEBAN HIDL	-66.895	-635.141	-0.108	-0.076	0.000	-9.359			
		3:BEBAN GEM	-529.342	-2.94E 3	-25.125	0.974	0.163	1.505			
		4:KOMBINASI	-366.548	-2.27E 3	-0.045	-0.196	-0.001	-50.094			
		5:KOMB B. MA	-812.209	-4.51E 3	-26.339	0.915	0.170	-33.300			
	13642	1:BEBAN MATI	216.263	2.4E 3	-0.107	0.063	0.000	9.010			
		2:BEBAN HIDL	66.895	635.141	0.108	0.076	0.001	1.885			
		3:BEBAN GEM	529.342	2.94E 3	25.125	-0.974	0.132	-36.085			
		4:KOMBINASI	366.548	3.89E 3	0.045	0.196	0.002	13.829			
		5:KOMB B. MA	812.209	5.86E 3	26.339	-0.915	0.140	-27.747			
15515	81	1:BEBAN MATI	-120.184	5.28E 3	-13.137	-1.323	0.078	53.234			
		2:BEBAN HIDL	-42.096	1.32E 3	-4.584	-0.429	0.027	15.111			
		3:BEBAN GEM	-383.605	-3.67E 3	-36.251	-2.285	0.226	-79.273			
		4:KOMBINASI	-211.575	8.45E 3	-23.098	-2.274	0.137	88.058			
		5:KOMB B. MA	-548.227	2.22E 3	-53.951	-3.980	0.331	-20.936			
	13639	1:BEBAN MATI	120.184	-3.93E 3	13.137	1.323	0.077	1.008			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 46	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	42.096	-1.32E 3	4.584	0.429	0.027	0.395			
		3:BEBAN GEM	383.605	3.67E 3	36.251	2.285	0.201	36.062			
		4:KOMBINASI	211.575	-6.83E 3	23.098	2.274	0.135	1.841			
		5:KOMB B. MA	548.227	-869.087	53.951	3.980	0.304	39.109			
15516	12812	1:BEBAN MATI	-251.879	-1.38E 3	1.068	0.749	-0.006	-44.798			
		2:BEBAN HIDL	-89.984	-766.237	0.364	0.197	-0.002	-15.709			
		3:BEBAN GEM	-132.116	-2.02E 3	-26.216	0.436	0.197	-0.495			
		4:KOMBINASI	-446.229	-2.88E 3	1.863	1.214	-0.011	-78.893			
		5:KOMB B. MA	-444.590	-3.95E 3	-26.240	1.325	0.199	-54.743			
	13507	1:BEBAN MATI	251.879	3.06E 3	-1.068	-0.749	-0.009	12.128			
		2:BEBAN HIDL	89.984	766.237	-0.364	-0.197	-0.003	4.438			
		3:BEBAN GEM	132.116	2.02E 3	26.216	-0.436	0.189	-29.149			
		4:KOMBINASI	446.229	4.9E 3	-1.863	-1.214	-0.017	21.654			
		5:KOMB B. MA	444.590	5.64E 3	26.240	-1.325	0.187	-15.816			
15517	109	1:BEBAN MATI	-229.629	6.31E 3	-9.763	-1.383	0.069	71.276			
		2:BEBAN HIDL	-85.625	1.66E 3	-3.008	-0.532	0.021	21.841			
		3:BEBAN GEM	-319.949	-2.57E 3	-22.622	-1.627	0.186	-68.434			
		4:KOMBINASI	-412.554	10.2E 3	-16.528	-2.511	0.116	120.477			
		5:KOMB B. MA	-616.950	4.61E 3	-35.321	-3.411	0.277	12.525			
	13501	1:BEBAN MATI	229.629	-4.62E 3	9.763	1.383	0.075	9.096			
		2:BEBAN HIDL	85.625	-1.66E 3	3.008	0.532	0.023	2.621			
		3:BEBAN GEM	319.949	2.57E 3	22.622	1.627	0.147	30.662			
		4:KOMBINASI	412.554	-8.2E 3	16.528	2.511	0.127	15.109			
		5:KOMB B. MA	616.950	-2.92E 3	35.321	3.411	0.243	42.864			
15518	12813	1:BEBAN MATI	-234.236	-1.55E 3	3.213	0.363	-0.022	-45.468			
		2:BEBAN HIDL	-81.622	-844.270	0.952	0.113	-0.006	-15.709			
		3:BEBAN GEM	85.537	-2.11E 3	-15.803	0.388	0.123	0.056			
		4:KOMBINASI	-411.679	-3.21E 3	5.378	0.617	-0.037	-79.696			
		5:KOMB B. MA	-193.396	-4.27E 3	-12.809	0.839	0.104	-54.835			
	13495	1:BEBAN MATI	234.236	3.24E 3	-3.213	-0.363	-0.025	10.287			
		2:BEBAN HIDL	81.622	844.270	-0.952	-0.113	-0.008	3.290			
		3:BEBAN GEM	-85.537	2.11E 3	15.803	-0.388	0.109	-31.062			
		4:KOMBINASI	411.679	5.23E 3	-5.378	-0.617	-0.042	17.608			
		5:KOMB B. MA	193.396	5.96E 3	12.809	-0.839	0.085	-20.354			
15519	110	1:BEBAN MATI	-351.681	6.23E 3	-8.453	-0.991	0.055	67.593			
		2:BEBAN HIDL	-128.994	1.58E 3	-2.840	-0.221	0.018	19.168			
		3:BEBAN GEM	360.592	-2.62E 3	3.352	-1.484	-0.041	-70.359			
		4:KOMBINASI	-628.408	10E 3	-14.689	-1.544	0.095	111.782			
		5:KOMB B. MA	-50.457	4.43E 3	-6.638	-2.683	0.023	5.217			
	13489	1:BEBAN MATI	351.681	-4.54E 3	8.453	0.991	0.069	11.675			
		2:BEBAN HIDL	128.994	-1.58E 3	2.840	0.221	0.023	4.073			
		3:BEBAN GEM	-360.592	2.62E 3	-3.352	1.484	-0.009	31.798			
		4:KOMBINASI	628.408	-7.98E 3	14.689	1.544	0.121	20.527			
		5:KOMB B. MA	50.457	-2.74E 3	6.638	2.683	0.074	47.506			
15520	12814	1:BEBAN MATI	-156.077	-981.916	3.874	1.404	-0.027	-32.313			
		2:BEBAN HIDL	-45.482	-502.163	1.228	1.101	-0.008	-7.932			
		3:BEBAN GEM	-273.709	-2.08E 3	-15.192	-0.102	0.113	1.388			
		4:KOMBINASI	-260.063	-1.98E 3	6.614	3.446	-0.045	-51.467			



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Job No 1	Sheet No 47	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-470.761	-3.47E 3	-11.341	1.957	0.087	-35.615			
	13483	1:BEBAN MATI	156.077	2.67E 3	-3.874	-1.404	-0.030	5.454			
		2:BEBAN HIDL	45.482	502.163	-1.228	-1.101	-0.010	0.546			
		3:BEBAN GEM	273.709	2.08E 3	15.192	0.102	0.111	-32.054			
		4:KOMBINASI	260.063	4.01E 3	-6.614	-3.446	-0.052	7.418			
		5:KOMB B. MA	470.761	5.16E 3	11.341	-1.957	0.080	-27.876			
15521	111	1:BEBAN MATI	-378.494	4.61E 3	-20.731	-4.627	0.161	46.475			
		2:BEBAN HIDL	-126.946	765.985	-6.910	-2.600	0.055	9.261			
		3:BEBAN GEM	-1.76E 3	-2.35E 3	-12.603	-0.841	0.214	-63.087			
		4:KOMBINASI	-657.307	6.76E 3	-35.933	-9.712	0.281	70.588			
		5:KOMB B. MA	-2.3E 3	2.6E 3	-38.110	-7.069	0.419	-14.210			
	13477	1:BEBAN MATI	378.494	-2.93E 3	20.731	4.627	0.144	8.994			
		2:BEBAN HIDL	126.946	-765.985	6.910	2.600	0.047	2.007			
		3:BEBAN GEM	1.76E 3	2.35E 3	12.603	0.841	-0.029	28.474			
		4:KOMBINASI	657.307	-4.74E 3	35.933	9.712	0.248	14.003			
		5:KOMB B. MA	2.3E 3	-915.791	38.110	7.069	0.142	40.096			
15522	138	1:BEBAN MATI	-80.854	2.25E 3	3.580	-0.687	-0.013	12.303			
		2:BEBAN HIDL	-57.007	471.257	3.018	-0.368	-0.013	3.268			
		3:BEBAN GEM	-939.729	-6.37E 3	-199.419	-3.793	1.039	-87.598			
		4:KOMBINASI	-188.237	3.46E 3	9.125	-1.413	-0.037	19.993			
		5:KOMB B. MA	-1.1E 3	-4.16E 3	-203.999	-4.890	1.069	-77.714			
	13386	1:BEBAN MATI	80.854	-1.13E 3	-3.580	0.687	-0.022	4.292			
		2:BEBAN HIDL	57.007	-471.257	-3.018	0.368	-0.016	1.353			
		3:BEBAN GEM	939.729	6.37E 3	199.419	3.793	0.917	25.083			
		4:KOMBINASI	188.237	-2.11E 3	-9.125	1.413	-0.052	7.316			
		5:KOMB B. MA	1.1E 3	5.28E 3	203.999	4.890	0.931	31.441			
15523	12815	1:BEBAN MATI	-179.869	-1.01E 3	2.163	-0.299	-0.012	-24.557			
		2:BEBAN HIDL	-75.654	-499.660	0.742	-0.313	-0.004	-10.081			
		3:BEBAN GEM	404.155	-3.61E 3	-9.548	1.421	0.060	6.239			
		4:KOMBINASI	-336.889	-2.01E 3	3.782	-0.860	-0.021	-45.598			
		5:KOMB B. MA	199.101	-5.1E 3	-7.418	1.005	0.048	-24.055			
	13571	1:BEBAN MATI	179.869	1.37E 3	-2.163	0.299	-0.013	10.591			
		2:BEBAN HIDL	75.654	499.660	-0.742	0.313	-0.004	4.201			
		3:BEBAN GEM	-404.155	3.61E 3	9.548	-1.421	0.053	-48.757			
		4:KOMBINASI	336.889	2.44E 3	-3.782	0.860	-0.023	19.431			
		5:KOMB B. MA	-199.101	5.46E 3	7.418	-1.005	0.039	-38.083			
15524	83	1:BEBAN MATI	-112.564	3.43E 3	2.988	0.680	-0.015	38.085			
		2:BEBAN HIDL	-41.415	1.29E 3	1.976	0.399	-0.011	14.831			
		3:BEBAN GEM	-158.456	-3.94E 3	-39.159	-2.662	0.241	-83.913			
		4:KOMBINASI	-201.341	6.17E 3	6.748	1.455	-0.035	69.431			
		5:KOMB B. MA	-303.792	58.437	-36.943	-1.876	0.231	-41.125			
	13564	1:BEBAN MATI	112.564	-3.07E 3	-2.988	-0.680	-0.020	0.122			
		2:BEBAN HIDL	41.415	-1.29E 3	-1.976	-0.399	-0.013	0.326			
		3:BEBAN GEM	158.456	3.94E 3	39.159	2.662	0.220	37.499			
		4:KOMBINASI	201.341	-5.74E 3	-6.748	-1.455	-0.044	0.668			
		5:KOMB B. MA	303.792	301.956	36.943	1.876	0.204	39.692			
15525	12816	1:BEBAN MATI	-213.298	-1.5E 3	11.997	0.355	-0.049	-35.628			
		2:BEBAN HIDL	-83.797	-665.633	4.281	0.060	-0.017	-14.866			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 48	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	7.686	-2E 3	-42.735	0.893	0.231	-1.004			
		4:KOMBINASI	-390.034	-2.87E 3	21.245	0.521	-0.086	-66.538			
		5:KOMB B. MA	-255.507	-4E 3	-30.307	1.329	0.184	-45.601			
	13633	1:BEBAN MATI	213.298	1.8E 3	-11.997	-0.355	-0.069	19.418			
		2:BEBAN HIDL	83.797	665.633	-4.281	-0.060	-0.025	8.338			
		3:BEBAN GEM	-7.686	2E 3	42.735	-0.893	0.188	-18.624			
		4:KOMBINASI	390.034	3.23E 3	-21.245	-0.521	-0.122	36.643			
		5:KOMB B. MA	255.507	4.3E 3	30.307	-1.329	0.113	4.866			
15526	112	1:BEBAN MATI	-226.525	4.21E 3	15.969	1.278	-0.070	51.376			
		2:BEBAN HIDL	-89.207	1.64E 3	6.368	0.828	-0.028	21.291			
		3:BEBAN GEM	-406.066	-2.42E 3	-78.294	-2.642	0.405	-67.088			
		4:KOMBINASI	-414.561	7.67E 3	29.352	2.858	-0.130	95.718			
		5:KOMB B. MA	-706.419	2.66E 3	-62.419	-1.000	0.338	-6.291			
	13622	1:BEBAN MATI	226.525	-3.91E 3	-15.969	-1.278	-0.086	-11.544			
		2:BEBAN HIDL	89.207	-1.64E 3	-6.368	-0.828	-0.034	-5.233			
		3:BEBAN GEM	406.066	2.42E 3	78.294	2.642	0.363	43.376			
		4:KOMBINASI	414.561	-7.31E 3	-29.352	-2.858	-0.158	-22.225			
		5:KOMB B. MA	706.419	-2.36E 3	62.419	1.000	0.274	30.861			
15527	12817	1:BEBAN MATI	-217.661	-1.64E 3	11.112	0.507	-0.041	-36.023			
		2:BEBAN HIDL	-82.528	-748.702	3.718	0.061	-0.014	-14.984			
		3:BEBAN GEM	-418.397	-2.15E 3	-79.741	0.949	0.389	0.028			
		4:KOMBINASI	-393.239	-3.16E 3	19.283	0.706	-0.071	-67.202			
		5:KOMB B. MA	-706.495	-4.34E 3	-70.385	1.540	0.359	-44.985			
	13611	1:BEBAN MATI	217.661	1.94E 3	-11.112	-0.507	-0.068	18.504			
		2:BEBAN HIDL	82.528	748.702	-3.718	-0.061	-0.023	7.642			
		3:BEBAN GEM	418.397	2.15E 3	79.741	-0.949	0.392	-21.081			
		4:KOMBINASI	393.239	3.52E 3	-19.283	-0.706	-0.118	34.431			
		5:KOMB B. MA	706.495	4.64E 3	70.385	-1.540	0.331	0.954			
15528	113	1:BEBAN MATI	-356.438	4.07E 3	11.845	0.748	-0.044	46.067			
		2:BEBAN HIDL	-144.009	1.55E 3	4.833	0.548	-0.019	18.416			
		3:BEBAN GEM	-1.32E 3	-2.52E 3	-75.842	-2.908	0.428	-69.975			
		4:KOMBINASI	-658.140	7.37E 3	21.946	1.773	-0.083	84.746			
		5:KOMB B. MA	-1.83E 3	2.35E 3	-64.890	-1.977	0.395	-16.356			
	13600	1:BEBAN MATI	356.438	-3.77E 3	-11.845	-0.748	-0.072	-7.653			
		2:BEBAN HIDL	144.009	-1.55E 3	-4.833	-0.548	-0.029	-3.183			
		3:BEBAN GEM	1.32E 3	2.52E 3	75.842	2.908	0.316	45.258			
		4:KOMBINASI	658.140	-7.01E 3	-21.946	-1.773	-0.133	-14.276			
		5:KOMB B. MA	1.83E 3	-2.05E 3	64.890	1.977	0.242	37.958			
15529	12818	1:BEBAN MATI	-162.054	-663.610	-0.289	-1.703	0.007	-17.026			
		2:BEBAN HIDL	-50.554	-322.448	-0.169	-0.907	0.003	-6.213			
		3:BEBAN GEM	-902.419	-2.19E 3	-2.468	1.597	0.004	1.220			
		4:KOMBINASI	-275.351	-1.31E 3	-0.617	-3.496	0.013	-30.372			
		5:KOMB B. MA	-1.14E 3	-3.16E 3	-2.981	-0.571	0.013	-19.472			
	13589	1:BEBAN MATI	162.054	963.938	0.289	1.703	-0.004	9.046			
		2:BEBAN HIDL	50.554	322.448	0.169	0.907	-0.001	3.051			
		3:BEBAN GEM	902.419	2.19E 3	2.468	-1.597	0.020	-22.703			
		4:KOMBINASI	275.351	1.67E 3	0.617	3.496	-0.007	15.736			
		5:KOMB B. MA	1.14E 3	3.46E 3	2.981	0.571	0.016	-12.963			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 49	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15530	114	1:BEBAN MATI	-223.129	2.53E 3	25.266	4.652	-0.139	34.109			
		2:BEBAN HIDL	-71.927	850.978	10.907	2.344	-0.060	12.748			
		3:BEBAN GEM	-28.172	-2.45E 3	-100.263	-2.594	0.525	-67.179			
		4:KOMBINASI	-382.838	4.4E 3	47.771	9.333	-0.263	61.328			
		5:KOMB B. MA	-295.866	464.841	-73.466	3.334	0.376	-28.780			
13578		1:BEBAN MATI	223.129	-2.23E 3	-25.266	-4.652	-0.109	-10.756			
		2:BEBAN HIDL	71.927	-850.978	-10.907	-2.344	-0.047	-4.403			
		3:BEBAN GEM	28.172	2.45E 3	100.263	2.594	0.458	43.109			
		4:KOMBINASI	382.838	-4.04E 3	-47.771	-9.333	-0.206	-19.952			
		5:KOMB B. MA	295.866	-164.513	73.466	-3.334	0.344	31.866			
15531	12819	1:BEBAN MATI	-259.759	-1.18E 3	8.402	-1.071	-0.026	-33.338			
		2:BEBAN HIDL	-106.936	-554.442	3.355	-0.373	-0.010	-14.917			
		3:BEBAN GEM	-155.857	-2.5E 3	-47.165	0.510	0.155	-7.451			
		4:KOMBINASI	-482.808	-2.31E 3	15.450	-1.882	-0.048	-63.873			
		5:KOMB B. MA	-487.571	-4.14E 3	-39.109	-0.759	0.130	-50.112			
13546		1:BEBAN MATI	259.759	1.41E 3	-8.402	1.071	-0.036	23.816			
		2:BEBAN HIDL	106.936	554.442	-3.355	0.373	-0.014	10.839			
		3:BEBAN GEM	155.857	2.5E 3	47.165	-0.510	0.192	-10.962			
		4:KOMBINASI	482.808	2.58E 3	-15.450	1.882	-0.065	45.922			
		5:KOMB B. MA	487.571	4.37E 3	39.109	0.759	0.158	18.810			
15532	12820	1:BEBAN MATI	-224.844	-1.28E 3	0.427	-0.176	-0.003	-29.668			
		2:BEBAN HIDL	-95.121	-637.542	0.001	-0.035	-0.000	-12.532			
		3:BEBAN GEM	404.736	-3.5E 3	-11.137	1.320	0.057	7.991			
		4:KOMBINASI	-422.006	-2.56E 3	0.513	-0.267	-0.004	-55.653			
		5:KOMB B. MA	143.056	-5.34E 3	-11.267	1.190	0.057	-28.797			
13379		1:BEBAN MATI	224.844	1.64E 3	-0.427	0.176	-0.002	12.452			
		2:BEBAN HIDL	95.121	637.542	-0.001	0.035	0.000	5.030			
		3:BEBAN GEM	-404.736	3.5E 3	11.137	-1.320	0.074	-49.131			
		4:KOMBINASI	422.006	2.99E 3	-0.513	0.267	-0.002	22.990			
		5:KOMB B. MA	-143.056	5.7E 3	11.267	-1.190	0.075	-36.118			
15533	85	1:BEBAN MATI	-109.822	3.93E 3	1.440	0.193	-0.008	44.260			
		2:BEBAN HIDL	-35.761	1.53E 3	-0.104	0.039	0.001	17.854			
		3:BEBAN GEM	-22.990	-4.15E 3	-18.114	-2.352	0.107	-85.182			
		4:KOMBINASI	-189.004	7.16E 3	1.561	0.293	-0.008	81.679			
		5:KOMB B. MA	-155.419	492.486	-17.642	-2.254	0.105	-34.469			
13371		1:BEBAN MATI	109.822	-3.56E 3	-1.440	-0.193	-0.009	-0.190			
		2:BEBAN HIDL	35.761	-1.53E 3	0.104	-0.039	0.000	0.185			
		3:BEBAN GEM	22.990	4.15E 3	18.114	2.352	0.107	36.403			
		4:KOMBINASI	189.004	-6.73E 3	-1.561	-0.293	-0.010	0.069			
		5:KOMB B. MA	155.419	-132.093	17.642	2.254	0.103	38.144			
15534	12821	1:BEBAN MATI	-252.868	-1.66E 3	-0.103	-0.207	-0.001	-40.881			
		2:BEBAN HIDL	-97.384	-751.171	-0.193	-0.017	0.000	-17.773			
		3:BEBAN GEM	-127.463	-1.91E 3	-28.073	0.816	0.148	-0.823			
		4:KOMBINASI	-459.255	-3.19E 3	-0.434	-0.276	0.000	-77.493			
		5:KOMB B. MA	-445.135	-4.12E 3	-29.696	0.640	0.155	-52.408			
13462		1:BEBAN MATI	252.868	1.96E 3	0.103	0.207	0.002	23.129			
		2:BEBAN HIDL	97.384	751.171	0.193	0.017	0.001	10.406			
		3:BEBAN GEM	127.463	1.91E 3	28.073	-0.816	0.128	-17.928			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 50	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	459.255	3.55E 3	0.434	0.276	0.004	44.405			
		5:KOMB B. MA	445.135	4.42E 3	29.696	-0.640	0.137	10.549			
15535	115	1:BEBAN MATI	-234.104	4.96E 3	0.673	0.312	-0.001	59.588			
		2:BEBAN HIDL	-91.498	2.02E 3	-0.363	0.032	0.002	25.650			
		3:BEBAN GEM	-542.642	-2.63E 3	-26.625	-2.338	0.146	-68.106			
		4:KOMBINASI	-427.321	9.17E 3	0.226	0.425	0.002	112.546			
		5:KOMB B. MA	-858.777	3.41E 3	-27.502	-2.124	0.154	3.467			
	13449	1:BEBAN MATI	234.104	-4.66E 3	-0.673	-0.312	-0.005	-12.462			
		2:BEBAN HIDL	91.498	-2.02E 3	0.363	-0.032	0.001	-5.872			
		3:BEBAN GEM	542.642	2.63E 3	26.625	2.338	0.115	42.327			
		4:KOMBINASI	427.321	-8.81E 3	-0.226	-0.425	-0.005	-24.349			
		5:KOMB B. MA	858.777	-3.11E 3	27.502	2.124	0.116	28.459			
15536	12822	1:BEBAN MATI	-254.239	-1.72E 3	-0.661	-0.146	0.002	-40.258			
		2:BEBAN HIDL	-91.019	-801.105	-0.251	0.003	0.001	-17.179			
		3:BEBAN GEM	-437.363	-2.03E 3	-19.422	0.820	0.107	0.797			
		4:KOMBINASI	-450.717	-3.35E 3	-1.195	-0.170	0.004	-75.797			
		5:KOMB B. MA	-768.081	-4.34E 3	-21.205	0.716	0.115	-49.729			
	13436	1:BEBAN MATI	254.239	2.02E 3	0.661	0.146	0.004	21.895			
		2:BEBAN HIDL	91.019	801.105	0.251	-0.003	0.002	9.323			
		3:BEBAN GEM	437.363	2.03E 3	19.422	-0.820	0.084	-20.711			
		4:KOMBINASI	450.717	3.71E 3	1.195	0.170	0.008	41.191			
		5:KOMB B. MA	768.081	4.64E 3	21.205	-0.716	0.093	5.742			
15537	116	1:BEBAN MATI	-251.200	4.94E 3	0.132	0.238	0.001	59.447			
		2:BEBAN HIDL	-88.312	1.98E 3	-0.432	-0.006	0.003	25.021			
		3:BEBAN GEM	-671.504	-2.74E 3	-15.777	-2.315	0.081	-70.119			
		4:KOMBINASI	-442.738	9.1E 3	-0.533	0.275	0.006	111.370			
		5:KOMB B. MA	-1.01E 3	3.25E 3	-16.694	-2.197	0.088	0.834			
	13423	1:BEBAN MATI	251.200	-4.64E 3	-0.132	-0.238	-0.002	-12.454			
		2:BEBAN HIDL	88.312	-1.98E 3	0.432	0.006	0.002	-5.570			
		3:BEBAN GEM	671.504	2.74E 3	15.777	2.315	0.074	43.201			
		4:KOMBINASI	442.738	-8.74E 3	0.533	-0.275	-0.001	-23.857			
		5:KOMB B. MA	1.01E 3	-2.95E 3	16.694	2.197	0.076	29.565			
15538	12823	1:BEBAN MATI	-269.434	-1.65E 3	-0.822	-0.136	0.004	-39.890			
		2:BEBAN HIDL	-98.999	-792.006	-0.216	-0.017	0.001	-17.187			
		3:BEBAN GEM	-456.127	-1.96E 3	-20.250	0.788	0.104	1.337			
		4:KOMBINASI	-481.718	-3.25E 3	-1.332	-0.191	0.007	-75.368			
		5:KOMB B. MA	-807.766	-4.19E 3	-22.215	0.682	0.115	-48.799			
	13410	1:BEBAN MATI	269.434	1.95E 3	0.822	0.136	0.004	22.232			
		2:BEBAN HIDL	98.999	792.006	0.216	0.017	0.001	9.420			
		3:BEBAN GEM	456.127	1.96E 3	20.250	-0.788	0.094	-20.605			
		4:KOMBINASI	481.718	3.61E 3	1.332	0.191	0.006	41.752			
		5:KOMB B. MA	807.766	4.49E 3	22.215	-0.682	0.103	6.250			
15539	117	1:BEBAN MATI	-245.894	4.86E 3	1.489	0.296	-0.007	61.839			
		2:BEBAN HIDL	-90.193	2E 3	0.401	0.060	-0.002	25.994			
		3:BEBAN GEM	-749.928	-2.7E 3	-13.231	-2.268	0.083	-67.671			
		4:KOMBINASI	-439.382	9.04E 3	2.427	0.452	-0.011	115.796			
		5:KOMB B. MA	-1.09E 3	3.23E 3	-12.163	-2.049	0.080	6.381			
	13397	1:BEBAN MATI	245.894	-4.56E 3	-1.489	-0.296	-0.008	-15.635			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 51	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	90.193	-2E 3	-0.401	-0.060	-0.002	-6.337			
		3:BEBAN GEM	749.928	2.7E 3	13.231	2.268	0.047	41.194			
		4:KOMBINASI	439.382	-8.68E 3	-2.427	-0.452	-0.013	-28.901			
		5:KOMB B. MA	1.09E 3	-2.93E 3	12.163	2.049	0.040	23.817			
15540	12824	1:BEBAN MATI	-308.801	-1.9E 3	0.230	-0.102	-0.001	-45.723			
		2:BEBAN HIDL	-125.835	-832.442	0.516	0.032	-0.003	-19.670			
		3:BEBAN GEM	-494.523	-2.38E 3	2.448	0.726	-0.002	-5.152			
		4:KOMBINASI	-571.897	-3.61E 3	1.102	-0.071	-0.005	-86.340			
		5:KOMB B. MA	-903.551	-4.9E 3	3.109	0.680	-0.005	-62.935			
	13338	1:BEBAN MATI	308.801	2.12E 3	-0.230	0.102	-0.001	30.938			
		2:BEBAN HIDL	125.835	832.442	-0.516	-0.032	-0.001	13.548			
		3:BEBAN GEM	494.523	2.38E 3	-2.448	-0.726	-0.016	-12.357			
		4:KOMBINASI	571.897	3.88E 3	-1.102	0.071	-0.003	58.802			
		5:KOMB B. MA	903.551	5.12E 3	-3.109	-0.680	-0.018	26.092			
15541	89	1:BEBAN MATI	-340.771	4.83E 3	-25.598	-3.252	0.133	53.981			
		2:BEBAN HIDL	-122.684	848.998	-12.146	-2.094	0.063	11.453			
		3:BEBAN GEM	-1.13E 3	-2.52E 3	2.858	-1.246	0.013	-68.344			
		4:KOMBINASI	-605.219	7.15E 3	-50.152	-7.253	0.261	83.101			
		5:KOMB B. MA	-1.6E 3	2.69E 3	-29.885	-5.817	0.184	-10.909			
	13394	1:BEBAN MATI	340.771	-3.7E 3	25.598	3.252	0.118	-12.175			
		2:BEBAN HIDL	122.684	-848.998	12.146	2.094	0.056	-3.127			
		3:BEBAN GEM	1.13E 3	2.52E 3	-2.858	1.246	-0.041	43.594			
		4:KOMBINASI	605.219	-5.8E 3	50.152	7.253	0.231	-19.614			
		5:KOMB B. MA	1.6E 3	-1.56E 3	29.885	5.817	0.109	31.722			
15542	141	1:BEBAN MATI	-332.868	-865.295	-2.403	1.099	0.004	-35.111			
		2:BEBAN HIDL	-87.082	-358.654	-0.501	0.618	-0.001	-8.908			
		3:BEBAN GEM	-940.958	-2.65E 3	-10.993	0.077	0.059	-6.095			
		4:KOMBINASI	-538.773	-1.61E 3	-3.685	2.309	0.003	-56.386			
		5:KOMB B. MA	-1.37E 3	-3.86E 3	-14.247	1.551	0.065	-46.856			
	13335	1:BEBAN MATI	332.868	1.71E 3	2.403	-1.099	0.014	25.643			
		2:BEBAN HIDL	87.082	358.654	0.501	-0.618	0.005	6.270			
		3:BEBAN GEM	940.958	2.65E 3	10.993	-0.077	0.022	-13.397			
		4:KOMBINASI	538.773	2.62E 3	3.685	-2.309	0.024	40.804			
		5:KOMB B. MA	1.37E 3	4.71E 3	14.247	-1.551	0.040	15.338			
15543	72	1:BEBAN MATI	-83.026	2.63E 3	-22.928	-0.015	0.129	18.238			
		2:BEBAN HIDL	-40.824	319.038	-10.983	-0.212	0.064	2.800			
		3:BEBAN GEM	-437.838	-1.86E 3	-57.434	6.124	0.380	-29.753			
		4:KOMBINASI	-164.949	3.66E 3	-45.087	-0.357	0.257	26.366			
		5:KOMB B. MA	-567.249	868.859	-89.824	6.288	0.567	-11.323			
	12890	1:BEBAN MATI	83.026	-1.28E 3	22.928	0.015	0.140	4.723			
		2:BEBAN HIDL	40.824	-319.038	10.983	0.212	0.066	0.954			
		3:BEBAN GEM	437.838	1.86E 3	57.434	-6.124	0.295	7.911			
		4:KOMBINASI	164.949	-2.04E 3	45.087	0.357	0.274	7.194			
		5:KOMB B. MA	567.249	481.535	89.824	-6.288	0.490	13.602			
15544	70	1:BEBAN MATI	-199.577	3.59E 3	-36.643	-3.386	0.214	31.237			
		2:BEBAN HIDL	-88.112	547.689	-16.373	-2.115	0.096	5.908			
		3:BEBAN GEM	-484.049	-805.333	-55.548	5.628	0.339	-20.385			
		4:KOMBINASI	-380.471	5.18E 3	-70.170	-7.447	0.410	46.938			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 52	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-760.696	3.07E 3	-104.793	1.254	0.627	13.377			
	13121	1:BEBAN MATI	199.577	-2.24E 3	36.643	3.386	0.218	3.023			
		2:BEBAN HIDL	88.112	-547.689	16.373	2.115	0.096	0.537			
		3:BEBAN GEM	484.049	805.333	55.548	-5.628	0.315	10.908			
		4:KOMBINASI	380.471	-3.56E 3	70.170	7.447	0.416	4.486			
		5:KOMB B. MA	760.696	-1.72E 3	104.793	-1.254	0.606	14.799			
15545	117	1:BEBAN MATI	-122.667	3.32E 3	1.469	0.090	-0.008	31.991			
		2:BEBAN HIDL	-49.152	1.33E 3	0.302	0.011	-0.001	13.241			
		3:BEBAN GEM	374.369	-1.12E 3	-1.505	5.738	-0.001	-22.747			
		4:KOMBINASI	-225.845	6.12E 3	2.247	0.125	-0.011	59.575			
		5:KOMB B. MA	240.929	2.95E 3	0.070	6.121	-0.010	16.051			
	13351	1:BEBAN MATI	122.667	-2.96E 3	-1.469	-0.090	-0.009	4.947			
		2:BEBAN HIDL	49.152	-1.33E 3	-0.302	-0.011	-0.002	2.461			
		3:BEBAN GEM	-374.369	1.12E 3	1.505	-5.738	0.019	9.600			
		4:KOMBINASI	225.845	-5.69E 3	-2.247	-0.125	-0.015	9.874			
		5:KOMB B. MA	-240.929	-2.59E 3	-0.070	-6.121	0.009	16.504			
15546	114	1:BEBAN MATI	-242.962	3E 3	7.715	-0.252	-0.049	24.680			
		2:BEBAN HIDL	-107.540	1.23E 3	3.984	-0.172	-0.025	10.531			
		3:BEBAN GEM	1.57E 3	-885.399	10.787	5.921	-0.101	-18.964			
		4:KOMBINASI	-463.618	5.57E 3	15.633	-0.577	-0.098	46.465			
		5:KOMB B. MA	1.34E 3	2.81E 3	21.432	5.863	-0.169	11.086			
	13557	1:BEBAN MATI	242.962	-2.64E 3	-7.715	0.252	-0.042	8.481			
		2:BEBAN HIDL	107.540	-1.23E 3	-3.984	0.172	-0.022	3.979			
		3:BEBAN GEM	-1.57E 3	885.399	-10.787	-5.921	-0.026	8.544			
		4:KOMBINASI	463.618	-5.14E 3	-15.633	0.577	-0.086	16.543			
		5:KOMB B. MA	-1.34E 3	-2.45E 3	-21.432	-5.863	-0.083	19.840			
15547	111	1:BEBAN MATI	48.736	1.23E 3	2.202	3.774	-0.007	20.393			
		2:BEBAN HIDL	44.994	390.923	2.870	1.637	-0.015	7.974			
		3:BEBAN GEM	1.46E 3	-1.35E 3	87.848	3.702	-0.525	-26.825			
		4:KOMBINASI	130.474	2.11E 3	7.235	7.149	-0.032	37.229			
		5:KOMB B. MA	1.61E 3	49.502	96.164	8.643	-0.568	-2.989			
	13392	1:BEBAN MATI	-48.736	-873.582	-2.202	-3.774	-0.019	-7.992			
		2:BEBAN HIDL	-44.994	-390.923	-2.870	-1.637	-0.019	-3.373			
		3:BEBAN GEM	-1.46E 3	1.35E 3	-87.848	-3.702	-0.508	10.921			
		4:KOMBINASI	-130.474	-1.67E 3	-7.235	-7.149	-0.053	-14.988			
		5:KOMB B. MA	-1.61E 3	310.891	-96.164	-8.643	-0.564	1.451			
15548	12825	1:BEBAN MATI	-279.882	-1.94E 3	2.432	-1.283	-0.020	-44.691			
		2:BEBAN HIDL	-81.805	-751.439	0.825	0.282	-0.007	-16.336			
		3:BEBAN GEM	856.251	-439.539	9.491	-2.326	-0.092	1.003			
		4:KOMBINASI	-466.746	-3.53E 3	4.240	-1.089	-0.035	-79.766			
		5:KOMB B. MA	570.098	-2.85E 3	12.894	-3.557	-0.120	-53.439			
	13474	1:BEBAN MATI	279.882	2.39E 3	-2.432	1.283	-0.016	12.875			
		2:BEBAN HIDL	81.805	751.439	-0.825	-0.282	-0.005	5.282			
		3:BEBAN GEM	-856.251	439.539	-9.491	2.326	-0.048	-7.469			
		4:KOMBINASI	466.746	4.07E 3	-4.240	1.089	-0.027	23.901			
		5:KOMB B. MA	-570.098	3.3E 3	-12.894	3.557	-0.069	8.202			
15549	108	1:BEBAN MATI	-174.102	5.07E 3	-0.412	-0.896	0.005	61.862			
		2:BEBAN HIDL	-37.966	1.74E 3	-1.088	-0.861	0.008	22.782			



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Job No 1	Sheet No 53	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.21E 3	-756.626	-7.509	6.895	0.027	-18.706			
		4:KOMBINASI	-269.667	8.87E 3	-2.236	-2.453	0.018	110.685			
		5:KOMB B. MA	1.08E 3	5.32E 3	-8.950	5.828	0.038	55.890			
	13475	1:BEBAN MATI	174.102	-4.62E 3	0.412	0.896	0.002	9.417			
		2:BEBAN HIDL	37.966	-1.74E 3	1.088	0.861	0.008	2.812			
		3:BEBAN GEM	-1.21E 3	756.626	7.509	-6.895	0.083	7.576			
		4:KOMBINASI	269.667	-8.33E 3	2.236	2.453	0.015	15.800			
		5:KOMB B. MA	-1.08E 3	-4.87E 3	8.950	-5.828	0.094	19.059			
15550	12826	1:BEBAN MATI	-167.433	-2.22E 3	-0.733	-0.196	0.005	-45.093			
		2:BEBAN HIDL	-51.137	-968.853	0.065	-0.213	-0.000	-18.386			
		3:BEBAN GEM	1.63E 3	-629.950	-1.049	-3.647	-0.012	-1.481			
		4:KOMBINASI	-282.739	-4.21E 3	-0.776	-0.576	0.005	-83.529			
		5:KOMB B. MA	1.51E 3	-3.46E 3	-1.796	-4.153	-0.008	-57.680			
	12917	1:BEBAN MATI	167.433	2.67E 3	0.733	0.196	0.006	9.180			
		2:BEBAN HIDL	51.137	968.853	-0.065	0.213	-0.001	4.135			
		3:BEBAN GEM	-1.63E 3	629.950	1.049	3.647	0.027	-7.785			
		4:KOMBINASI	282.739	4.75E 3	0.776	0.576	0.006	17.631			
		5:KOMB B. MA	-1.51E 3	3.91E 3	1.796	4.153	0.034	3.486			
15551	105	1:BEBAN MATI	-178.382	5.09E 3	1.721	0.513	-0.009	63.648			
		2:BEBAN HIDL	-58.865	1.89E 3	-0.589	0.362	0.005	24.421			
		3:BEBAN GEM	1.3E 3	-625.889	-12.325	7.468	0.070	-17.642			
		4:KOMBINASI	-308.242	9.13E 3	1.123	1.195	-0.004	115.451			
		5:KOMB B. MA	1.15E 3	5.57E 3	-11.574	8.571	0.067	59.777			
	12916	1:BEBAN MATI	178.382	-4.64E 3	-1.721	-0.513	-0.016	7.869			
		2:BEBAN HIDL	58.865	-1.89E 3	0.589	-0.362	0.004	3.421			
		3:BEBAN GEM	-1.3E 3	625.889	12.325	-7.468	0.111	8.435			
		4:KOMBINASI	308.242	-8.59E 3	-1.123	-1.195	-0.013	14.916			
		5:KOMB B. MA	-1.15E 3	-5.11E 3	11.574	-8.571	0.103	18.778			
15552	12827	1:BEBAN MATI	-223.076	-2.13E 3	0.109	1.484	-0.005	-45.290			
		2:BEBAN HIDL	-59.007	-875.703	0.200	0.644	-0.002	-16.414			
		3:BEBAN GEM	699.303	-656.817	-17.397	-3.755	0.113	-0.878			
		4:KOMBINASI	-362.102	-3.95E 3	0.450	2.811	-0.009	-80.610			
		5:KOMB B. MA	475.788	-3.34E 3	-18.038	-2.073	0.112	-56.060			
	13071	1:BEBAN MATI	223.076	2.58E 3	-0.109	-1.484	0.003	10.676			
		2:BEBAN HIDL	59.007	875.703	-0.200	-0.644	-0.001	3.532			
		3:BEBAN GEM	-699.303	656.817	17.397	3.755	0.143	-8.784			
		4:KOMBINASI	362.102	4.5E 3	-0.450	-2.811	0.003	18.463			
		5:KOMB B. MA	-475.788	3.79E 3	18.038	2.073	0.153	3.573			
15553	102	1:BEBAN MATI	-409.128	4.47E 3	-3.946	-0.746	0.021	50.651			
		2:BEBAN HIDL	-125.954	1.55E 3	-0.847	-1.052	0.003	18.111			
		3:BEBAN GEM	113.737	-480.483	-13.232	7.603	0.032	-17.214			
		4:KOMBINASI	-692.480	7.84E 3	-6.090	-2.579	0.030	89.759			
		5:KOMB B. MA	-365.276	4.9E 3	-18.348	6.605	0.056	43.443			
	13070	1:BEBAN MATI	409.128	-4.02E 3	3.946	0.746	0.037	11.789			
		2:BEBAN HIDL	125.954	-1.55E 3	0.847	1.052	0.009	4.679			
		3:BEBAN GEM	-113.737	480.483	13.232	-7.603	0.163	10.146			
		4:KOMBINASI	692.480	-7.3E 3	6.090	2.579	0.060	21.633			
		5:KOMB B. MA	365.276	-4.44E 3	18.348	-6.605	0.214	25.249			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 54	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15554	99	1:BEBAN MATI	49.265	846.687	18.526	0.907	-0.103	11.928			
		2:BEBAN HIDL	46.715	198.999	7.921	0.668	-0.044	4.017			
		3:BEBAN GEM	2.25E 3	-1.46E 3	-121.752	3.970	0.866	-24.123			
		4:KOMBINASI	133.862	1.33E 3	34.904	2.158	-0.194	20.741			
		5:KOMB B. MA	2.44E 3	-563.223	-104.561	5.476	0.780	-10.991			
12945		1:BEBAN MATI	-49.265	-486.294	-18.526	-0.907	-0.115	-4.085			
		2:BEBAN HIDL	-46.715	-198.999	-7.921	-0.668	-0.050	-1.675			
		3:BEBAN GEM	-2.25E 3	1.46E 3	121.752	-3.970	0.566	6.984			
		4:KOMBINASI	-133.862	-901.951	-34.904	-2.158	-0.217	-7.582			
		5:KOMB B. MA	-2.44E 3	923.616	104.561	-5.476	0.450	2.243			
15555	96	1:BEBAN MATI	-88.522	3.15E 3	1.697	0.353	-0.009	30.377			
		2:BEBAN HIDL	-45.349	1.31E 3	0.811	0.190	-0.004	13.204			
		3:BEBAN GEM	471.189	-949.038	-30.504	5.866	0.190	-20.427			
		4:KOMBINASI	-178.785	5.87E 3	3.334	0.727	-0.018	57.579			
		5:KOMB B. MA	379.017	2.94E 3	-29.846	6.626	0.188	16.851			
13151		1:BEBAN MATI	88.522	-2.79E 3	-1.697	-0.353	-0.011	4.577			
		2:BEBAN HIDL	45.349	-1.31E 3	-0.811	-0.190	-0.005	2.196			
		3:BEBAN GEM	-471.189	949.038	30.504	-5.866	0.169	9.259			
		4:KOMBINASI	178.785	-5.44E 3	-3.334	-0.727	-0.021	9.007			
		5:KOMB B. MA	-379.017	-2.58E 3	29.846	-6.626	0.163	15.617			
15556	116	1:BEBAN MATI	-153.651	5.06E 3	0.618	-0.019	-0.004	45.161			
		2:BEBAN HIDL	-52.567	1.34E 3	0.362	0.010	-0.002	13.266			
		3:BEBAN GEM	70.050	-1.18E 3	0.931	5.530	-0.014	-23.515			
		4:KOMBINASI	-268.489	8.22E 3	1.319	-0.007	-0.009	75.420			
		5:KOMB B. MA	-111.639	4.64E 3	1.812	5.793	-0.020	28.431			
13418		1:BEBAN MATI	153.651	-3.71E 3	-0.618	0.019	-0.003	6.486			
		2:BEBAN HIDL	52.567	-1.34E 3	-0.362	-0.010	-0.002	2.529			
		3:BEBAN GEM	-70.050	1.18E 3	-0.931	-5.530	0.003	9.686			
		4:KOMBINASI	268.489	-6.6E 3	-1.319	0.007	-0.007	11.830			
		5:KOMB B. MA	111.639	-3.29E 3	-1.812	-5.793	-0.001	18.174			
15557	113	1:BEBAN MATI	-267.029	4.61E 3	-9.053	0.794	0.060	36.431			
		2:BEBAN HIDL	-111.780	1.23E 3	-4.265	0.354	0.028	10.582			
		3:BEBAN GEM	68.485	-935.363	-29.898	5.997	0.242	-20.614			
		4:KOMBINASI	-499.284	7.5E 3	-17.688	1.520	0.117	60.648			
		5:KOMB B. MA	-262.189	4.37E 3	-43.005	7.304	0.331	21.135			
13596		1:BEBAN MATI	267.029	-3.26E 3	9.053	-0.794	0.046	9.881			
		2:BEBAN HIDL	111.780	-1.23E 3	4.265	-0.354	0.022	3.870			
		3:BEBAN GEM	-68.485	935.363	29.898	-5.997	0.110	9.606			
		4:KOMBINASI	499.284	-5.88E 3	17.688	-1.520	0.091	18.049			
		5:KOMB B. MA	262.189	-3.01E 3	43.005	-7.304	0.175	22.289			
15558	110	1:BEBAN MATI	128.318	2.61E 3	-7.087	-2.295	0.055	29.234			
		2:BEBAN HIDL	60.980	339.058	-2.400	-0.991	0.019	7.870			
		3:BEBAN GEM	1.78E 3	-1.42E 3	52.236	2.319	-0.502	-25.137			
		4:KOMBINASI	251.550	3.68E 3	-12.344	-4.340	0.096	47.672			
		5:KOMB B. MA	2.04E 3	1.32E 3	46.322	-0.455	-0.461	7.562			
13512		1:BEBAN MATI	-128.318	-588.130	7.087	2.295	0.070	-0.974			
		2:BEBAN HIDL	-60.980	-339.058	2.400	0.991	0.024	-1.885			
		3:BEBAN GEM	-1.78E 3	1.42E 3	-52.236	-2.319	-0.420	0.017			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 55	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-251.550	-1.25E 3	12.344	4.340	0.122	-4.185			
		5:KOMB B. MA	-2.04E 3	702.627	-46.322	0.455	-0.357	-2.087			
15559	12828	1:BEBAN MATI	-307.142	-1.61E 3	1.119	-0.428	-0.006	-56.294			
		2:BEBAN HIDL	-95.718	-872.257	0.766	-0.338	-0.005	-19.576			
		3:BEBAN GEM	1.1E 3	-523.435	35.474	-3.556	-0.255	-0.196			
		4:KOMBINASI	-521.719	-3.33E 3	2.568	-1.054	-0.015	-98.874			
		5:KOMB B. MA	785.612	-2.68E 3	38.826	-4.365	-0.277	-68.245			
	13486	1:BEBAN MATI	307.142	3.3E 3	-1.119	0.428	-0.010	20.201			
		2:BEBAN HIDL	95.718	872.257	-0.766	0.338	-0.006	6.745			
		3:BEBAN GEM	-1.1E 3	523.435	-35.474	3.556	-0.266	-7.504			
		4:KOMBINASI	521.719	5.35E 3	-2.568	1.054	-0.023	35.033			
		5:KOMB B. MA	-785.612	4.37E 3	-38.826	4.365	-0.294	16.369			
15560	107	1:BEBAN MATI	-226.234	7.23E 3	-0.845	-0.081	0.006	83.467			
		2:BEBAN HIDL	-71.336	1.96E 3	0.124	0.036	-0.001	25.464			
		3:BEBAN GEM	944.489	-758.329	34.411	7.094	-0.252	-19.603			
		4:KOMBINASI	-385.620	11.8E 3	-0.816	-0.040	0.005	140.902			
		5:KOMB B. MA	722.677	7.61E 3	35.361	7.389	-0.259	78.162			
	13487	1:BEBAN MATI	226.234	-5.55E 3	0.845	0.081	0.007	10.522			
		2:BEBAN HIDL	71.336	-1.96E 3	-0.124	-0.036	-0.001	3.372			
		3:BEBAN GEM	-944.489	758.329	-34.411	-7.094	-0.254	8.448			
		4:KOMBINASI	385.620	-9.79E 3	0.816	0.040	0.007	18.020			
		5:KOMB B. MA	-722.677	-5.93E 3	-35.361	-7.389	-0.261	21.415			
15561	12829	1:BEBAN MATI	-181.150	-1.8E 3	-0.021	0.069	0.000	-49.195			
		2:BEBAN HIDL	-56.472	-924.431	-0.042	0.005	0.000	-16.913			
		3:BEBAN GEM	1.76E 3	-562.339	25.356	-3.413	-0.265	0.184			
		4:KOMBINASI	-307.734	-3.64E 3	-0.092	0.091	0.001	-86.094			
		5:KOMB B. MA	1.63E 3	-2.95E 3	26.578	-3.512	-0.278	-59.149			
	13035	1:BEBAN MATI	181.150	3.49E 3	0.021	-0.069	-0.000	10.269			
		2:BEBAN HIDL	56.472	924.431	0.042	-0.005	0.000	3.314			
		3:BEBAN GEM	-1.76E 3	562.339	-25.356	3.413	-0.108	-8.456			
		4:KOMBINASI	307.734	5.67E 3	0.092	-0.091	0.001	17.626			
		5:KOMB B. MA	-1.63E 3	4.64E 3	-26.578	3.512	-0.113	3.379			
15562	104	1:BEBAN MATI	-179.989	6.86E 3	-0.268	-0.132	0.002	79.849			
		2:BEBAN HIDL	-55.489	1.82E 3	0.103	-0.001	-0.001	24.139			
		3:BEBAN GEM	1.13E 3	-793.833	-43.804	7.145	0.337	-20.158			
		4:KOMBINASI	-304.770	11.1E 3	-0.156	-0.160	0.001	134.441			
		5:KOMB B. MA	975.803	7.11E 3	-46.200	7.370	0.355	73.166			
	13034	1:BEBAN MATI	179.989	-5.17E 3	0.268	0.132	0.002	8.593			
		2:BEBAN HIDL	55.489	-1.82E 3	-0.103	0.001	-0.001	2.607			
		3:BEBAN GEM	-1.13E 3	793.833	43.804	-7.145	0.307	8.481			
		4:KOMBINASI	304.770	-9.11E 3	0.156	0.160	0.002	14.482			
		5:KOMB B. MA	-975.803	-5.43E 3	46.200	-7.370	0.324	19.062			
15563	12830	1:BEBAN MATI	-243.019	-2.13E 3	0.284	0.101	-0.002	-56.088			
		2:BEBAN HIDL	-75.861	-1.04E 3	-0.183	0.035	0.001	-19.502			
		3:BEBAN GEM	506.794	-552.170	-58.783	-3.398	0.439	0.301			
		4:KOMBINASI	-413.000	-4.22E 3	0.048	0.177	-0.001	-98.509			
		5:KOMB B. MA	243.598	-3.33E 3	-61.548	-3.446	0.460	-67.474			
	13083	1:BEBAN MATI	243.019	3.82E 3	-0.284	-0.101	-0.002	12.365			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 56	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	75.861	1.04E 3	0.183	-0.035	0.002	4.144			
		3:BEBAN GEM	-506.794	552.170	58.783	3.398	0.425	-8.423			
		4:KOMBINASI	413.000	6.25E 3	-0.048	-0.177	0.000	21.468			
		5:KOMB B. MA	-243.598	5.02E 3	61.548	3.446	0.446	6.007			
15564	101	1:BEBAN MATI	-482.767	6.79E 3	-7.605	0.661	0.062	68.589			
		2:BEBAN HIDL	-151.876	1.82E 3	-3.327	0.482	0.026	20.628			
		3:BEBAN GEM	997.709	-730.093	-41.616	7.645	0.279	-18.871			
		4:KOMBINASI	-822.322	11.1E 3	-14.449	1.563	0.116	115.311			
		5:KOMB B. MA	473.702	7.11E 3	-53.298	8.977	0.371	61.151			
	13082	1:BEBAN MATI	482.767	-5.1E 3	7.605	-0.661	0.050	18.821			
		2:BEBAN HIDL	151.876	-1.82E 3	3.327	-0.482	0.023	6.143			
		3:BEBAN GEM	-997.709	730.093	41.616	-7.645	0.333	8.132			
		4:KOMBINASI	822.322	-9.03E 3	14.449	-1.563	0.096	32.414			
		5:KOMB B. MA	-473.702	-5.42E 3	53.298	-8.977	0.413	31.045			
15565	98	1:BEBAN MATI	46.992	2.22E 3	-6.812	-2.043	0.055	22.465			
		2:BEBAN HIDL	34.079	130.308	-2.801	-0.935	0.022	4.134			
		3:BEBAN GEM	-676.567	-1.45E 3	-77.816	2.381	0.676	-25.027			
		4:KOMBINASI	110.917	2.88E 3	-12.656	-3.947	0.102	33.571			
		5:KOMB B. MA	-642.956	785.034	-90.199	-0.104	0.778	-1.334			
	13108	1:BEBAN MATI	-46.992	-198.540	6.812	2.043	0.065	-1.082			
		2:BEBAN HIDL	-34.079	-130.308	2.801	0.935	0.027	-1.833			
		3:BEBAN GEM	676.567	1.45E 3	77.816	-2.381	0.698	-0.481			
		4:KOMBINASI	-110.917	-446.741	12.656	3.947	0.122	-4.232			
		5:KOMB B. MA	642.956	1.24E 3	90.199	0.104	0.815	-2.687			
15566	95	1:BEBAN MATI	-111.244	4.82E 3	-1.378	-0.256	0.009	43.176			
		2:BEBAN HIDL	-48.514	1.31E 3	-0.344	-0.134	0.002	13.179			
		3:BEBAN GEM	-395.657	-981.517	-39.284	5.665	0.247	-20.865			
		4:KOMBINASI	-211.114	7.87E 3	-2.204	-0.521	0.014	72.898			
		5:KOMB B. MA	-555.791	4.57E 3	-42.833	5.612	0.270	29.175			
	13190	1:BEBAN MATI	111.244	-3.47E 3	1.378	0.256	0.008	5.606			
		2:BEBAN HIDL	48.514	-1.31E 3	0.344	0.134	0.002	2.178			
		3:BEBAN GEM	395.657	981.517	39.284	-5.665	0.215	9.315			
		4:KOMBINASI	211.114	-6.25E 3	2.204	0.521	0.012	10.212			
		5:KOMB B. MA	555.791	-3.22E 3	42.833	-5.612	0.234	16.693			
15567	115	1:BEBAN MATI	-157.924	5.08E 3	0.644	-0.002	-0.004	45.256			
		2:BEBAN HIDL	-52.285	1.35E 3	0.038	-0.017	-0.000	13.306			
		3:BEBAN GEM	211.992	-1.18E 3	9.194	5.496	-0.064	-23.840			
		4:KOMBINASI	-273.166	8.25E 3	0.833	-0.030	-0.005	75.597			
		5:KOMB B. MA	33.296	4.65E 3	10.320	5.759	-0.071	28.208			
	13444	1:BEBAN MATI	157.924	-3.73E 3	-0.644	0.002	-0.004	6.533			
		2:BEBAN HIDL	52.285	-1.35E 3	-0.038	0.017	-0.000	2.541			
		3:BEBAN GEM	-211.992	1.18E 3	-9.194	-5.496	-0.045	9.960			
		4:KOMBINASI	273.166	-6.63E 3	-0.833	0.030	-0.005	11.904			
		5:KOMB B. MA	-33.296	-3.3E 3	-10.320	-5.759	-0.051	18.515			
15568	112	1:BEBAN MATI	-205.262	4.58E 3	1.298	0.030	-0.008	37.194			
		2:BEBAN HIDL	-82.507	1.23E 3	0.347	-0.020	-0.002	11.058			
		3:BEBAN GEM	624.149	-945.457	38.255	5.673	-0.240	-20.460			
		4:KOMBINASI	-378.326	7.45E 3	2.113	0.005	-0.013	62.326			



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Job No 1	Sheet No 57	Rev
Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	400.590	4.32E 3	41.674	5.974	-0.261	22.346			
	13618	1:BEBAN MATI	205.262	-3.23E 3	-1.298	-0.030	-0.008	8.741			
		2:BEBAN HIDL	82.507	-1.23E 3	-0.347	0.020	-0.002	3.362			
		3:BEBAN GEM	-624.149	945.457	-38.255	-5.673	-0.210	9.334			
		4:KOMBINASI	378.326	-5.83E 3	-2.113	-0.005	-0.012	15.869			
		5:KOMB B. MA	-400.590	-2.97E 3	-41.674	-5.974	-0.229	20.559			
15569	109	1:BEBAN MATI	87.810	3.16E 3	0.540	0.005	-0.005	32.033			
		2:BEBAN HIDL	26.751	611.553	0.195	0.007	-0.002	9.180			
		3:BEBAN GEM	585.471	-1.4E 3	30.658	3.443	-0.280	-25.067			
		4:KOMBINASI	148.174	4.77E 3	0.961	0.017	-0.009	53.127			
		5:KOMB B. MA	718.605	2.05E 3	32.848	3.624	-0.300	11.221			
	13518	1:BEBAN MATI	-87.810	-1.13E 3	-0.540	-0.005	-0.004	5.828			
		2:BEBAN HIDL	-26.751	-611.553	-0.195	-0.007	-0.002	1.615			
		3:BEBAN GEM	-585.471	1.4E 3	-30.658	-3.443	-0.261	0.293			
		4:KOMBINASI	-148.174	-2.34E 3	-0.961	-0.017	-0.008	9.579			
		5:KOMB B. MA	-718.605	-25.412	-32.848	-3.624	-0.279	7.106			
15570	12831	1:BEBAN MATI	-277.531	-1.64E 3	0.215	-0.024	-0.002	-55.572			
		2:BEBAN HIDL	-88.382	-872.244	0.200	0.039	-0.001	-18.984			
		3:BEBAN GEM	887.824	-552.425	56.467	-3.465	-0.425	-0.535			
		4:KOMBINASI	-474.448	-3.36E 3	0.578	0.034	-0.004	-97.061			
		5:KOMB B. MA	601.656	-2.74E 3	59.626	-3.639	-0.449	-67.524			
	13498	1:BEBAN MATI	277.531	3.33E 3	-0.215	0.024	-0.002	19.074			
		2:BEBAN HIDL	88.382	872.244	-0.200	-0.039	-0.001	6.154			
		3:BEBAN GEM	-887.824	552.425	-56.467	3.465	-0.405	-7.592			
		4:KOMBINASI	474.448	5.39E 3	-0.578	-0.034	-0.004	32.734			
		5:KOMB B. MA	-601.656	4.43E 3	-59.626	3.639	-0.428	14.795			
15571	106	1:BEBAN MATI	-239.518	7.22E 3	0.586	0.092	-0.004	83.647			
		2:BEBAN HIDL	-78.718	1.93E 3	0.012	-0.015	-0.000	25.310			
		3:BEBAN GEM	1.3E 3	-744.310	115.564	7.135	-0.907	-19.556			
		4:KOMBINASI	-413.370	11.8E 3	0.722	0.087	-0.006	140.873			
		5:KOMB B. MA	1.08E 3	7.6E 3	121.935	7.575	-0.957	78.300			
	13499	1:BEBAN MATI	239.518	-5.54E 3	-0.586	-0.092	-0.004	10.189			
		2:BEBAN HIDL	78.718	-1.93E 3	-0.012	0.015	0.000	3.148			
		3:BEBAN GEM	-1.3E 3	744.310	-115.564	-7.135	-0.793	8.607			
		4:KOMBINASI	413.370	-9.74E 3	-0.722	-0.087	-0.005	17.264			
		5:KOMB B. MA	-1.08E 3	-5.91E 3	-121.935	-7.575	-0.837	21.115			
15572	12832	1:BEBAN MATI	-209.205	-1.84E 3	-0.039	-0.010	0.000	-50.065			
		2:BEBAN HIDL	-69.676	-935.991	0.063	0.023	-0.000	-17.188			
		3:BEBAN GEM	-2.21E 3	-591.926	113.262	-3.434	-0.753	-0.137			
		4:KOMBINASI	-362.528	-3.71E 3	0.055	0.025	-0.000	-87.578			
		5:KOMB B. MA	-2.58E 3	-3.03E 3	118.924	-3.601	-0.791	-60.521			
	13049	1:BEBAN MATI	209.205	3.53E 3	0.039	0.010	0.000	10.514			
		2:BEBAN HIDL	69.676	935.991	-0.063	-0.023	-0.000	3.419			
		3:BEBAN GEM	2.21E 3	591.926	-113.262	3.434	-0.913	-8.570			
		4:KOMBINASI	362.528	5.74E 3	-0.055	-0.025	-0.000	18.087			
		5:KOMB B. MA	2.58E 3	4.72E 3	-118.924	3.601	-0.959	3.567			
15573	103	1:BEBAN MATI	-204.252	6.92E 3	0.237	0.016	-0.002	80.585			
		2:BEBAN HIDL	-67.840	1.84E 3	-0.199	-0.048	0.001	24.292			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-555.128	-775.812	-158.239	7.155	1.194	-20.076			
		4:KOMBINASI	-353.647	11.2E 3	-0.034	-0.058	-0.000	135.568			
		5:KOMB B. MA	-827.841	7.21E 3	-166.033	7.500	1.252	74.080			
	13048	1:BEBAN MATI	204.252	-5.23E 3	-0.237	-0.016	-0.002	8.811			
		2:BEBAN HIDL	67.840	-1.84E 3	0.199	0.048	0.002	2.703			
		3:BEBAN GEM	555.128	775.812	158.239	-7.155	1.134	8.664			
		4:KOMBINASI	353.647	-9.22E 3	0.034	0.058	0.001	14.898			
		5:KOMB B. MA	827.841	-5.52E 3	166.033	-7.500	1.190	19.530			
15574	12833	1:BEBAN MATI	-244.331	-2.11E 3	-0.319	-0.069	0.002	-55.426			
		2:BEBAN HIDL	-79.302	-1.02E 3	-0.108	-0.008	0.001	-18.934			
		3:BEBAN GEM	-628.498	-565.750	-51.003	-3.451	0.372	0.155			
		4:KOMBINASI	-420.080	-4.16E 3	-0.555	-0.095	0.004	-96.806			
		5:KOMB B. MA	-951.835	-3.31E 3	-53.937	-3.697	0.393	-66.624			
	13095	1:BEBAN MATI	244.331	3.8E 3	0.319	0.069	0.002	12.011			
		2:BEBAN HIDL	79.302	1.02E 3	0.108	0.008	0.001	3.902			
		3:BEBAN GEM	628.498	565.750	51.003	3.451	0.378	-8.477			
		4:KOMBINASI	420.080	6.19E 3	0.555	0.095	0.004	20.656			
		5:KOMB B. MA	951.835	5E 3	53.937	3.697	0.400	5.451			
15575	100	1:BEBAN MATI	-377.436	6.78E 3	-0.042	0.089	0.000	69.727			
		2:BEBAN HIDL	-117.558	1.8E 3	-0.303	-0.040	0.002	20.923			
		3:BEBAN GEM	-528.699	-721.751	-47.856	7.351	0.349	-18.350			
		4:KOMBINASI	-641.017	11E 3	-0.535	0.043	0.004	117.149			
		5:KOMB B. MA	-1E 3	7.1E 3	-50.472	7.784	0.369	63.013			
	13094	1:BEBAN MATI	377.436	-5.1E 3	0.042	-0.089	0.000	17.640			
		2:BEBAN HIDL	117.558	-1.8E 3	0.303	0.040	0.002	5.529			
		3:BEBAN GEM	528.699	721.751	47.856	-7.351	0.355	7.733			
		4:KOMBINASI	641.017	-8.99E 3	0.535	-0.043	0.004	30.015			
		5:KOMB B. MA	1E 3	-5.42E 3	50.472	-7.784	0.374	29.077			
15576	97	1:BEBAN MATI	-9.603	2.73E 3	-0.331	0.019	0.003	24.708			
		2:BEBAN HIDL	2.032	417.228	-0.241	-0.001	0.002	5.671			
		3:BEBAN GEM	-230.898	-1.4E 3	-31.949	3.682	0.285	-24.590			
		4:KOMBINASI	-8.272	3.94E 3	-0.783	0.021	0.007	38.723			
		5:KOMB B. MA	-250.826	1.51E 3	-34.023	3.885	0.303	2.292			
	13114	1:BEBAN MATI	9.603	-700.156	0.331	-0.019	0.003	5.529			
		2:BEBAN HIDL	-2.032	-417.228	0.241	0.001	0.002	1.694			
		3:BEBAN GEM	230.898	1.4E 3	31.949	-3.682	0.279	-0.126			
		4:KOMBINASI	8.272	-1.51E 3	0.783	-0.021	0.007	9.345			
		5:KOMB B. MA	250.826	519.657	34.023	-3.885	0.297	6.413			
15577	94	1:BEBAN MATI	-116.248	4.79E 3	-0.250	0.056	0.002	43.352			
		2:BEBAN HIDL	-48.968	1.29E 3	-0.453	0.003	0.003	13.293			
		3:BEBAN GEM	-109.984	-967.256	-38.457	5.683	0.241	-20.822			
		4:KOMBINASI	-217.847	7.81E 3	-1.025	0.072	0.007	73.291			
		5:KOMB B. MA	-261.112	4.55E 3	-40.901	6.025	0.256	29.465			
	13212	1:BEBAN MATI	116.248	-3.44E 3	0.250	-0.056	0.001	5.039			
		2:BEBAN HIDL	48.968	-1.29E 3	0.453	-0.003	0.003	1.927			
		3:BEBAN GEM	109.984	967.256	38.457	-5.683	0.212	9.439			
		4:KOMBINASI	217.847	-6.19E 3	1.025	-0.072	0.005	9.130			
		5:KOMB B. MA	261.112	-3.2E 3	40.901	-6.025	0.225	16.106			



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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15578	85	1:BEBAN MATI	-135.961	3.22E 3	5.143	0.729	-0.029	30.705			
		2:BEBAN HIDL	-52.365	1.28E 3	2.731	0.310	-0.016	12.607			
		3:BEBAN GEM	-58.112	-1.37E 3	14.906	6.054	-0.095	-25.858			
		4:KOMBINASI	-246.937	5.9E 3	10.541	1.371	-0.061	57.017			
		5:KOMB B. MA	-228.398	2.54E 3	22.433	7.272	-0.139	11.118			
13369		1:BEBAN MATI	135.961	-2.86E 3	-5.143	-0.729	-0.031	5.018			
		2:BEBAN HIDL	52.365	-1.28E 3	-2.731	-0.310	-0.016	2.428			
		3:BEBAN GEM	58.112	1.37E 3	-14.906	-6.054	-0.080	9.719			
		4:KOMBINASI	246.937	-5.47E 3	-10.541	-1.371	-0.064	9.906			
		5:KOMB B. MA	228.398	-2.18E 3	-22.433	-7.272	-0.125	16.680			
15579	83	1:BEBAN MATI	-172.851	2.82E 3	4.138	0.761	-0.023	24.671			
		2:BEBAN HIDL	-77.688	1.15E 3	1.934	0.430	-0.011	10.384			
		3:BEBAN GEM	-214.201	-1.11E 3	39.354	6.295	-0.252	-22.029			
		4:KOMBINASI	-331.722	5.23E 3	8.059	1.602	-0.045	46.220			
		5:KOMB B. MA	-444.375	2.34E 3	46.620	7.630	-0.294	7.771			
13562		1:BEBAN MATI	172.851	-2.46E 3	-4.138	-0.761	-0.026	6.442			
		2:BEBAN HIDL	77.688	-1.15E 3	-1.934	-0.430	-0.012	3.171			
		3:BEBAN GEM	214.201	1.11E 3	-39.354	-6.295	-0.211	8.912			
		4:KOMBINASI	331.722	-4.8E 3	-8.059	-1.602	-0.050	12.804			
		5:KOMB B. MA	444.375	-1.98E 3	-46.620	-7.630	-0.255	17.702			
15580	81	1:BEBAN MATI	36.687	1.62E 3	1.753	0.195	-0.015	20.186			
		2:BEBAN HIDL	14.730	549.726	0.526	0.110	-0.004	8.212			
		3:BEBAN GEM	-233.781	-1.48E 3	30.211	3.965	-0.285	-25.934			
		4:KOMBINASI	67.592	2.82E 3	2.945	0.409	-0.024	37.362			
		5:KOMB B. MA	-199.945	396.059	33.790	4.424	-0.316	-2.118			
13524		1:BEBAN MATI	-36.687	-1.08E 3	-1.753	-0.195	-0.016	3.589			
		2:BEBAN HIDL	-14.730	-549.726	-0.526	-0.110	-0.005	1.492			
		3:BEBAN GEM	233.781	1.48E 3	-30.211	-3.965	-0.248	-0.139			
		4:KOMBINASI	-67.592	-2.17E 3	-2.945	-0.409	-0.028	6.693			
		5:KOMB B. MA	199.945	144.531	-33.790	-4.424	-0.280	4.338			
15581	12834	1:BEBAN MATI	-254.211	-1.74E 3	-1.244	-0.527	0.007	-43.050			
		2:BEBAN HIDL	-89.343	-751.620	-0.418	-0.270	0.002	-16.626			
		3:BEBAN GEM	-461.111	-522.166	35.985	-3.260	-0.270	-0.037			
		4:KOMBINASI	-448.001	-3.29E 3	-2.163	-1.065	0.012	-78.262			
		5:KOMB B. MA	-791.983	-2.74E 3	36.289	-4.113	-0.275	-53.064			
13510		1:BEBAN MATI	254.211	2.19E 3	1.244	0.527	0.011	14.193			
		2:BEBAN HIDL	89.343	751.620	0.418	0.270	0.004	5.570			
		3:BEBAN GEM	461.111	522.166	-35.985	3.260	-0.259	-7.645			
		4:KOMBINASI	448.001	3.83E 3	2.163	1.065	0.020	25.943			
		5:KOMB B. MA	791.983	3.19E 3	-36.289	4.113	-0.258	9.508			
15582	79	1:BEBAN MATI	-235.660	4.75E 3	4.315	0.944	-0.030	59.117			
		2:BEBAN HIDL	-84.124	1.71E 3	1.541	0.396	-0.011	22.328			
		3:BEBAN GEM	-1.04E 3	-825.642	18.710	7.127	-0.159	-20.568			
		4:KOMBINASI	-417.390	8.43E 3	7.644	1.766	-0.054	106.665			
		5:KOMB B. MA	-1.37E 3	4.91E 3	24.886	8.664	-0.204	50.917			
13511		1:BEBAN MATI	235.660	-4.3E 3	-4.315	-0.944	-0.033	7.382			
		2:BEBAN HIDL	84.124	-1.71E 3	-1.541	-0.396	-0.012	2.844			
		3:BEBAN GEM	1.04E 3	825.642	-18.710	-7.127	-0.116	8.423			



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Job No 1	Sheet No 60	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	417.390	-7.89E 3	-7.644	-1.766	-0.059	13.408			
		5:KOMB B. MA	1.37E 3	-4.46E 3	-24.886	-8.664	-0.162	17.932			
15583	12835	1:BEBAN MATI	-213.482	-1.87E 3	-1.261	-0.403	0.008	-38.238			
		2:BEBAN HIDL	-75.630	-802.713	-0.436	-0.214	0.002	-14.899			
		3:BEBAN GEM	-1.41E 3	-560.090	9.558	-3.287	-0.112	0.407			
		4:KOMBINASI	-377.186	-3.53E 3	-2.211	-0.827	0.013	-69.724			
		5:KOMB B. MA	-1.74E 3	-2.94E 3	8.513	-3.983	-0.108	-46.751			
	13063	1:BEBAN MATI	213.482	2.32E 3	1.261	0.403	0.011	7.412			
		2:BEBAN HIDL	75.630	802.713	0.436	0.214	0.004	3.091			
		3:BEBAN GEM	1.41E 3	560.090	-9.558	3.287	-0.029	-8.646			
		4:KOMBINASI	377.186	4.07E 3	2.211	0.827	0.020	13.840			
		5:KOMB B. MA	1.74E 3	3.39E 3	-8.513	3.983	-0.017	0.189			
15584	77	1:BEBAN MATI	-207.256	4.48E 3	4.583	1.006	-0.032	56.507			
		2:BEBAN HIDL	-73.837	1.62E 3	1.610	0.435	-0.011	21.350			
		3:BEBAN GEM	-1.36E 3	-858.340	-15.935	7.154	0.104	-21.077			
		4:KOMBINASI	-366.846	7.97E 3	8.076	1.902	-0.056	101.969			
		5:KOMB B. MA	-1.68E 3	4.55E 3	-11.182	8.778	0.070	47.186			
	13062	1:BEBAN MATI	207.256	-4.03E 3	-4.583	-1.006	-0.035	6.143			
		2:BEBAN HIDL	73.837	-1.62E 3	-1.610	-0.435	-0.012	2.420			
		3:BEBAN GEM	1.36E 3	858.340	15.935	-7.154	0.131	8.451			
		4:KOMBINASI	366.846	-7.43E 3	-8.076	-1.902	-0.062	11.243			
		5:KOMB B. MA	1.68E 3	-4.1E 3	11.182	-8.778	0.094	16.468			
15585	12836	1:BEBAN MATI	-234.944	-2.1E 3	-1.016	-0.317	0.006	-42.895			
		2:BEBAN HIDL	-83.213	-884.932	-0.369	-0.168	0.002	-16.571			
		3:BEBAN GEM	-883.799	-532.090	-18.695	-3.298	0.140	0.704			
		4:KOMBINASI	-415.074	-3.93E 3	-1.810	-0.649	0.010	-77.986			
		5:KOMB B. MA	-1.21E 3	-3.19E 3	-20.867	-3.881	0.154	-52.098			
	13107	1:BEBAN MATI	234.944	2.55E 3	1.016	0.317	0.009	8.755			
		2:BEBAN HIDL	83.213	884.932	0.369	0.168	0.003	3.553			
		3:BEBAN GEM	883.799	532.090	18.695	3.298	0.135	-8.531			
		4:KOMBINASI	415.074	4.47E 3	1.810	0.649	0.017	16.191			
		5:KOMB B. MA	1.21E 3	3.64E 3	20.867	3.881	0.153	1.929			
15586	75	1:BEBAN MATI	-329.503	4.45E 3	4.625	1.084	-0.034	48.953			
		2:BEBAN HIDL	-114.889	1.6E 3	1.596	0.464	-0.012	18.537			
		3:BEBAN GEM	-653.896	-804.522	-33.973	7.235	0.246	-19.371			
		4:KOMBINASI	-579.226	7.9E 3	8.103	2.043	-0.060	88.402			
		5:KOMB B. MA	-1.09E 3	4.56E 3	-30.089	8.960	0.217	39.735			
	13106	1:BEBAN MATI	329.503	-4E 3	-4.625	-1.084	-0.034	13.168			
		2:BEBAN HIDL	114.889	-1.6E 3	-1.596	-0.464	-0.012	4.990			
		3:BEBAN GEM	653.896	804.522	33.973	-7.235	0.254	7.537			
		4:KOMBINASI	579.226	-7.36E 3	-8.103	-2.043	-0.059	23.785			
		5:KOMB B. MA	1.09E 3	-4.11E 3	30.089	-8.960	0.226	24.075			
15587	73	1:BEBAN MATI	-35.663	1.33E 3	0.990	0.554	-0.009	15.437			
		2:BEBAN HIDL	-2.972	388.505	0.514	0.159	-0.004	5.272			
		3:BEBAN GEM	-528.636	-1.47E 3	-22.910	3.660	0.198	-25.316			
		4:KOMBINASI	-47.551	2.22E 3	2.011	0.919	-0.018	26.959			
		5:KOMB B. MA	-592.514	22.278	-22.757	4.492	0.197	-7.982			
	13120	1:BEBAN MATI	35.663	-791.768	-0.990	-0.554	-0.009	3.311			



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Job No 1	Sheet No 61	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	2.972	-388.505	-0.514	-0.159	-0.005	1.586			
		3:BEBAN GEM	528.636	1.47E 3	22.910	-3.660	0.206	-0.627			
		4:KOMBINASI	47.551	-1.57E 3	-2.011	-0.919	-0.018	6.511			
		5:KOMB B. MA	592.514	518.312	22.757	-4.492	0.205	3.604			
15588	71	1:BEBAN MATI	-106.036	2.98E 3	5.697	0.660	-0.033	29.058			
		2:BEBAN HIDL	-49.544	1.23E 3	2.386	0.360	-0.014	12.561			
		3:BEBAN GEM	-314.122	-1.15E 3	-30.988	6.241	0.194	-22.565			
		4:KOMBINASI	-206.513	5.53E 3	10.653	1.368	-0.062	54.967			
		5:KOMB B. MA	-465.590	2.51E 3	-25.410	7.429	0.163	12.901			
	13154	1:BEBAN MATI	106.036	-2.62E 3	-5.697	-0.660	-0.034	3.846			
		2:BEBAN HIDL	49.544	-1.23E 3	-2.386	-0.360	-0.014	1.859			
		3:BEBAN GEM	314.122	1.15E 3	30.988	-6.241	0.170	9.049			
		4:KOMBINASI	206.513	-5.1E 3	-10.653	-1.368	-0.064	7.589			
		5:KOMB B. MA	465.590	-2.15E 3	25.410	-7.429	0.136	14.463			
15589	126	1:BEBAN MATI	-183.514	3.71E 3	19.692	2.231	-0.118	31.653			
		2:BEBAN HIDL	-64.554	553.654	8.751	1.299	-0.053	5.639			
		3:BEBAN GEM	-121.538	-1.21E 3	-36.753	5.402	0.216	-25.118			
		4:KOMBINASI	-323.504	5.33E 3	37.632	4.754	-0.227	47.006			
		5:KOMB B. MA	-349.862	2.77E 3	-13.648	8.682	0.077	8.662			
	13382	1:BEBAN MATI	183.514	-2.36E 3	-19.692	-2.231	-0.114	4.022			
		2:BEBAN HIDL	64.554	-553.654	-8.751	-1.299	-0.050	0.877			
		3:BEBAN GEM	121.538	1.21E 3	36.753	-5.402	0.217	10.914			
		4:KOMBINASI	323.504	-3.71E 3	-37.632	-4.754	-0.216	6.229			
		5:KOMB B. MA	349.862	-1.42E 3	13.648	-8.682	0.084	16.008			
15590	125	1:BEBAN MATI	-145.693	3.36E 3	20.245	2.252	-0.127	26.002			
		2:BEBAN HIDL	-58.914	476.032	8.359	1.537	-0.052	4.301			
		3:BEBAN GEM	-955.360	-1E 3	-29.818	5.371	0.169	-22.039			
		4:KOMBINASI	-269.094	4.8E 3	37.668	5.162	-0.236	38.084			
		5:KOMB B. MA	-1.18E 3	2.59E 3	-6.049	8.814	0.020	5.442			
	13574	1:BEBAN MATI	145.693	-2.01E 3	-20.245	-2.252	-0.111	5.632			
		2:BEBAN HIDL	58.914	-476.032	-8.359	-1.537	-0.046	1.301			
		3:BEBAN GEM	955.360	1E 3	29.818	-5.371	0.181	10.214			
		4:KOMBINASI	269.094	-3.18E 3	-37.668	-5.162	-0.208	8.840			
		5:KOMB B. MA	1.18E 3	-1.24E 3	6.049	-8.814	0.051	17.137			
15591	124	1:BEBAN MATI	58.700	2.58E 3	8.278	1.923	-0.069	27.007			
		2:BEBAN HIDL	19.527	334.889	2.134	1.125	-0.018	7.170			
		3:BEBAN GEM	-2.81E 3	-1.4E 3	70.674	0.732	-0.691	-25.550			
		4:KOMBINASI	101.684	3.63E 3	13.348	4.108	-0.112	43.882			
		5:KOMB B. MA	-2.88E 3	1.31E 3	83.766	3.366	-0.805	4.483			
	13643	1:BEBAN MATI	-58.700	-555.825	-8.278	-1.923	-0.077	0.682			
		2:BEBAN HIDL	-19.527	-334.889	-2.134	-1.125	-0.020	-1.259			
		3:BEBAN GEM	2.81E 3	1.4E 3	-70.674	-0.732	-0.557	0.817			
		4:KOMBINASI	-101.684	-1.2E 3	-13.348	-4.108	-0.124	-1.196			
		5:KOMB B. MA	2.88E 3	714.395	-83.766	-3.366	-0.674	0.785			
15592	199	1:BEBAN MATI	-308.139	-972.955	-2.124	-0.096	0.014	-46.047			
		2:BEBAN HIDL	-114.844	-657.903	-0.577	-0.147	0.004	-16.942			
		3:BEBAN GEM	-1.64E 3	-611.904	29.540	-2.801	-0.211	-0.574			
		4:KOMBINASI	-553.517	-2.22E 3	-3.472	-0.350	0.023	-82.363			



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Job No 1	Sheet No 62	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-2.1E 3	-2.01E 3	28.547	-3.126	-0.205	-56.815			
	13309	1:BEBAN MATI	308.139	2.66E 3	2.124	0.096	0.017	19.319			
		2:BEBAN HIDL	114.844	657.903	0.577	0.147	0.004	7.264			
		3:BEBAN GEM	1.64E 3	611.904	-29.540	2.801	-0.224	-8.427			
		4:KOMBINASI	553.517	4.25E 3	3.472	0.350	0.028	34.806			
		5:KOMB B. MA	2.1E 3	3.7E 3	-28.547	3.126	-0.215	14.830			
15593	123	1:BEBAN MATI	-235.298	6.41E 3	-0.521	-1.271	0.003	72.409			
		2:BEBAN HIDL	-86.844	1.81E 3	-1.779	-0.820	0.012	23.315			
		3:BEBAN GEM	-1.5E 3	-726.653	15.778	6.859	-0.136	-19.673			
		4:KOMBINASI	-421.308	10.6E 3	-3.472	-2.837	0.023	124.194			
		5:KOMB B. MA	-1.86E 3	6.74E 3	14.978	5.439	-0.132	65.741			
	13300	1:BEBAN MATI	235.298	-4.73E 3	0.521	1.271	0.005	9.531			
		2:BEBAN HIDL	86.844	-1.81E 3	1.779	0.820	0.014	3.345			
		3:BEBAN GEM	1.5E 3	726.653	-15.778	-6.859	-0.097	8.983			
		4:KOMBINASI	421.308	-8.57E 3	3.472	2.837	0.029	16.788			
		5:KOMB B. MA	1.86E 3	-5.05E 3	-14.978	-5.439	-0.088	20.970			
15594	12837	1:BEBAN MATI	-203.276	-1.18E 3	-0.747	-0.552	0.007	-40.020			
		2:BEBAN HIDL	-75.691	-732.921	0.121	-0.436	0.000	-14.543			
		3:BEBAN GEM	-1.43E 3	-624.966	19.210	-2.653	-0.149	-0.497			
		4:KOMBINASI	-365.036	-2.59E 3	-0.704	-1.360	0.009	-71.293			
		5:KOMB B. MA	-1.75E 3	-2.28E 3	19.496	-3.599	-0.150	-49.268			
	13263	1:BEBAN MATI	203.276	2.87E 3	0.747	0.552	0.004	10.211			
		2:BEBAN HIDL	75.691	732.921	-0.121	0.436	-0.002	3.762			
		3:BEBAN GEM	1.43E 3	624.966	-19.210	2.653	-0.133	-8.697			
		4:KOMBINASI	365.036	4.62E 3	0.704	1.360	0.002	18.272			
		5:KOMB B. MA	1.75E 3	3.97E 3	-19.496	3.599	-0.137	3.337			
15595	122	1:BEBAN MATI	-199.970	6.11E 3	-1.232	-1.344	0.008	69.410			
		2:BEBAN HIDL	-73.765	1.69E 3	-2.121	-0.853	0.015	22.160			
		3:BEBAN GEM	-1.44E 3	-734.272	-14.869	6.857	0.098	-19.793			
		4:KOMBINASI	-357.988	10E 3	-4.872	-2.977	0.033	118.747			
		5:KOMB B. MA	-1.76E 3	6.35E 3	-18.117	5.344	0.119	61.923			
	13262	1:BEBAN MATI	199.970	-4.42E 3	1.232	1.344	0.010	8.028			
		2:BEBAN HIDL	73.765	-1.69E 3	2.121	0.853	0.017	2.732			
		3:BEBAN GEM	1.44E 3	734.272	14.869	-6.857	0.121	8.992			
		4:KOMBINASI	357.988	-8.01E 3	4.872	2.977	0.038	14.006			
		5:KOMB B. MA	1.76E 3	-4.66E 3	18.117	-5.344	0.147	19.109			
15596	187	1:BEBAN MATI	-249.855	-1.46E 3	-1.030	-0.707	0.008	-45.728			
		2:BEBAN HIDL	-92.987	-840.776	0.027	-0.523	0.001	-16.792			
		3:BEBAN GEM	-1.35E 3	-601.998	-9.566	-2.640	0.072	-0.232			
		4:KOMBINASI	-448.605	-3.1E 3	-1.194	-1.686	0.011	-81.741			
		5:KOMB B. MA	-1.72E 3	-2.6E 3	-11.059	-3.793	0.084	-56.048			
	13251	1:BEBAN MATI	249.855	3.15E 3	1.030	0.707	0.007	11.845			
		2:BEBAN HIDL	92.987	840.776	-0.027	0.523	-0.001	4.424			
		3:BEBAN GEM	1.35E 3	601.998	9.566	2.640	0.069	-8.623			
		4:KOMBINASI	448.605	5.12E 3	1.194	1.686	0.007	21.292			
		5:KOMB B. MA	1.72E 3	4.28E 3	11.059	3.793	0.079	5.445			
15597	121	1:BEBAN MATI	-480.914	6.11E 3	5.624	-2.467	-0.044	59.854			
		2:BEBAN HIDL	-178.686	1.72E 3	1.204	-1.502	-0.010	18.827			



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Job No

1

Sheet No

63

Rev

Part

1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.9E 3	-649.634	-28.516	7.171	0.231	-17.604			
		4:KOMBINASI	-862.995	10.1E 3	8.674	-5.363	-0.070	101.949			
		5:KOMB B. MA	-2.59E 3	6.46E 3	-23.596	4.161	0.192	52.666			
	13250	1:BEBAN MATI	480.914	-4.42E 3	-5.624	2.467	-0.038	17.598			
		2:BEBAN HIDL	178.686	-1.72E 3	-1.204	1.502	-0.007	6.438			
		3:BEBAN GEM	1.9E 3	649.634	28.516	-7.171	0.189	8.048			
		4:KOMBINASI	862.995	-8.05E 3	-8.674	5.363	-0.058	31.418			
		5:KOMB B. MA	2.59E 3	-4.77E 3	23.596	-4.161	0.155	29.911			
15598	120	1:BEBAN MATI	15.902	2.09E 3	4.079	0.355	-0.033	18.171			
		2:BEBAN HIDL	-4.984	65.991	2.258	0.117	-0.018	2.209			
		3:BEBAN GEM	-1.49E 3	-1.6E 3	-30.760	5.540	0.234	-27.922			
		4:KOMBINASI	11.109	2.61E 3	8.507	0.614	-0.068	25.339			
		5:KOMB B. MA	-1.55E 3	446.260	-26.864	6.243	0.203	-9.822			
	13239	1:BEBAN MATI	-15.902	-63.282	-4.079	-0.355	-0.039	0.824			
		2:BEBAN HIDL	4.984	-65.991	-2.258	-0.117	-0.022	-1.044			
		3:BEBAN GEM	1.49E 3	1.6E 3	30.760	-5.540	0.309	-0.359			
		4:KOMBINASI	-11.109	-181.524	-8.507	-0.614	-0.082	-0.681			
		5:KOMB B. MA	1.55E 3	1.58E 3	26.864	-6.243	0.272	-0.179			
15599	119	1:BEBAN MATI	-141.955	3.55E 3	19.865	1.903	-0.118	30.601			
		2:BEBAN HIDL	-59.189	522.219	8.793	1.344	-0.053	5.545			
		3:BEBAN GEM	-534.891	-964.995	-39.171	5.530	0.241	-21.360			
		4:KOMBINASI	-265.048	5.1E 3	37.906	4.434	-0.227	45.593			
		5:KOMB B. MA	-739.104	2.85E 3	-15.989	8.515	0.103	11.499			
	13168	1:BEBAN MATI	141.955	-2.2E 3	-19.865	-1.903	-0.115	3.231			
		2:BEBAN HIDL	59.189	-522.219	-8.793	-1.344	-0.051	0.601			
		3:BEBAN GEM	534.891	964.995	39.171	-5.530	0.220	10.004			
		4:KOMBINASI	265.048	-3.48E 3	-37.906	-4.434	-0.219	4.839			
		5:KOMB B. MA	739.104	-1.5E 3	15.989	-8.515	0.085	14.096			
15600	129	1:BEBAN MATI	-212.420	2.33E 3	23.803	6.179	-0.172	28.706			
		2:BEBAN HIDL	-96.583	819.189	11.058	3.418	-0.080	11.340			
		3:BEBAN GEM	-1.3E 3	-786.413	-21.468	5.365	0.135	-20.643			
		4:KOMBINASI	-409.437	4.1E 3	46.256	12.884	-0.335	52.591			
		5:KOMB B. MA	-1.63E 3	1.99E 3	7.896	13.863	-0.079	13.835			
	13283	1:BEBAN MATI	212.420	-1.88E 3	-23.803	-6.179	-0.178	2.232			
		2:BEBAN HIDL	96.583	-819.189	-11.058	-3.418	-0.083	0.710			
		3:BEBAN GEM	1.3E 3	786.413	21.468	-5.365	0.181	9.075			
		4:KOMBINASI	409.437	-3.56E 3	-46.256	-12.884	-0.345	3.815			
		5:KOMB B. MA	1.63E 3	-1.54E 3	-7.896	-13.863	-0.037	12.187			
15601	12824	1:BEBAN MATI	-46.186	1.32E 3	-0.427	0.108	0.004	13.475			
		2:BEBAN HIDL	-14.992	569.693	-0.467	0.014	0.003	5.836			
		3:BEBAN GEM	164.125	-12.701	-3.122	-0.131	0.022	-0.863			
		4:KOMBINASI	-79.411	2.5E 3	-1.260	0.151	0.010	25.508			
		5:KOMB B. MA	117.150	1.65E 3	-3.985	-0.021	0.028	16.070			
	13333	1:BEBAN MATI	46.186	-1.09E 3	0.427	-0.108	0.001	0.756			
		2:BEBAN HIDL	14.992	-569.693	0.467	-0.014	0.002	0.868			
		3:BEBAN GEM	-164.125	12.701	3.122	0.131	0.015	0.714			
		4:KOMBINASI	79.411	-2.22E 3	1.260	-0.151	0.005	2.296			
		5:KOMB B. MA	-117.150	-1.42E 3	3.985	0.021	0.018	2.026			



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Job No 1	Sheet No 64	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15602	12819	1:BEBAN MATI	-40.240	960.140	-1.000	0.108	0.006	5.012			
		2:BEBAN HIDL	-19.470	416.549	-0.343	0.012	0.002	2.658			
		3:BEBAN GEM	361.525	13.845	-5.968	-0.097	0.048	-0.509			
		4:KOMBINASI	-79.440	1.82E 3	-1.749	0.149	0.011	10.267			
		5:KOMB B. MA	327.680	1.22E 3	-7.472	0.014	0.059	6.072			
13542	13542	1:BEBAN MATI	40.240	-729.488	1.000	-0.108	0.005	4.930			
		2:BEBAN HIDL	19.470	-416.549	0.343	-0.012	0.002	2.244			
		3:BEBAN GEM	-361.525	-13.845	5.968	0.097	0.022	0.672			
		4:KOMBINASI	79.440	-1.54E 3	1.749	-0.149	0.009	9.506			
		5:KOMB B. MA	-327.680	-993.955	7.472	-0.014	0.029	6.982			
15603	138	1:BEBAN MATI	-3.219	1.74E 3	2.251	0.417	-0.015	23.013			
		2:BEBAN HIDL	-38.790	638.389	-0.007	0.138	-0.000	8.262			
		3:BEBAN GEM	915.541	-375.026	-22.900	4.791	0.171	-9.432			
		4:KOMBINASI	-65.926	3.11E 3	2.690	0.721	-0.019	40.835			
		5:KOMB B. MA	934.825	1.73E 3	-21.798	5.530	0.165	18.066			
13363	13363	1:BEBAN MATI	3.219	-1.51E 3	-2.251	-0.417	-0.011	-3.899			
		2:BEBAN HIDL	38.790	-638.389	0.007	-0.138	0.000	-0.750			
		3:BEBAN GEM	-915.541	375.026	22.900	-4.791	0.098	5.019			
		4:KOMBINASI	65.926	-2.83E 3	-2.690	-0.721	-0.013	-5.878			
		5:KOMB B. MA	-934.825	-1.5E 3	21.798	-5.530	0.092	0.922			
15604	201	1:BEBAN MATI	-88.112	-484.039	0.977	-1.624	-0.008	-19.611			
		2:BEBAN HIDL	-0.397	-242.151	0.490	-0.082	-0.004	-3.731			
		3:BEBAN GEM	1.88E 3	-282.949	1.041	-0.909	-0.024	2.034			
		4:KOMBINASI	-106.369	-968.288	1.956	-2.080	-0.016	-29.502			
		5:KOMB B. MA	1.89E 3	-926.426	2.364	-2.628	-0.036	-19.714			
13468	13468	1:BEBAN MATI	88.112	2.01E 3	-0.977	1.624	-0.006	1.268			
		2:BEBAN HIDL	0.397	242.151	-0.490	0.082	-0.003	0.169			
		3:BEBAN GEM	-1.88E 3	282.949	-1.041	0.909	0.009	-6.196			
		4:KOMBINASI	106.369	2.8E 3	-1.956	2.080	-0.013	1.792			
		5:KOMB B. MA	-1.89E 3	2.45E 3	-2.364	2.628	0.001	-5.136			
15605	12810	1:BEBAN MATI	-136.626	3.07E 3	-6.971	2.604	0.047	23.711			
		2:BEBAN HIDL	-24.701	452.526	-1.590	0.011	0.011	6.136			
		3:BEBAN GEM	2.04E 3	-439.662	11.225	-1.435	-0.131	-6.467			
		4:KOMBINASI	-203.474	4.4E 3	-10.910	3.142	0.074	38.271			
		5:KOMB B. MA	2E 3	2.88E 3	3.861	1.104	-0.084	20.603			
13472	13472	1:BEBAN MATI	136.626	-1.54E 3	6.971	-2.604	0.055	10.186			
		2:BEBAN HIDL	24.701	-452.526	1.590	-0.011	0.013	0.521			
		3:BEBAN GEM	-2.04E 3	439.662	-11.225	1.435	-0.034	-0.001			
		4:KOMBINASI	203.474	-2.57E 3	10.910	-3.142	0.086	13.057			
		5:KOMB B. MA	-2E 3	-1.35E 3	-3.861	-1.104	0.027	10.498			
15606	12838	1:BEBAN MATI	-158.624	-304.227	-0.256	-0.150	-0.001	-9.672			
		2:BEBAN HIDL	-35.618	-175.433	-0.030	0.016	-0.001	-5.629			
		3:BEBAN GEM	995.435	-25.218	2.511	0.959	-0.017	0.373			
		4:KOMBINASI	-247.337	-645.764	-0.355	-0.154	-0.002	-20.613			
		5:KOMB B. MA	865.212	-435.966	2.363	0.866	-0.019	-12.658			
12910	12910	1:BEBAN MATI	158.624	592.541	0.256	0.150	0.005	3.077			
		2:BEBAN HIDL	35.618	175.433	0.030	-0.016	0.001	3.048			
		3:BEBAN GEM	-995.435	25.218	-2.511	-0.959	-0.020	-0.744			



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Job No 1	Sheet No 65	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	247.337	991.742	0.355	0.154	0.007	8.569			
		5:KOMB B. MA	-865.212	724.280	-2.363	-0.866	-0.015	4.124			
15607	12805	1:BEBAN MATI	-137.249	1.42E 3	-0.319	0.498	0.009	16.792			
		2:BEBAN HIDL	-29.696	544.361	-0.160	0.107	0.003	5.579			
		3:BEBAN GEM	1.37E 3	3.302	-10.287	-0.813	0.101	-1.261			
		4:KOMBINASI	-212.212	2.57E 3	-0.639	0.768	0.015	29.075			
		5:KOMB B. MA	1.28E 3	1.75E 3	-11.216	-0.291	0.116	18.814			
	12909	1:BEBAN MATI	137.249	-1.13E 3	0.319	-0.498	-0.004	1.935			
		2:BEBAN HIDL	29.696	-544.361	0.160	-0.107	-0.000	2.429			
		3:BEBAN GEM	-1.37E 3	-3.302	10.287	0.813	0.051	1.310			
		4:KOMBINASI	212.212	-2.23E 3	0.639	-0.768	-0.006	6.209			
		5:KOMB B. MA	-1.28E 3	-1.46E 3	11.216	0.291	0.049	4.768			
15608	189	1:BEBAN MATI	-74.864	181.986	1.604	-0.035	-0.012	-18.363			
		2:BEBAN HIDL	-4.029	-181.464	0.310	0.209	-0.003	-3.481			
		3:BEBAN GEM	1.83E 3	-22.473	0.270	1.207	-0.022	0.732			
		4:KOMBINASI	-96.283	-71.958	2.420	0.293	-0.018	-27.605			
		5:KOMB B. MA	1.85E 3	49.511	2.073	1.357	-0.037	-19.682			
	13068	1:BEBAN MATI	74.864	1.34E 3	-1.604	0.035	-0.012	9.817			
		2:BEBAN HIDL	4.029	181.464	-0.310	-0.209	-0.002	0.812			
		3:BEBAN GEM	-1.83E 3	22.473	-0.270	-1.207	0.018	-1.063			
		4:KOMBINASI	96.283	1.9E 3	-2.420	-0.293	-0.018	13.080			
		5:KOMB B. MA	-1.85E 3	1.48E 3	-2.073	-1.357	0.006	9.188			
15609	135	1:BEBAN MATI	-197.110	3.96E 3	-3.786	1.115	0.029	45.544			
		2:BEBAN HIDL	-22.912	555.313	-1.572	-0.333	0.011	8.308			
		3:BEBAN GEM	1.4E 3	-253.545	-8.936	3.330	0.015	-8.135			
		4:KOMBINASI	-273.191	5.64E 3	-7.058	0.805	0.053	67.945			
		5:KOMB B. MA	1.26E 3	4.03E 3	-14.111	4.411	0.052	41.987			
	13064	1:BEBAN MATI	197.110	-2.44E 3	3.786	-1.115	0.026	1.510			
		2:BEBAN HIDL	22.912	-555.313	1.572	0.333	0.012	-0.139			
		3:BEBAN GEM	-1.4E 3	253.545	8.936	-3.330	0.117	4.405			
		4:KOMBINASI	273.191	-3.81E 3	7.058	-0.805	0.051	1.590			
		5:KOMB B. MA	-1.26E 3	-2.5E 3	14.111	-4.411	0.156	6.052			
15610	12796	1:BEBAN MATI	-29.898	523.124	0.373	0.028	-0.002	3.136			
		2:BEBAN HIDL	-19.668	248.822	0.076	0.018	-0.000	1.850			
		3:BEBAN GEM	241.352	-285.249	-12.081	-1.016	0.091	-3.148			
		4:KOMBINASI	-67.345	1.03E 3	0.569	0.062	-0.003	6.723			
		5:KOMB B. MA	211.722	372.906	-12.267	-1.029	0.093	0.941			
	12900	1:BEBAN MATI	29.898	-292.473	-0.373	-0.028	-0.002	1.663			
		2:BEBAN HIDL	19.668	-248.822	-0.076	-0.018	-0.001	1.078			
		3:BEBAN GEM	-241.352	285.249	12.081	1.016	0.051	-0.209			
		4:KOMBINASI	67.345	-749.082	-0.569	-0.062	-0.004	3.721			
		5:KOMB B. MA	-211.722	-142.254	12.267	1.029	0.051	2.090			
15611	12791	1:BEBAN MATI	-49.369	1.29E 3	-0.347	0.089	0.003	13.324			
		2:BEBAN HIDL	-17.476	541.680	-0.061	0.017	0.001	5.901			
		3:BEBAN GEM	132.871	46.412	-0.442	-0.133	0.007	-0.467			
		4:KOMBINASI	-87.206	2.41E 3	-0.514	0.134	0.005	25.430			
		5:KOMB B. MA	79.659	1.66E 3	-0.848	-0.041	0.011	16.374			
	13136	1:BEBAN MATI	49.369	-1.06E 3	0.347	-0.089	0.001	0.454			



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Job No 1	Sheet No 66	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	17.476	-541.680	0.061	-0.017	-0.000	0.474			
		3:BEBAN GEM	-132.871	-46.412	0.442	0.133	-0.002	1.013			
		4:KOMBINASI	87.206	-2.13E 3	0.514	-0.134	0.001	1.303			
		5:KOMB B. MA	-79.659	-1.43E 3	0.848	0.041	-0.001	1.802			
15612	12822	1:BEBAN MATI	-53.982	1.39E 3	0.263	-0.002	-0.002	13.795			
		2:BEBAN HIDL	-19.948	596.135	0.099	-0.001	-0.001	6.038			
		3:BEBAN GEM	140.031	-19.699	8.446	-0.149	-0.050	-0.933			
		4:KOMBINASI	-96.696	2.62E 3	0.475	-0.004	-0.003	26.214			
		5:KOMB B. MA	81.081	1.73E 3	9.191	-0.159	-0.055	16.438			
	13431	1:BEBAN MATI	53.982	-1.16E 3	-0.263	0.002	-0.001	1.229			
		2:BEBAN HIDL	19.948	-596.135	-0.099	0.001	-0.001	0.977			
		3:BEBAN GEM	-140.031	19.699	-8.446	0.149	-0.049	0.701			
		4:KOMBINASI	96.696	-2.35E 3	-0.475	0.004	-0.003	3.038			
		5:KOMB B. MA	-81.081	-1.5E 3	-9.191	0.159	-0.053	2.551			
15613	12817	1:BEBAN MATI	-100.310	1.21E 3	0.512	0.018	-0.002	10.240			
		2:BEBAN HIDL	-32.795	492.704	0.262	0.011	-0.001	4.155			
		3:BEBAN GEM	577.420	8.004	24.799	-0.216	-0.144	-0.741			
		4:KOMBINASI	-172.845	2.24E 3	1.033	0.038	-0.004	18.936			
		5:KOMB B. MA	486.303	1.51E 3	26.708	-0.203	-0.154	11.955			
	13607	1:BEBAN MATI	100.310	-975.806	-0.512	-0.018	-0.004	2.600			
		2:BEBAN HIDL	32.795	-492.704	-0.262	-0.011	-0.002	1.643			
		3:BEBAN GEM	-577.420	-8.004	-24.799	0.216	-0.148	0.835			
		4:KOMBINASI	172.845	-1.96E 3	-1.033	-0.038	-0.008	5.749			
		5:KOMB B. MA	-486.303	-1.28E 3	-26.708	0.203	-0.161	4.463			
15614	12813	1:BEBAN MATI	-98.372	590.893	0.155	0.006	-0.002	8.778			
		2:BEBAN HIDL	-31.188	257.709	0.119	-0.001	-0.001	4.444			
		3:BEBAN GEM	414.626	-23.132	15.363	0.204	-0.141	-0.725			
		4:KOMBINASI	-167.947	1.12E 3	0.376	0.007	-0.005	17.645			
		5:KOMB B. MA	318.272	721.230	16.358	0.220	-0.151	10.684			
	13515	1:BEBAN MATI	98.372	-244.916	-0.155	-0.006	-0.001	-1.402			
		2:BEBAN HIDL	31.188	-257.709	-0.119	0.001	-0.001	0.105			
		3:BEBAN GEM	-414.626	23.132	-15.363	-0.204	-0.130	0.317			
		4:KOMBINASI	167.947	-706.233	-0.376	-0.007	-0.002	-1.514			
		5:KOMB B. MA	-318.272	-375.252	-16.358	-0.220	-0.138	-1.006			
15615	12839	1:BEBAN MATI	-111.830	-165.718	0.288	0.006	-0.002	-11.887			
		2:BEBAN HIDL	-34.879	-120.444	0.173	0.004	-0.001	-4.793			
		3:BEBAN GEM	558.981	-66.440	18.353	0.908	-0.137	0.021			
		4:KOMBINASI	-190.002	-391.572	0.623	0.014	-0.005	-21.933			
		5:KOMB B. MA	454.173	-307.746	19.663	0.962	-0.147	-14.741			
	13492	1:BEBAN MATI	111.830	454.032	-0.288	-0.006	-0.002	7.329			
		2:BEBAN HIDL	34.879	120.444	-0.173	-0.004	-0.001	3.021			
		3:BEBAN GEM	-558.981	66.440	-18.353	-0.908	-0.133	-0.998			
		4:KOMBINASI	190.002	737.549	-0.623	-0.014	-0.004	13.628			
		5:KOMB B. MA	-454.173	596.061	-19.663	-0.962	-0.142	8.093			
15616	12808	1:BEBAN MATI	-134.983	1.4E 3	0.178	0.008	-0.001	16.387			
		2:BEBAN HIDL	-43.702	554.907	0.114	0.006	-0.001	7.006			
		3:BEBAN GEM	732.684	35.746	37.550	-0.689	-0.284	-0.742			
		4:KOMBINASI	-231.902	2.57E 3	0.396	0.019	-0.003	30.874			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 67	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	608.114	1.77E 3	39.673	-0.712	-0.300	19.811			
	13493	1:BEAN MATI	134.983	-1.11E 3	-0.178	-0.008	-0.001	2.076			
		2:BEAN HIDL	43.702	-554.907	-0.114	-0.006	-0.001	1.157			
		3:BEAN GEM	-732.684	-35.746	-37.550	0.689	-0.269	1.268			
		4:KOMBINASI	231.902	-2.22E 3	-0.396	-0.019	-0.003	4.343			
		5:KOMB B. MA	-608.114	-1.48E 3	-39.673	0.712	-0.284	4.102			
15617	12840	1:BEAN MATI	-133.825	-319.412	0.017	0.009	-0.000	-9.197			
		2:BEAN HIDL	-43.194	-172.168	0.018	0.002	-0.000	-3.945			
		3:BEAN GEM	1.57E 3	-70.869	113.632	0.888	-0.921	0.212			
		4:KOMBINASI	-229.700	-658.764	0.049	0.014	-0.000	-17.349			
		5:KOMB B. MA	1.49E 3	-497.125	119.341	0.943	-0.967	-11.342			
	13042	1:BEAN MATI	133.825	607.727	-0.017	-0.009	-0.000	2.378			
		2:BEAN HIDL	43.194	172.168	-0.018	-0.002	-0.000	1.412			
		3:BEAN GEM	-1.57E 3	70.869	-113.632	-0.888	-0.751	-1.255			
		4:KOMBINASI	229.700	1E 3	-0.049	-0.014	-0.000	5.114			
		5:KOMB B. MA	-1.49E 3	785.440	-119.341	-0.943	-0.788	1.908			
15618	12803	1:BEAN MATI	-134.141	1.32E 3	-0.080	-0.010	0.001	16.269			
		2:BEAN HIDL	-43.602	530.849	-0.054	-0.004	0.000	6.965			
		3:BEAN GEM	-1.06E 3	27.148	-111.916	-0.694	0.848	-0.872			
		4:KOMBINASI	-230.733	2.44E 3	-0.182	-0.019	0.001	30.667			
		5:KOMB B. MA	-1.27E 3	1.67E 3	-117.625	-0.742	0.891	19.532			
	13041	1:BEAN MATI	134.141	-1.04E 3	0.080	0.010	0.001	1.084			
		2:BEAN HIDL	43.602	-530.849	0.054	0.004	0.000	0.843			
		3:BEAN GEM	1.06E 3	-27.148	111.916	0.694	0.798	1.271			
		4:KOMBINASI	230.733	-2.09E 3	0.182	0.019	0.001	2.650			
		5:KOMB B. MA	1.27E 3	-1.38E 3	117.625	0.742	0.839	2.925			
15619	12841	1:BEAN MATI	-132.446	-417.504	-0.278	0.000	0.002	-11.728			
		2:BEAN HIDL	-42.259	-203.187	-0.160	-0.003	0.001	-4.747			
		3:BEAN GEM	-484.947	-59.156	-37.973	0.880	0.267	0.412			
		4:KOMBINASI	-226.549	-826.104	-0.590	-0.005	0.004	-21.668			
		5:KOMB B. MA	-666.995	-601.530	-40.247	0.922	0.283	-14.143			
	13089	1:BEAN MATI	132.446	705.818	0.278	-0.000	0.002	3.466			
		2:BEAN HIDL	42.259	203.187	0.160	0.003	0.001	1.758			
		3:BEAN GEM	484.947	59.156	37.973	-0.880	0.291	-1.282			
		4:KOMBINASI	226.549	1.17E 3	0.590	0.005	0.005	6.971			
		5:KOMB B. MA	666.995	889.845	40.247	-0.922	0.309	3.174			
15620	12799	1:BEAN MATI	-102.070	1.2E 3	-0.371	0.014	0.003	9.239			
		2:BEAN HIDL	-31.683	489.395	-0.220	0.008	0.002	4.657			
		3:BEAN GEM	-343.938	7.951	-26.842	-0.793	0.192	-0.913			
		4:KOMBINASI	-173.177	2.22E 3	-0.797	0.029	0.007	18.539			
		5:KOMB B. MA	-482.215	1.5E 3	-28.687	-0.814	0.207	11.075			
	13088	1:BEAN MATI	102.070	-909.972	0.371	-0.014	0.002	6.267			
		2:BEAN HIDL	31.683	-489.395	0.220	-0.008	0.001	2.542			
		3:BEAN GEM	343.938	-7.951	26.842	0.793	0.203	1.030			
		4:KOMBINASI	173.177	-1.87E 3	0.797	-0.029	0.005	11.587			
		5:KOMB B. MA	482.215	-1.21E 3	28.687	0.814	0.215	8.874			
15621	12794	1:BEAN MATI	-103.557	679.825	-0.228	-0.006	0.001	10.292			
		2:BEAN HIDL	-33.290	225.257	-0.151	-0.003	0.001	3.788			



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Job No 1	Sheet No 68	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-63.360	-24.055	-20.535	0.148	0.186	-0.601			
		4:KOMBINASI	-177.532	1.18E 3	-0.515	-0.012	0.003	18.412			
		5:KOMB B. MA	-190.059	789.722	-21.881	0.148	0.197	11.934			
	13111	1:BEBAN MATI	103.557	-333.848	0.228	0.006	0.003	-1.345			
		2:BEBAN HIDL	33.290	-225.257	0.151	0.003	0.002	0.188			
		3:BEBAN GEM	63.360	24.055	20.535	-0.148	0.177	0.176			
		4:KOMBINASI	177.532	-761.029	0.515	0.012	0.006	-1.314			
		5:KOMB B. MA	190.059	-443.745	21.881	-0.148	0.189	-1.048			
15622	12789	1:BEBAN MATI	-63.367	1.29E 3	-0.298	0.017	0.002	13.568			
		2:BEBAN HIDL	-23.095	551.139	-0.108	0.009	0.001	6.049			
		3:BEBAN GEM	-76.894	21.189	-12.847	-0.161	0.082	-0.435			
		4:KOMBINASI	-112.992	2.44E 3	-0.530	0.034	0.003	25.959			
		5:KOMB B. MA	-157.963	1.65E 3	-13.853	-0.147	0.088	16.741			
	13201	1:BEBAN MATI	63.367	-1.06E 3	0.298	-0.017	0.002	0.312			
		2:BEBAN HIDL	23.095	-551.139	0.108	-0.009	0.001	0.437			
		3:BEBAN GEM	76.894	-21.189	12.847	0.161	0.069	0.684			
		4:KOMBINASI	112.992	-2.16E 3	0.530	-0.034	0.003	1.073			
		5:KOMB B. MA	157.963	-1.42E 3	13.853	0.147	0.075	1.292			
15623	12821	1:BEBAN MATI	-50.492	1.37E 3	0.245	0.052	-0.002	13.494			
		2:BEBAN HIDL	-19.050	595.216	0.148	-0.005	-0.001	5.961			
		3:BEBAN GEM	79.243	-19.162	14.374	-0.159	-0.087	-0.977			
		4:KOMBINASI	-91.070	2.59E 3	0.530	0.055	-0.004	25.731			
		5:KOMB B. MA	21.283	1.7E 3	15.426	-0.117	-0.093	16.045			
	13457	1:BEBAN MATI	50.492	-1.14E 3	-0.245	-0.052	-0.001	1.247			
		2:BEBAN HIDL	19.050	-595.216	-0.148	0.005	-0.001	1.043			
		3:BEBAN GEM	-79.243	19.162	-14.374	0.159	-0.082	0.752			
		4:KOMBINASI	91.070	-2.32E 3	-0.530	-0.055	-0.003	3.166			
		5:KOMB B. MA	-21.283	-1.47E 3	-15.426	0.117	-0.088	2.662			
15624	12816	1:BEBAN MATI	-104.776	1.2E 3	0.477	0.073	-0.003	10.473			
		2:BEBAN HIDL	-37.559	497.778	0.192	-0.009	-0.001	4.300			
		3:BEBAN GEM	208.034	10.768	31.676	-0.221	-0.192	-0.745			
		4:KOMBINASI	-185.826	2.24E 3	0.880	0.073	-0.005	19.448			
		5:KOMB B. MA	91.124	1.51E 3	33.852	-0.165	-0.205	12.271			
	13629	1:BEBAN MATI	104.776	-970.395	-0.477	-0.073	-0.003	2.304			
		2:BEBAN HIDL	37.559	-497.778	-0.192	0.009	-0.001	1.558			
		3:BEBAN GEM	-208.034	-10.768	-31.676	0.221	-0.181	0.872			
		4:KOMBINASI	185.826	-1.96E 3	-0.880	-0.073	-0.005	5.256			
		5:KOMB B. MA	-91.124	-1.28E 3	-33.852	0.165	-0.193	4.154			
15625	12812	1:BEBAN MATI	-87.895	581.233	0.122	-0.059	-0.001	8.128			
		2:BEBAN HIDL	-30.452	259.622	0.061	-0.010	-0.001	4.467			
		3:BEBAN GEM	194.459	-20.237	17.561	0.162	-0.159	-0.610			
		4:KOMBINASI	-154.198	1.11E 3	0.244	-0.088	-0.002	16.900			
		5:KOMB B. MA	98.016	715.757	18.598	0.105	-0.168	10.167			
	13521	1:BEBAN MATI	87.895	-235.255	-0.122	0.059	-0.001	-0.922			
		2:BEBAN HIDL	30.452	-259.622	-0.061	0.010	-0.000	0.116			
		3:BEBAN GEM	-194.459	20.237	-17.561	-0.162	-0.151	0.253			
		4:KOMBINASI	154.198	-697.703	-0.244	0.088	-0.002	-0.920			
		5:KOMB B. MA	-98.016	-369.780	-18.598	-0.105	-0.160	-0.586			



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Job No 1	Sheet No 69	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15626	12842	1:BEBAN MATI	-113.012	-114.614	0.009	-0.197	0.000	-10.663			
		2:BEBAN HIDL	-38.903	-127.111	0.028	-0.015	-0.000	-4.855			
		3:BEBAN GEM	171.801	-65.240	25.912	0.872	-0.195	0.094			
		4:KOMBINASI	-197.859	-340.915	0.056	-0.261	-0.000	-20.564			
		5:KOMB B. MA	44.037	-259.383	27.233	0.710	-0.205	-13.477			
13504	13504	1:BEBAN MATI	113.012	402.929	-0.009	0.197	-0.000	6.856			
		2:BEBAN HIDL	38.903	127.111	-0.028	0.015	-0.000	2.985			
		3:BEBAN GEM	-171.801	65.240	-25.912	-0.872	-0.186	-1.054			
		4:KOMBINASI	197.859	686.893	-0.056	0.261	-0.001	13.004			
		5:KOMB B. MA	-44.037	547.698	-27.233	-0.710	-0.195	7.541			
15627	12807	1:BEBAN MATI	-132.560	1.32E 3	0.156	0.195	-0.001	15.201			
		2:BEBAN HIDL	-45.397	556.248	0.056	0.010	-0.001	7.006			
		3:BEBAN GEM	-148.863	29.959	24.096	-0.676	-0.172	-0.863			
		4:KOMBINASI	-231.707	2.47E 3	0.276	0.250	-0.003	29.450			
		5:KOMB B. MA	-316.104	1.69E 3	25.490	-0.508	-0.183	18.499			
13505	13505	1:BEBAN MATI	132.560	-1.03E 3	-0.156	-0.195	-0.001	2.104			
		2:BEBAN HIDL	45.397	-556.248	-0.056	-0.010	-0.000	1.177			
		3:BEBAN GEM	148.863	-29.959	-24.096	0.676	-0.182	1.304			
		4:KOMBINASI	231.707	-2.13E 3	-0.276	-0.250	-0.002	4.407			
		5:KOMB B. MA	316.104	-1.4E 3	-25.490	0.508	-0.192	4.179			
15628	12843	1:BEBAN MATI	-139.557	-253.881	-0.019	-0.183	0.000	-8.278			
		2:BEBAN HIDL	-48.184	-175.062	-0.004	-0.015	0.000	-4.034			
		3:BEBAN GEM	-977.145	-66.218	6.596	0.867	-0.086	0.298			
		4:KOMBINASI	-244.563	-584.756	-0.028	-0.244	0.001	-16.388			
		5:KOMB B. MA	-1.19E 3	-428.447	6.905	0.718	-0.090	-10.386			
13056	13056	1:BEBAN MATI	139.557	542.195	0.019	0.183	-0.000	2.423			
		2:BEBAN HIDL	48.184	175.062	0.004	0.015	-0.000	1.458			
		3:BEBAN GEM	977.145	66.218	-6.596	-0.867	-0.011	-1.272			
		4:KOMBINASI	244.563	930.733	0.028	0.244	-0.000	5.241			
		5:KOMB B. MA	1.19E 3	716.762	-6.905	-0.718	-0.012	1.963			
15629	12802	1:BEBAN MATI	-135.295	1.25E 3	0.024	0.171	-0.000	15.112			
		2:BEBAN HIDL	-46.455	533.681	0.002	0.007	-0.000	6.976			
		3:BEBAN GEM	-730.685	20.359	-15.787	-0.677	0.119	-1.004			
		4:KOMBINASI	-236.682	2.36E 3	0.032	0.216	-0.001	29.297			
		5:KOMB B. MA	-930.387	1.6E 3	-16.551	-0.536	0.125	18.244			
13055	13055	1:BEBAN MATI	135.295	-966.385	-0.024	-0.171	0.000	1.224			
		2:BEBAN HIDL	46.455	-533.681	-0.002	-0.007	0.000	0.874			
		3:BEBAN GEM	730.685	-20.359	15.787	0.677	0.113	1.303			
		4:KOMBINASI	236.682	-2.01E 3	-0.032	-0.216	0.000	2.867			
		5:KOMB B. MA	930.387	-1.31E 3	16.551	0.536	0.119	3.117			
15630	12844	1:BEBAN MATI	-129.466	-340.757	-0.123	-0.203	0.001	-10.507			
		2:BEBAN HIDL	-44.417	-204.982	-0.051	-0.018	0.000	-4.800			
		3:BEBAN GEM	-326.946	-52.755	-18.422	0.869	0.135	0.509			
		4:KOMBINASI	-226.426	-736.880	-0.229	-0.271	0.002	-20.288			
		5:KOMB B. MA	-499.409	-519.139	-19.497	0.699	0.143	-12.853			
13101	13101	1:BEBAN MATI	129.466	629.071	0.123	0.203	0.001	3.374			
		2:BEBAN HIDL	44.417	204.982	0.051	0.018	0.000	1.784			
		3:BEBAN GEM	326.946	52.755	18.422	-0.869	0.136	-1.285			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 70	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	226.426	1.08E 3	0.229	0.271	0.001	6.904			
		5:KOMB B. MA	499.409	807.454	19.497	-0.699	0.144	3.096			
15631	12798	1:BEBAN MATI	-99.058	1.14E 3	0.070	0.252	-0.001	8.749			
		2:BEBAN HIDL	-33.964	493.600	-0.015	0.017	0.000	4.797			
		3:BEBAN GEM	-243.479	10.083	-16.450	-0.757	0.122	-0.803			
		4:KOMBINASI	-173.212	2.15E 3	0.059	0.330	-0.001	18.173			
		5:KOMB B. MA	-375.089	1.44E 3	-17.212	-0.533	0.127	10.784			
	13100	1:BEBAN MATI	99.058	-847.563	-0.070	-0.252	-0.000	5.840			
		2:BEBAN HIDL	33.964	-493.600	0.015	-0.017	0.000	2.464			
		3:BEBAN GEM	243.479	-10.083	16.450	0.757	0.120	0.951			
		4:KOMBINASI	173.212	-1.81E 3	-0.059	-0.330	-0.000	10.950			
		5:KOMB B. MA	375.089	-1.15E 3	17.212	0.533	0.126	8.316			
15632	12793	1:BEBAN MATI	-96.198	707.956	-0.191	-0.039	0.002	10.374			
		2:BEBAN HIDL	-33.701	229.752	-0.077	-0.005	0.001	3.866			
		3:BEBAN GEM	-179.634	-31.386	-11.554	0.135	0.103	-0.694			
		4:KOMBINASI	-169.360	1.22E 3	-0.352	-0.056	0.003	18.635			
		5:KOMB B. MA	-305.034	812.852	-12.369	0.099	0.110	11.965			
	13117	1:BEBAN MATI	96.198	-361.979	0.191	0.039	0.002	-0.931			
		2:BEBAN HIDL	33.701	-229.752	0.077	0.005	0.001	0.189			
		3:BEBAN GEM	179.634	31.386	11.554	-0.135	0.101	0.140			
		4:KOMBINASI	169.360	-801.978	0.352	0.056	0.003	-0.814			
		5:KOMB B. MA	305.034	-466.875	12.369	-0.099	0.108	-0.670			
15633	12788	1:BEBAN MATI	-59.611	1.27E 3	-0.194	0.042	0.001	13.217			
		2:BEBAN HIDL	-22.155	548.480	-0.113	-0.010	0.001	5.957			
		3:BEBAN GEM	-68.413	25.266	-13.831	-0.176	0.088	-0.438			
		4:KOMBINASI	-106.981	2.4E 3	-0.412	0.035	0.002	25.391			
		5:KOMB B. MA	-144.737	1.63E 3	-14.784	-0.148	0.093	16.331			
	13223	1:BEBAN MATI	59.611	-1.04E 3	0.194	-0.042	0.001	0.398			
		2:BEBAN HIDL	22.155	-548.480	0.113	0.010	0.001	0.498			
		3:BEBAN GEM	68.413	-25.266	13.831	0.176	0.075	0.735			
		4:KOMBINASI	106.981	-2.13E 3	0.412	-0.035	0.003	1.274			
		5:KOMB B. MA	144.737	-1.4E 3	14.784	0.148	0.080	1.468			
15634	12820	1:BEBAN MATI	-61.476	1.26E 3	0.025	-0.155	-0.001	12.475			
		2:BEBAN HIDL	-21.618	521.146	0.378	-0.019	-0.003	5.432			
		3:BEBAN GEM	-99.680	-29.817	6.506	-0.178	-0.036	-1.597			
		4:KOMBINASI	-108.360	2.35E 3	0.636	-0.217	-0.006	23.660			
		5:KOMB B. MA	-179.111	1.54E 3	7.083	-0.353	-0.041	14.057			
	13374	1:BEBAN MATI	61.476	-1.03E 3	-0.025	0.155	0.001	0.988			
		2:BEBAN HIDL	21.618	-521.146	-0.378	0.019	-0.002	0.701			
		3:BEBAN GEM	99.680	29.817	-6.506	0.178	-0.040	1.247			
		4:KOMBINASI	108.360	-2.07E 3	-0.636	0.217	-0.001	2.308			
		5:KOMB B. MA	179.111	-1.31E 3	-7.083	0.353	-0.042	2.718			
15635	12815	1:BEBAN MATI	-68.760	1.07E 3	1.007	-0.170	-0.007	8.745			
		2:BEBAN HIDL	-25.854	421.812	0.396	-0.018	-0.003	3.595			
		3:BEBAN GEM	-429.549	38.787	20.903	-0.202	-0.128	-0.378			
		4:KOMBINASI	-123.878	1.95E 3	1.841	-0.232	-0.013	16.245			
		5:KOMB B. MA	-535.299	1.36E 3	23.192	-0.393	-0.144	10.505			
	13567	1:BEBAN MATI	68.760	-834.507	-1.007	0.170	-0.005	2.433			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	25.854	-421.812	-0.396	0.018	-0.002	1.369			
		3:BEBAN GEM	429.549	-38.787	-20.903	0.202	-0.117	0.834			
		4:KOMBINASI	123.878	-1.68E 3	-1.841	0.232	-0.008	5.110			
		5:KOMB B. MA	535.299	-1.13E 3	-23.192	0.393	-0.129	4.130			
15636	12811	1:BEBAN MATI	-95.282	632.653	0.564	0.007	-0.005	8.850			
		2:BEBAN HIDL	-36.608	251.903	0.135	-0.002	-0.001	4.163			
		3:BEBAN GEM	-495.616	-97.284	14.889	0.248	-0.143	-2.310			
		4:KOMBINASI	-172.910	1.16E 3	0.893	0.004	-0.007	17.281			
		5:KOMB B. MA	-637.643	681.647	16.278	0.266	-0.155	8.922			
	13640	1:BEBAN MATI	95.282	-286.675	-0.564	-0.007	-0.005	-0.736			
		2:BEBAN HIDL	36.608	-251.903	-0.135	0.002	-0.001	0.284			
		3:BEBAN GEM	495.616	97.284	-14.889	-0.248	-0.120	0.593			
		4:KOMBINASI	172.910	-747.056	-0.893	-0.004	-0.009	-0.430			
		5:KOMB B. MA	637.643	-335.669	-16.278	-0.266	-0.132	0.056			
15637	12845	1:BEBAN MATI	-121.040	-144.506	-0.337	0.164	0.003	-10.796			
		2:BEBAN HIDL	-43.840	-103.711	-0.137	0.020	0.001	-4.330			
		3:BEBAN GEM	-681.916	-57.239	11.513	0.885	-0.089	0.291			
		4:KOMBINASI	-215.392	-339.346	-0.624	0.229	0.005	-19.883			
		5:KOMB B. MA	-863.356	-266.834	11.669	1.106	-0.090	-13.089			
	13647	1:BEBAN MATI	121.040	432.821	0.337	-0.164	0.002	6.549			
		2:BEBAN HIDL	43.840	103.711	0.137	-0.020	0.001	2.805			
		3:BEBAN GEM	681.916	57.239	-11.513	-0.885	-0.081	-1.133			
		4:KOMBINASI	215.392	685.324	0.624	-0.229	0.004	12.347			
		5:KOMB B. MA	863.356	555.149	-11.669	-1.106	-0.082	7.043			
15638	12806	1:BEBAN MATI	-146.585	1.32E 3	-0.041	-0.189	-0.000	15.817			
		2:BEBAN HIDL	-54.312	514.133	-0.064	-0.017	0.000	6.597			
		3:BEBAN GEM	-857.108	28.871	9.565	-0.731	-0.078	-1.417			
		4:KOMBINASI	-262.801	2.41E 3	-0.152	-0.254	0.000	29.535			
		5:KOMB B. MA	-1.08E 3	1.66E 3	9.964	-0.967	-0.082	18.288			
	13648	1:BEBAN MATI	146.585	-1.03E 3	0.041	0.189	0.001	1.506			
		2:BEBAN HIDL	54.312	-514.133	0.064	0.017	0.001	0.966			
		3:BEBAN GEM	857.108	-28.871	-9.565	0.731	-0.063	1.842			
		4:KOMBINASI	262.801	-2.06E 3	0.152	0.254	0.002	3.353			
		5:KOMB B. MA	1.08E 3	-1.37E 3	-9.964	0.967	-0.065	4.019			
15639	12846	1:BEBAN MATI	-138.206	-282.582	-0.098	0.146	0.001	-8.947			
		2:BEBAN HIDL	-49.301	-152.437	-0.010	0.014	0.000	-3.679			
		3:BEBAN GEM	-957.835	-77.281	4.416	0.875	-0.043	0.575			
		4:KOMBINASI	-244.729	-582.997	-0.133	0.198	0.001	-16.623			
		5:KOMB B. MA	-1.17E 3	-455.189	4.533	1.073	-0.044	-10.551			
	13257	1:BEBAN MATI	138.206	570.897	0.098	-0.146	0.000	2.670			
		2:BEBAN HIDL	49.301	152.437	0.010	-0.014	0.000	1.437			
		3:BEBAN GEM	957.835	77.281	-4.416	-0.875	-0.022	-1.711			
		4:KOMBINASI	244.729	928.975	0.133	-0.198	0.001	5.502			
		5:KOMB B. MA	1.17E 3	743.504	-4.533	-1.073	-0.023	1.735			
15640	12801	1:BEBAN MATI	-144.309	1.27E 3	0.194	-0.162	-0.002	15.671			
		2:BEBAN HIDL	-53.283	495.211	0.016	-0.006	-0.000	6.540			
		3:BEBAN GEM	-913.031	17.025	-3.833	-0.744	0.026	-1.579			
		4:KOMBINASI	-258.423	2.32E 3	0.259	-0.203	-0.002	29.269			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 72	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.13E 3	1.58E 3	-3.821	-0.947	0.025	17.937			
	13256	1:BEBAN MATI	144.309	-980.870	-0.194	0.162	-0.001	0.878			
		2:BEBAN HIDL	53.283	-495.211	-0.016	0.006	-0.000	0.745			
		3:BEBAN GEM	913.031	-17.025	3.833	0.744	0.031	1.830			
		4:KOMBINASI	258.423	-1.97E 3	-0.259	0.203	-0.001	2.245			
		5:KOMB B. MA	1.13E 3	-1.3E 3	3.821	0.947	0.031	3.246			
15641	12847	1:BEBAN MATI	-140.911	-352.761	0.169	0.162	-0.001	-10.711			
		2:BEBAN HIDL	-50.910	-177.337	0.099	0.020	-0.001	-4.306			
		3:BEBAN GEM	-794.801	-66.462	-6.446	0.875	0.045	0.720			
		4:KOMBINASI	-250.549	-707.053	0.362	0.227	-0.002	-19.743			
		5:KOMB B. MA	-1.01E 3	-528.948	-6.539	1.093	0.046	-12.539			
	13245	1:BEBAN MATI	140.911	641.076	-0.169	-0.162	-0.002	3.401			
		2:BEBAN HIDL	50.910	177.337	-0.099	-0.020	-0.001	1.698			
		3:BEBAN GEM	794.801	66.462	6.446	-0.875	0.050	-1.697			
		4:KOMBINASI	250.549	1.05E 3	-0.362	-0.227	-0.003	6.798			
		5:KOMB B. MA	1.01E 3	817.263	6.539	-1.093	0.050	2.638			
15642	12797	1:BEBAN MATI	-105.509	1.13E 3	0.289	-0.245	-0.003	9.508			
		2:BEBAN HIDL	-39.802	450.087	0.103	-0.034	-0.001	4.391			
		3:BEBAN GEM	-633.192	-16.108	-10.466	-0.820	0.075	-1.990			
		4:KOMBINASI	-190.294	2.08E 3	0.512	-0.348	-0.006	18.436			
		5:KOMB B. MA	-794.242	1.39E 3	-10.638	-1.126	0.075	10.054			
	13244	1:BEBAN MATI	105.509	-846.165	-0.289	0.245	-0.001	5.060			
		2:BEBAN HIDL	39.802	-450.087	-0.103	0.034	-0.000	2.230			
		3:BEBAN GEM	633.192	16.108	10.466	0.820	0.079	1.753			
		4:KOMBINASI	190.294	-1.74E 3	-0.512	0.348	-0.002	9.639			
		5:KOMB B. MA	794.242	-1.1E 3	10.638	1.126	0.082	8.238			
15643	12792	1:BEBAN MATI	-80.869	597.973	-0.221	-0.021	0.002	7.938			
		2:BEBAN HIDL	-30.257	192.922	-0.020	-0.015	0.000	2.968			
		3:BEBAN GEM	-572.716	6.320	-10.785	-0.050	0.095	-0.093			
		4:KOMBINASI	-145.454	1.03E 3	-0.297	-0.050	0.003	14.274			
		5:KOMB B. MA	-700.375	720.362	-11.557	-0.083	0.103	9.621			
	13236	1:BEBAN MATI	80.869	-251.996	0.221	0.021	0.001	-0.436			
		2:BEBAN HIDL	30.257	-192.922	0.020	0.015	0.000	0.438			
		3:BEBAN GEM	572.716	-6.320	10.785	0.050	0.095	0.204			
		4:KOMBINASI	145.454	-611.071	0.297	0.050	0.002	0.177			
		5:KOMB B. MA	700.375	-374.385	11.557	0.083	0.101	0.041			
15644	12787	1:BEBAN MATI	-65.956	1.2E 3	0.825	-0.165	-0.006	12.258			
		2:BEBAN HIDL	-23.938	494.339	0.196	-0.029	-0.002	5.399			
		3:BEBAN GEM	-294.644	20.932	-7.100	-0.184	0.047	-0.837			
		4:KOMBINASI	-117.449	2.23E 3	1.304	-0.244	-0.011	23.347			
		5:KOMB B. MA	-389.696	1.52E 3	-6.513	-0.375	0.042	14.618			
	13161	1:BEBAN MATI	65.956	-971.053	-0.825	0.165	-0.003	0.527			
		2:BEBAN HIDL	23.938	-494.339	-0.196	0.029	-0.000	0.419			
		3:BEBAN GEM	294.644	-20.932	7.100	0.184	0.036	1.083			
		4:KOMBINASI	117.449	-1.96E 3	-1.304	0.244	-0.005	1.302			
		5:KOMB B. MA	389.696	-1.29E 3	6.513	0.375	0.034	1.916			
15645	12847	1:BEBAN MATI	-106.217	-123.854	0.392	0.008	-0.001	-3.778			
		2:BEBAN HIDL	-39.689	-145.737	0.245	0.010	-0.001	-1.324			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 73	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	460.187	-292.452	14.853	-0.268	-0.091	0.245			
		4:KOMBINASI	-190.963	-381.804	0.862	0.027	-0.003	-6.653			
		5:KOMB B. MA	353.165	-518.371	16.135	-0.266	-0.098	-4.316			
	13247	1:BEBAN MATI	106.217	354.506	-0.392	-0.008	-0.003	0.963			
		2:BEBAN HIDL	39.689	145.737	-0.245	-0.010	-0.002	-0.391			
		3:BEBAN GEM	-460.187	292.452	-14.853	0.268	-0.084	-3.686			
		4:KOMBINASI	190.963	658.586	-0.862	-0.027	-0.007	0.531			
		5:KOMB B. MA	-353.165	749.022	-16.135	0.266	-0.092	-3.141			
15646	12836	1:BEBAN MATI	-125.418	1.17E 3	-0.079	-0.065	-0.000	15.231			
		2:BEBAN HIDL	-43.979	395.817	-0.005	-0.028	-0.000	5.266			
		3:BEBAN GEM	455.039	96.821	14.413	0.177	-0.091	-2.506			
		4:KOMBINASI	-220.868	2.04E 3	-0.102	-0.123	-0.000	26.703			
		5:KOMB B. MA	325.985	1.51E 3	15.052	0.104	-0.096	15.759			
	13241	1:BEBAN MATI	125.418	-941.317	0.079	0.065	0.001	-2.796			
		2:BEBAN HIDL	43.979	-395.817	0.005	0.028	0.000	-0.608			
		3:BEBAN GEM	-455.039	-96.821	-14.413	-0.177	-0.079	3.645			
		4:KOMBINASI	220.868	-1.76E 3	0.102	0.123	0.002	-4.328			
		5:KOMB B. MA	-325.985	-1.28E 3	-15.052	-0.104	-0.081	0.666			
15647	12844	1:BEBAN MATI	-142.257	-340.234	0.015	-0.047	0.000	-11.713			
		2:BEBAN HIDL	-49.038	-142.768	0.016	-0.020	0.000	-4.604			
		3:BEBAN GEM	411.957	-235.626	8.162	-0.239	-0.061	0.350			
		4:KOMBINASI	-249.169	-636.709	0.043	-0.089	0.000	-21.423			
		5:KOMB B. MA	260.876	-673.302	8.595	-0.310	-0.064	-14.108			
	13104	1:BEBAN MATI	142.257	628.549	-0.015	0.047	-0.001	4.588			
		2:BEBAN HIDL	49.038	142.768	-0.016	0.020	-0.000	2.504			
		3:BEBAN GEM	-411.957	235.626	-8.162	0.239	-0.059	-3.816			
		4:KOMBINASI	249.169	982.687	-0.043	0.089	-0.001	9.513			
		5:KOMB B. MA	-260.876	961.617	-8.595	0.310	-0.062	2.083			
15648	12833	1:BEBAN MATI	-141.857	1.37E 3	0.204	0.035	-0.002	15.623			
		2:BEBAN HIDL	-48.779	549.008	0.101	0.016	-0.001	6.996			
		3:BEBAN GEM	406.435	116.423	5.037	0.181	-0.041	-2.687			
		4:KOMBINASI	-248.275	2.52E 3	0.406	0.068	-0.004	29.940			
		5:KOMB B. MA	255.632	1.82E 3	5.554	0.235	-0.045	16.999			
	13098	1:BEBAN MATI	141.857	-1.08E 3	-0.204	-0.035	-0.001	2.391			
		2:BEBAN HIDL	48.779	-549.008	-0.101	-0.016	-0.001	1.080			
		3:BEBAN GEM	-406.435	-116.423	-5.037	-0.181	-0.033	4.400			
		4:KOMBINASI	248.275	-2.17E 3	-0.406	-0.068	-0.002	4.598			
		5:KOMB B. MA	-255.632	-1.53E 3	-5.554	-0.235	-0.036	7.659			
15649	12841	1:BEBAN MATI	-150.560	-329.110	-0.115	-0.047	0.001	-9.972			
		2:BEBAN HIDL	-50.598	-180.231	0.017	-0.008	0.000	-4.187			
		3:BEBAN GEM	377.079	-251.748	1.076	-0.224	-0.004	0.595			
		4:KOMBINASI	-261.629	-683.301	-0.111	-0.069	0.002	-18.666			
		5:KOMB B. MA	215.014	-701.584	1.026	-0.286	-0.003	-11.860			
	13092	1:BEBAN MATI	150.560	617.424	0.115	0.047	0.000	3.011			
		2:BEBAN HIDL	50.598	180.231	-0.017	0.008	-0.000	1.536			
		3:BEBAN GEM	-377.079	251.748	-1.076	0.224	-0.012	-4.298			
		4:KOMBINASI	261.629	1.03E 3	0.111	0.069	-0.000	6.070			
		5:KOMB B. MA	-215.014	989.898	-1.026	0.286	-0.012	-0.581			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15650	12830	1:BEBAN MATI	-130.839	1.32E 3	-0.352	-0.042	0.001	15.253			
		2:BEBAN HIDL	-42.776	541.291	-0.086	-0.038	0.000	6.920			
		3:BEBAN GEM	20.428	101.112	15.861	0.162	-0.121	-3.061			
		4:KOMBINASI	-225.449	2.45E 3	-0.560	-0.111	0.002	29.376			
		5:KOMB B. MA	-135.055	1.75E 3	16.251	0.106	-0.126	16.191			
13086	13086	1:BEBAN MATI	130.839	-1.03E 3	0.352	0.042	0.004	2.040			
		2:BEBAN HIDL	42.776	-541.291	0.086	0.038	0.001	1.042			
		3:BEBAN GEM	-20.428	-101.112	-15.861	-0.162	-0.112	4.549			
		4:KOMBINASI	225.449	-2.1E 3	0.560	0.111	0.006	4.115			
		5:KOMB B. MA	135.055	-1.46E 3	-16.251	-0.106	-0.113	7.441			
15651	12848	1:BEBAN MATI	-144.818	-373.711	-0.689	-0.074	0.006	-11.333			
		2:BEBAN HIDL	-45.812	-207.990	-0.144	-0.050	0.001	-4.767			
		3:BEBAN GEM	-166.994	-219.310	29.129	-0.243	-0.218	1.144			
		4:KOMBINASI	-247.080	-781.238	-1.058	-0.168	0.010	-21.228			
		5:KOMB B. MA	-347.648	-728.781	29.810	-0.359	-0.222	-12.992			
13080	13080	1:BEBAN MATI	144.818	662.026	0.689	0.074	0.004	3.715			
		2:BEBAN HIDL	45.812	207.990	0.144	0.050	0.001	1.708			
		3:BEBAN GEM	166.994	219.310	-29.129	0.243	-0.210	-4.371			
		4:KOMBINASI	247.080	1.13E 3	1.058	0.168	0.006	7.191			
		5:KOMB B. MA	347.648	1.02E 3	-29.810	0.359	-0.216	0.151			
15652	12827	1:BEBAN MATI	-81.159	1.51E 3	0.434	-0.262	-0.004	18.206			
		2:BEBAN HIDL	-24.052	487.146	0.220	-0.010	-0.002	5.009			
		3:BEBAN GEM	-58.083	100.394	21.305	0.319	-0.165	-1.868			
		4:KOMBINASI	-135.875	2.59E 3	0.872	-0.331	-0.008	29.861			
		5:KOMB B. MA	-156.578	1.9E 3	22.935	0.067	-0.179	19.250			
13074	13074	1:BEBAN MATI	81.159	-1.22E 3	-0.434	0.262	-0.002	1.815			
		2:BEBAN HIDL	24.052	-487.146	-0.220	0.010	-0.001	2.157			
		3:BEBAN GEM	58.083	-100.394	-21.305	-0.319	-0.149	3.345			
		4:KOMBINASI	135.875	-2.24E 3	-0.872	0.331	-0.004	5.629			
		5:KOMB B. MA	156.578	-1.61E 3	-22.935	-0.067	-0.159	6.621			
15653	12845	1:BEBAN MATI	-106.217	-123.854	-0.392	-0.008	0.001	-3.778			
		2:BEBAN HIDL	-39.689	-145.737	-0.245	-0.010	0.001	-1.324			
		3:BEBAN GEM	416.628	-279.121	-19.591	-0.282	0.120	0.297			
		4:KOMBINASI	-190.963	-381.804	-0.862	-0.027	0.003	-6.653			
		5:KOMB B. MA	307.428	-504.374	-21.109	-0.311	0.128	-4.261			
13650	13650	1:BEBAN MATI	106.217	354.506	0.392	0.008	0.003	0.963			
		2:BEBAN HIDL	39.689	145.737	0.245	0.010	0.002	-0.391			
		3:BEBAN GEM	-416.628	279.121	19.591	0.282	0.110	-3.581			
		4:KOMBINASI	190.963	658.585	0.862	0.027	0.007	0.531			
		5:KOMB B. MA	-307.428	735.025	21.109	0.311	0.120	-3.031			
15654	12834	1:BEBAN MATI	-125.418	1.17E 3	0.079	0.065	0.000	15.230			
		2:BEBAN HIDL	-43.979	395.816	0.005	0.028	0.000	5.266			
		3:BEBAN GEM	384.448	86.804	-21.822	0.174	0.136	-2.632			
		4:KOMBINASI	-220.868	2.04E 3	0.102	0.123	0.000	26.703			
		5:KOMB B. MA	251.865	1.5E 3	-22.832	0.265	0.143	15.627			
13645	13645	1:BEBAN MATI	125.418	-941.316	-0.079	-0.065	-0.001	-2.796			
		2:BEBAN HIDL	43.979	-395.816	-0.005	-0.028	-0.000	-0.608			
		3:BEBAN GEM	-384.448	-86.804	21.822	-0.174	0.121	3.654			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

75

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	220.868	-1.76E 3	-0.102	-0.123	-0.002	-4.328			
		5:KOMB B. MA	-251.865	-1.27E 3	22.832	-0.265	0.126	0.675			
15655	12842	1:BEBAN MATI	-142.257	-340.234	-0.015	0.047	-0.000	-11.713			
		2:BEBAN HIDL	-49.038	-142.767	-0.016	0.020	-0.000	-4.604			
		3:BEBAN GEM	263.949	-224.839	-14.489	-0.248	0.107	0.497			
		4:KOMBINASI	-249.169	-636.709	-0.043	0.089	-0.000	-21.423			
		5:KOMB B. MA	105.466	-661.975	-15.238	-0.202	0.112	-13.954			
	13508	1:BEBAN MATI	142.257	628.549	0.015	-0.047	0.001	4.588			
		2:BEBAN HIDL	49.038	142.767	0.016	-0.020	0.000	2.504			
		3:BEBAN GEM	-263.949	224.839	14.489	0.248	0.106	-3.805			
		4:KOMBINASI	249.169	982.686	0.043	-0.089	0.001	9.513			
		5:KOMB B. MA	-105.466	950.290	15.238	0.202	0.113	2.096			
15656	12831	1:BEBAN MATI	-141.857	1.37E 3	-0.204	-0.035	0.002	15.623			
		2:BEBAN HIDL	-48.779	549.007	-0.101	-0.016	0.001	6.996			
		3:BEBAN GEM	22.161	104.020	-9.618	0.191	0.081	-2.858			
		4:KOMBINASI	-248.275	2.52E 3	-0.406	-0.068	0.004	29.940			
		5:KOMB B. MA	-147.856	1.81E 3	-10.364	0.155	0.087	16.819			
	13502	1:BEBAN MATI	141.857	-1.08E 3	0.204	0.035	0.001	2.391			
		2:BEBAN HIDL	48.779	-549.007	0.101	0.016	0.001	1.080			
		3:BEBAN GEM	-22.161	-104.020	9.618	-0.191	0.061	4.388			
		4:KOMBINASI	248.275	-2.17E 3	0.406	0.068	0.002	4.598			
		5:KOMB B. MA	147.856	-1.52E 3	10.364	-0.155	0.065	7.647			
15657	12839	1:BEBAN MATI	-150.560	-329.110	0.115	0.047	-0.001	-9.972			
		2:BEBAN HIDL	-50.598	-180.230	-0.017	0.008	-0.000	-4.187			
		3:BEBAN GEM	-126.410	-238.823	-1.992	-0.255	0.022	0.762			
		4:KOMBINASI	-261.629	-683.301	0.111	0.069	-0.002	-18.666			
		5:KOMB B. MA	-313.650	-688.013	-1.987	-0.216	0.022	-11.684			
	13496	1:BEBAN MATI	150.560	617.425	-0.115	-0.047	-0.000	3.011			
		2:BEBAN HIDL	50.598	180.230	0.017	-0.008	0.000	1.536			
		3:BEBAN GEM	126.410	238.823	1.992	0.255	0.007	-4.275			
		4:KOMBINASI	261.629	1.03E 3	-0.111	-0.069	0.000	6.070			
		5:KOMB B. MA	313.650	976.327	1.987	0.216	0.007	-0.557			
15658	12828	1:BEBAN MATI	-130.839	1.32E 3	0.352	0.042	-0.001	15.253			
		2:BEBAN HIDL	-42.776	541.290	0.086	0.038	-0.000	6.920			
		3:BEBAN GEM	-227.072	89.381	-8.868	0.204	0.065	-3.181			
		4:KOMBINASI	-225.449	2.45E 3	0.560	0.111	-0.002	29.376			
		5:KOMB B. MA	-394.930	1.74E 3	-8.908	0.279	0.067	16.065			
	13490	1:BEBAN MATI	130.839	-1.03E 3	-0.352	-0.042	-0.004	2.040			
		2:BEBAN HIDL	42.776	-541.290	-0.086	-0.038	-0.001	1.042			
		3:BEBAN GEM	227.072	-89.381	8.868	-0.204	0.066	4.496			
		4:KOMBINASI	225.449	-2.1E 3	-0.560	-0.111	-0.006	4.115			
		5:KOMB B. MA	394.930	-1.45E 3	8.908	-0.279	0.064	7.385			
15659	12849	1:BEBAN MATI	-144.818	-373.711	0.689	0.074	-0.006	-11.333			
		2:BEBAN HIDL	-45.812	-207.990	0.144	0.050	-0.001	-4.767			
		3:BEBAN GEM	-187.729	-211.399	-16.728	-0.218	0.128	1.249			
		4:KOMBINASI	-247.080	-781.237	1.058	0.168	-0.010	-21.228			
		5:KOMB B. MA	-369.420	-720.474	-16.789	-0.125	0.128	-12.882			
	13484	1:BEBAN MATI	144.818	662.026	-0.689	-0.074	-0.004	3.715			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 76	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	45.812	207.990	-0.144	-0.050	-0.001	1.708			
		3:BEBAN GEM	187.729	211.399	16.728	0.218	0.118	-4.359			
		4:KOMBINASI	247.080	1.13E 3	-1.058	-0.168	-0.006	7.191			
		5:KOMB B. MA	369.420	1.01E 3	16.789	0.125	0.119	0.164			
15660	12825	1:BEBAN MATI	-81.159	1.51E 3	-0.434	0.262	0.004	18.206			
		2:BEBAN HIDL	-24.052	487.145	-0.220	0.010	0.002	5.009			
		3:BEBAN GEM	-98.360	23.624	-10.118	0.055	0.078	-3.796			
		4:KOMBINASI	-135.875	2.59E 3	-0.872	0.331	0.008	29.861			
		5:KOMB B. MA	-198.869	1.82E 3	-11.190	0.326	0.088	17.225			
	13478	1:BEBAN MATI	81.159	-1.22E 3	0.434	-0.262	0.002	1.815			
		2:BEBAN HIDL	24.052	-487.145	0.220	-0.010	0.001	2.157			
		3:BEBAN GEM	98.360	-23.624	10.118	-0.055	0.071	4.144			
		4:KOMBINASI	135.875	-2.24E 3	0.872	-0.331	0.004	5.629			
		5:KOMB B. MA	198.869	-1.53E 3	11.190	-0.326	0.077	7.460			
15661	172	1:BEBAN MATI	-220.090	-273.320	-4.232	-1.396	0.026	-21.971			
		2:BEBAN HIDL	-53.957	-242.649	-1.094	-1.153	0.008	-5.389			
		3:BEBAN GEM	1.07E 3	-3.97E 3	3.242	2.539	0.007	7.276			
		4:KOMBINASI	-350.440	-716.223	-6.829	-3.519	0.044	-34.988			
		5:KOMB B. MA	867.271	-4.59E 3	-1.484	0.579	0.038	-17.564			
	12930	1:BEBAN MATI	220.090	1.62E 3	4.232	1.396	0.024	10.809			
		2:BEBAN HIDL	53.957	242.649	1.094	1.153	0.005	2.534			
		3:BEBAN GEM	-1.07E 3	3.97E 3	-3.242	-2.539	-0.045	-54.036			
		4:KOMBINASI	350.440	2.34E 3	6.829	3.519	0.037	17.024			
		5:KOMB B. MA	-867.271	5.94E 3	1.484	-0.579	-0.020	-44.409			
15662	69	1:BEBAN MATI	-150.824	4.08E 3	14.614	2.252	-0.081	39.454			
		2:BEBAN HIDL	-59.081	665.888	7.508	1.279	-0.043	7.929			
		3:BEBAN GEM	516.674	-4.2E 3	19.028	-3.173	-0.120	-89.897			
		4:KOMBINASI	-275.519	5.96E 3	29.550	4.748	-0.166	60.031			
		5:KOMB B. MA	356.234	70.502	39.098	-0.313	-0.232	-50.180			
	12920	1:BEBAN MATI	150.824	-2.73E 3	-14.614	-2.252	-0.091	0.591			
		2:BEBAN HIDL	59.081	-665.888	-7.508	-1.279	-0.045	-0.093			
		3:BEBAN GEM	-516.674	4.2E 3	-19.028	3.173	-0.104	40.504			
		4:KOMBINASI	275.519	-4.34E 3	-29.550	-4.748	-0.181	0.561			
		5:KOMB B. MA	-356.234	1.28E 3	-39.098	0.313	-0.228	43.064			
15663	162	1:BEBAN MATI	-227.546	-578.881	-0.777	-1.406	0.010	-31.458			
		2:BEBAN HIDL	-69.481	-309.304	-0.337	-0.804	0.004	-7.962			
		3:BEBAN GEM	609.160	-2.24E 3	-1.056	1.937	0.013	-1.332			
		4:KOMBINASI	-384.224	-1.19E 3	-1.472	-2.975	0.018	-50.489			
		5:KOMB B. MA	370.384	-3.12E 3	-2.088	0.145	0.026	-37.634			
	13013	1:BEBAN MATI	227.546	1.7E 3	0.777	1.406	-0.002	20.264			
		2:BEBAN HIDL	69.481	309.304	0.337	0.804	-0.001	4.929			
		3:BEBAN GEM	-609.160	2.24E 3	1.056	-1.937	-0.003	-20.659			
		4:KOMBINASI	384.224	2.54E 3	1.472	2.975	-0.004	32.202			
		5:KOMB B. MA	-370.384	4.24E 3	2.088	-0.145	-0.006	1.529			
15664	92	1:BEBAN MATI	-342.293	4.93E 3	33.991	3.098	-0.180	53.369			
		2:BEBAN HIDL	-119.062	867.819	12.588	2.128	-0.067	11.448			
		3:BEBAN GEM	-0.377	-2.48E 3	27.788	-3.639	-0.169	-71.066			
		4:KOMBINASI	-601.251	7.31E 3	60.931	7.122	-0.324	82.359			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 77	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-414.125	2.84E 3	70.721	0.554	-0.398	-14.382			
	13000	1:BEBAN MATI	342.293	-3.81E 3	-33.991	-3.098	-0.153	-10.528			
		2:BEBAN HIDL	119.062	-867.819	-12.588	-2.128	-0.056	-2.938			
		3:BEBAN GEM	0.377	2.48E 3	-27.788	3.639	-0.103	46.700			
		4:KOMBINASI	601.251	-5.96E 3	-60.931	-7.122	-0.274	-17.333			
		5:KOMB B. MA	414.125	-1.72E 3	-70.721	-0.554	-0.295	36.744			
15665	152	1:BEBAN MATI	-222.140	-651.341	-0.325	-0.918	0.008	-30.563			
		2:BEBAN HIDL	-72.584	-332.088	-0.116	-0.766	0.003	-7.586			
		3:BEBAN GEM	326.146	-2.37E 3	0.696	1.973	0.005	0.310			
		4:KOMBINASI	-382.702	-1.31E 3	-0.575	-2.327	0.015	-48.813			
		5:KOMB B. MA	76.763	-3.33E 3	0.336	0.694	0.015	-34.789			
	12987	1:BEBAN MATI	222.140	1.78E 3	0.325	0.918	-0.005	18.658			
		2:BEBAN HIDL	72.584	332.088	0.116	0.766	-0.002	4.329			
		3:BEBAN GEM	-326.146	2.37E 3	-0.696	-1.973	-0.012	-23.513			
		4:KOMBINASI	382.702	2.66E 3	0.575	2.327	-0.009	29.316			
		5:KOMB B. MA	-76.763	4.46E 3	-0.336	-0.694	-0.019	-3.433			
15666	90	1:BEBAN MATI	-364.268	4.86E 3	34.315	3.283	-0.183	52.402			
		2:BEBAN HIDL	-124.749	841.093	12.546	2.108	-0.067	11.019			
		3:BEBAN GEM	-337.406	-2.61E 3	30.549	-3.618	-0.182	-73.212			
		4:KOMBINASI	-636.720	7.17E 3	61.252	7.313	-0.326	80.513			
		5:KOMB B. MA	-793.393	2.62E 3	73.919	0.750	-0.413	-17.859			
	12974	1:BEBAN MATI	364.268	-3.73E 3	-34.315	-3.283	-0.154	-10.289			
		2:BEBAN HIDL	124.749	-841.093	-12.546	-2.108	-0.056	-2.771			
		3:BEBAN GEM	337.406	2.61E 3	-30.549	3.618	-0.118	47.598			
		4:KOMBINASI	636.720	-5.82E 3	-61.252	-7.313	-0.275	-16.779			
		5:KOMB B. MA	793.393	-1.49E 3	-73.919	-0.750	-0.312	38.027			
15667	181	1:BEBAN MATI	-220.090	-273.321	4.232	1.396	-0.026	-21.971			
		2:BEBAN HIDL	-53.957	-242.649	1.094	1.153	-0.008	-5.389			
		3:BEBAN GEM	752.031	-3.79E 3	-5.955	0.774	0.020	6.787			
		4:KOMBINASI	-350.440	-716.224	6.829	3.519	-0.044	-34.988			
		5:KOMB B. MA	537.168	-4.4E 3	-1.365	2.900	-0.010	-18.078			
	13376	1:BEBAN MATI	220.090	1.62E 3	-4.232	-1.396	-0.024	10.809			
		2:BEBAN HIDL	53.957	242.649	-1.094	-1.153	-0.005	2.534			
		3:BEBAN GEM	-752.031	3.79E 3	5.955	-0.774	0.050	-51.443			
		4:KOMBINASI	350.440	2.34E 3	-6.829	-3.519	-0.037	17.024			
		5:KOMB B. MA	-537.168	5.75E 3	1.365	-2.900	0.026	-41.687			
15668	87	1:BEBAN MATI	-150.824	4.08E 3	-14.614	-2.252	0.081	39.454			
		2:BEBAN HIDL	-59.081	665.888	-7.508	-1.279	0.043	7.929			
		3:BEBAN GEM	285.610	-4.08E 3	8.712	-1.794	-0.047	-86.952			
		4:KOMBINASI	-275.519	5.96E 3	-29.550	-4.748	0.166	60.031			
		5:KOMB B. MA	113.617	188.561	-9.972	-4.903	0.058	-47.088			
	13366	1:BEBAN MATI	150.824	-2.73E 3	14.614	2.252	0.091	0.591			
		2:BEBAN HIDL	59.081	-665.888	7.508	1.279	0.045	-0.093			
		3:BEBAN GEM	-285.610	4.08E 3	-8.712	1.794	-0.056	38.882			
		4:KOMBINASI	275.519	-4.34E 3	29.550	4.748	0.181	0.561			
		5:KOMB B. MA	-113.617	1.16E 3	9.972	4.903	0.060	41.361			
15669	163	1:BEBAN MATI	-227.546	-578.881	0.777	1.406	-0.010	-31.458			
		2:BEBAN HIDL	-69.481	-309.304	0.337	0.804	-0.004	-7.962			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 78	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	91.986	-2.14E 3	-1.065	0.347	0.011	-1.655			
		4:KOMBINASI	-384.224	-1.19E 3	1.472	2.975	-0.018	-50.489			
		5:KOMB B. MA	-172.649	-3.01E 3	-0.139	2.253	-0.001	-37.973			
	13459	1:BEBAN MATI	227.546	1.7E 3	-0.777	-1.406	0.002	20.264			
		2:BEBAN HIDL	69.481	309.304	-0.337	-0.804	0.001	4.929			
		3:BEBAN GEM	-91.986	2.14E 3	1.065	-0.347	-0.000	-19.341			
		4:KOMBINASI	384.224	2.54E 3	-1.472	-2.975	0.004	32.202			
		5:KOMB B. MA	172.649	4.14E 3	0.139	-2.253	0.002	2.913			
15670	93	1:BEBAN MATI	-342.293	4.93E 3	-33.991	-3.098	0.180	53.369			
		2:BEBAN HIDL	-119.062	867.819	-12.588	-2.128	0.067	11.448			
		3:BEBAN GEM	-494.859	-2.46E 3	6.882	-1.384	-0.012	-68.691			
		4:KOMBINASI	-601.251	7.31E 3	-60.931	-7.122	0.324	82.359			
		5:KOMB B. MA	-933.332	2.87E 3	-34.318	-5.828	0.208	-11.888			
	13446	1:BEBAN MATI	342.293	-3.81E 3	33.991	3.098	0.153	-10.528			
		2:BEBAN HIDL	119.062	-867.819	12.588	2.128	0.056	-2.938			
		3:BEBAN GEM	494.859	2.46E 3	-6.882	1.384	-0.056	44.596			
		4:KOMBINASI	601.251	-5.96E 3	60.931	7.122	0.274	-17.333			
		5:KOMB B. MA	933.332	-1.75E 3	34.318	5.828	0.128	34.535			
15671	153	1:BEBAN MATI	-222.140	-651.341	0.325	0.918	-0.008	-30.563			
		2:BEBAN HIDL	-72.584	-332.088	0.116	0.766	-0.003	-7.586			
		3:BEBAN GEM	-387.633	-2.26E 3	-4.041	0.284	0.029	-0.058			
		4:KOMBINASI	-382.702	-1.31E 3	0.575	2.327	-0.015	-48.813			
		5:KOMB B. MA	-672.705	-3.22E 3	-3.848	1.675	0.020	-35.176			
	13433	1:BEBAN MATI	222.140	1.78E 3	-0.325	-0.918	0.005	18.658			
		2:BEBAN HIDL	72.584	332.088	-0.116	-0.766	0.002	4.329			
		3:BEBAN GEM	387.633	2.26E 3	4.041	-0.284	0.011	-22.103			
		4:KOMBINASI	382.702	2.66E 3	-0.575	-2.327	0.009	29.316			
		5:KOMB B. MA	672.705	4.35E 3	3.848	-1.675	0.018	-1.953			
15672	91	1:BEBAN MATI	-364.268	4.86E 3	-34.315	-3.283	0.183	52.402			
		2:BEBAN HIDL	-124.749	841.093	-12.546	-2.108	0.067	11.019			
		3:BEBAN GEM	-799.775	-2.58E 3	4.861	-1.334	-0.007	-70.757			
		4:KOMBINASI	-636.720	7.17E 3	-61.252	-7.313	0.326	80.513			
		5:KOMB B. MA	-1.28E 3	2.65E 3	-36.739	-5.949	0.215	-15.282			
	13420	1:BEBAN MATI	364.268	-3.73E 3	34.315	3.283	0.154	-10.289			
		2:BEBAN HIDL	124.749	-841.093	12.546	2.108	0.056	-2.771			
		3:BEBAN GEM	799.775	2.58E 3	-4.861	1.334	-0.041	45.463			
		4:KOMBINASI	636.720	-5.82E 3	61.252	7.313	0.275	-16.779			
		5:KOMB B. MA	1.28E 3	-1.53E 3	36.739	5.949	0.145	35.786			
15673	12823	1:BEBAN MATI	-28.057	1.36E 3	0.053	-0.075	-0.000	13.463			
		2:BEBAN HIDL	-11.831	589.979	0.024	-0.001	-0.000	5.913			
		3:BEBAN GEM	90.168	-20.996	9.238	-0.152	-0.056	-0.940			
		4:KOMBINASI	-52.599	2.57E 3	0.102	-0.092	-0.001	25.616			
		5:KOMB B. MA	59.521	1.69E 3	9.767	-0.236	-0.060	16.024			
	13405	1:BEBAN MATI	28.057	-1.13E 3	-0.053	0.075	-0.000	1.174			
		2:BEBAN HIDL	11.831	-589.979	-0.024	0.001	-0.000	1.030			
		3:BEBAN GEM	-90.168	20.996	-9.238	0.152	-0.052	0.692			
		4:KOMBINASI	52.599	-2.3E 3	-0.102	0.092	-0.000	3.057			
		5:KOMB B. MA	-59.521	-1.46E 3	-9.767	0.236	-0.055	2.519			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 79	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15674	12818	1:BEBAN MATI	7.862	945.078	0.028	-0.095	-0.000	2.679			
		2:BEBAN HIDL	2.549	400.138	0.026	-0.001	-0.000	1.201			
		3:BEBAN GEM	50.372	-3.571	4.834	-0.320	-0.041	-1.235			
		4:KOMBINASI	13.512	1.77E 3	0.075	-0.117	-0.001	5.135			
		5:KOMB B. MA	62.282	1.18E 3	5.119	-0.432	-0.043	2.102			
13585	13585	1:BEBAN MATI	-7.862	-714.426	-0.028	0.095	0.000	7.086			
		2:BEBAN HIDL	-2.549	-400.138	-0.026	0.001	-0.000	3.508			
		3:BEBAN GEM	-50.372	3.571	-4.834	0.320	-0.016	1.193			
		4:KOMBINASI	-13.512	-1.5E 3	-0.075	0.117	-0.000	14.116			
		5:KOMB B. MA	-62.282	-950.759	-5.119	0.432	-0.017	10.443			
15676	12849	1:BEBAN MATI	-35.548	30.664	0.677	0.255	-0.006	-11.801			
		2:BEBAN HIDL	-10.304	-51.521	0.300	0.028	-0.002	-5.777			
		3:BEBAN GEM	169.666	-99.185	9.072	0.848	-0.069	-0.259			
		4:KOMBINASI	-59.145	-45.636	1.293	0.351	-0.011	-23.404			
		5:KOMB B. MA	136.418	-104.392	10.383	1.162	-0.079	-15.539			
	13480	13480	1:BEBAN MATI	35.548	257.650	-0.677	-0.255	-0.004	10.131		
			2:BEBAN HIDL	10.304	51.521	-0.300	-0.028	-0.002	5.019		
			3:BEBAN GEM	-169.666	99.185	-9.072	-0.848	-0.065	-1.200		
			4:KOMBINASI	59.145	391.614	-1.293	-0.351	-0.008	20.188		
			5:KOMB B. MA	-136.418	392.707	-10.383	-1.162	-0.073	11.883		
15677	12809	1:BEBAN MATI	-97.983	1.36E 3	-0.046	-0.228	0.001	15.509			
		2:BEBAN HIDL	-28.611	584.678	0.028	-0.021	-0.000	7.225			
		3:BEBAN GEM	572.045	40.069	9.913	-0.670	-0.077	-0.791			
		4:KOMBINASI	-163.357	2.56E 3	-0.011	-0.307	0.000	30.171			
		5:KOMB B. MA	485.498	1.75E 3	10.379	-0.944	-0.080	19.014			
	13481	13481	1:BEBAN MATI	97.983	-1.07E 3	0.046	0.228	0.000	2.325		
			2:BEBAN HIDL	28.611	-584.678	-0.028	0.021	-0.000	1.376		
			3:BEBAN GEM	-572.045	-40.069	-9.913	0.670	-0.069	1.380		
			4:KOMBINASI	163.357	-2.22E 3	0.011	0.307	-0.000	4.991		
			5:KOMB B. MA	-485.498	-1.46E 3	-10.379	0.944	-0.072	4.599		
15678	12850	1:BEBAN MATI	-98.493	-249.745	-0.110	0.120	0.001	-8.075			
		2:BEBAN HIDL	-30.422	-172.861	-0.023	-0.009	0.000	-3.907			
		3:BEBAN GEM	913.613	-64.132	1.414	0.880	-0.025	0.280			
		4:KOMBINASI	-166.868	-576.272	-0.169	0.129	0.001	-15.941			
		5:KOMB B. MA	842.547	-420.800	1.361	1.038	-0.025	-10.125			
	13028	13028	1:BEBAN MATI	98.493	538.060	0.110	-0.120	0.001	2.280		
			2:BEBAN HIDL	30.422	172.861	0.023	0.009	0.000	1.364		
			3:BEBAN GEM	-913.613	64.132	-1.414	-0.880	0.004	-1.224		
			4:KOMBINASI	166.868	922.250	0.169	-0.129	0.001	4.919		
			5:KOMB B. MA	-842.547	709.115	-1.361	-1.038	0.005	1.814		
15679	12804	1:BEBAN MATI	-100.109	1.26E 3	0.127	-0.109	-0.001	15.232			
		2:BEBAN HIDL	-29.667	535.117	0.013	0.025	-0.000	7.064			
		3:BEBAN GEM	735.572	25.072	-10.911	-0.688	0.078	-0.837			
		4:KOMBINASI	-167.598	2.36E 3	0.173	-0.091	-0.001	29.582			
		5:KOMB B. MA	654.441	1.6E 3	-11.321	-0.816	0.082	18.593			
	13027	13027	1:BEBAN MATI	100.109	-968.114	-0.127	0.109	-0.001	1.129		
			2:BEBAN HIDL	29.667	-535.117	-0.013	-0.025	-0.000	0.807		
			3:BEBAN GEM	-735.572	-25.072	10.911	0.688	0.082	1.205		



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 80	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	167.598	-2.02E 3	-0.173	0.091	-0.002	2.646			
		5:KOMB B. MA	-654.441	-1.32E 3	11.321	0.816	0.085	2.879			
15680	12848	1:BEBAN MATI	-83.570	-394.991	-0.234	0.191	0.001	-11.592			
		2:BEBAN HIDL	-24.660	-246.718	-0.135	0.012	0.001	-5.666			
		3:BEBAN GEM	299.233	-70.020	-18.313	0.851	0.132	0.159			
		4:KOMBINASI	-139.740	-868.739	-0.496	0.248	0.003	-22.975			
		5:KOMB B. MA	215.828	-616.544	-19.543	1.092	0.141	-14.824			
	13077	1:BEBAN MATI	83.570	683.306	0.234	-0.191	0.002	3.661			
		2:BEBAN HIDL	24.660	246.718	0.135	-0.012	0.001	2.037			
		3:BEBAN GEM	-299.233	70.020	18.313	-0.851	0.137	-1.189			
		4:KOMBINASI	139.740	1.21E 3	0.496	-0.248	0.004	7.652			
		5:KOMB B. MA	-215.828	904.858	19.543	-1.092	0.147	3.634			
15681	12800	1:BEBAN MATI	-9.234	959.035	-0.699	-0.337	0.006	2.765			
		2:BEBAN HIDL	-2.541	395.472	-0.323	-0.033	0.003	1.319			
		3:BEBAN GEM	57.757	6.714	-15.460	-0.837	0.149	-1.420			
		4:KOMBINASI	-15.146	1.78E 3	-1.356	-0.457	0.011	5.428			
		5:KOMB B. MA	49.886	1.2E 3	-17.126	-1.236	0.164	2.066			
	13076	1:BEBAN MATI	9.234	-670.721	0.699	0.337	0.005	9.221			
		2:BEBAN HIDL	2.541	-395.472	0.323	0.033	0.002	4.499			
		3:BEBAN GEM	-57.757	-6.714	15.460	0.837	0.078	1.519			
		4:KOMBINASI	15.146	-1.44E 3	1.356	0.457	0.009	18.264			
		5:KOMB B. MA	-49.886	-915.054	17.126	1.236	0.088	13.515			
15683	12790	1:BEBAN MATI	-26.389	1.36E 3	-0.091	-0.059	0.001	13.211			
		2:BEBAN HIDL	-10.637	583.313	-0.032	-0.000	0.000	5.886			
		3:BEBAN GEM	18.174	11.494	-18.618	-0.166	0.118	-0.504			
		4:KOMBINASI	-48.686	2.56E 3	-0.160	-0.072	0.001	25.270			
		5:KOMB B. MA	-13.688	1.72E 3	-19.658	-0.234	0.125	16.213			
	13179	1:BEBAN MATI	26.389	-1.13E 3	0.091	0.059	0.001	1.431			
		2:BEBAN HIDL	10.637	-583.313	0.032	0.000	0.000	0.979			
		3:BEBAN GEM	-18.174	-11.494	18.618	0.166	0.101	0.639			
		4:KOMBINASI	48.686	-2.29E 3	0.160	0.072	0.001	3.284			
		5:KOMB B. MA	13.688	-1.49E 3	19.658	0.234	0.106	2.690			
15684	84	1:BEBAN MATI	-216.021	3.72E 3	-36.494	-3.708	0.213	32.209			
		2:BEBAN HIDL	-84.799	578.774	-16.238	-1.886	0.095	5.994			
		3:BEBAN GEM	89.161	-1.07E 3	-49.688	5.200	0.290	-23.547			
		4:KOMBINASI	-394.902	5.4E 3	-69.774	-7.467	0.408	48.241			
		5:KOMB B. MA	-173.280	2.95E 3	-98.410	0.620	0.574	11.081			
	13318	1:BEBAN MATI	216.021	-2.37E 3	36.494	3.708	0.217	3.679			
		2:BEBAN HIDL	84.799	-578.774	16.238	1.886	0.096	0.817			
		3:BEBAN GEM	-89.161	1.07E 3	49.688	-5.200	0.295	10.946			
		4:KOMBINASI	394.902	-3.78E 3	69.774	7.467	0.413	5.722			
		5:KOMB B. MA	173.280	-1.6E 3	98.410	-0.620	0.584	15.663			
15685	82	1:BEBAN MATI	-284.264	3.43E 3	-30.008	-4.379	0.182	26.711			
		2:BEBAN HIDL	-104.874	516.589	-13.106	-2.518	0.079	4.808			
		3:BEBAN GEM	-443.382	-814.677	-52.763	5.368	0.333	-19.727			
		4:KOMBINASI	-508.916	4.95E 3	-56.980	-9.284	0.345	39.745			
		5:KOMB B. MA	-812.741	2.89E 3	-93.273	-0.253	0.579	8.882			
	13529	1:BEBAN MATI	284.264	-2.08E 3	30.008	4.379	0.171	5.761			



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Job No

1

Sheet No

81

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	104.874	-516.589	13.106	2.518	0.075	1.272			
		3:BEBAN GEM	443.382	814.677	52.763	-5.368	0.288	10.140			
		4:KOMBINASI	508.916	-3.33E 3	56.980	9.284	0.326	8.948			
		5:KOMB B. MA	812.741	-1.54E 3	93.273	0.253	0.519	17.171			
15686	80	1:BEBAN MATI	-191.998	2.2E 3	-9.109	-2.364	0.053	11.832			
		2:BEBAN HIDL	-46.541	239.938	-2.282	-1.535	0.012	1.952			
		3:BEBAN GEM	-153.714	-1.67E 3	-16.467	3.500	0.020	-30.534			
		4:KOMBINASI	-304.863	3.03E 3	-14.582	-5.293	0.084	17.321			
		5:KOMB B. MA	-381.322	590.991	-27.768	0.390	0.082	-19.057			
	13355	1:BEBAN MATI	191.998	-853.802	9.109	2.364	0.054	6.161			
		2:BEBAN HIDL	46.541	-239.938	2.282	1.535	0.014	0.872			
		3:BEBAN GEM	153.714	1.67E 3	16.467	-3.500	0.173	10.840			
		4:KOMBINASI	304.863	-1.41E 3	14.582	5.293	0.088	8.788			
		5:KOMB B. MA	381.322	759.403	27.768	-0.390	0.245	18.066			
15688	130	1:BEBAN MATI	-249.949	2.58E 3	23.146	6.050	-0.169	31.200			
		2:BEBAN HIDL	-114.291	933.773	10.912	3.322	-0.080	12.509			
		3:BEBAN GEM	-911.943	-924.440	-33.796	5.320	0.221	-23.393			
		4:KOMBINASI	-482.805	4.59E 3	45.235	12.575	-0.330	57.455			
		5:KOMB B. MA	-1.28E 3	2.17E 3	-5.792	13.628	0.016	14.143			
	13297	1:BEBAN MATI	249.949	-2.13E 3	-23.146	-6.050	-0.172	3.391			
		2:BEBAN HIDL	114.291	-933.773	-10.912	-3.322	-0.081	1.226			
		3:BEBAN GEM	911.943	924.440	33.796	-5.320	0.276	9.794			
		4:KOMBINASI	482.805	-4.05E 3	-45.235	-12.575	-0.335	6.032			
		5:KOMB B. MA	1.28E 3	-1.72E 3	5.792	-13.628	0.070	14.411			
15690	12846	1:BEBAN MATI	-103.731	-102.997	-0.000	-0.000	0.000	-3.210			
		2:BEBAN HIDL	-40.274	-138.427	-0.000	-0.000	0.000	-1.082			
		3:BEBAN GEM	1.03E 3	-278.524	-2.879	-0.286	0.017	0.308			
		4:KOMBINASI	-188.915	-345.080	-0.000	-0.000	0.000	-5.583			
		5:KOMB B. MA	954.999	-478.504	-3.023	-0.300	0.018	-3.536			
	13259	1:BEBAN MATI	103.731	333.648	0.000	0.000	0.000	0.641			
		2:BEBAN HIDL	40.274	138.427	0.000	0.000	0.000	-0.547			
		3:BEBAN GEM	-1.03E 3	278.524	2.879	0.286	0.016	-3.585			
		4:KOMBINASI	188.915	621.861	0.000	0.000	0.000	-0.106			
		5:KOMB B. MA	-954.999	709.155	3.023	0.300	0.017	-3.452			
15691	12835	1:BEBAN MATI	-120.226	1.13E 3	0.000	0.000	-0.000	14.704			
		2:BEBAN HIDL	-41.954	378.494	-0.000	0.000	0.000	5.092			
		3:BEBAN GEM	1.47E 3	89.736	-4.840	0.188	0.029	-2.560			
		4:KOMBINASI	-211.398	1.96E 3	0.000	0.000	0.000	25.793			
		5:KOMB B. MA	1.4E 3	1.45E 3	-5.082	0.198	0.031	15.071			
	13253	1:BEBAN MATI	120.226	-895.296	-0.000	-0.000	-0.000	-2.811			
		2:BEBAN HIDL	41.954	-378.494	0.000	-0.000	0.000	-0.638			
		3:BEBAN GEM	-1.47E 3	-89.736	4.840	-0.188	0.028	3.616			
		4:KOMBINASI	211.398	-1.68E 3	-0.000	-0.000	-0.000	-4.395			
		5:KOMB B. MA	-1.4E 3	-1.22E 3	5.082	-0.198	0.029	0.603			
15692	12843	1:BEBAN MATI	-131.359	-318.620	0.000	-0.000	-0.000	-11.531			
		2:BEBAN HIDL	-44.307	-136.042	0.000	0.000	-0.000	-4.564			
		3:BEBAN GEM	2.42E 3	-230.531	-7.771	-0.260	0.059	0.413			
		4:KOMBINASI	-228.522	-600.011	0.000	-0.000	-0.000	-21.140			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 82	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	2.38E 3	-642.303	-8.159	-0.273	0.062	-13.836			
	13059	1:BEBAN MATI	131.359	606.935	-0.000	0.000	-0.000	4.724			
		2:BEBAN HIDL	44.307	136.042	-0.000	-0.000	-0.000	2.563			
		3:BEBAN GEM	-2.42E 3	230.531	7.771	0.260	0.056	-3.805			
		4:KOMBINASI	228.522	945.989	-0.000	0.000	-0.000	9.769			
		5:KOMB B. MA	-2.38E 3	930.617	8.159	0.273	0.058	2.267			
15693	12832	1:BEBAN MATI	-144.570	1.36E 3	-0.000	0.000	0.000	15.406			
		2:BEBAN HIDL	-47.566	544.361	-0.000	-0.000	0.000	6.884			
		3:BEBAN GEM	5.56E 3	108.618	-45.085	0.199	0.378	-2.794			
		4:KOMBINASI	-249.590	2.5E 3	-0.000	0.000	0.000	29.502			
		5:KOMB B. MA	5.66E 3	1.8E 3	-47.340	0.209	0.397	16.603			
	13052	1:BEBAN MATI	144.570	-1.07E 3	0.000	-0.000	0.000	2.431			
		2:BEBAN HIDL	47.566	-544.361	0.000	0.000	0.000	1.123			
		3:BEBAN GEM	-5.56E 3	-108.618	45.085	-0.199	0.285	4.391			
		4:KOMBINASI	249.590	-2.15E 3	0.000	-0.000	0.000	4.714			
		5:KOMB B. MA	-5.66E 3	-1.51E 3	47.340	-0.209	0.300	7.715			
15694	12840	1:BEBAN MATI	-146.582	-310.150	0.000	-0.000	-0.000	-9.610			
		2:BEBAN HIDL	-46.938	-171.736	0.000	-0.000	-0.000	-4.029			
		3:BEBAN GEM	-11.9E 3	-240.680	142.141	-0.258	-1.101	0.726			
		4:KOMBINASI	-250.999	-646.958	0.000	-0.000	-0.000	-17.979			
		5:KOMB B. MA	-12.6E 3	-665.905	149.248	-0.271	-1.156	-11.265			
	13045	1:BEBAN MATI	146.582	598.464	-0.000	0.000	-0.000	2.927			
		2:BEBAN HIDL	46.938	171.736	-0.000	0.000	-0.000	1.503			
		3:BEBAN GEM	11.9E 3	240.680	-142.141	0.258	-0.990	-4.266			
		4:KOMBINASI	250.999	992.935	-0.000	0.000	-0.000	5.917			
		5:KOMB B. MA	12.6E 3	954.220	-149.248	0.271	-1.040	-0.651			
15695	12829	1:BEBAN MATI	-153.738	1.29E 3	-0.000	0.000	0.000	14.877			
		2:BEBAN HIDL	-48.147	526.278	-0.000	0.000	0.000	6.746			
		3:BEBAN GEM	-3.17E 3	91.341	17.115	0.194	-0.116	-3.094			
		4:KOMBINASI	-261.521	2.39E 3	-0.000	0.000	0.000	28.645			
		5:KOMB B. MA	-3.51E 3	1.7E 3	17.971	0.203	-0.122	15.675			
	13038	1:BEBAN MATI	153.738	-1E 3	0.000	-0.000	0.000	1.987			
		2:BEBAN HIDL	48.147	-526.278	0.000	-0.000	-0.000	0.996			
		3:BEBAN GEM	3.17E 3	-91.341	-17.115	-0.194	-0.136	4.438			
		4:KOMBINASI	261.521	-2.04E 3	0.000	-0.000	-0.000	3.977			
		5:KOMB B. MA	3.51E 3	-1.41E 3	-17.971	-0.203	-0.143	7.244			
15696	12850	1:BEBAN MATI	-167.892	-292.498	0.000	-0.000	-0.000	-9.802			
		2:BEBAN HIDL	-50.563	-167.938	0.000	0.000	-0.000	-4.056			
		3:BEBAN GEM	-1.51E 3	-216.596	5.563	-0.262	-0.040	1.061			
		4:KOMBINASI	-282.371	-619.699	0.000	-0.000	-0.000	-18.252			
		5:KOMB B. MA	-1.78E 3	-620.687	5.841	-0.275	-0.041	-11.121			
	13031	1:BEBAN MATI	167.892	580.813	-0.000	0.000	-0.000	3.379			
		2:BEBAN HIDL	50.563	167.938	-0.000	-0.000	-0.000	1.586			
		3:BEBAN GEM	1.51E 3	216.596	-5.563	0.262	-0.042	-4.247			
		4:KOMBINASI	282.371	965.677	-0.000	0.000	-0.000	6.591			
		5:KOMB B. MA	1.78E 3	909.001	-5.841	0.275	-0.044	-0.130			
15697	12826	1:BEBAN MATI	-181.738	1.5E 3	-0.000	0.000	0.000	19.950			
		2:BEBAN HIDL	-49.702	541.358	-0.000	0.000	0.000	7.044			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 83	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-886.177	126.707	3.056	0.201	-0.024	-1.648			
		4:KOMBINASI	-297.608	2.66E 3	-0.000	0.000	0.000	35.210			
		5:KOMB B. MA	-1.14E 3	1.95E 3	3.208	0.211	-0.025	22.445			
	13024	1:BEBAN MATI	181.738	-1.21E 3	0.000	-0.000	0.000	-0.073			
		2:BEBAN HIDL	49.702	-541.358	0.000	-0.000	-0.000	0.920			
		3:BEBAN GEM	886.177	-126.707	-3.056	-0.201	-0.021	3.512			
		4:KOMBINASI	297.608	-2.31E 3	0.000	-0.000	0.000	1.384			
		5:KOMB B. MA	1.14E 3	-1.66E 3	-3.208	-0.211	-0.022	4.167			
15698	12838	1:BEBAN MATI	-158.644	-590.890	-0.000	-0.000	0.000	-14.103			
		2:BEBAN HIDL	-42.909	-243.303	0.000	-0.000	-0.000	-5.475			
		3:BEBAN GEM	-637.173	-380.361	2.778	-0.220	-0.019	-1.794			
		4:KOMBINASI	-259.027	-1.1E 3	-0.000	-0.000	0.000	-25.683			
		5:KOMB B. MA	-853.421	-1.14E 3	2.916	-0.231	-0.020	-19.272			
	12913	1:BEBAN MATI	158.644	879.205	0.000	0.000	0.000	3.291			
		2:BEBAN HIDL	42.909	243.303	-0.000	0.000	0.000	1.896			
		3:BEBAN GEM	637.173	380.361	-2.778	0.220	-0.022	-3.801			
		4:KOMBINASI	259.027	1.44E 3	0.000	0.000	0.000	6.982			
		5:KOMB B. MA	853.421	1.42E 3	-2.916	0.231	-0.023	0.437			
15699	12851	1:BEBAN MATI	-149.844	1.46E 3	-6.051	-1.713	0.034	-11.043			
		2:BEBAN HIDL	-41.092	175.333	-1.508	-1.367	0.008	-2.761			
		3:BEBAN GEM	29.759	-1.05E 3	-9.863	1.502	0.052	-14.083			
		4:KOMBINASI	-245.560	2.03E 3	-9.674	-4.243	0.054	-17.670			
		5:KOMB B. MA	-143.252	460.163	-17.312	-0.956	0.093	-27.487			
	12854	1:BEBAN MATI	149.844	-108.651	6.051	1.713	0.037	20.268			
		2:BEBAN HIDL	41.092	-175.333	1.508	1.367	0.010	4.824			
		3:BEBAN GEM	-29.759	1.05E 3	9.863	-1.502	0.065	1.709			
		4:KOMBINASI	245.560	-410.914	9.674	4.243	0.060	32.040			
		5:KOMB B. MA	143.252	890.230	17.312	0.956	0.111	24.957			
15700	12853	1:BEBAN MATI	-554.264	3.54E 3	7.026	2.933	-0.022	7.525			
		2:BEBAN HIDL	-138.645	716.363	2.209	2.326	-0.006	1.719			
		3:BEBAN GEM	-1.17E 3	-2.81E 3	13.835	-2.003	-0.066	-68.436			
		4:KOMBINASI	-886.948	5.39E 3	11.966	7.242	-0.036	11.780			
		5:KOMB B. MA	-1.86E 3	1.02E 3	22.878	2.226	-0.094	-63.302			
	12860	1:BEBAN MATI	554.264	-2.69E 3	-7.026	-2.933	-0.030	15.385			
		2:BEBAN HIDL	138.645	-716.363	-2.209	-2.326	-0.010	3.550			
		3:BEBAN GEM	1.17E 3	2.81E 3	-13.835	2.003	-0.036	47.770			
		4:KOMBINASI	886.948	-4.38E 3	-11.966	-7.242	-0.052	24.142			
		5:KOMB B. MA	1.86E 3	-172.476	-22.878	-2.226	-0.074	67.674			
15702	12854	1:BEBAN MATI	-114.110	-599.800	5.686	1.265	-0.032	-20.252			
		2:BEBAN HIDL	-35.925	-288.660	2.616	0.481	-0.014	-4.890			
		3:BEBAN GEM	-3.885	-1.04E 3	8.029	-1.845	-0.046	-1.451			
		4:KOMBINASI	-194.412	-1.18E 3	11.009	2.287	-0.061	-32.127			
		5:KOMB B. MA	-139.745	-1.87E 3	15.687	-0.384	-0.089	-24.710			
	12856	1:BEBAN MATI	114.110	1.95E 3	-5.686	-1.265	-0.035	5.248			
		2:BEBAN HIDL	35.925	288.660	-2.616	-0.481	-0.017	1.493			
		3:BEBAN GEM	3.885	1.04E 3	-8.029	1.845	-0.048	-10.803			
		4:KOMBINASI	194.412	2.8E 3	-11.009	-2.287	-0.068	8.687			
		5:KOMB B. MA	139.745	3.22E 3	-15.687	0.384	-0.095	-5.199			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 84	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15704	12856	1:BEBAN MATI	-216.020	-2.37E 3	36.494	3.708	-0.217	-3.679			
		2:BEBAN HIDL	-84.798	-578.773	16.238	1.886	-0.096	-0.817			
		3:BEBAN GEM	-202.579	-1.23E 3	50.419	-4.894	-0.300	10.170			
		4:KOMBINASI	-394.901	-3.78E 3	69.774	7.467	-0.413	-5.722			
		5:KOMB B. MA	-479.607	-4.01E 3	99.177	-0.299	-0.590	6.509			
	70	1:BEBAN MATI	216.020	3.72E 3	-36.494	-3.708	-0.213	-32.209			
		2:BEBAN HIDL	84.798	578.773	-16.238	-1.886	-0.095	-5.994			
		3:BEBAN GEM	202.579	1.23E 3	-50.419	4.894	-0.293	-24.600			
		4:KOMBINASI	394.901	5.4E 3	-69.774	-7.467	-0.408	-48.241			
		5:KOMB B. MA	479.607	5.36E 3	-99.177	0.299	-0.578	-61.635			
15706	12858	1:BEBAN MATI	-495.071	3.72E 3	-0.790	-0.193	0.002	8.873			
		2:BEBAN HIDL	-217.349	1.6E 3	-0.105	0.054	0.001	4.158			
		3:BEBAN GEM	-708.599	-2.68E 3	-5.433	-1.711	0.022	-65.266			
		4:KOMBINASI	-941.843	7.02E 3	-1.116	-0.146	0.004	17.300			
		5:KOMB B. MA	-1.37E 3	1.86E 3	-6.557	-1.958	0.026	-57.161			
	12863	1:BEBAN MATI	495.071	-3.5E 3	0.790	0.193	0.003	17.661			
		2:BEBAN HIDL	217.349	-1.6E 3	0.105	-0.054	0.000	7.574			
		3:BEBAN GEM	708.599	2.68E 3	5.433	1.711	0.018	45.527			
		4:KOMBINASI	941.843	-6.75E 3	1.116	0.146	0.004	33.312			
		5:KOMB B. MA	1.37E 3	-1.63E 3	6.557	1.958	0.022	70.009			
15708	12860	1:BEBAN MATI	-436.919	2.28E 3	5.342	1.696	-0.016	-16.328			
		2:BEBAN HIDL	-108.404	445.560	1.793	1.519	-0.005	-3.931			
		3:BEBAN GEM	-975.536	-2.74E 3	10.216	-0.801	-0.045	-46.821			
		4:KOMBINASI	-697.749	3.45E 3	9.280	4.466	-0.027	-25.883			
		5:KOMB B. MA	-1.53E 3	-331.905	17.145	1.767	-0.066	-67.849			
	12865	1:BEBAN MATI	436.919	-1.44E 3	-5.342	-1.696	-0.023	30.006			
		2:BEBAN HIDL	108.404	-445.560	-1.793	-1.519	-0.008	7.208			
		3:BEBAN GEM	975.536	2.74E 3	-10.216	0.801	-0.030	26.641			
		4:KOMBINASI	697.749	-2.44E 3	-9.280	-4.466	-0.041	47.539			
		5:KOMB B. MA	1.53E 3	1.18E 3	-17.145	-1.767	-0.060	62.304			
15712	12863	1:BEBAN MATI	-388.857	2.45E 3	-0.738	-0.152	0.003	-18.794			
		2:BEBAN HIDL	-168.028	1.02E 3	-0.158	0.036	0.001	-7.961			
		3:BEBAN GEM	-559.797	-2.48E 3	-5.697	-1.205	0.018	-44.535			
		4:KOMBINASI	-735.473	4.57E 3	-1.139	-0.124	0.004	-35.290			
		5:KOMB B. MA	-1.08E 3	461.449	-6.815	-1.396	0.022	-70.332			
	12868	1:BEBAN MATI	388.857	-2.23E 3	0.738	0.152	0.003	36.011			
		2:BEBAN HIDL	168.028	-1.02E 3	0.158	-0.036	0.000	15.453			
		3:BEBAN GEM	559.797	2.48E 3	5.697	1.205	0.024	26.300			
		4:KOMBINASI	735.473	-4.3E 3	1.139	0.124	0.004	67.938			
		5:KOMB B. MA	1.08E 3	-236.203	6.815	1.396	0.028	72.898			
15714	12865	1:BEBAN MATI	-367.698	1.05E 3	3.353	0.833	-0.007	-30.650			
		2:BEBAN HIDL	-92.135	190.454	1.072	0.842	-0.002	-7.499			
		3:BEBAN GEM	-858.910	-2.71E 3	5.586	-0.077	-0.027	-25.819			
		4:KOMBINASI	-588.653	1.57E 3	5.739	2.346	-0.011	-48.778			
		5:KOMB B. MA	-1.32E 3	-1.67E 3	9.862	1.257	-0.036	-62.259			
	132	1:BEBAN MATI	367.698	-210.869	-3.353	-0.833	-0.018	35.305			
		2:BEBAN HIDL	92.135	-190.454	-1.072	-0.842	-0.006	8.900			
		3:BEBAN GEM	858.910	2.71E 3	-5.586	0.077	-0.014	5.902			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 85	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	588.653	-557.769	-5.739	-2.346	-0.032	56.605			
		5:KOMB B. MA	1.32E 3	2.52E 3	-9.862	-1.257	-0.037	46.841			
15718	12868	1:BEBAN MATI	-336.006	1.32E 3	-0.384	-0.083	0.002	-37.149			
		2:BEBAN HIDL	-141.549	528.148	-0.300	0.026	0.001	-15.877			
		3:BEBAN GEM	-488.427	-2.42E 3	-5.522	-0.777	0.014	-25.106			
		4:KOMBINASI	-629.686	2.42E 3	-0.940	-0.058	0.004	-69.981			
		5:KOMB B. MA	-933.783	-911.110	-6.362	-0.883	0.017	-73.036			
	12791	1:BEBAN MATI	336.006	-1.09E 3	0.384	0.083	0.001	45.994			
		2:BEBAN HIDL	141.549	-528.148	0.300	-0.026	0.001	19.761			
		3:BEBAN GEM	488.427	2.42E 3	5.522	0.777	0.027	7.291			
		4:KOMBINASI	629.686	-2.15E 3	0.940	0.058	0.003	86.811			
		5:KOMB B. MA	933.783	1.14E 3	6.362	0.883	0.030	65.506			
15720	12869	1:BEBAN MATI	-29.241	338.129	-0.382	0.097	0.001	-8.843			
		2:BEBAN HIDL	-10.456	133.362	0.066	0.021	-0.001	-4.377			
		3:BEBAN GEM	23.835	-91.242	-0.599	-0.276	0.002	-1.896			
		4:KOMBINASI	-51.820	619.133	-0.353	0.150	-0.000	-17.615			
		5:KOMB B. MA	-10.489	322.342	-0.971	-0.180	0.002	-13.460			
	12870	1:BEBAN MATI	29.241	-107.477	0.382	-0.097	0.003	11.465			
		2:BEBAN HIDL	10.456	-133.362	-0.066	-0.021	0.000	5.946			
		3:BEBAN GEM	-23.835	91.242	0.599	0.276	0.005	0.823			
		4:KOMBINASI	51.820	-342.351	0.353	-0.150	0.004	23.272			
		5:KOMB B. MA	10.489	-91.690	0.971	0.180	0.009	15.896			
15722	12870	1:BEBAN MATI	-47.807	-592.497	-0.150	-0.058	-0.000	-11.251			
		2:BEBAN HIDL	-16.086	-332.551	0.171	0.004	-0.001	-5.859			
		3:BEBAN GEM	41.209	-105.806	-0.037	0.220	-0.001	-0.692			
		4:KOMBINASI	-83.106	-1.24E 3	0.094	-0.064	-0.002	-22.876			
		5:KOMB B. MA	-14.189	-903.123	-0.086	0.175	-0.002	-15.493			
	12871	1:BEBAN MATI	47.807	823.148	0.150	0.058	0.002	2.921			
		2:BEBAN HIDL	16.086	332.551	-0.171	-0.004	-0.001	1.946			
		3:BEBAN GEM	-41.209	105.806	0.037	-0.220	0.002	-0.554			
		4:KOMBINASI	83.106	1.52E 3	-0.094	0.064	0.001	6.619			
		5:KOMB B. MA	14.189	1.13E 3	0.086	-0.175	0.003	3.507			
15724	12871	1:BEBAN MATI	-46.186	-1.09E 3	0.427	-0.108	-0.001	-0.756			
		2:BEBAN HIDL	-14.992	-569.693	0.467	-0.014	-0.002	-0.868			
		3:BEBAN GEM	89.877	-23.610	0.927	0.140	-0.002	0.754			
		4:KOMBINASI	-79.411	-2.22E 3	1.260	-0.151	-0.005	-2.296			
		5:KOMB B. MA	39.190	-1.46E 3	1.681	0.032	-0.004	-0.484			
	12791	1:BEBAN MATI	46.186	1.32E 3	-0.427	0.108	-0.004	-13.475			
		2:BEBAN HIDL	14.992	569.693	-0.467	0.014	-0.003	-5.836			
		3:BEBAN GEM	-89.877	23.610	-0.927	-0.140	-0.009	-1.032			
		4:KOMBINASI	79.411	2.5E 3	-1.260	0.151	-0.010	-25.508			
		5:KOMB B. MA	-39.190	1.69E 3	-1.681	-0.032	-0.015	-18.060			
15727	12873	1:BEBAN MATI	-325.314	-2.07E 3	0.209	-1.840	0.007	-24.914			
		2:BEBAN HIDL	-91.272	-599.715	-0.039	-1.222	0.004	-6.000			
		3:BEBAN GEM	-696.793	-2.78E 3	3.540	2.068	-0.016	14.931			
		4:KOMBINASI	-536.412	-3.45E 3	0.188	-4.163	0.014	-39.497			
		5:KOMB B. MA	-1.11E 3	-5.35E 3	3.903	-0.401	-0.008	-12.837			
	12878	1:BEBAN MATI	325.314	2.92E 3	-0.209	1.840	-0.008	6.556			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 86	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	91.272	599.715	0.039	1.222	-0.003	1.589			
		3:BEBAN GEM	696.793	2.78E 3	-3.540	-2.068	-0.010	-35.369			
		4:KOMBINASI	536.412	4.46E 3	-0.188	4.163	-0.015	10.409			
		5:KOMB B. MA	1.11E 3	6.2E 3	-3.903	0.401	-0.021	-29.628			
15731	12876	1:BEBAN MATI	-295.238	-3.01E 3	0.238	0.150	-0.001	-29.638			
		2:BEBAN HIDL	-116.834	-1.31E 3	-0.245	-0.041	0.001	-12.993			
		3:BEBAN GEM	-429.811	-2.55E 3	5.829	1.115	-0.032	13.291			
		4:KOMBINASI	-541.219	-5.71E 3	-0.106	0.115	0.000	-56.354			
		5:KOMB B. MA	-816.640	-6.48E 3	6.212	1.296	-0.034	-23.478			
	12881	1:BEBAN MATI	295.238	3.24E 3	-0.238	-0.150	-0.001	6.662			
		2:BEBAN HIDL	116.834	1.31E 3	0.245	0.041	0.001	3.353			
		3:BEBAN GEM	429.811	2.55E 3	-5.829	-1.115	-0.011	-32.075			
		4:KOMBINASI	541.219	5.98E 3	0.106	-0.115	0.000	13.359			
		5:KOMB B. MA	816.640	6.7E 3	-6.212	-1.296	-0.012	-25.004			
15733	12878	1:BEBAN MATI	-342.121	-3.25E 3	-0.620	-2.705	0.016	-5.483			
		2:BEBAN HIDL	-104.826	-830.325	-0.385	-1.866	0.008	-1.188			
		3:BEBAN GEM	-617.786	-2.89E 3	3.734	1.774	-0.010	35.456			
		4:KOMBINASI	-578.267	-5.23E 3	-1.360	-6.231	0.032	-8.480			
		5:KOMB B. MA	-1.05E 3	-6.78E 3	3.070	-1.962	0.010	31.034			
	12883	1:BEBAN MATI	342.121	4.09E 3	0.620	2.705	-0.012	-21.531			
		2:BEBAN HIDL	104.826	830.325	0.385	1.866	-0.005	-4.919			
		3:BEBAN GEM	617.786	2.89E 3	-3.734	-1.774	-0.017	-56.683			
		4:KOMBINASI	578.267	6.24E 3	1.360	6.231	-0.022	-33.708			
		5:KOMB B. MA	1.05E 3	7.62E 3	-3.070	1.962	-0.033	-84.000			
15737	12881	1:BEBAN MATI	-290.302	-4.14E 3	0.415	0.148	-0.002	-5.230			
		2:BEBAN HIDL	-111.947	-1.83E 3	-0.281	-0.054	0.001	-2.747			
		3:BEBAN GEM	-388.185	-2.79E 3	10.915	1.573	-0.052	33.145			
		4:KOMBINASI	-527.478	-7.89E 3	0.048	0.091	-0.002	-10.671			
		5:KOMB B. MA	-765.065	-8.17E 3	11.707	1.767	-0.056	27.923			
	12886	1:BEBAN MATI	290.302	4.36E 3	-0.415	-0.148	-0.001	-26.037			
		2:BEBAN HIDL	111.947	1.83E 3	0.281	0.054	0.001	-10.704			
		3:BEBAN GEM	388.185	2.79E 3	-10.915	-1.573	-0.029	-53.692			
		4:KOMBINASI	527.478	8.16E 3	-0.048	-0.091	0.001	-48.372			
		5:KOMB B. MA	765.065	8.39E 3	-11.707	-1.767	-0.030	-88.836			
15739	12883	1:BEBAN MATI	-425.235	-4.32E 3	-40.091	-3.575	0.116	22.875			
		2:BEBAN HIDL	-148.099	-959.783	-19.088	-2.278	0.055	5.438			
		3:BEBAN GEM	-539.282	-3.14E 3	-16.932	1.121	0.057	56.693			
		4:KOMBINASI	-747.240	-6.72E 3	-78.651	-7.935	0.227	36.151			
		5:KOMB B. MA	-1.08E 3	-8.19E 3	-69.323	-3.765	0.209	85.666			
	88	1:BEBAN MATI	425.235	5.16E 3	40.091	3.575	0.179	-57.753			
		2:BEBAN HIDL	148.099	959.783	19.088	2.278	0.085	-12.497			
		3:BEBAN GEM	539.282	3.14E 3	16.932	-1.121	0.067	-79.753			
		4:KOMBINASI	747.240	7.73E 3	78.651	7.935	0.351	-89.300			
		5:KOMB B. MA	1.08E 3	9.03E 3	69.323	3.765	0.301	-148.993			
15743	12886	1:BEBAN MATI	-295.221	-5.21E 3	1.478	0.131	-0.006	27.457			
		2:BEBAN HIDL	-111.659	-2.27E 3	-0.837	-0.060	0.002	11.317			
		3:BEBAN GEM	-302.625	-3.38E 3	15.355	2.423	-0.065	54.348			
		4:KOMBINASI	-532.920	-9.88E 3	0.434	0.062	-0.004	51.055			



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Job No 1	Sheet No 87	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-679.973	-10.1E 3	17.098	2.640	-0.074	91.313			
	96	1:BEBAN MATI	295.221	5.43E 3	-1.478	-0.131	-0.005	-66.585			
		2:BEBAN HIDL	111.659	2.27E 3	0.837	0.060	0.004	-28.004			
		3:BEBAN GEM	302.625	3.38E 3	-15.355	-2.423	-0.047	-79.179			
		4:KOMBINASI	532.920	10.1E 3	-0.434	-0.062	0.001	-124.708			
		5:KOMB B. MA	679.973	10.3E 3	-17.098	-2.640	-0.052	-166.525			
15745	12887	1:BEBAN MATI	-190.057	978.714	0.432	0.094	-0.003	-12.909			
		2:BEBAN HIDL	-92.096	393.457	0.302	0.057	-0.002	-5.485			
		3:BEBAN GEM	30.203	-951.027	-9.534	1.970	0.065	-13.727			
		4:KOMBINASI	-375.422	1.8E 3	1.002	0.204	-0.007	-24.267			
		5:KOMB B. MA	-213.601	216.210	-9.397	2.196	0.064	-30.613			
	12888	1:BEBAN MATI	190.057	-618.321	-0.432	-0.094	-0.002	22.306			
		2:BEBAN HIDL	92.096	-393.457	-0.302	-0.057	-0.002	10.116			
		3:BEBAN GEM	-30.203	951.027	9.534	-1.970	0.047	2.535			
		4:KOMBINASI	375.422	-1.37E 3	-1.002	-0.204	-0.005	42.952			
		5:KOMB B. MA	213.601	144.183	9.397	-2.196	0.046	31.037			
15747	12888	1:BEBAN MATI	-138.150	-1.15E 3	-0.392	-0.036	0.002	-22.155			
		2:BEBAN HIDL	-62.857	-573.725	0.019	0.012	-0.000	-10.045			
		3:BEBAN GEM	186.424	-985.171	-5.269	-1.667	0.035	-2.074			
		4:KOMBINASI	-266.351	-2.3E 3	-0.440	-0.024	0.001	-42.657			
		5:KOMB B. MA	19.881	-2.53E 3	-5.913	-1.779	0.038	-30.359			
	12889	1:BEBAN MATI	138.150	1.51E 3	0.392	0.036	0.003	6.512			
		2:BEBAN HIDL	62.857	573.725	-0.019	-0.012	0.000	3.293			
		3:BEBAN GEM	-186.424	985.171	5.269	1.667	0.027	-9.519			
		4:KOMBINASI	266.351	2.73E 3	0.440	0.024	0.004	13.083			
		5:KOMB B. MA	-19.881	2.89E 3	5.913	1.779	0.031	-1.508			
15749	12889	1:BEBAN MATI	-122.667	-2.96E 3	-1.469	-0.090	0.009	-4.947			
		2:BEBAN HIDL	-49.152	-1.33E 3	-0.302	-0.011	0.002	-2.461			
		3:BEBAN GEM	370.264	-1.2E 3	-2.595	-5.839	0.005	9.706			
		4:KOMBINASI	-225.844	-5.69E 3	-2.247	-0.125	0.015	-9.874			
		5:KOMB B. MA	236.619	-5.02E 3	-4.375	-6.228	0.016	3.767			
	96	1:BEBAN MATI	122.667	3.32E 3	1.469	0.090	0.008	-31.991			
		2:BEBAN HIDL	49.152	1.33E 3	0.302	0.011	0.001	-13.241			
		3:BEBAN GEM	-370.264	1.2E 3	2.595	5.839	0.025	-23.858			
		4:KOMBINASI	225.844	6.12E 3	2.247	0.125	0.011	-59.575			
		5:KOMB B. MA	-236.619	5.38E 3	4.375	6.228	0.035	-64.987			
15752	12890	1:BEBAN MATI	-92.297	843.478	-1.520	1.557	0.013	-5.081			
		2:BEBAN HIDL	-25.337	21.368	-1.033	0.836	0.007	-1.162			
		3:BEBAN GEM	94.532	-1.81E 3	-2.682	1.305	0.022	-6.860			
		4:KOMBINASI	-151.296	1.05E 3	-3.477	3.206	0.027	-7.956			
		5:KOMB B. MA	-8.240	-1.04E 3	-4.956	3.429	0.040	-12.981			
	12893	1:BEBAN MATI	92.297	506.915	1.520	-1.557	0.005	7.061			
		2:BEBAN HIDL	25.337	-21.368	1.033	-0.836	0.005	1.414			
		3:BEBAN GEM	-94.532	1.81E 3	2.682	-1.305	0.010	-14.421			
		4:KOMBINASI	151.296	574.109	3.477	-3.206	0.014	10.735			
		5:KOMB B. MA	8.240	2.39E 3	4.956	-3.429	0.018	-7.233			
15753	12892	1:BEBAN MATI	-375.137	2.57E 3	-20.585	-3.460	0.047	-1.317			
		2:BEBAN HIDL	-160.735	1.13E 3	-7.641	-1.657	0.017	-0.307			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-376.893	-3.01E 3	12.423	-1.534	-0.070	-58.113			
		4:KOMBINASI	-707.340	4.89E 3	-36.927	-6.802	0.084	-2.070			
		5:KOMB B. MA	-867.316	85.281	-12.125	-6.064	-0.017	-62.519			
	13131	1:BEBAN MATI	375.137	-2.42E 3	20.585	3.460	0.054	13.548			
		2:BEBAN HIDL	160.735	-1.13E 3	7.641	1.657	0.020	5.836			
		3:BEBAN GEM	376.893	3.01E 3	-12.423	1.534	0.009	43.352			
		4:KOMBINASI	707.340	-4.71E 3	36.927	6.802	0.097	25.595			
		5:KOMB B. MA	867.316	64.883	12.125	6.064	0.076	62.569			
15755	12893	1:BEBAN MATI	-191.998	-853.802	9.109	2.364	-0.054	-6.161			
		2:BEBAN HIDL	-46.541	-239.938	2.282	1.535	-0.014	-0.872			
		3:BEBAN GEM	507.017	-1.63E 3	4.773	-4.187	-0.167	14.953			
		4:KOMBINASI	-304.863	-1.41E 3	14.582	5.293	-0.088	-8.788			
		5:KOMB B. MA	312.445	-2.71E 3	15.490	-1.111	-0.238	9.017			
	74	1:BEBAN MATI	191.998	2.2E 3	-9.109	-2.364	-0.053	-11.832			
		2:BEBAN HIDL	46.541	239.938	-2.282	-1.535	-0.012	-1.952			
		3:BEBAN GEM	-507.017	1.63E 3	-4.773	4.187	0.111	-34.113			
		4:KOMBINASI	304.863	3.03E 3	-14.582	-5.293	-0.084	-17.321			
		5:KOMB B. MA	-312.445	4.06E 3	-15.490	1.111	0.056	-48.822			
15757	12895	1:BEBAN MATI	-118.280	701.670	-3.468	1.467	0.012	-5.457			
		2:BEBAN HIDL	-31.629	25.170	-0.797	-0.025	0.002	-1.094			
		3:BEBAN GEM	-1.37E 3	-7.39E 3	-2.743	-0.631	0.047	-50.700			
		4:KOMBINASI	-192.543	882.277	-5.437	1.720	0.018	-8.299			
		5:KOMB B. MA	-1.58E 3	-7.04E 3	-6.826	0.789	0.062	-59.348			
	12899	1:BEBAN MATI	118.280	423.657	3.468	-1.467	0.022	6.821			
		2:BEBAN HIDL	31.629	-25.170	0.797	0.025	0.006	1.341			
		3:BEBAN GEM	1.37E 3	7.39E 3	2.743	0.631	-0.020	-21.788			
		4:KOMBINASI	192.543	468.116	5.437	-1.720	0.035	10.330			
		5:KOMB B. MA	1.58E 3	8.17E 3	6.826	-0.789	0.005	-15.252			
15759	12897	1:BEBAN MATI	-322.210	1.44E 3	-42.812	-2.608	0.053	-23.395			
		2:BEBAN HIDL	-129.956	633.121	-18.297	-1.326	0.024	-10.247			
		3:BEBAN GEM	-2.455	-2.66E 3	87.316	-0.465	-0.197	-27.924			
		4:KOMBINASI	-594.582	2.74E 3	-80.650	-5.251	0.103	-44.469			
		5:KOMB B. MA	-402.761	-974.274	37.891	-3.892	-0.139	-58.863			
	13135	1:BEBAN MATI	322.210	-1.36E 3	42.812	2.608	0.051	26.832			
		2:BEBAN HIDL	129.956	-633.121	18.297	1.326	0.021	11.799			
		3:BEBAN GEM	2.455	2.66E 3	-87.316	0.465	-0.017	21.401			
		4:KOMBINASI	594.582	-2.65E 3	80.650	5.251	0.095	51.077			
		5:KOMB B. MA	402.761	1.05E 3	-37.891	3.892	0.046	56.382			
15762	12899	1:BEBAN MATI	-72.524	-871.597	-6.847	3.916	0.019	-5.973			
		2:BEBAN HIDL	-33.730	-264.883	3.682	1.203	-0.018	-1.068			
		3:BEBAN GEM	-1.61E 3	-7.82E 3	0.365	2.758	0.149	22.992			
		4:KOMBINASI	-140.997	-1.47E 3	-2.326	6.624	-0.005	-8.877			
		5:KOMB B. MA	-1.78E 3	-9.25E 3	-4.255	7.533	0.165	17.528			
	135	1:BEBAN MATI	72.524	2E 3	6.847	-3.916	0.048	-8.092			
		2:BEBAN HIDL	33.730	264.883	-3.682	-1.203	-0.018	-1.529			
		3:BEBAN GEM	1.61E 3	7.82E 3	-0.365	-2.758	-0.153	-99.718			
		4:KOMBINASI	140.997	2.82E 3	2.326	-6.624	0.028	-12.157			
		5:KOMB B. MA	1.78E 3	10.4E 3	4.255	-7.533	-0.124	-113.714			



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Job No 1	Sheet No 89	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15764	12900	1:BEBAN MATI	-25.082	-312.712	-0.610	-0.090	0.003	-2.318			
		2:BEBAN HIDL	-26.649	-136.243	-0.030	-0.034	0.000	-1.533			
		3:BEBAN GEM	415.895	-432.110	-6.476	-2.231	0.051	0.737			
		4:KOMBINASI	-72.738	-593.242	-0.779	-0.163	0.005	-5.235			
		5:KOMB B. MA	395.618	-848.173	-7.427	-2.454	0.057	-2.464			
	12901	1:BEBAN MATI	25.082	543.363	0.610	0.090	0.004	-2.719			
		2:BEBAN HIDL	26.649	136.243	0.030	0.034	-0.000	-0.070			
		3:BEBAN GEM	-415.895	432.110	6.476	2.231	0.025	-5.822			
		4:KOMBINASI	72.738	870.024	0.779	0.163	0.005	-3.375			
		5:KOMB B. MA	-395.618	1.08E 3	7.427	2.454	0.030	-8.874			
15766	12901	1:BEBAN MATI	-3.219	-1.51E 3	-2.251	-0.417	0.011	3.899			
		2:BEBAN HIDL	-38.790	-638.389	0.007	-0.138	-0.000	0.750			
		3:BEBAN GEM	871.496	-673.064	8.695	-4.692	-0.019	6.002			
		4:KOMBINASI	-65.926	-2.83E 3	-2.690	-0.721	0.013	5.878			
		5:KOMB B. MA	888.578	-2.6E 3	6.883	-5.427	-0.009	10.651			
	135	1:BEBAN MATI	3.219	1.74E 3	2.251	0.417	0.015	-23.013			
		2:BEBAN HIDL	38.790	638.389	-0.007	0.138	0.000	-8.262			
		3:BEBAN GEM	-871.496	673.064	-8.695	4.692	-0.083	-13.923			
		4:KOMBINASI	65.926	3.11E 3	2.690	0.721	0.019	-40.835			
		5:KOMB B. MA	-888.578	2.83E 3	-6.883	5.427	-0.072	-42.589			
15769	12902	1:BEBAN MATI	-249.765	2.48E 3	-6.448	-0.969	0.047	-16.132			
		2:BEBAN HIDL	-57.024	418.854	-1.568	-1.055	0.011	-4.046			
		3:BEBAN GEM	282.661	-739.129	3.101	4.099	-0.035	-10.902			
		4:KOMBINASI	-390.957	3.65E 3	-10.247	-2.852	0.074	-25.831			
		5:KOMB B. MA	12.814	1.96E 3	-4.133	2.701	0.017	-30.006			
	12785	1:BEBAN MATI	249.765	-793.974	6.448	0.969	0.048	40.226			
		2:BEBAN HIDL	57.024	-418.854	1.568	1.055	0.012	10.207			
		3:BEBAN GEM	-282.661	739.129	-3.101	-4.099	-0.011	0.029			
		4:KOMBINASI	390.957	-1.62E 3	10.247	2.852	0.077	64.603			
		5:KOMB B. MA	-12.814	-269.202	4.133	-2.701	0.044	46.381			
15770	12904	1:BEBAN MATI	-734.273	4.25E 3	-4.988	-4.566	0.024	-20.014			
		2:BEBAN HIDL	-179.353	804.761	-1.073	-0.420	0.005	-4.406			
		3:BEBAN GEM	-552.911	-2.69E 3	66.686	-0.465	-0.556	-44.465			
		4:KOMBINASI	-1.17E 3	6.39E 3	-7.702	-6.152	0.036	-31.066			
		5:KOMB B. MA	-1.42E 3	1.91E 3	64.389	-5.307	-0.557	-69.346			
	12805	1:BEBAN MATI	734.273	-2.57E 3	4.988	4.566	0.049	70.163			
		2:BEBAN HIDL	179.353	-804.761	1.073	0.420	0.011	16.244			
		3:BEBAN GEM	552.911	2.69E 3	-66.686	0.465	-0.425	4.942			
		4:KOMBINASI	1.17E 3	-4.37E 3	7.702	6.152	0.077	110.186			
		5:KOMB B. MA	1.42E 3	-226.896	-64.389	5.307	-0.390	85.099			
15772	12905	1:BEBAN MATI	-70.027	282.162	-0.000	0.000	0.000	-12.199			
		2:BEBAN HIDL	-19.459	37.508	-0.000	0.000	0.000	-5.015			
		3:BEBAN GEM	-354.228	-329.848	3.557	0.359	-0.024	-8.366			
		4:KOMBINASI	-115.168	398.608	-0.000	0.000	0.000	-22.663			
		5:KOMB B. MA	-453.642	-41.673	3.735	0.377	-0.025	-23.992			
	12838	1:BEBAN MATI	70.027	6.152	0.000	-0.000	0.000	14.229			
		2:BEBAN HIDL	19.459	-37.508	0.000	-0.000	0.000	5.566			
		3:BEBAN GEM	354.228	329.848	-3.557	-0.359	-0.029	3.514			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 90	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	115.168	-52.631	0.000	-0.000	0.000	25.981			
		5:KOMB B. MA	453.642	329.988	-3.735	-0.377	-0.030	21.259			
15774	12906	1:BEBAN MATI	-486.696	-3.2E 3	25.053	3.445	-0.217	-14.811			
		2:BEBAN HIDL	-115.580	-840.446	6.072	2.244	-0.053	-3.277			
		3:BEBAN GEM	687.694	-1.06E 3	-5.025	-7.596	-0.069	11.982			
		4:KOMBINASI	-768.964	-5.18E 3	39.778	7.725	-0.345	-23.017			
		5:KOMB B. MA	166.034	-4.82E 3	23.420	-3.184	-0.321	-4.196			
	78	1:BEBAN MATI	486.696	4.89E 3	-25.053	-3.445	-0.152	-44.647			
		2:BEBAN HIDL	115.580	840.446	-6.072	-2.244	-0.036	-9.086			
		3:BEBAN GEM	-687.694	1.06E 3	5.025	7.596	0.143	-27.592			
		4:KOMBINASI	768.964	7.21E 3	-39.778	-7.725	-0.240	-68.114			
		5:KOMB B. MA	-166.034	6.5E 3	-23.420	3.184	-0.024	-79.071			
15776	12908	1:BEBAN MATI	-734.272	4.25E 3	4.988	4.566	-0.024	-20.014			
		2:BEBAN HIDL	-179.353	804.760	1.073	0.420	-0.005	-4.406			
		3:BEBAN GEM	-1.07E 3	-3.03E 3	-42.264	-3.738	0.401	-45.020			
		4:KOMBINASI	-1.17E 3	6.39E 3	7.702	6.152	-0.036	-31.066			
		5:KOMB B. MA	-1.97E 3	1.56E 3	-38.746	0.894	0.394	-69.928			
	12810	1:BEBAN MATI	734.272	-2.57E 3	-4.988	-4.566	-0.049	70.163			
		2:BEBAN HIDL	179.353	-804.760	-1.073	-0.420	-0.011	16.244			
		3:BEBAN GEM	1.07E 3	3.03E 3	42.264	3.738	0.221	0.485			
		4:KOMBINASI	1.17E 3	-4.37E 3	-7.702	-6.152	-0.077	110.186			
		5:KOMB B. MA	1.97E 3	130.829	38.746	-0.894	0.176	80.419			
15778	12909	1:BEBAN MATI	-158.624	592.541	0.256	0.150	-0.005	-3.077			
		2:BEBAN HIDL	-35.618	175.433	0.030	-0.016	-0.001	-3.048			
		3:BEBAN GEM	1.05E 3	-79.662	-4.060	-1.045	0.031	-1.268			
		4:KOMBINASI	-247.337	991.741	0.355	0.154	-0.007	-8.569			
		5:KOMB B. MA	923.288	614.155	-3.990	-0.957	0.027	-6.237			
	12838	1:BEBAN MATI	158.624	-304.226	-0.256	-0.150	0.001	9.672			
		2:BEBAN HIDL	35.618	-175.433	-0.030	0.016	0.001	5.629			
		3:BEBAN GEM	-1.05E 3	79.662	4.060	1.045	0.029	0.097			
		4:KOMBINASI	247.337	-645.764	-0.355	-0.154	0.002	20.613			
		5:KOMB B. MA	-923.288	-325.841	3.990	0.957	0.031	13.151			
15781	12910	1:BEBAN MATI	-137.249	-1.13E 3	0.319	-0.498	0.004	-1.935			
		2:BEBAN HIDL	-29.696	-544.362	0.160	-0.107	0.000	-2.429			
		3:BEBAN GEM	1.22E 3	157.632	9.922	0.919	-0.046	0.838			
		4:KOMBINASI	-212.212	-2.23E 3	0.639	-0.768	0.006	-6.209			
		5:KOMB B. MA	1.13E 3	-1.29E 3	10.833	0.403	-0.044	-2.513			
	12810	1:BEBAN MATI	137.249	1.42E 3	-0.319	0.498	-0.009	-16.792			
		2:BEBAN HIDL	29.696	544.362	-0.160	0.107	-0.003	-5.579			
		3:BEBAN GEM	-1.22E 3	-157.632	-9.922	-0.919	-0.100	1.481			
		4:KOMBINASI	212.212	2.57E 3	-0.639	0.768	-0.015	-29.075			
		5:KOMB B. MA	-1.13E 3	1.58E 3	-10.833	-0.403	-0.116	-18.583			
15784	12912	1:BEBAN MATI	-316.227	-5.8E 3	-2.589	-0.137	0.020	-9.657			
		2:BEBAN HIDL	-60.780	-1.68E 3	-1.166	-0.965	0.009	-3.006			
		3:BEBAN GEM	-274.465	-3.11E 3	11.802	1.923	-0.078	30.456			
		4:KOMBINASI	-476.721	-9.65E 3	-4.973	-1.709	0.038	-16.397			
		5:KOMB B. MA	-640.884	-10.1E 3	9.103	1.303	-0.057	20.518			
	105	1:BEBAN MATI	316.227	7.49E 3	2.589	0.137	0.018	-88.080			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	60.780	1.68E 3	1.166	0.965	0.008	-21.744			
		3:BEBAN GEM	274.465	3.11E 3	-11.802	-1.923	-0.096	-76.220			
		4:KOMBINASI	476.721	11.7E 3	4.973	1.709	0.035	-140.487			
		5:KOMB B. MA	640.884	11.8E 3	-9.103	-1.303	-0.077	-181.158			
15786	12913	1:BEBAN MATI	-179.254	-1.33E 3	0.000	-0.000	0.000	-1.560			
		2:BEBAN HIDL	-48.207	-578.546	0.000	0.000	-0.000	-1.203			
		3:BEBAN GEM	-776.547	-20.033	2.227	-0.184	-0.017	4.104			
		4:KOMBINASI	-292.235	-2.53E 3	0.000	-0.000	-0.000	-3.797			
		5:KOMB B. MA	-1.02E 3	-1.7E 3	2.338	-0.193	-0.018	2.028			
	12826	1:BEBAN MATI	179.254	1.62E 3	-0.000	0.000	-0.000	-20.180			
		2:BEBAN HIDL	48.207	578.546	-0.000	-0.000	-0.000	-7.307			
		3:BEBAN GEM	776.547	20.033	-2.227	0.184	-0.016	-4.399			
		4:KOMBINASI	292.235	2.87E 3	-0.000	0.000	-0.000	-35.908			
		5:KOMB B. MA	1.02E 3	1.99E 3	-2.338	0.193	-0.016	-29.183			
15789	12915	1:BEBAN MATI	-316.227	-5.8E 3	2.589	0.137	-0.020	-9.657			
		2:BEBAN HIDL	-60.780	-1.68E 3	1.166	0.965	-0.009	-3.006			
		3:BEBAN GEM	-535.870	-2.94E 3	-4.932	2.583	0.027	30.812			
		4:KOMBINASI	-476.721	-9.65E 3	4.973	1.709	-0.038	-16.397			
		5:KOMB B. MA	-915.359	-9.9E 3	-1.889	3.428	0.004	20.892			
	108	1:BEBAN MATI	316.227	7.49E 3	-2.589	-0.137	-0.018	-88.080			
		2:BEBAN HIDL	60.780	1.68E 3	-1.166	-0.965	-0.008	-21.744			
		3:BEBAN GEM	535.870	2.94E 3	4.932	-2.583	0.045	-74.080			
		4:KOMBINASI	476.721	11.7E 3	-4.973	-1.709	-0.035	-140.487			
		5:KOMB B. MA	915.359	11.6E 3	1.889	-3.428	0.024	-178.910			
15791	12916	1:BEBAN MATI	-167.433	2.67E 3	0.733	0.196	-0.006	-9.180			
		2:BEBAN HIDL	-51.137	968.852	-0.065	0.213	0.001	-4.135			
		3:BEBAN GEM	1.55E 3	-473.317	-5.824	3.570	0.022	-8.396			
		4:KOMBINASI	-282.739	4.75E 3	0.776	0.576	-0.006	-17.631			
		5:KOMB B. MA	1.43E 3	2.75E 3	-5.421	4.072	0.017	-20.477			
	12826	1:BEBAN MATI	167.433	-2.22E 3	-0.733	-0.196	-0.005	45.093			
		2:BEBAN HIDL	51.137	-968.852	0.065	-0.213	0.000	18.386			
		3:BEBAN GEM	-1.55E 3	473.317	5.824	-3.570	0.064	1.434			
		4:KOMBINASI	282.739	-4.21E 3	-0.776	-0.576	-0.005	83.529			
		5:KOMB B. MA	-1.43E 3	-2.3E 3	5.421	-4.072	0.062	57.630			
15794	12917	1:BEBAN MATI	-178.382	-4.64E 3	-1.721	-0.513	0.016	-7.869			
		2:BEBAN HIDL	-58.865	-1.89E 3	0.589	-0.362	-0.004	-3.421			
		3:BEBAN GEM	1.55E 3	-877.329	3.527	-7.565	-0.043	7.899			
		4:KOMBINASI	-308.243	-8.59E 3	-1.123	-1.195	0.013	-14.916			
		5:KOMB B. MA	1.41E 3	-6.69E 3	2.336	-8.674	-0.032	-1.627			
	108	1:BEBAN MATI	178.382	5.09E 3	1.721	0.513	0.009	-63.648			
		2:BEBAN HIDL	58.865	1.89E 3	-0.589	0.362	-0.005	-24.421			
		3:BEBAN GEM	-1.55E 3	877.329	-3.527	7.565	-0.008	-20.805			
		4:KOMBINASI	308.243	9.13E 3	1.123	1.195	0.004	-115.451			
		5:KOMB B. MA	-1.41E 3	7.14E 3	-2.336	8.674	-0.002	-100.145			
15797	12918	1:BEBAN MATI	-191.457	939.697	0.937	0.369	-0.006	-12.238			
		2:BEBAN HIDL	-88.652	370.786	0.104	0.278	-0.000	-5.111			
		3:BEBAN GEM	-207.206	-996.044	-9.462	1.930	0.058	-13.288			
		4:KOMBINASI	-371.591	1.72E 3	1.291	0.888	-0.007	-22.862			



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Job No 1	Sheet No 92	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-462.214	116.322	-8.936	2.563	0.055	-29.256			
	12921	1:BEBAN MATI	191.457	-579.304	-0.937	-0.369	-0.005	21.175			
		2:BEBAN HIDL	88.652	-370.786	-0.104	-0.278	-0.001	9.474			
		3:BEBAN GEM	207.206	996.044	9.462	-1.930	0.053	1.566			
		4:KOMBINASI	371.591	-1.29E 3	-1.291	-0.888	-0.008	40.569			
		5:KOMB B. MA	462.214	244.071	8.936	-2.563	0.050	28.504			
15798	12920	1:BEBAN MATI	-149.569	2.36E 3	0.436	1.493	0.000	-1.885			
		2:BEBAN HIDL	-41.975	422.832	0.620	0.747	-0.003	-0.431			
		3:BEBAN GEM	803.478	-3.93E 3	8.121	-0.615	-0.031	-39.399			
		4:KOMBINASI	-246.642	3.51E 3	1.516	2.986	-0.004	-2.952			
		5:KOMB B. MA	668.897	-1.52E 3	9.335	1.295	-0.034	-43.512			
	172	1:BEBAN MATI	149.569	-1.01E 3	-0.436	-1.493	-0.005	21.683			
		2:BEBAN HIDL	41.975	-422.832	-0.620	-0.747	-0.005	5.407			
		3:BEBAN GEM	-803.478	3.93E 3	-8.121	0.615	-0.064	-6.891			
		4:KOMBINASI	246.642	-1.89E 3	-1.516	-2.986	-0.014	34.671			
		5:KOMB B. MA	-668.897	2.87E 3	-9.335	-1.295	-0.075	17.692			
15800	12921	1:BEBAN MATI	-146.066	-1.07E 3	-1.077	-0.286	0.006	-21.027			
		2:BEBAN HIDL	-63.087	-533.094	-0.699	-0.073	0.004	-9.389			
		3:BEBAN GEM	-179.309	-954.871	-8.525	-1.697	0.050	-1.132			
		4:KOMBINASI	-276.218	-2.14E 3	-2.411	-0.459	0.013	-40.256			
		5:KOMB B. MA	-372.192	-2.4E 3	-10.448	-2.111	0.061	-27.850			
	12923	1:BEBAN MATI	146.066	1.43E 3	1.077	0.286	0.007	6.278			
		2:BEBAN HIDL	63.087	533.094	0.699	0.073	0.004	3.116			
		3:BEBAN GEM	179.309	954.871	8.525	1.697	0.050	-10.104			
		4:KOMBINASI	276.218	2.57E 3	2.411	0.459	0.015	12.520			
		5:KOMB B. MA	372.192	2.76E 3	10.448	2.111	0.062	-2.462			
15802	12923	1:BEBAN MATI	-135.960	-2.86E 3	-5.143	-0.729	0.031	-5.018			
		2:BEBAN HIDL	-52.365	-1.28E 3	-2.731	-0.310	0.016	-2.428			
		3:BEBAN GEM	-179.231	-1.05E 3	-6.171	-6.131	0.032	10.340			
		4:KOMBINASI	-246.936	-5.47E 3	-10.541	-1.371	0.064	-9.906			
		5:KOMB B. MA	-355.571	-4.72E 3	-13.262	-7.353	0.074	4.382			
	71	1:BEBAN MATI	135.960	3.22E 3	5.143	0.729	0.029	-30.705			
		2:BEBAN HIDL	52.365	1.28E 3	2.731	0.310	0.016	-12.607			
		3:BEBAN GEM	179.231	1.05E 3	6.171	6.131	0.041	-22.649			
		4:KOMBINASI	246.936	5.9E 3	10.541	1.371	0.061	-57.016			
		5:KOMB B. MA	355.571	5.08E 3	13.262	7.353	0.082	-62.051			
15804	12925	1:BEBAN MATI	-161.088	2.53E 3	-0.738	-0.131	0.005	-1.431			
		2:BEBAN HIDL	-62.633	974.689	0.055	-0.019	-0.000	-0.895			
		3:BEBAN GEM	251.714	-3.59E 3	10.013	-1.229	-0.048	-36.225			
		4:KOMBINASI	-293.518	4.6E 3	-0.797	-0.188	0.006	-3.149			
		5:KOMB B. MA	65.632	-646.883	9.808	-1.433	-0.046	-40.005			
	12787	1:BEBAN MATI	161.088	-2.17E 3	0.738	0.131	0.004	29.139			
		2:BEBAN HIDL	62.633	-974.689	-0.055	0.019	-0.001	12.365			
		3:BEBAN GEM	-251.714	3.59E 3	-10.013	1.229	-0.069	-5.987			
		4:KOMBINASI	293.518	-4.17E 3	0.797	0.188	0.004	54.751			
		5:KOMB B. MA	-65.632	1.01E 3	-9.808	1.433	-0.070	30.272			
15806	12926	1:BEBAN MATI	-32.237	308.032	0.338	-0.113	-0.001	-7.267			
		2:BEBAN HIDL	-12.061	92.276	-0.082	-0.002	0.001	-3.475			



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Job No 1	Sheet No 93	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-55.345	-160.690	-3.461	-0.442	0.015	-2.648			
		4:KOMBINASI	-57.981	517.281	0.275	-0.138	0.001	-14.281			
		5:KOMB B. MA	-97.585	194.673	-3.345	-0.578	0.016	-12.133			
	12927	1:BEBAN MATI	32.237	-77.381	-0.338	0.113	-0.003	9.534			
		2:BEBAN HIDL	12.061	-92.276	0.082	0.002	0.000	4.561			
		3:BEBAN GEM	55.345	160.690	3.461	0.442	0.025	0.757			
		4:KOMBINASI	57.981	-240.499	-0.275	0.138	-0.004	18.739			
		5:KOMB B. MA	97.585	35.978	3.345	0.578	0.023	13.067			
15808	12927	1:BEBAN MATI	-58.853	-476.143	0.399	0.093	-0.001	-9.405			
		2:BEBAN HIDL	-20.924	-263.250	-0.203	0.001	0.002	-4.534			
		3:BEBAN GEM	-126.847	-156.502	-3.560	0.391	0.018	-0.727			
		4:KOMBINASI	-104.103	-992.571	0.154	0.113	0.002	-18.541			
		5:KOMB B. MA	-204.597	-798.420	-3.461	0.504	0.019	-12.889			
	12928	1:BEBAN MATI	58.853	706.794	-0.399	-0.093	-0.004	2.445			
		2:BEBAN HIDL	20.924	263.250	0.203	-0.001	0.001	1.436			
		3:BEBAN GEM	126.847	156.502	3.560	-0.391	0.024	-1.115			
		4:KOMBINASI	104.103	1.27E 3	-0.154	-0.113	-0.004	5.232			
		5:KOMB B. MA	204.597	1.03E 3	3.461	-0.504	0.022	2.136			
15810	12928	1:BEBAN MATI	-61.476	-1.03E 3	-0.025	0.155	-0.001	-0.988			
		2:BEBAN HIDL	-21.618	-521.145	-0.378	0.019	0.002	-0.701			
		3:BEBAN GEM	-220.406	-13.677	-2.747	0.167	0.019	1.184			
		4:KOMBINASI	-108.360	-2.07E 3	-0.636	0.217	0.001	-2.308			
		5:KOMB B. MA	-305.873	-1.36E 3	-3.137	0.343	0.020	-0.166			
	12787	1:BEBAN MATI	61.476	1.26E 3	0.025	-0.155	0.001	-12.475			
		2:BEBAN HIDL	21.618	521.145	0.378	-0.019	0.003	-5.432			
		3:BEBAN GEM	220.406	13.677	2.747	-0.167	0.013	-1.345			
		4:KOMBINASI	108.360	2.35E 3	0.636	-0.217	0.006	-23.660			
		5:KOMB B. MA	305.873	1.59E 3	3.137	-0.343	0.017	-17.146			
15813	12930	1:BEBAN MATI	-390.011	-2.15E 3	-18.348	-2.785	0.103	-9.877			
		2:BEBAN HIDL	-95.805	-541.283	-4.564	-1.845	0.026	-2.002			
		3:BEBAN GEM	1.42E 3	-4.18E 3	17.093	2.027	0.023	54.038			
		4:KOMBINASI	-621.300	-3.45E 3	-29.319	-6.294	0.164	-15.055			
		5:KOMB B. MA	1.04E 3	-6.87E 3	-3.138	-1.764	0.142	45.662			
	118	1:BEBAN MATI	390.011	3.5E 3	18.348	2.785	0.113	-23.418			
		2:BEBAN HIDL	95.805	541.283	4.564	1.845	0.028	-4.368			
		3:BEBAN GEM	-1.42E 3	4.18E 3	-17.093	-2.027	-0.224	-103.231			
		4:KOMBINASI	621.300	5.07E 3	29.319	6.294	0.181	-35.090			
		5:KOMB B. MA	-1.04E 3	8.22E 3	3.138	1.764	-0.105	-134.431			
15817	12933	1:BEBAN MATI	-363.920	-2.97E 3	-0.035	0.266	-0.002	-11.645			
		2:BEBAN HIDL	-159.796	-1.28E 3	0.047	0.036	-0.001	-4.573			
		3:BEBAN GEM	815.215	-4.15E 3	0.153	2.541	0.007	51.079			
		4:KOMBINASI	-692.378	-5.61E 3	0.033	0.377	-0.003	-21.291			
		5:KOMB B. MA	396.178	-8.1E 3	0.154	2.956	0.005	39.244			
	119	1:BEBAN MATI	363.920	3.33E 3	0.035	-0.266	0.002	-25.431			
		2:BEBAN HIDL	159.796	1.28E 3	-0.047	-0.036	-0.000	-10.441			
		3:BEBAN GEM	-815.215	4.15E 3	-0.153	-2.541	-0.009	-99.953			
		4:KOMBINASI	692.378	6.04E 3	-0.033	-0.377	0.003	-47.223			
		5:KOMB B. MA	-396.178	8.46E 3	-0.154	-2.956	-0.007	-136.647			



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Job No 1	Sheet No 94	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15819	12934	1:BEBAN MATI	-193.341	1.42E 3	2.553	0.926	-0.013	-10.471			
		2:BEBAN HIDL	-44.721	156.419	0.660	0.867	-0.003	-2.445			
		3:BEBAN GEM	-643.740	-1.14E 3	-1.111	2.258	-0.013	-16.312			
		4:KOMBINASI	-303.563	1.96E 3	4.119	2.499	-0.020	-16.478			
		5:KOMB B. MA	-896.101	320.525	1.783	3.818	-0.028	-29.065			
	12935	1:BEBAN MATI	193.341	-70.897	-2.553	-0.926	-0.017	19.251			
		2:BEBAN HIDL	44.721	-156.419	-0.660	-0.867	-0.005	4.286			
		3:BEBAN GEM	643.740	1.14E 3	1.111	-2.258	0.026	2.923			
		4:KOMBINASI	303.563	-335.348	-4.119	-2.499	-0.028	29.959			
		5:KOMB B. MA	896.101	1.03E 3	-1.783	-3.818	0.007	24.892			
15821	12935	1:BEBAN MATI	-141.988	-525.785	-1.665	-0.751	0.013	-19.209			
		2:BEBAN HIDL	-37.881	-250.014	-0.785	-0.384	0.005	-4.307			
		3:BEBAN GEM	-542.903	-1.13E 3	7.599	-1.215	-0.053	-2.785			
		4:KOMBINASI	-230.996	-1.03E 3	-3.254	-1.516	0.024	-29.943			
		5:KOMB B. MA	-734.765	-1.86E 3	5.842	-2.257	-0.039	-24.718			
	12936	1:BEBAN MATI	141.988	1.88E 3	1.665	0.751	0.007	5.076			
		2:BEBAN HIDL	37.881	250.014	0.785	0.384	0.004	1.365			
		3:BEBAN GEM	542.903	1.13E 3	-7.599	1.215	-0.037	-10.483			
		4:KOMBINASI	230.996	2.65E 3	3.254	1.516	0.015	8.275			
		5:KOMB B. MA	734.765	3.21E 3	-5.842	2.257	-0.029	-5.112			
15823	12936	1:BEBAN MATI	-183.514	-2.36E 3	-19.692	-2.231	0.114	-4.022			
		2:BEBAN HIDL	-64.554	-553.654	-8.751	-1.299	0.050	-0.877			
		3:BEBAN GEM	-355.966	-1.24E 3	43.732	-5.978	-0.248	11.440			
		4:KOMBINASI	-323.503	-3.71E 3	-37.633	-4.754	0.216	-6.229			
		5:KOMB B. MA	-596.010	-3.99E 3	20.976	-9.286	-0.116	7.464			
	119	1:BEBAN MATI	183.514	3.71E 3	19.692	2.231	0.118	-31.653			
		2:BEBAN HIDL	64.554	553.654	8.751	1.299	0.053	-5.639			
		3:BEBAN GEM	355.966	1.24E 3	-43.732	5.978	-0.267	-26.050			
		4:KOMBINASI	323.503	5.33E 3	37.633	4.754	0.227	-47.006			
		5:KOMB B. MA	596.010	5.34E 3	-20.976	9.286	-0.130	-62.389			
15826	12938	1:BEBAN MATI	-282.195	-2.25E 3	-18.613	1.334	0.045	-18.571			
		2:BEBAN HIDL	-116.863	-1.01E 3	-6.880	0.406	0.016	-8.672			
		3:BEBAN GEM	507.686	-2.35E 3	155.737	1.684	-0.404	21.868			
		4:KOMBINASI	-525.615	-4.31E 3	-33.344	2.251	0.079	-36.159			
		5:KOMB B. MA	180.758	-5.31E 3	140.782	3.345	-0.370	-0.813			
	13146	1:BEBAN MATI	282.195	2.4E 3	18.613	-1.334	0.046	7.187			
		2:BEBAN HIDL	116.863	1.01E 3	6.880	-0.406	0.018	3.739			
		3:BEBAN GEM	-507.686	2.35E 3	-155.737	-1.684	-0.359	-33.377			
		4:KOMBINASI	525.615	4.49E 3	33.344	-2.251	0.084	14.606			
		5:KOMB B. MA	-180.758	5.46E 3	-140.782	-3.345	-0.320	-25.616			
15829	12940	1:BEBAN MATI	-164.112	584.767	73.390	4.194	-0.166	-4.317			
		2:BEBAN HIDL	-79.038	157.471	14.578	1.925	-0.037	-1.348			
		3:BEBAN GEM	-2.37E 3	-5.93E 3	-562.316	-2.243	1.153	-23.966			
		4:KOMBINASI	-323.395	953.674	111.393	8.113	-0.259	-7.337			
		5:KOMB B. MA	-2.71E 3	-5.55E 3	-508.295	2.994	1.022	-30.290			
	13066	1:BEBAN MATI	164.112	-22.104	-73.390	-4.194	-0.194	5.804			
	2:BEBAN HIDL	79.038	-157.471	-14.578	-1.925	-0.034	2.120				
	3:BEBAN GEM	2.37E 3	5.93E 3	562.316	2.243	1.604	-5.119				



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Job No 1	Sheet No 95	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	323.395	-278.478	-111.393	-8.113	-0.288	10.358			
		5:KOMB B. MA	2.71E 3	6.11E 3	508.295	-2.994	1.470	1.702			
15831	12942	1:BEBAN MATI	-334.695	-3.45E 3	-24.322	0.891	0.017	8.217			
		2:BEBAN HIDL	-140.393	-1.52E 3	-5.827	0.245	-0.002	2.936			
		3:BEBAN GEM	971.594	-2.67E 3	524.665	1.739	-0.843	46.177			
		4:KOMBINASI	-626.263	-6.57E 3	-38.510	1.460	0.017	14.558			
		5:KOMB B. MA	601.243	-7.16E 3	523.080	2.863	-0.869	58.464			
	13150	1:BEBAN MATI	334.695	3.52E 3	24.322	-0.891	0.043	-16.759			
		2:BEBAN HIDL	140.393	1.52E 3	5.827	-0.245	0.016	-6.661			
		3:BEBAN GEM	-971.594	2.67E 3	-524.665	-1.739	-0.444	-52.723			
		4:KOMBINASI	626.263	6.66E 3	38.510	-1.460	0.078	-30.768			
		5:KOMB B. MA	-601.243	7.24E 3	-523.080	-2.863	-0.413	-76.114			
15834	12944	1:BEBAN MATI	-59.214	-1.78E 3	5.005	1.030	-0.028	-0.412			
		2:BEBAN HIDL	-53.634	-519.715	-0.563	1.066	0.002	-0.781			
		3:BEBAN GEM	-2.05E 3	-6.01E 3	-61.318	0.136	0.386	35.681			
		4:KOMBINASI	-156.871	-2.97E 3	5.106	2.942	-0.031	-1.743			
		5:KOMB B. MA	-2.25E 3	-8.4E 3	-59.716	1.812	0.379	36.585			
	102	1:BEBAN MATI	59.214	2.91E 3	-5.005	-1.030	-0.021	-22.559			
		2:BEBAN HIDL	53.634	519.715	0.563	-1.066	0.003	-4.316			
		3:BEBAN GEM	2.05E 3	6.01E 3	61.318	-0.136	0.215	-94.584			
		4:KOMBINASI	156.871	4.32E 3	-5.106	-2.942	-0.020	-33.977			
		5:KOMB B. MA	2.25E 3	9.52E 3	59.716	-1.812	0.207	-124.462			
15836	12945	1:BEBAN MATI	67.563	-75.299	2.897	-1.868	-0.014	3.851			
		2:BEBAN HIDL	53.841	-116.640	0.850	-0.679	-0.004	1.445			
		3:BEBAN GEM	1.39E 3	-1.29E 3	-40.004	1.379	0.259	-7.331			
		4:KOMBINASI	167.220	-276.982	4.837	-3.328	-0.023	6.932			
		5:KOMB B. MA	1.56E 3	-1.5E 3	-38.597	-0.827	0.256	-2.980			
	12946	1:BEBAN MATI	-67.563	435.692	-2.897	1.868	-0.020	-6.857			
		2:BEBAN HIDL	-53.841	116.640	-0.850	0.679	-0.006	-2.817			
		3:BEBAN GEM	-1.39E 3	1.29E 3	40.004	-1.379	0.211	-7.879			
		4:KOMBINASI	-167.220	709.454	-4.837	3.328	-0.034	-12.736			
		5:KOMB B. MA	-1.56E 3	1.86E 3	38.597	0.827	0.199	-16.820			
15838	12946	1:BEBAN MATI	48.736	-873.583	-2.202	-3.774	0.019	7.992			
		2:BEBAN HIDL	44.995	-390.923	-2.870	-1.637	0.019	3.373			
		3:BEBAN GEM	507.425	-1.45E 3	-144.817	-2.794	0.796	7.855			
		4:KOMBINASI	130.474	-1.67E 3	-7.235	-7.149	0.053	14.988			
		5:KOMB B. MA	608.528	-2.64E 3	-155.981	-7.690	0.866	18.264			
	102	1:BEBAN MATI	-48.736	1.23E 3	2.202	3.774	0.007	-20.393			
		2:BEBAN HIDL	-44.995	390.923	2.870	1.637	0.015	-7.974			
		3:BEBAN GEM	-507.425	1.45E 3	144.817	2.794	0.908	-24.969			
		4:KOMBINASI	-130.474	2.11E 3	7.235	7.149	0.032	-37.229			
		5:KOMB B. MA	-608.528	3E 3	155.981	7.690	0.969	-51.395			
15841	12948	1:BEBAN MATI	-270.225	3.38E 3	2.038	2.302	-0.005	10.703			
		2:BEBAN HIDL	-90.630	645.336	0.951	1.529	-0.002	2.465			
		3:BEBAN GEM	-760.539	-2.33E 3	1.398	-1.379	-0.015	-44.939			
		4:KOMBINASI	-469.278	5.09E 3	3.968	5.208	-0.009	16.787			
		5:KOMB B. MA	-1.12E 3	1.32E 3	4.077	1.772	-0.022	-35.004			
	12953	1:BEBAN MATI	270.225	-2.26E 3	-2.038	-2.302	-0.015	16.953			



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Job No 1	Sheet No 96	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	90.630	-645.336	-0.951	-1.529	-0.007	3.864			
		3:BEBAN GEM	760.539	2.33E 3	-1.398	1.379	0.001	22.095			
		4:KOMBINASI	469.278	-3.74E 3	-3.968	-5.208	-0.030	26.525			
		5:KOMB B. MA	1.12E 3	-198.793	-4.077	-1.772	-0.018	42.471			
15845	12951	1:BEBAN MATI	-261.649	3.55E 3	-0.398	-0.263	0.001	13.914			
		2:BEBAN HIDL	-95.753	1.45E 3	-0.297	-0.039	0.001	5.520			
		3:BEBAN GEM	-517.272	-2.15E 3	25.959	-1.374	-0.137	-41.533			
		4:KOMBINASI	-467.184	6.57E 3	-0.954	-0.378	0.004	25.530			
		5:KOMB B. MA	-862.237	2.16E 3	26.681	-1.729	-0.142	-26.383			
	12956	1:BEBAN MATI	261.649	-3.25E 3	0.398	0.263	0.003	19.383			
		2:BEBAN HIDL	95.753	-1.45E 3	0.297	0.039	0.002	8.678			
		3:BEBAN GEM	517.272	2.15E 3	-25.959	1.374	-0.117	20.463			
		4:KOMBINASI	467.184	-6.21E 3	0.954	0.378	0.006	37.145			
		5:KOMB B. MA	862.237	-1.86E 3	-26.681	1.729	-0.120	46.076			
15847	12953	1:BEBAN MATI	-251.053	1.8E 3	-0.213	1.371	0.006	-17.764			
		2:BEBAN HIDL	-82.597	338.808	0.017	0.772	0.002	-4.162			
		3:BEBAN GEM	-504.958	-2.26E 3	-0.074	-0.248	0.003	-21.347			
		4:KOMBINASI	-433.420	2.7E 3	-0.228	2.880	0.011	-27.976			
		5:KOMB B. MA	-830.817	-373.279	-0.280	1.574	0.011	-42.675			
	12783	1:BEBAN MATI	251.053	-670.951	0.213	-1.371	-0.004	29.862			
		2:BEBAN HIDL	82.597	-338.808	-0.017	-0.772	-0.002	7.484			
		3:BEBAN GEM	504.958	2.26E 3	0.074	0.248	-0.003	-0.815			
		4:KOMBINASI	433.420	-1.35E 3	0.228	-2.880	-0.009	47.809			
		5:KOMB B. MA	830.817	1.5E 3	0.280	-1.574	-0.008	33.497			
15851	12956	1:BEBAN MATI	-270.778	2.12E 3	0.098	-0.177	-0.001	-20.467			
		2:BEBAN HIDL	-99.268	825.474	-0.124	-0.021	0.001	-9.083			
		3:BEBAN GEM	-392.497	-2.01E 3	32.312	-0.792	-0.150	-19.622			
		4:KOMBINASI	-483.762	3.86E 3	-0.081	-0.245	-0.000	-39.094			
		5:KOMB B. MA	-742.460	503.205	33.951	-1.021	-0.157	-46.521			
	12790	1:BEBAN MATI	270.778	-1.82E 3	-0.098	0.177	-0.000	39.776			
		2:BEBAN HIDL	99.268	-825.474	0.124	0.021	0.001	17.178			
		3:BEBAN GEM	392.497	2.01E 3	-32.312	0.792	-0.167	-0.096			
		4:KOMBINASI	483.762	-3.5E 3	0.081	0.245	0.001	75.217			
		5:KOMB B. MA	742.460	-202.877	-33.951	1.021	-0.175	49.983			
15853	12957	1:BEBAN MATI	1.225	321.806	-0.093	-0.083	0.001	-8.932			
		2:BEBAN HIDL	-0.873	121.624	-0.012	-0.004	0.000	-4.473			
		3:BEBAN GEM	22.687	-96.376	-8.837	-0.291	0.054	-1.904			
		4:KOMBINASI	0.074	580.766	-0.130	-0.105	0.001	-17.875			
		5:KOMB B. MA	24.523	293.585	-9.378	-0.390	0.058	-13.615			
	12958	1:BEBAN MATI	-1.225	-91.154	0.093	0.083	0.001	11.362			
		2:BEBAN HIDL	0.873	-121.624	0.012	0.004	0.000	5.904			
		3:BEBAN GEM	-22.687	96.376	8.837	0.291	0.050	0.770			
		4:KOMBINASI	-0.074	-303.984	0.130	0.105	0.001	23.081			
		5:KOMB B. MA	-24.523	-62.934	9.378	0.390	0.053	15.713			
15855	12958	1:BEBAN MATI	-15.330	-583.098	-0.050	0.047	0.000	-11.184			
		2:BEBAN HIDL	-7.241	-332.546	-0.017	-0.001	0.000	-5.842			
		3:BEBAN GEM	17.326	-101.247	-11.480	0.228	0.066	-0.628			
		4:KOMBINASI	-29.982	-1.23E 3	-0.087	0.055	0.001	-22.767			



Software licensed to Snow Panther [LZ0]

Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.482	-888.934	-12.114	0.287	0.070	-15.348			
	12959	1:BEBAN MATI	15.330	813.749	0.050	-0.047	0.000	2.965			
		2:BEBAN HIDL	7.241	332.546	0.017	0.001	0.000	1.928			
		3:BEBAN GEM	-17.326	101.247	11.480	-0.228	0.069	-0.564			
		4:KOMBINASI	29.982	1.51E 3	0.087	-0.055	0.000	6.643			
		5:KOMB B. MA	1.482	1.12E 3	12.114	-0.287	0.073	3.530			
15857	12959	1:BEBAN MATI	-28.057	-1.13E 3	-0.053	0.075	0.000	-1.174			
		2:BEBAN HIDL	-11.831	-589.980	-0.024	0.001	0.000	-1.030			
		3:BEBAN GEM	14.687	-19.018	-15.658	0.153	0.088	0.714			
		4:KOMBINASI	-52.599	-2.3E 3	-0.102	0.092	0.000	-3.057			
		5:KOMB B. MA	-19.734	-1.5E 3	-16.508	0.236	0.093	-1.042			
	12790	1:BEBAN MATI	28.057	1.36E 3	0.053	-0.075	0.000	-13.463			
		2:BEBAN HIDL	11.831	589.980	0.024	-0.001	0.000	-5.913			
		3:BEBAN GEM	-14.687	19.018	15.658	-0.153	0.096	-0.938			
		4:KOMBINASI	52.599	2.57E 3	0.102	-0.092	0.001	-25.616			
		5:KOMB B. MA	19.734	1.73E 3	16.508	-0.236	0.101	-17.995			
15860	12961	1:BEBAN MATI	-275.066	-2.18E 3	-2.859	-1.681	0.020	-18.061			
		2:BEBAN HIDL	-93.181	-627.769	-1.060	-1.533	0.007	-4.056			
		3:BEBAN GEM	-18.133	-2.34E 3	-1.185	1.961	0.016	23.390			
		4:KOMBINASI	-479.169	-3.62E 3	-5.128	-4.470	0.036	-28.164			
		5:KOMB B. MA	-350.015	-5.01E 3	-4.739	-0.542	0.041	4.064			
	12966	1:BEBAN MATI	275.066	3.31E 3	2.859	1.681	0.008	-8.843			
		2:BEBAN HIDL	93.181	627.769	1.060	1.533	0.003	-2.100			
		3:BEBAN GEM	18.133	2.34E 3	1.185	-1.961	-0.004	-46.326			
		4:KOMBINASI	479.169	4.97E 3	5.128	4.470	0.014	-13.971			
		5:KOMB B. MA	350.015	6.14E 3	4.739	0.542	0.005	-58.745			
15864	12964	1:BEBAN MATI	-259.364	-3.09E 3	1.305	0.227	-0.007	-21.111			
		2:BEBAN HIDL	-95.499	-1.41E 3	0.363	0.034	-0.002	-9.030			
		3:BEBAN GEM	-141.938	-2.18E 3	29.171	1.401	-0.136	21.682			
		4:KOMBINASI	-464.035	-5.97E 3	2.146	0.327	-0.012	-39.781			
		5:KOMB B. MA	-465.698	-6.23E 3	32.153	1.719	-0.151	-3.762			
	12969	1:BEBAN MATI	259.364	3.39E 3	-1.305	-0.227	-0.006	-10.694			
		2:BEBAN HIDL	95.499	1.41E 3	-0.363	-0.034	-0.002	-4.842			
		3:BEBAN GEM	141.938	2.18E 3	-29.171	-1.401	-0.151	-43.086			
		4:KOMBINASI	464.035	6.34E 3	-2.146	-0.327	-0.009	-20.580			
		5:KOMB B. MA	465.698	6.53E 3	-32.153	-1.719	-0.165	-58.840			
15866	12966	1:BEBAN MATI	-367.535	-3.71E 3	-34.209	-3.094	0.154	10.132			
		2:BEBAN HIDL	-128.398	-835.561	-12.646	-2.114	0.057	2.756			
		3:BEBAN GEM	224.848	-2.59E 3	-4.730	1.345	0.055	46.153			
		4:KOMBINASI	-646.478	-5.79E 3	-61.284	-7.095	0.275	16.568			
		5:KOMB B. MA	-208.483	-6.93E 3	-46.764	-2.950	0.246	60.246			
	90	1:BEBAN MATI	367.535	4.83E 3	34.209	3.094	0.182	-52.014			
		2:BEBAN HIDL	128.398	835.561	12.646	2.114	0.067	-10.950			
		3:BEBAN GEM	-224.848	2.59E 3	4.730	-1.345	-0.009	-71.521			
		4:KOMBINASI	646.478	7.14E 3	61.284	7.095	0.326	-79.938			
		5:KOMB B. MA	208.483	8.05E 3	46.764	2.950	0.212	-133.682			
15870	12969	1:BEBAN MATI	-247.430	-4.59E 3	2.507	0.282	-0.013	12.202			
		2:BEBAN HIDL	-91.720	-1.98E 3	0.458	0.054	-0.003	5.638			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 98	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	14.667	-2.73E 3	33.906	2.346	-0.141	43.492			
		4:KOMBINASI	-443.669	-8.67E 3	3.740	0.424	-0.020	23.663			
		5:KOMB B. MA	-287.062	-8.65E 3	38.383	2.777	-0.163	61.251			
	95	1:BEBAN MATI	247.430	4.89E 3	-2.507	-0.282	-0.011	-58.719			
		2:BEBAN HIDL	91.720	1.98E 3	-0.458	-0.054	-0.002	-25.014			
		3:BEBAN GEM	-14.667	2.73E 3	-33.906	-2.346	-0.191	-70.277			
		4:KOMBINASI	443.669	9.03E 3	-3.740	-0.424	-0.017	-110.484			
		5:KOMB B. MA	287.062	8.95E 3	-38.383	-2.777	-0.213	-147.518			
15872	12970	1:BEBAN MATI	-250.511	1.76E 3	-0.477	-0.026	0.003	-16.402			
		2:BEBAN HIDL	-92.007	394.164	-0.155	0.001	0.001	-5.454			
		3:BEBAN GEM	-193.301	-981.924	-12.924	1.869	0.088	-13.713			
		4:KOMBINASI	-447.825	2.74E 3	-0.820	-0.030	0.005	-28.408			
		5:KOMB B. MA	-508.681	962.654	-14.140	1.936	0.096	-34.073			
	12971	1:BEBAN MATI	250.511	-406.783	0.477	0.026	0.003	29.134			
		2:BEBAN HIDL	92.007	-394.164	0.155	-0.001	0.001	10.092			
		3:BEBAN GEM	193.301	981.924	12.924	-1.869	0.064	2.158			
		4:KOMBINASI	447.825	-1.12E 3	0.820	0.030	0.005	51.109			
		5:KOMB B. MA	508.681	387.739	14.140	-1.936	0.070	37.456			
15874	12971	1:BEBAN MATI	-177.474	-1.09E 3	-0.539	-0.000	0.003	-28.935			
		2:BEBAN HIDL	-63.898	-570.237	-0.223	-0.002	0.001	-10.004			
		3:BEBAN GEM	-192.308	-969.092	-9.717	-1.605	0.063	-1.732			
		4:KOMBINASI	-315.205	-2.22E 3	-1.004	-0.003	0.006	-50.728			
		5:KOMB B. MA	-417.736	-2.45E 3	-10.875	-1.687	0.070	-36.756			
	12972	1:BEBAN MATI	177.474	2.44E 3	0.539	0.000	0.003	8.212			
		2:BEBAN HIDL	63.898	570.237	0.223	0.002	0.001	3.293			
		3:BEBAN GEM	192.308	969.092	9.717	1.605	0.051	-9.672			
		4:KOMBINASI	315.205	3.84E 3	1.004	0.003	0.006	15.125			
		5:KOMB B. MA	417.736	3.8E 3	10.875	1.687	0.058	0.033			
15876	12972	1:BEBAN MATI	-153.651	-3.71E 3	-0.618	0.019	0.003	-6.486			
		2:BEBAN HIDL	-52.567	-1.34E 3	-0.362	-0.010	0.002	-2.529			
		3:BEBAN GEM	-213.479	-1.18E 3	-8.063	-5.643	0.036	9.886			
		4:KOMBINASI	-268.488	-6.6E 3	-1.319	0.007	0.007	-11.830			
		5:KOMB B. MA	-409.345	-5.75E 3	-9.301	-5.912	0.042	2.377			
	95	1:BEBAN MATI	153.651	5.06E 3	0.618	-0.019	0.004	-45.161			
		2:BEBAN HIDL	52.567	1.34E 3	0.362	0.010	0.002	-13.266			
		3:BEBAN GEM	213.479	1.18E 3	8.063	5.643	0.059	-23.728			
		4:KOMBINASI	268.488	8.22E 3	1.319	-0.007	0.009	-75.420			
		5:KOMB B. MA	409.345	7.1E 3	9.301	5.912	0.067	-78.035			
15879	12974	1:BEBAN MATI	-259.651	3.33E 3	2.683	1.895	-0.007	8.956			
		2:BEBAN HIDL	-86.701	633.194	0.970	1.527	-0.002	2.115			
		3:BEBAN GEM	-38.036	-2.39E 3	3.189	-1.370	-0.009	-46.796			
		4:KOMBINASI	-450.302	5.01E 3	4.773	4.718	-0.012	14.131			
		5:KOMB B. MA	-351.609	1.2E 3	6.614	1.374	-0.017	-38.911			
	12979	1:BEBAN MATI	259.651	-2.21E 3	-2.683	-1.895	-0.020	18.204			
		2:BEBAN HIDL	86.701	-633.194	-0.970	-1.527	-0.007	4.095			
		3:BEBAN GEM	38.036	2.39E 3	-3.189	1.370	-0.022	23.334			
		4:KOMBINASI	450.302	-3.66E 3	-4.773	-4.718	-0.035	28.397			
		5:KOMB B. MA	351.609	-74.708	-6.614	-1.374	-0.047	45.162			



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Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15883	12977	1:BEBAN MATI	-251.861	3.42E 3	0.230	-0.257	-0.001	10.975			
		2:BEBAN HIDL	-89.532	1.41E 3	0.228	-0.011	-0.001	4.793			
		3:BEBAN GEM	-260.841	-2.21E 3	21.942	-1.372	-0.103	-43.555			
		4:KOMBINASI	-445.484	6.37E 3	0.641	-0.326	-0.003	20.838			
		5:KOMB B. MA	-579.464	1.95E 3	23.406	-1.704	-0.110	-31.882			
	12982	1:BEBAN MATI	251.861	-3.12E 3	-0.230	0.257	-0.001	21.116			
		2:BEBAN HIDL	89.532	-1.41E 3	-0.228	0.011	-0.001	9.062			
		3:BEBAN GEM	260.841	2.21E 3	-21.942	1.372	-0.112	21.906			
		4:KOMBINASI	445.484	-6.01E 3	-0.641	0.326	-0.003	39.839			
		5:KOMB B. MA	579.464	-1.65E 3	-23.406	1.704	-0.119	49.555			
15885	12979	1:BEBAN MATI	-226.205	1.75E 3	0.299	0.927	0.005	-18.954			
		2:BEBAN HIDL	-74.380	326.038	0.134	0.767	0.002	-4.389			
		3:BEBAN GEM	164.860	-2.33E 3	3.785	-0.242	-0.006	-22.569			
		4:KOMBINASI	-390.454	2.62E 3	0.573	2.340	0.010	-29.768			
		5:KOMB B. MA	-97.730	-499.629	4.353	1.134	0.001	-45.285			
	152	1:BEBAN MATI	226.205	-621.352	-0.299	-0.927	-0.008	30.565			
		2:BEBAN HIDL	74.380	-326.038	-0.134	-0.767	-0.003	7.587			
		3:BEBAN GEM	-164.860	2.33E 3	-3.785	0.242	-0.032	-0.238			
		4:KOMBINASI	390.454	-1.27E 3	-0.573	-2.340	-0.015	48.817			
		5:KOMB B. MA	97.730	1.62E 3	-4.353	-1.134	-0.043	34.868			
15889	12982	1:BEBAN MATI	-254.841	1.99E 3	0.767	-0.177	-0.002	-22.217			
		2:BEBAN HIDL	-91.135	790.047	0.340	-0.010	-0.001	-9.440			
		3:BEBAN GEM	-194.439	-2.07E 3	20.936	-0.790	-0.091	-21.036			
		4:KOMBINASI	-451.624	3.65E 3	1.465	-0.229	-0.005	-41.764			
		5:KOMB B. MA	-513.682	287.499	22.954	-1.012	-0.099	-49.968			
	12789	1:BEBAN MATI	254.841	-1.69E 3	-0.767	0.177	-0.005	40.277			
		2:BEBAN HIDL	91.135	-790.047	-0.340	0.010	-0.002	17.187			
		3:BEBAN GEM	194.439	2.07E 3	-20.936	0.790	-0.114	0.691			
		4:KOMBINASI	451.624	-3.29E 3	-1.465	0.229	-0.010	75.832			
		5:KOMB B. MA	513.682	12.829	-22.954	1.012	-0.126	51.315			
15891	12983	1:BEBAN MATI	-9.854	325.611	-0.143	-0.001	0.001	-9.321			
		2:BEBAN HIDL	-3.916	120.480	-0.053	0.001	0.000	-4.475			
		3:BEBAN GEM	-40.940	-96.931	-4.436	-0.286	0.028	-1.915			
		4:KOMBINASI	-18.090	583.502	-0.256	0.000	0.002	-18.345			
		5:KOMB B. MA	-55.191	296.122	-4.833	-0.301	0.031	-14.017			
	12984	1:BEBAN MATI	9.854	-94.960	0.143	0.001	0.001	11.796			
		2:BEBAN HIDL	3.916	-120.480	0.053	-0.001	0.000	5.893			
		3:BEBAN GEM	40.940	96.931	4.436	0.286	0.024	0.774			
		4:KOMBINASI	18.090	-306.720	0.256	-0.000	0.001	23.583			
		5:KOMB B. MA	55.191	-65.470	4.833	0.301	0.026	16.145			
15893	12984	1:BEBAN MATI	-33.559	-610.038	-0.179	0.000	0.001	-11.607			
		2:BEBAN HIDL	-12.512	-335.762	-0.066	0.000	0.000	-5.829			
		3:BEBAN GEM	-61.062	-103.973	-6.141	0.228	0.036	-0.631			
		4:KOMBINASI	-60.291	-1.27E 3	-0.320	0.001	0.002	-23.254			
		5:KOMB B. MA	-105.182	-920.667	-6.667	0.241	0.039	-15.767			
	12985	1:BEBAN MATI	33.559	840.689	0.179	-0.000	0.001	3.071			
		2:BEBAN HIDL	12.512	335.762	0.066	-0.000	0.000	1.877			
		3:BEBAN GEM	61.062	103.973	6.141	-0.228	0.036	-0.592			



Software licensed to Snow Panther [LZ0]

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Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	60.291	1.55E 3	0.320	-0.001	0.002	6.689			
		5:KOMB B. MA	105.182	1.15E 3	6.667	-0.241	0.039	3.576			
15895	12985	1:BEBAN MATI	-53.982	-1.16E 3	-0.263	0.002	0.001	-1.229			
		2:BEBAN HIDL	-19.948	-596.135	-0.099	0.001	0.001	-0.977			
		3:BEBAN GEM	-76.811	-21.608	-9.310	0.147	0.054	0.747			
		4:KOMBINASI	-96.696	-2.35E 3	-0.475	0.004	0.003	-3.038			
		5:KOMB B. MA	-146.603	-1.54E 3	-10.098	0.157	0.058	-1.031			
	12789	1:BEBAN MATI	53.982	1.39E 3	0.263	-0.002	0.002	-13.795			
		2:BEBAN HIDL	19.948	596.135	0.099	-0.001	0.001	-6.038			
		3:BEBAN GEM	76.811	21.608	9.310	-0.147	0.056	-1.001			
		4:KOMBINASI	96.696	2.62E 3	0.475	-0.004	0.003	-26.214			
		5:KOMB B. MA	146.603	1.77E 3	10.098	-0.157	0.060	-18.468			
15898	12987	1:BEBAN MATI	-247.580	-2.24E 3	-2.779	-1.888	0.020	-17.903			
		2:BEBAN HIDL	-81.282	-638.974	-0.981	-1.525	0.007	-4.034			
		3:BEBAN GEM	471.360	-2.4E 3	0.068	1.979	0.011	23.494			
		4:KOMBINASI	-427.146	-3.71E 3	-4.906	-4.705	0.036	-27.938			
		5:KOMB B. MA	198.579	-5.15E 3	-3.297	-0.725	0.037	4.345			
	12992	1:BEBAN MATI	247.580	3.36E 3	2.779	1.888	0.007	-9.550			
		2:BEBAN HIDL	81.282	638.974	0.981	1.525	0.002	-2.232			
		3:BEBAN GEM	-471.360	2.4E 3	-0.068	-1.979	-0.012	-47.076			
		4:KOMBINASI	427.146	5.06E 3	4.906	4.705	0.012	-15.031			
		5:KOMB B. MA	-198.579	6.27E 3	3.297	0.725	-0.004	-60.319			
15902	12990	1:BEBAN MATI	-249.519	-3.15E 3	1.082	0.246	-0.005	-20.782			
		2:BEBAN HIDL	-88.786	-1.42E 3	0.318	0.008	-0.002	-8.941			
		3:BEBAN GEM	-38.043	-2.26E 3	15.195	1.386	-0.069	21.721			
		4:KOMBINASI	-441.480	-6.05E 3	1.807	0.309	-0.009	-39.245			
		5:KOMB B. MA	-342.736	-6.37E 3	17.228	1.706	-0.078	-3.340			
	12995	1:BEBAN MATI	249.519	3.45E 3	-1.082	-0.246	-0.005	-11.559			
		2:BEBAN HIDL	88.786	1.42E 3	-0.318	-0.008	-0.002	-4.994			
		3:BEBAN GEM	38.043	2.26E 3	-15.195	-1.386	-0.080	-43.895			
		4:KOMBINASI	441.480	6.41E 3	-1.807	-0.309	-0.009	-21.861			
		5:KOMB B. MA	342.736	6.67E 3	-17.228	-1.706	-0.091	-60.645			
15904	12992	1:BEBAN MATI	-344.135	-3.76E 3	-34.177	-3.279	0.154	10.887			
		2:BEBAN HIDL	-115.460	-846.099	-12.463	-2.103	0.056	2.890			
		3:BEBAN GEM	628.760	-2.65E 3	-4.960	1.368	0.051	46.913			
		4:KOMBINASI	-597.698	-5.87E 3	-60.953	-7.300	0.275	17.688			
		5:KOMB B. MA	246.787	-7.05E 3	-46.863	-3.105	0.241	61.880			
	92	1:BEBAN MATI	344.135	4.89E 3	34.177	3.279	0.181	-53.288			
		2:BEBAN HIDL	115.460	846.099	12.463	2.103	0.066	-11.187			
		3:BEBAN GEM	-628.760	2.65E 3	4.960	-1.368	-0.002	-72.915			
		4:KOMBINASI	597.698	7.22E 3	60.953	7.300	0.323	-81.845			
		5:KOMB B. MA	-246.787	8.18E 3	46.863	3.105	0.218	-136.561			
15908	12995	1:BEBAN MATI	-245.545	-4.65E 3	1.674	0.260	-0.010	13.061			
		2:BEBAN HIDL	-85.781	-1.98E 3	0.152	0.011	-0.001	5.781			
		3:BEBAN GEM	106.396	-2.81E 3	18.463	2.335	-0.075	44.332			
		4:KOMBINASI	-431.902	-8.76E 3	2.252	0.330	-0.013	24.923			
		5:KOMB B. MA	-185.297	-8.8E 3	21.152	2.718	-0.089	63.078			
	94	1:BEBAN MATI	245.545	4.96E 3	-1.674	-0.260	-0.007	-60.182			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 101	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	85.781	1.98E 3	-0.152	-0.011	-0.000	-25.240			
		3:BEBAN GEM	-106.396	2.81E 3	-18.463	-2.335	-0.106	-71.891			
		4:KOMBINASI	431.902	9.12E 3	-2.252	-0.330	-0.009	-112.602			
		5:KOMB B. MA	185.297	9.1E 3	-21.152	-2.718	-0.118	-150.811			
15910	12996	1:BEBAN MATI	-255.244	1.76E 3	-0.113	0.028	0.001	-16.462			
		2:BEBAN HIDL	-93.185	394.946	-0.096	-0.013	0.001	-5.471			
		3:BEBAN GEM	-162.972	-987.120	-10.246	1.863	0.070	-13.903			
		4:KOMBINASI	-455.388	2.74E 3	-0.290	0.013	0.002	-28.508			
		5:KOMB B. MA	-482.275	959.981	-10.929	1.976	0.075	-34.342			
	12997	1:BEBAN MATI	255.244	-409.097	0.113	-0.028	0.000	29.222			
		2:BEBAN HIDL	93.185	-394.946	0.096	0.013	0.000	10.119			
		3:BEBAN GEM	162.972	987.120	10.246	-1.863	0.051	2.286			
		4:KOMBINASI	455.388	-1.12E 3	0.290	-0.013	0.001	51.256			
		5:KOMB B. MA	482.275	390.411	10.929	-1.976	0.054	37.693			
15912	12997	1:BEBAN MATI	-182.934	-1.09E 3	-0.248	0.015	0.002	-29.022			
		2:BEBAN HIDL	-64.806	-571.550	-0.062	-0.001	0.000	-10.030			
		3:BEBAN GEM	-98.167	-983.501	-6.747	-1.592	0.046	-1.856			
		4:KOMBINASI	-323.211	-2.22E 3	-0.398	0.016	0.003	-50.875			
		5:KOMB B. MA	-324.893	-2.47E 3	-7.370	-1.657	0.050	-36.989			
	12998	1:BEBAN MATI	182.934	2.44E 3	0.248	-0.015	0.001	8.256			
		2:BEBAN HIDL	64.806	571.550	0.062	0.001	0.000	3.304			
		3:BEBAN GEM	98.167	983.501	6.747	1.592	0.033	-9.718			
		4:KOMBINASI	323.211	3.84E 3	0.398	-0.016	0.002	15.194			
		5:KOMB B. MA	324.893	3.82E 3	7.370	1.657	0.037	0.035			
15914	12998	1:BEBAN MATI	-157.923	-3.73E 3	-0.644	0.002	0.004	-6.533			
		2:BEBAN HIDL	-52.285	-1.35E 3	-0.038	0.017	0.000	-2.541			
		3:BEBAN GEM	-40.028	-1.21E 3	-3.745	-5.606	0.015	9.929			
		4:KOMBINASI	-273.165	-6.63E 3	-0.833	0.030	0.005	-11.904			
		5:KOMB B. MA	-231.324	-5.8E 3	-4.598	-5.874	0.020	2.368			
	94	1:BEBAN MATI	157.923	5.08E 3	0.644	-0.002	0.004	-45.256			
		2:BEBAN HIDL	52.285	1.35E 3	0.038	-0.017	0.000	-13.306			
		3:BEBAN GEM	40.028	1.21E 3	3.745	5.606	0.029	-24.125			
		4:KOMBINASI	273.165	8.25E 3	0.833	-0.030	0.005	-75.597			
		5:KOMB B. MA	231.324	7.15E 3	4.598	5.874	0.034	-78.571			
15917	13000	1:BEBAN MATI	-245.678	3.4E 3	2.535	1.680	-0.006	9.219			
		2:BEBAN HIDL	-80.993	659.893	0.958	1.544	-0.002	2.274			
		3:BEBAN GEM	264.592	-2.27E 3	2.113	-1.398	-0.006	-45.917			
		4:KOMBINASI	-424.402	5.14E 3	4.575	4.487	-0.011	14.701			
		5:KOMB B. MA	-16.452	1.42E 3	5.329	1.139	-0.014	-37.629			
	13005	1:BEBAN MATI	245.678	-2.28E 3	-2.535	-1.680	-0.019	18.641			
		2:BEBAN HIDL	80.993	-659.893	-0.958	-1.544	-0.007	4.198			
		3:BEBAN GEM	-264.592	2.27E 3	-2.113	1.398	-0.015	23.692			
		4:KOMBINASI	424.402	-3.79E 3	-4.575	-4.487	-0.034	29.086			
		5:KOMB B. MA	16.452	-294.626	-5.329	-1.139	-0.039	46.037			
15921	13003	1:BEBAN MATI	-240.062	3.45E 3	-0.386	-0.291	0.002	10.946			
		2:BEBAN HIDL	-92.421	1.45E 3	0.065	-0.028	-0.000	5.070			
		3:BEBAN GEM	-123.620	-2.08E 3	17.704	-1.391	-0.085	-42.669			
		4:KOMBINASI	-435.949	6.47E 3	-0.359	-0.393	0.002	21.247			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-425.315	2.14E 3	18.242	-1.768	-0.088	-30.815			
	13008	1:BEBAN MATI	240.062	-3.15E 3	0.386	0.291	0.002	21.430			
		2:BEBAN HIDL	92.421	-1.45E 3	-0.065	0.028	-0.000	9.171			
		3:BEBAN GEM	123.620	2.08E 3	-17.704	1.391	-0.089	22.242			
		4:KOMBINASI	435.949	-6.1E 3	0.359	0.393	0.002	40.389			
		5:KOMB B. MA	425.315	-1.84E 3	-18.242	1.768	-0.091	50.287			
15923	13005	1:BEBAN MATI	-220.732	1.81E 3	0.059	0.673	0.006	-19.366			
		2:BEBAN HIDL	-69.329	352.212	0.091	0.780	0.002	-4.500			
		3:BEBAN GEM	452.090	-2.2E 3	3.472	-0.266	-0.005	-22.948			
		4:KOMBINASI	-375.805	2.74E 3	0.215	2.057	0.011	-30.438			
		5:KOMB B. MA	212.365	-284.610	3.758	0.863	0.002	-46.161			
	162	1:BEBAN MATI	220.732	-688.309	-0.059	-0.673	-0.007	31.633			
		2:BEBAN HIDL	69.329	-352.212	-0.091	-0.780	-0.003	7.954			
		3:BEBAN GEM	-452.090	2.2E 3	-3.472	0.266	-0.029	1.377			
		4:KOMBINASI	375.805	-1.39E 3	-0.215	-2.057	-0.013	50.686			
		5:KOMB B. MA	-212.365	1.41E 3	-3.758	-0.863	-0.039	37.852			
15927	13008	1:BEBAN MATI	-246.729	2.02E 3	0.176	-0.178	0.001	-22.557			
		2:BEBAN HIDL	-94.666	833.723	0.220	-0.010	-0.000	-9.567			
		3:BEBAN GEM	-20.639	-1.95E 3	19.580	-0.799	-0.083	-21.426			
		4:KOMBINASI	-447.540	3.76E 3	0.563	-0.230	-0.000	-42.376			
		5:KOMB B. MA	-325.199	475.125	20.867	-1.023	-0.087	-50.794			
	12788	1:BEBAN MATI	246.729	-1.72E 3	-0.176	0.178	-0.002	40.914			
		2:BEBAN HIDL	94.666	-833.723	-0.220	0.010	-0.002	17.743			
		3:BEBAN GEM	20.639	1.95E 3	-19.580	0.799	-0.109	2.306			
		4:KOMBINASI	447.540	-3.4E 3	-0.563	0.230	-0.005	77.486			
		5:KOMB B. MA	325.199	-174.798	-20.867	1.023	-0.117	53.981			
15929	13009	1:BEBAN MATI	-11.942	327.904	0.028	0.066	0.000	-8.987			
		2:BEBAN HIDL	-5.265	124.453	-0.054	-0.009	0.000	-4.478			
		3:BEBAN GEM	-47.477	-95.032	-5.310	-0.290	0.033	-1.931			
		4:KOMBINASI	-22.755	592.610	-0.053	0.065	0.001	-17.949			
		5:KOMB B. MA	-64.952	302.793	-5.580	-0.244	0.035	-13.701			
	13010	1:BEBAN MATI	11.942	-97.253	-0.028	-0.066	-0.001	11.488			
		2:BEBAN HIDL	5.265	-124.453	0.054	0.009	0.000	5.943			
		3:BEBAN GEM	47.477	95.032	5.310	0.290	0.030	0.812			
		4:KOMBINASI	22.755	-315.828	0.053	-0.065	-0.000	23.295			
		5:KOMB B. MA	64.952	-72.141	5.580	0.244	0.031	15.907			
15931	13010	1:BEBAN MATI	-33.497	-586.715	-0.054	-0.039	0.001	-11.311			
		2:BEBAN HIDL	-13.079	-334.581	-0.072	-0.001	0.000	-5.882			
		3:BEBAN GEM	-54.995	-105.885	-7.187	0.230	0.042	-0.669			
		4:KOMBINASI	-61.122	-1.24E 3	-0.180	-0.048	0.001	-22.985			
		5:KOMB B. MA	-99.088	-898.643	-7.644	0.202	0.045	-15.543			
	13011	1:BEBAN MATI	33.497	817.367	0.054	0.039	0.000	3.050			
		2:BEBAN HIDL	13.079	334.581	0.072	0.001	0.000	1.945			
		3:BEBAN GEM	54.995	105.885	7.187	-0.230	0.043	-0.577			
		4:KOMBINASI	61.122	1.52E 3	0.180	0.048	0.001	6.771			
		5:KOMB B. MA	99.088	1.13E 3	7.644	-0.202	0.045	3.611			
15933	13011	1:BEBAN MATI	-50.492	-1.14E 3	-0.245	-0.052	0.001	-1.247			
		2:BEBAN HIDL	-19.050	-595.216	-0.148	0.005	0.001	-1.043			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-61.691	-23.622	-10.114	0.158	0.059	0.738			
		4:KOMBINASI	-91.069	-2.32E 3	-0.530	-0.055	0.003	-3.166			
		5:KOMB B. MA	-126.697	-1.52E 3	-10.953	0.117	0.063	-1.098			
	12788	1:BEBAN MATI	50.492	1.37E 3	0.245	0.052	0.002	-13.494			
		2:BEBAN HIDL	19.050	595.216	0.148	-0.005	0.001	-5.961			
		3:BEBAN GEM	61.691	23.622	10.114	-0.158	0.060	-1.016			
		4:KOMBINASI	91.069	2.59E 3	0.530	0.055	0.004	-25.731			
		5:KOMB B. MA	126.697	1.75E 3	10.953	-0.117	0.066	-18.137			
15936	13013	1:BEBAN MATI	-266.438	-2.18E 3	-2.934	-2.387	0.019	-19.465			
		2:BEBAN HIDL	-82.111	-622.321	-1.200	-1.599	0.008	-4.630			
		3:BEBAN GEM	753.178	-2.29E 3	-0.594	1.937	0.016	20.615			
		4:KOMBINASI	-451.103	-3.61E 3	-5.440	-5.422	0.036	-30.767			
		5:KOMB B. MA	475.132	-4.95E 3	-4.277	-1.313	0.041	-0.598			
	13018	1:BEBAN MATI	266.438	3.3E 3	2.934	2.387	0.010	-7.392			
		2:BEBAN HIDL	82.111	622.321	1.200	1.599	0.004	-1.473			
		3:BEBAN GEM	-753.178	2.29E 3	0.594	-1.937	-0.010	-43.038			
		4:KOMBINASI	451.103	4.96E 3	5.440	5.422	0.017	-11.226			
		5:KOMB B. MA	-475.132	6.08E 3	4.277	1.313	0.001	-53.465			
15940	13016	1:BEBAN MATI	-263.638	-3.09E 3	0.412	0.318	-0.002	-22.146			
		2:BEBAN HIDL	-102.863	-1.38E 3	0.262	0.028	-0.001	-10.049			
		3:BEBAN GEM	171.929	-2.15E 3	14.721	1.401	-0.065	18.792			
		4:KOMBINASI	-480.945	-5.91E 3	0.913	0.426	-0.004	-42.654			
		5:KOMB B. MA	-144.829	-6.17E 3	16.026	1.805	-0.071	-8.444			
	13021	1:BEBAN MATI	263.638	3.39E 3	-0.412	-0.318	-0.002	-9.617			
		2:BEBAN HIDL	102.863	1.38E 3	-0.262	-0.028	-0.001	-3.443			
		3:BEBAN GEM	-171.929	2.15E 3	-14.721	-1.401	-0.079	-39.879			
		4:KOMBINASI	480.945	6.27E 3	-0.913	-0.426	-0.005	-17.049			
		5:KOMB B. MA	144.829	6.47E 3	-16.026	-1.805	-0.086	-53.555			
15942	13018	1:BEBAN MATI	-375.397	-3.66E 3	-28.761	-3.472	0.123	8.836			
		2:BEBAN HIDL	-123.171	-846.221	-12.576	-2.242	0.055	2.129			
		3:BEBAN GEM	904.061	-2.55E 3	-4.927	1.299	0.049	42.843			
		4:KOMBINASI	-647.551	-5.74E 3	-54.635	-7.753	0.235	14.009			
		5:KOMB B. MA	499.964	-6.84E 3	-41.480	-3.454	0.208	55.098			
	69	1:BEBAN MATI	375.397	4.78E 3	28.761	3.472	0.159	-50.226			
		2:BEBAN HIDL	123.171	846.221	12.576	2.242	0.069	-10.427			
		3:BEBAN GEM	-904.061	2.55E 3	4.927	-1.299	-0.001	-67.858			
		4:KOMBINASI	647.551	7.09E 3	54.635	7.753	0.300	-76.955			
		5:KOMB B. MA	-499.964	7.97E 3	41.480	3.454	0.199	-127.734			
15946	13021	1:BEBAN MATI	-293.933	-4.48E 3	0.787	0.323	-0.005	11.188			
		2:BEBAN HIDL	-117.852	-1.97E 3	0.097	0.021	-0.001	4.188			
		3:BEBAN GEM	302.766	-2.73E 3	16.211	2.350	-0.063	40.239			
		4:KOMBINASI	-541.284	-8.52E 3	1.099	0.421	-0.007	20.127			
		5:KOMB B. MA	-46.740	-8.53E 3	17.867	2.803	-0.071	55.951			
	71	1:BEBAN MATI	293.933	4.78E 3	-0.787	-0.323	-0.003	-56.554			
		2:BEBAN HIDL	117.852	1.97E 3	-0.097	-0.021	-0.000	-23.465			
		3:BEBAN GEM	-302.766	2.73E 3	-16.211	-2.350	-0.096	-67.046			
		4:KOMBINASI	541.284	8.88E 3	-1.099	-0.421	-0.004	-105.408			
		5:KOMB B. MA	46.740	8.83E 3	-17.867	-2.803	-0.104	-141.031			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
15952	13023	1:BEBAN MATI	-241.182	3.64E 3	-1.303	-0.394	0.011	-8.588			
		2:BEBAN HIDL	-81.027	952.020	-0.167	-0.222	0.001	-4.213			
		3:BEBAN GEM	-960.200	-1.96E 3	37.355	-0.957	-0.270	-27.989			
		4:KOMBINASI	-419.062	5.89E 3	-1.831	-0.828	0.015	-17.046			
		5:KOMB B. MA	-1.3E 3	2.15E 3	37.820	-1.532	-0.271	-40.504			
12804	12804	1:BEBAN MATI	241.182	-1.95E 3	1.303	0.394	0.008	49.660			
		2:BEBAN HIDL	81.027	-952.020	0.167	0.222	0.001	18.217			
		3:BEBAN GEM	960.200	1.96E 3	-37.355	0.957	-0.280	-0.829			
		4:KOMBINASI	419.062	-3.86E 3	1.831	0.828	0.012	88.739			
		5:KOMB B. MA	1.3E 3	-462.334	-37.820	1.532	-0.285	59.720			
15954	13024	1:BEBAN MATI	-175.514	715.986	-0.000	0.000	-0.000	-1.463			
		2:BEBAN HIDL	-49.987	175.857	0.000	0.000	-0.000	-1.462			
		3:BEBAN GEM	-1.1E 3	-206.809	3.569	0.247	-0.025	-3.400			
		4:KOMBINASI	-290.596	1.14E 3	0.000	0.000	-0.000	-4.095			
		5:KOMB B. MA	-1.37E 3	604.351	3.747	0.260	-0.027	-5.910			
12850	12850	1:BEBAN MATI	175.514	-427.672	0.000	-0.000	0.000	9.875			
		2:BEBAN HIDL	49.987	-175.857	-0.000	-0.000	0.000	4.049			
		3:BEBAN GEM	1.1E 3	206.809	-3.569	-0.247	-0.027	0.357			
		4:KOMBINASI	290.596	-794.577	-0.000	-0.000	0.000	18.327			
		5:KOMB B. MA	1.37E 3	-316.037	-3.747	-0.260	-0.028	12.679			
15957	13026	1:BEBAN MATI	-241.182	3.64E 3	1.303	0.394	-0.011	-8.588			
		2:BEBAN HIDL	-81.027	952.019	0.167	0.222	-0.001	-4.213			
		3:BEBAN GEM	-1.01E 3	-1.96E 3	-17.360	-0.904	0.122	-28.328			
		4:KOMBINASI	-419.062	5.89E 3	1.831	0.828	-0.015	-17.046			
		5:KOMB B. MA	-1.35E 3	2.15E 3	-16.824	-0.422	0.117	-40.860			
12809	12809	1:BEBAN MATI	241.182	-1.95E 3	-1.303	-0.394	-0.008	49.660			
		2:BEBAN HIDL	81.027	-952.019	-0.167	-0.222	-0.001	18.217			
		3:BEBAN GEM	1.01E 3	1.96E 3	17.360	0.904	0.133	-0.490			
		4:KOMBINASI	419.062	-3.86E 3	-1.831	-0.828	-0.012	88.739			
		5:KOMB B. MA	1.35E 3	-462.281	16.824	0.422	0.131	60.075			
15959	13027	1:BEBAN MATI	-98.493	538.060	0.110	-0.120	-0.001	-2.280			
		2:BEBAN HIDL	-30.423	172.861	0.023	0.009	-0.000	-1.364			
		3:BEBAN GEM	900.698	-69.604	-6.571	-0.871	0.032	-1.157			
		4:KOMBINASI	-166.868	922.250	0.169	-0.129	-0.001	-4.919			
		5:KOMB B. MA	828.986	568.692	-6.776	-1.029	0.033	-4.313			
12850	12850	1:BEBAN MATI	98.493	-249.745	-0.110	0.120	-0.001	8.075			
		2:BEBAN HIDL	30.423	-172.861	-0.023	-0.009	-0.000	3.907			
		3:BEBAN GEM	-900.698	69.604	6.571	0.871	0.064	0.133			
		4:KOMBINASI	166.868	-576.272	-0.169	0.129	-0.001	15.941			
		5:KOMB B. MA	-828.986	-280.377	6.776	1.029	0.066	10.558			
15962	13028	1:BEBAN MATI	-100.109	-968.115	-0.127	0.109	0.001	-1.129			
		2:BEBAN HIDL	-29.667	-535.117	-0.013	-0.025	0.000	-0.807			
		3:BEBAN GEM	778.960	29.531	4.570	0.681	-0.037	1.247			
		4:KOMBINASI	-167.598	-2.02E 3	-0.173	0.091	0.002	-2.646			
		5:KOMB B. MA	699.999	-1.26E 3	4.663	0.808	-0.037	-0.305			
12809	12809	1:BEBAN MATI	100.109	1.26E 3	0.127	-0.109	0.001	-15.232			
		2:BEBAN HIDL	29.667	535.117	0.013	0.025	0.000	-7.064			
		3:BEBAN GEM	-778.960	-29.531	-4.570	-0.681	-0.031	-0.812			



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Sheet No

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Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	167.598	2.36E 3	0.173	-0.091	0.001	-29.582			
		5:KOMB B. MA	-699.999	1.55E 3	-4.663	-0.808	-0.031	-20.324			
15965	13030	1:BEBAN MATI	-223.540	-5.16E 3	-0.275	0.256	0.002	-10.292			
		2:BEBAN HIDL	-76.654	-1.89E 3	0.053	0.121	-0.001	-3.096			
		3:BEBAN GEM	-1.26E 3	-2.65E 3	65.853	2.056	-0.455	29.680			
		4:KOMBINASI	-390.895	-9.22E 3	-0.246	0.500	0.001	-17.304			
		5:KOMB B. MA	-1.6E 3	-9.08E 3	68.903	2.487	-0.477	19.014			
	104	1:BEBAN MATI	223.540	6.85E 3	0.275	-0.256	0.002	-78.051			
		2:BEBAN HIDL	76.654	1.89E 3	-0.053	-0.121	-0.000	-24.699			
		3:BEBAN GEM	1.26E 3	2.65E 3	-65.853	-2.056	-0.514	-68.655			
		4:KOMBINASI	390.895	11.2E 3	0.246	-0.500	0.003	-133.181			
		5:KOMB B. MA	1.6E 3	10.8E 3	-68.903	-2.487	-0.537	-164.959			
15967	13031	1:BEBAN MATI	-160.316	-1.01E 3	0.000	-0.000	-0.000	-2.160			
		2:BEBAN HIDL	-49.460	-527.673	0.000	0.000	-0.000	-1.023			
		3:BEBAN GEM	-2.1E 3	111.979	8.434	-0.206	-0.060	4.367			
		4:KOMBINASI	-271.516	-2.05E 3	0.000	-0.000	-0.000	-4.228			
		5:KOMB B. MA	-2.4E 3	-1.21E 3	8.855	-0.216	-0.063	1.812			
	12829	1:BEBAN MATI	160.316	1.3E 3	-0.000	0.000	-0.000	-14.774			
		2:BEBAN HIDL	49.460	527.673	-0.000	-0.000	-0.000	-6.740			
		3:BEBAN GEM	2.1E 3	-111.979	-8.434	0.206	-0.064	-2.720			
		4:KOMBINASI	271.516	2.4E 3	-0.000	0.000	-0.000	-28.512			
		5:KOMB B. MA	2.4E 3	1.49E 3	-8.855	0.216	-0.067	-21.674			
15970	13033	1:BEBAN MATI	-223.540	-5.16E 3	0.275	-0.256	-0.002	-10.292			
		2:BEBAN HIDL	-76.654	-1.89E 3	-0.053	-0.121	0.001	-3.096			
		3:BEBAN GEM	-1.18E 3	-2.66E 3	-35.355	2.021	0.243	29.565			
		4:KOMBINASI	-390.895	-9.22E 3	0.246	-0.500	-0.001	-17.304			
		5:KOMB B. MA	-1.51E 3	-9.09E 3	-36.880	1.793	0.254	18.894			
	107	1:BEBAN MATI	223.540	6.85E 3	-0.275	0.256	-0.002	-78.051			
		2:BEBAN HIDL	76.654	1.89E 3	0.053	0.121	0.000	-24.699			
		3:BEBAN GEM	1.18E 3	2.66E 3	35.355	-2.021	0.277	-68.758			
		4:KOMBINASI	390.895	11.2E 3	-0.246	0.500	-0.003	-133.181			
		5:KOMB B. MA	1.51E 3	10.8E 3	36.880	-1.793	0.288	-165.067			
15972	13034	1:BEBAN MATI	-181.149	3.49E 3	0.021	-0.069	0.000	-10.269			
		2:BEBAN HIDL	-56.472	924.431	0.042	-0.005	-0.000	-3.314			
		3:BEBAN GEM	1.68E 3	-585.265	-18.768	3.449	0.050	-8.385			
		4:KOMBINASI	-307.734	5.67E 3	0.092	-0.091	-0.001	-17.626			
		5:KOMB B. MA	1.54E 3	3.43E 3	-19.660	3.549	0.052	-21.062			
	12829	1:BEBAN MATI	181.149	-1.8E 3	-0.021	0.069	-0.000	49.195			
		2:BEBAN HIDL	56.472	-924.431	-0.042	0.005	-0.000	16.913			
		3:BEBAN GEM	-1.68E 3	585.265	18.768	-3.449	0.226	-0.224			
		4:KOMBINASI	307.734	-3.64E 3	-0.092	0.091	-0.001	86.094			
		5:KOMB B. MA	-1.54E 3	-1.74E 3	19.660	-3.549	0.237	59.107			
15975	13035	1:BEBAN MATI	-179.990	-5.17E 3	0.268	0.132	-0.002	-8.593			
		2:BEBAN HIDL	-55.489	-1.82E 3	-0.103	0.001	0.001	-2.607			
		3:BEBAN GEM	1.42E 3	-757.784	43.002	-7.110	-0.313	8.541			
		4:KOMBINASI	-304.771	-9.11E 3	0.156	0.160	-0.002	-14.482			
		5:KOMB B. MA	1.27E 3	-7.05E 3	45.357	-7.333	-0.331	-1.189			
	107	1:BEBAN MATI	179.990	6.86E 3	-0.268	-0.132	-0.002	-79.849			



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Job No 1	Sheet No 106	Rev
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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	55.489	1.82E 3	0.103	-0.001	0.001	-24.139			
		3:BEBAN GEM	-1.42E 3	757.784	-43.002	7.110	-0.320	-19.688			
		4:KOMBINASI	304.771	11.1E 3	-0.156	-0.160	-0.001	-134.441			
		5:KOMB B. MA	-1.27E 3	8.74E 3	-45.357	7.333	-0.337	-115.004			
15978	13037	1:BEBAN MATI	-233.813	3.55E 3	-0.699	-0.072	0.006	-11.945			
		2:BEBAN HIDL	-71.556	940.853	-0.175	-0.019	0.001	-3.608			
		3:BEBAN GEM	-373.863	-2.02E 3	7.786	-0.978	-0.131	-29.552			
		4:KOMBINASI	-395.066	5.77E 3	-1.119	-0.118	0.009	-20.106			
		5:KOMB B. MA	-669.304	2E 3	7.371	-1.111	-0.131	-45.139			
	12803	1:BEBAN MATI	233.813	-1.86E 3	0.699	0.072	0.005	51.746			
		2:BEBAN HIDL	71.556	-940.853	0.175	0.019	0.001	17.447			
		3:BEBAN GEM	373.863	2.02E 3	-7.786	0.978	0.017	-0.093			
		4:KOMBINASI	395.066	-3.74E 3	1.119	0.118	0.007	90.011			
		5:KOMB B. MA	669.304	-310.121	-7.371	1.111	0.023	62.117			
15980	13038	1:BEBAN MATI	-148.874	578.604	-0.000	0.000	-0.000	-3.237			
		2:BEBAN HIDL	-47.117	168.119	0.000	0.000	-0.000	-1.560			
		3:BEBAN GEM	-5.39E 3	-242.111	49.504	0.254	-0.312	-4.293			
		4:KOMBINASI	-254.036	963.316	-0.000	0.000	-0.000	-6.380			
		5:KOMB B. MA	-5.83E 3	425.260	51.980	0.267	-0.327	-8.680			
	12840	1:BEBAN MATI	148.874	-290.290	0.000	-0.000	0.000	9.628			
		2:BEBAN HIDL	47.117	-168.119	-0.000	-0.000	0.000	4.033			
		3:BEBAN GEM	5.39E 3	242.111	-49.504	-0.254	-0.417	0.731			
		4:KOMBINASI	254.036	-617.339	0.000	-0.000	0.000	18.005			
		5:KOMB B. MA	5.83E 3	-136.945	-51.980	-0.267	-0.437	12.815			
15983	13040	1:BEBAN MATI	-233.813	3.55E 3	0.699	0.072	-0.006	-11.945			
		2:BEBAN HIDL	-71.557	940.852	0.175	0.019	-0.001	-3.608			
		3:BEBAN GEM	-907.434	-2E 3	21.550	-0.972	-0.137	-29.418			
		4:KOMBINASI	-395.066	5.77E 3	1.119	0.118	-0.009	-20.106			
		5:KOMB B. MA	-1.23E 3	2.02E 3	23.432	-0.936	-0.151	-44.999			
	12808	1:BEBAN MATI	233.813	-1.86E 3	-0.699	-0.072	-0.005	51.746			
		2:BEBAN HIDL	71.557	-940.852	-0.175	-0.019	-0.001	17.447			
		3:BEBAN GEM	907.434	2E 3	-21.550	0.972	-0.180	0.037			
		4:KOMBINASI	395.066	-3.74E 3	-1.119	-0.118	-0.007	90.011			
		5:KOMB B. MA	1.23E 3	-329.008	-23.432	0.936	-0.194	62.254			
15985	13041	1:BEBAN MATI	-133.825	607.727	-0.017	-0.009	0.000	-2.378			
		2:BEBAN HIDL	-43.194	172.168	-0.018	-0.002	0.000	-1.412			
		3:BEBAN GEM	1.91E 3	-69.467	-49.460	-0.890	0.414	-1.230			
		4:KOMBINASI	-229.700	1E 3	-0.049	-0.014	0.000	-5.114			
		5:KOMB B. MA	1.85E 3	638.087	-51.961	-0.945	0.435	-4.517			
	12840	1:BEBAN MATI	133.825	-319.412	0.017	0.009	0.000	9.197			
		2:BEBAN HIDL	43.194	-172.168	0.018	0.002	0.000	3.945			
		3:BEBAN GEM	-1.91E 3	69.467	49.460	0.890	0.314	0.208			
		4:KOMBINASI	229.700	-658.764	0.049	0.014	0.000	17.349			
		5:KOMB B. MA	-1.85E 3	-349.773	51.961	0.945	0.330	11.783			
15988	13042	1:BEBAN MATI	-134.141	-1.04E 3	0.080	0.010	-0.001	-1.084			
		2:BEBAN HIDL	-43.602	-530.849	0.054	0.004	-0.000	-0.843			
		3:BEBAN GEM	501.637	25.171	72.646	0.686	-0.526	1.299			
		4:KOMBINASI	-230.733	-2.09E 3	0.182	0.019	-0.001	-2.650			



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Job No 1	Sheet No 107	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	366.416	-1.33E 3	76.391	0.734	-0.553	-0.226			
	12808	1:BEBAN MATI	134.141	1.32E 3	-0.080	-0.010	-0.001	-16.269			
		2:BEBAN HIDL	43.602	530.849	-0.054	-0.004	-0.000	-6.965			
		3:BEBAN GEM	-501.637	-25.171	-72.646	-0.686	-0.542	-0.928			
		4:KOMBINASI	230.733	2.44E 3	-0.182	-0.019	-0.001	-30.667			
		5:KOMB B. MA	-366.416	1.62E 3	-76.391	-0.734	-0.570	-21.423			
15991	13044	1:BEBAN MATI	-237.572	-5.33E 3	0.503	0.236	-0.004	-9.656			
		2:BEBAN HIDL	-72.069	-1.85E 3	0.220	0.084	-0.002	-2.829			
		3:BEBAN GEM	1.1E 3	-2.71E 3	-51.140	2.075	0.478	29.823			
		4:KOMBINASI	-400.398	-9.35E 3	0.956	0.417	-0.008	-16.113			
		5:KOMB B. MA	878.799	-9.28E 3	-53.062	2.465	0.496	19.961			
	103	1:BEBAN MATI	237.572	7.01E 3	-0.503	-0.236	-0.003	-81.098			
		2:BEBAN HIDL	72.069	1.85E 3	-0.220	-0.084	-0.002	-24.373			
		3:BEBAN GEM	-1.1E 3	2.71E 3	51.140	-2.075	0.275	-69.705			
		4:KOMBINASI	400.398	11.4E 3	-0.956	-0.417	-0.006	-136.315			
		5:KOMB B. MA	-878.799	11E 3	53.062	-2.465	0.284	-168.912			
15993	13045	1:BEBAN MATI	-146.051	-1.02E 3	0.000	-0.000	-0.000	-1.663			
		2:BEBAN HIDL	-47.403	-529.849	0.000	-0.000	-0.000	-0.939			
		3:BEBAN GEM	12.1E 3	93.380	-138.731	-0.202	0.967	4.409			
		4:KOMBINASI	-251.105	-2.07E 3	0.000	-0.000	-0.000	-3.498			
		5:KOMB B. MA	12.5E 3	-1.24E 3	-145.668	-0.212	1.016	2.404			
	12832	1:BEBAN MATI	146.051	1.31E 3	-0.000	0.000	-0.000	-15.442			
		2:BEBAN HIDL	47.403	529.849	-0.000	0.000	-0.000	-6.855			
		3:BEBAN GEM	-12.1E 3	-93.380	138.731	0.202	1.073	-3.036			
		4:KOMBINASI	251.105	2.42E 3	-0.000	0.000	-0.000	-29.498			
		5:KOMB B. MA	-12.5E 3	1.53E 3	145.668	0.212	1.127	-22.742			
15996	13047	1:BEBAN MATI	-237.572	-5.33E 3	-0.503	-0.236	0.004	-9.656			
		2:BEBAN HIDL	-72.069	-1.85E 3	-0.220	-0.084	0.002	-2.829			
		3:BEBAN GEM	128.159	-2.71E 3	43.738	2.064	-0.341	29.699			
		4:KOMBINASI	-400.398	-9.35E 3	-0.956	-0.417	0.008	-16.113			
		5:KOMB B. MA	-146.247	-9.29E 3	45.290	1.881	-0.353	19.831			
	106	1:BEBAN MATI	237.572	7.01E 3	0.503	0.236	0.003	-81.098			
		2:BEBAN HIDL	72.069	1.85E 3	0.220	0.084	0.002	-24.373			
		3:BEBAN GEM	-128.159	2.71E 3	-43.738	-2.064	-0.303	-69.633			
		4:KOMBINASI	400.398	11.4E 3	0.956	0.417	0.006	-136.314			
		5:KOMB B. MA	146.247	11E 3	-45.290	-1.881	-0.314	-168.837			
15998	13048	1:BEBAN MATI	-209.205	3.53E 3	0.039	0.010	-0.000	-10.514			
		2:BEBAN HIDL	-69.676	935.991	-0.063	-0.023	0.000	-3.419			
		3:BEBAN GEM	-1.9E 3	-576.161	-248.984	3.450	1.606	-8.576			
		4:KOMBINASI	-362.528	5.74E 3	-0.055	-0.025	0.000	-18.088			
		5:KOMB B. MA	-2.25E 3	3.49E 3	-261.433	3.618	1.687	-21.570			
	12832	1:BEBAN MATI	209.205	-1.84E 3	-0.039	-0.010	-0.000	50.065			
		2:BEBAN HIDL	69.676	-935.991	0.063	0.023	0.000	17.188			
		3:BEBAN GEM	1.9E 3	576.161	248.984	-3.450	2.056	0.100			
		4:KOMBINASI	362.528	-3.71E 3	0.055	0.025	0.000	87.578			
		5:KOMB B. MA	2.25E 3	-1.8E 3	261.433	-3.618	2.159	60.482			
16001	13049	1:BEBAN MATI	-204.253	-5.23E 3	-0.237	-0.016	0.002	-8.811			
		2:BEBAN HIDL	-67.841	-1.84E 3	0.199	0.048	-0.002	-2.703			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.78E 3	-800.704	247.770	-7.130	-1.770	8.667			
		4:KOMBINASI	-353.648	-9.22E 3	0.034	0.058	-0.001	-14.898			
		5:KOMB B. MA	1.63E 3	-7.18E 3	260.041	-7.473	-1.858	-1.333			
	106	1:BEBAN MATI	204.253	6.92E 3	0.237	0.016	0.002	-80.585			
		2:BEBAN HIDL	67.841	1.84E 3	-0.199	-0.048	-0.001	-24.292			
		3:BEBAN GEM	-1.78E 3	800.704	-247.770	7.130	-1.875	-20.445			
		4:KOMBINASI	353.648	11.2E 3	-0.034	-0.058	0.000	-135.568			
		5:KOMB B. MA	-1.63E 3	8.86E 3	-260.041	7.473	-1.967	-116.627			
16004	13051	1:BEBAN MATI	-234.638	3.56E 3	-0.187	-0.052	0.002	-12.109			
		2:BEBAN HIDL	-81.208	990.835	-0.018	-0.021	0.000	-3.799			
		3:BEBAN GEM	1.61E 3	-1.97E 3	27.632	-0.991	-0.194	-29.373			
		4:KOMBINASI	-411.499	5.86E 3	-0.253	-0.097	0.003	-20.608			
		5:KOMB B. MA	1.41E 3	2.09E 3	28.816	-1.106	-0.202	-45.229			
	12802	1:BEBAN MATI	234.638	-1.87E 3	0.187	0.052	0.001	52.092			
		2:BEBAN HIDL	81.208	-990.835	0.018	0.021	-0.000	18.374			
		3:BEBAN GEM	-1.61E 3	1.97E 3	-27.632	0.991	-0.212	0.384			
		4:KOMBINASI	411.499	-3.83E 3	0.253	0.097	0.001	91.909			
		5:KOMB B. MA	-1.41E 3	-399.401	-28.816	1.106	-0.222	63.520			
16006	13052	1:BEBAN MATI	-140.679	660.514	-0.000	0.000	0.000	-3.722			
		2:BEBAN HIDL	-46.797	191.699	-0.000	-0.000	0.000	-1.707			
		3:BEBAN GEM	3.45E 3	-221.641	-15.059	0.259	0.120	-4.265			
		4:KOMBINASI	-243.689	1.1E 3	-0.000	0.000	0.000	-7.197			
		5:KOMB B. MA	3.45E 3	542.810	-15.812	0.272	0.126	-9.224			
	12843	1:BEBAN MATI	140.679	-372.199	0.000	-0.000	0.000	11.317			
		2:BEBAN HIDL	46.797	-191.699	0.000	0.000	0.000	4.527			
		3:BEBAN GEM	-3.45E 3	221.641	15.059	-0.259	0.102	1.005			
		4:KOMBINASI	243.689	-753.358	0.000	-0.000	0.000	20.824			
		5:KOMB B. MA	-3.45E 3	-254.496	15.812	-0.272	0.107	15.089			
16009	13054	1:BEBAN MATI	-234.638	3.56E 3	0.187	0.052	-0.002	-12.109			
		2:BEBAN HIDL	-81.208	990.833	0.018	0.021	-0.000	-3.799			
		3:BEBAN GEM	1.64E 3	-1.95E 3	-73.418	-0.995	0.519	-29.304			
		4:KOMBINASI	-411.499	5.86E 3	0.253	0.097	-0.003	-20.608			
		5:KOMB B. MA	1.44E 3	2.1E 3	-76.891	-0.980	0.543	-45.157			
	12807	1:BEBAN MATI	234.638	-1.87E 3	-0.187	-0.052	-0.001	52.092			
		2:BEBAN HIDL	81.208	-990.833	-0.018	-0.021	0.000	18.374			
		3:BEBAN GEM	-1.64E 3	1.95E 3	73.418	0.995	0.561	0.559			
		4:KOMBINASI	411.499	-3.83E 3	-0.253	-0.097	-0.001	91.909			
		5:KOMB B. MA	-1.44E 3	-416.781	76.891	0.980	0.588	63.703			
16011	13055	1:BEBAN MATI	-139.557	542.195	0.019	0.183	0.000	-2.423			
		2:BEBAN HIDL	-48.184	175.062	0.004	0.015	0.000	-1.458			
		3:BEBAN GEM	-1.02E 3	-76.319	-10.412	-0.870	0.043	-1.251			
		4:KOMBINASI	-244.563	930.733	0.028	0.244	0.000	-5.241			
		5:KOMB B. MA	-1.24E 3	567.097	-10.912	-0.721	0.045	-4.611			
	12843	1:BEBAN MATI	139.557	-253.881	-0.019	-0.183	-0.000	8.278			
		2:BEBAN HIDL	48.184	-175.062	-0.004	-0.015	-0.000	4.034			
		3:BEBAN GEM	1.02E 3	76.319	10.412	0.870	0.110	0.128			
		4:KOMBINASI	244.563	-584.756	-0.028	-0.244	-0.001	16.388			
		5:KOMB B. MA	1.24E 3	-278.783	10.912	0.721	0.116	10.833			



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Job No 1	Sheet No 109	Rev
Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Client Teknik Sipil	Job Title Skripsi Value Enggining
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Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16014	13056	1:BEBAN MATI	-135.295	-966.385	-0.024	-0.171	-0.000	-1.224			
		2:BEBAN HIDL	-46.455	-533.681	-0.002	-0.007	-0.000	-0.874			
		3:BEBAN GEM	-584.808	31.988	15.506	0.673	-0.105	1.305			
		4:KOMBINASI	-236.682	-2.01E 3	-0.032	-0.216	-0.000	-2.867			
		5:KOMB B. MA	-777.217	-1.25E 3	16.256	0.532	-0.111	-0.378			
12807	13056	1:BEBAN MATI	135.295	1.25E 3	0.024	0.171	0.000	-15.112			
		2:BEBAN HIDL	46.455	533.681	0.002	0.007	0.000	-6.976			
		3:BEBAN GEM	584.808	-31.988	-15.506	-0.673	-0.123	-0.835			
		4:KOMBINASI	236.682	2.36E 3	0.032	0.216	0.001	-29.297			
		5:KOMB B. MA	777.217	1.54E 3	-16.256	-0.532	-0.128	-20.174			
16017	13058	1:BEBAN MATI	-298.478	-5.02E 3	0.514	0.172	-0.004	-11.565			
		2:BEBAN HIDL	-102.186	-1.82E 3	0.220	0.054	-0.002	-4.401			
		3:BEBAN GEM	1.89E 3	-2.64E 3	29.763	2.074	-0.226	28.411			
		4:KOMBINASI	-521.671	-8.94E 3	0.969	0.292	-0.008	-20.920			
		5:KOMB B. MA	1.62E 3	-8.89E 3	31.898	2.382	-0.243	15.626			
77	13058	1:BEBAN MATI	298.478	6.71E 3	-0.514	-0.172	-0.003	-74.745			
		2:BEBAN HIDL	102.186	1.82E 3	-0.220	-0.054	-0.001	-22.406			
		3:BEBAN GEM	-1.89E 3	2.64E 3	-29.763	-2.074	-0.212	-67.239			
		4:KOMBINASI	521.671	11E 3	-0.969	-0.292	-0.006	-125.544			
		5:KOMB B. MA	-1.62E 3	10.6E 3	-31.898	-2.382	-0.227	-158.790			
16019	13059	1:BEBAN MATI	-125.472	-1.11E 3	0.000	0.000	-0.000	-3.278			
		2:BEBAN HIDL	-42.879	-495.233	0.000	0.000	-0.000	-2.030			
		3:BEBAN GEM	1.84E 3	85.052	-5.408	-0.201	0.040	3.919			
		4:KOMBINASI	-219.172	-2.12E 3	0.000	0.000	-0.000	-7.181			
		5:KOMB B. MA	1.78E 3	-1.32E 3	-5.678	-0.211	0.042	-0.381			
12835	13059	1:BEBAN MATI	125.472	1.4E 3	-0.000	-0.000	-0.000	-15.134			
		2:BEBAN HIDL	42.879	495.233	-0.000	-0.000	-0.000	-5.255			
		3:BEBAN GEM	-1.84E 3	-85.052	5.408	0.201	0.040	-2.668			
		4:KOMBINASI	219.172	2.47E 3	-0.000	-0.000	-0.000	-26.569			
		5:KOMB B. MA	-1.78E 3	1.6E 3	5.678	0.211	0.042	-21.088			
16022	13061	1:BEBAN MATI	-298.478	-5.02E 3	-0.514	-0.172	0.004	-11.565			
		2:BEBAN HIDL	-102.186	-1.82E 3	-0.220	-0.054	0.002	-4.401			
		3:BEBAN GEM	1.94E 3	-2.65E 3	-56.279	2.084	0.422	28.296			
		4:KOMBINASI	-521.671	-8.94E 3	-0.969	-0.292	0.008	-20.920			
		5:KOMB B. MA	1.68E 3	-8.9E 3	-59.739	1.984	0.449	15.505			
79	13061	1:BEBAN MATI	298.478	6.71E 3	0.514	0.172	0.003	-74.745			
		2:BEBAN HIDL	102.186	1.82E 3	0.220	0.054	0.001	-22.406			
		3:BEBAN GEM	-1.94E 3	2.65E 3	56.279	-2.084	0.406	-67.229			
		4:KOMBINASI	521.671	11E 3	0.969	0.292	0.006	-125.544			
		5:KOMB B. MA	-1.68E 3	10.6E 3	59.739	-1.984	0.430	-158.779			
16024	13062	1:BEBAN MATI	-213.482	2.32E 3	1.261	0.403	-0.011	-7.412			
		2:BEBAN HIDL	-75.630	802.712	0.436	0.214	-0.004	-3.091			
		3:BEBAN GEM	-1.46E 3	-610.844	-7.338	3.281	0.015	-8.545			
		4:KOMBINASI	-377.186	4.07E 3	2.211	0.827	-0.020	-13.840			
		5:KOMB B. MA	-1.79E 3	2.16E 3	-6.182	3.977	0.002	-18.239			
12835	13062	1:BEBAN MATI	213.482	-1.87E 3	-1.261	-0.403	-0.008	38.238			
		2:BEBAN HIDL	75.630	-802.712	-0.436	-0.214	-0.002	14.899			
		3:BEBAN GEM	1.46E 3	610.844	7.338	-3.281	0.093	-0.440			



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Job No 1	Sheet No 110	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	377.186	-3.53E 3	-2.211	-0.827	-0.013	69.724			
		5:KOMB B. MA	1.79E 3	-1.71E 3	6.182	-3.977	0.089	46.715			
16027	13063	1:BEBAN MATI	-207.256	-4.03E 3	-4.583	-1.006	0.035	-6.143			
		2:BEBAN HIDL	-73.837	-1.62E 3	-1.610	-0.435	0.012	-2.420			
		3:BEBAN GEM	-1.18E 3	-744.066	21.043	-7.106	-0.164	8.906			
		4:KOMBINASI	-366.847	-7.43E 3	-8.076	-1.902	0.062	-11.243			
		5:KOMB B. MA	-1.49E 3	-5.78E 3	16.545	-8.727	-0.129	1.756			
	79	1:BEBAN MATI	207.256	4.48E 3	4.583	1.006	0.032	-56.507			
		2:BEBAN HIDL	73.837	1.62E 3	1.610	0.435	0.011	-21.350			
		3:BEBAN GEM	1.18E 3	744.066	-21.043	7.106	-0.146	-19.851			
		4:KOMBINASI	366.847	7.97E 3	8.076	1.902	0.056	-101.969			
		5:KOMB B. MA	1.49E 3	6.24E 3	-16.545	8.727	-0.114	-90.161			
16030	13064	1:BEBAN MATI	-88.112	2.01E 3	-0.977	1.624	0.006	-1.268			
		2:BEBAN HIDL	-0.397	242.152	-0.490	0.082	0.003	-0.169			
		3:BEBAN GEM	1.63E 3	-160.697	-4.059	1.125	0.017	-3.213			
		4:KOMBINASI	-106.369	2.8E 3	-1.956	2.080	0.013	-1.792			
		5:KOMB B. MA	1.62E 3	1.99E 3	-5.533	2.854	0.026	-4.743			
	189	1:BEBAN MATI	88.112	-484.041	0.977	-1.624	0.008	19.611			
		2:BEBAN HIDL	0.397	-242.152	0.490	-0.082	0.004	3.731			
		3:BEBAN GEM	-1.63E 3	160.697	4.059	-1.125	0.043	0.849			
		4:KOMBINASI	106.369	-968.292	1.956	-2.080	0.016	29.503			
		5:KOMB B. MA	-1.62E 3	-460.600	5.533	-2.854	0.055	22.741			
16031	13066	1:BEBAN MATI	-13.015	-744.865	-70.525	-1.794	0.207	-5.755			
		2:BEBAN HIDL	-30.801	-257.594	-16.404	-0.164	0.052	-2.301			
		3:BEBAN GEM	-772.114	-5.93E 3	572.518	-1.112	-1.472	5.815			
		4:KOMBINASI	-64.899	-1.31E 3	-110.877	-2.415	0.331	-10.587			
		5:KOMB B. MA	-842.215	-7.13E 3	520.776	-3.060	-1.308	-1.029			
	12944	1:BEBAN MATI	13.015	1.31E 3	70.525	1.794	0.139	0.723			
		2:BEBAN HIDL	30.801	257.594	16.404	0.164	0.029	1.038			
		3:BEBAN GEM	772.114	5.93E 3	-572.518	1.112	-1.335	-34.900			
		4:KOMBINASI	64.899	1.98E 3	110.877	2.415	0.213	2.528			
		5:KOMB B. MA	842.215	7.69E 3	-520.776	3.060	-1.245	-35.299			
16033	13067	1:BEBAN MATI	-26.263	-841.710	0.374	-1.369	-0.003	3.652			
		2:BEBAN HIDL	-7.995	-345.713	0.002	-0.251	-0.000	-0.671			
		3:BEBAN GEM	-73.868	-12.505	8.197	0.014	-0.063	3.364			
		4:KOMBINASI	-44.308	-1.56E 3	0.452	-2.045	-0.005	3.308			
		5:KOMB B. MA	-108.621	-1.06E 3	8.983	-1.505	-0.070	6.781			
	12827	1:BEBAN MATI	26.263	1.13E 3	-0.374	1.369	-0.002	-18.154			
		2:BEBAN HIDL	7.995	345.713	-0.002	0.251	0.000	-4.414			
		3:BEBAN GEM	73.868	12.505	-8.197	-0.014	-0.057	-3.548			
		4:KOMBINASI	44.308	1.91E 3	-0.452	2.045	-0.002	-28.847			
		5:KOMB B. MA	108.621	1.35E 3	-8.983	1.505	-0.062	-24.528			
16035	13068	1:BEBAN MATI	-136.627	-1.54E 3	6.971	-2.604	-0.055	-10.186			
		2:BEBAN HIDL	-24.701	-452.527	1.590	-0.011	-0.013	-0.521			
		3:BEBAN GEM	2.24E 3	162.457	-20.891	0.679	0.096	2.252			
		4:KOMBINASI	-203.474	-2.57E 3	10.910	-3.142	-0.086	-13.057			
		5:KOMB B. MA	2.2E 3	-1.64E 3	-14.010	-1.897	0.038	-8.134			
	12805	1:BEBAN MATI	136.627	3.07E 3	-6.971	2.604	-0.047	-23.711			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 111	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	24.701	452.527	-1.590	0.011	-0.011	-6.136			
		3:BEBAN GEM	-2.24E 3	-162.457	20.891	-0.679	0.211	0.138			
		4:KOMBINASI	203.474	4.4E 3	-10.910	3.142	-0.074	-38.271			
		5:KOMB B. MA	-2.2E 3	3.17E 3	14.010	1.897	0.168	-27.248			
16038	13070	1:BEBAN MATI	-279.882	2.39E 3	-2.432	1.283	0.016	-12.875			
		2:BEBAN HIDL	-81.805	751.441	-0.825	-0.282	0.005	-5.282			
		3:BEBAN GEM	364.065	-575.433	-24.199	2.646	0.155	-9.440			
		4:KOMBINASI	-466.747	4.07E 3	-4.240	1.089	0.027	-23.901			
		5:KOMB B. MA	53.303	2.23E 3	-28.337	3.893	0.182	-25.956			
	12827	1:BEBAN MATI	279.882	-1.94E 3	2.432	-1.283	0.020	44.691			
		2:BEBAN HIDL	81.805	-751.441	0.825	0.282	0.007	16.336			
		3:BEBAN GEM	-364.065	575.433	24.199	-2.646	0.201	0.976			
		4:KOMBINASI	466.747	-3.53E 3	4.240	-1.089	0.035	79.767			
		5:KOMB B. MA	-53.303	-1.78E 3	28.337	-3.893	0.235	55.517			
16041	13071	1:BEBAN MATI	-174.102	-4.62E 3	0.412	0.896	-0.002	-9.417			
		2:BEBAN HIDL	-37.966	-1.74E 3	1.088	0.861	-0.008	-2.812			
		3:BEBAN GEM	1.08E 3	-879.131	-7.420	-7.457	0.019	8.902			
		4:KOMBINASI	-269.669	-8.33E 3	2.236	2.453	-0.015	-15.800			
		5:KOMB B. MA	931.895	-6.59E 3	-6.726	-6.417	0.014	-1.757			
	105	1:BEBAN MATI	174.102	5.07E 3	-0.412	-0.896	-0.005	-61.862			
		2:BEBAN HIDL	37.966	1.74E 3	-1.088	-0.861	-0.008	-22.782			
		3:BEBAN GEM	-1.08E 3	879.131	7.420	7.457	0.090	-21.834			
		4:KOMBINASI	269.669	8.87E 3	-2.236	-2.453	-0.018	-110.686			
		5:KOMB B. MA	-931.895	7.04E 3	6.726	6.417	0.085	-98.457			
16044	13073	1:BEBAN MATI	-199.451	2.28E 3	3.609	2.447	-0.027	-10.885			
		2:BEBAN HIDL	-65.842	344.105	1.165	1.296	-0.009	-2.843			
		3:BEBAN GEM	-1.05E 3	-2.1E 3	11.079	0.168	-0.121	-28.501			
		4:KOMBINASI	-344.688	3.28E 3	6.195	5.011	-0.048	-17.612			
		5:KOMB B. MA	-1.34E 3	282.330	15.941	3.402	-0.160	-42.517			
	12800	1:BEBAN MATI	199.451	-588.623	-3.609	-2.447	-0.026	31.959			
		2:BEBAN HIDL	65.842	-344.105	-1.165	-1.296	-0.008	7.905			
		3:BEBAN GEM	1.05E 3	2.1E 3	-11.079	-0.168	-0.042	-2.331			
		4:KOMBINASI	344.688	-1.26E 3	-6.195	-5.011	-0.043	50.999			
		5:KOMB B. MA	1.34E 3	1.41E 3	-15.941	-3.402	-0.075	34.255			
16046	13074	1:BEBAN MATI	-125.941	693.616	0.006	0.044	0.001	-3.475			
		2:BEBAN HIDL	-38.700	138.437	0.125	0.047	-0.001	-2.776			
		3:BEBAN GEM	-93.187	-205.959	26.095	0.284	-0.195	-3.279			
		4:KOMBINASI	-213.050	1.05E 3	0.208	0.128	0.000	-8.611			
		5:KOMB B. MA	-247.008	560.421	27.481	0.371	-0.204	-8.583			
	12848	1:BEBAN MATI	125.941	-405.301	-0.006	-0.044	-0.001	11.557			
		2:BEBAN HIDL	38.700	-138.437	-0.125	-0.047	-0.001	4.812			
		3:BEBAN GEM	93.187	205.959	-26.095	-0.284	-0.189	0.249			
		4:KOMBINASI	213.050	-707.861	-0.208	-0.128	-0.003	21.568			
		5:KOMB B. MA	247.008	-272.107	-27.481	-0.371	-0.201	14.706			
16050	13076	1:BEBAN MATI	-35.549	257.651	-0.677	-0.255	0.004	-10.131			
		2:BEBAN HIDL	-10.304	51.522	-0.300	-0.028	0.002	-5.019			
		3:BEBAN GEM	135.739	-81.925	-15.285	-0.864	0.111	-1.474			
		4:KOMBINASI	-59.145	391.616	-1.293	-0.351	0.008	-20.188			



Software licensed to Snow Panther [LZ0]

Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	100.795	202.543	-16.907	-1.179	0.122	-14.690			
	12848	1:BEBAN MATI	35.549	30.663	0.677	0.255	0.006	11.801			
		2:BEBAN HIDL	10.304	-51.522	0.300	0.028	0.002	5.777			
		3:BEBAN GEM	-135.739	81.925	15.285	0.864	0.114	0.269			
		4:KOMBINASI	59.145	-45.639	1.293	0.351	0.011	23.404			
		5:KOMB B. MA	-100.795	85.771	16.907	1.179	0.127	15.549			
16053	13077	1:BEBAN MATI	-97.983	-1.07E 3	0.046	0.228	-0.000	-2.325			
		2:BEBAN HIDL	-28.611	-584.680	-0.028	0.021	0.000	-1.376			
		3:BEBAN GEM	503.911	26.695	-18.243	0.663	0.126	1.219			
		4:KOMBINASI	-163.357	-2.22E 3	0.011	0.307	0.000	-4.991			
		5:KOMB B. MA	413.956	-1.39E 3	-19.126	0.936	0.133	-1.870			
	12804	1:BEBAN MATI	97.983	1.36E 3	-0.046	-0.228	-0.001	-15.509			
		2:BEBAN HIDL	28.611	584.680	0.028	-0.021	0.000	-7.225			
		3:BEBAN GEM	-503.911	-26.695	18.243	-0.663	0.142	-0.827			
		4:KOMBINASI	163.357	2.56E 3	-0.011	-0.307	-0.000	-30.171			
		5:KOMB B. MA	-413.956	1.68E 3	19.126	-0.936	0.149	-20.712			
16056	13079	1:BEBAN MATI	-229.544	-3.42E 3	-24.600	-4.507	0.176	-3.799			
		2:BEBAN HIDL	-59.024	-917.835	-7.865	-2.443	0.056	0.301			
		3:BEBAN GEM	1.91E 3	-2.43E 3	80.320	0.452	-0.484	32.911			
		4:KOMBINASI	-369.891	-5.58E 3	-42.103	-9.317	0.301	-4.077			
		5:KOMB B. MA	1.74E 3	-6.52E 3	55.017	-5.497	-0.299	30.938			
	101	1:BEBAN MATI	229.544	5.11E 3	24.600	4.507	0.186	-58.980			
		2:BEBAN HIDL	59.024	917.835	7.865	2.443	0.059	-13.802			
		3:BEBAN GEM	-1.91E 3	2.43E 3	-80.320	-0.452	-0.698	-68.638			
		4:KOMBINASI	369.891	7.6E 3	42.103	9.317	0.319	-92.859			
		5:KOMB B. MA	-1.74E 3	8.21E 3	-55.017	5.497	-0.511	-139.331			
16058	13080	1:BEBAN MATI	-132.597	-1.06E 3	-0.920	-0.078	0.006	-2.314			
		2:BEBAN HIDL	-42.672	-554.241	-0.249	-0.063	0.002	-1.040			
		3:BEBAN GEM	-139.643	112.392	25.753	-0.210	-0.183	4.521			
		4:KOMBINASI	-227.392	-2.16E 3	-1.502	-0.194	0.010	-4.442			
		5:KOMB B. MA	-304.826	-1.28E 3	25.972	-0.336	-0.185	1.809			
	12830	1:BEBAN MATI	132.597	1.35E 3	0.920	0.078	0.008	-15.448			
		2:BEBAN HIDL	42.672	554.241	0.249	0.063	0.002	-7.113			
		3:BEBAN GEM	139.643	-112.392	-25.753	0.210	-0.196	-2.868			
		4:KOMBINASI	227.392	2.51E 3	1.502	0.194	0.012	-29.918			
		5:KOMB B. MA	304.826	1.57E 3	-25.972	0.336	-0.197	-22.727			
16062	13082	1:BEBAN MATI	-307.142	3.3E 3	-1.119	0.428	0.010	-20.201			
		2:BEBAN HIDL	-95.718	872.259	-0.766	0.338	0.006	-6.745			
		3:BEBAN GEM	640.342	-563.614	-50.662	3.618	0.371	-7.967			
		4:KOMBINASI	-521.720	5.35E 3	-2.568	1.054	0.023	-35.034			
		5:KOMB B. MA	307.786	3.23E 3	-54.773	4.430	0.404	-32.614			
	12830	1:BEBAN MATI	307.142	-1.61E 3	1.119	-0.428	0.006	56.294			
		2:BEBAN HIDL	95.718	-872.259	0.766	-0.338	0.005	19.576			
		3:BEBAN GEM	-640.342	563.614	50.662	-3.618	0.374	-0.324			
		4:KOMBINASI	521.720	-3.33E 3	2.568	-1.054	0.015	98.874			
		5:KOMB B. MA	-307.786	-1.54E 3	54.773	-4.430	0.402	67.700			
16065	13083	1:BEBAN MATI	-226.235	-5.55E 3	0.845	0.081	-0.007	-10.522			
		2:BEBAN HIDL	-71.337	-1.96E 3	-0.124	-0.036	0.001	-3.372			



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Job No 1	Sheet No 113	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	737.216	-746.411	-48.018	-7.125	0.355	8.497			
		4:KOMBINASI	-385.621	-9.79E 3	0.816	0.040	-0.007	-18.021			
		5:KOMB B. MA	505.039	-7.51E 3	-49.649	-7.422	0.366	-3.623			
	104	1:BEBAN MATI	226.235	7.23E 3	-0.845	-0.081	-0.006	-83.467			
		2:BEBAN HIDL	71.337	1.96E 3	0.124	0.036	0.001	-25.464			
		3:BEBAN GEM	-737.216	746.411	48.018	7.125	0.352	-19.477			
		4:KOMBINASI	385.621	11.8E 3	-0.816	-0.040	-0.005	-140.903			
		5:KOMB B. MA	-505.039	9.19E 3	49.649	7.422	0.364	-119.196			
16068	13085	1:BEBAN MATI	-252.836	3.05E 3	0.034	0.194	-0.002	-13.073			
		2:BEBAN HIDL	-89.688	751.774	0.012	0.008	-0.001	-4.691			
		3:BEBAN GEM	923.379	-2.15E 3	12.030	-0.378	-0.076	-32.410			
		4:KOMBINASI	-446.904	4.87E 3	0.060	0.245	-0.004	-23.194			
		5:KOMB B. MA	662.899	1.25E 3	12.673	-0.198	-0.082	-49.918			
	12799	1:BEBAN MATI	252.836	-1.36E 3	-0.034	-0.194	0.002	45.565			
		2:BEBAN HIDL	89.688	-751.774	-0.012	-0.008	0.001	15.750			
		3:BEBAN GEM	-923.379	2.15E 3	-12.030	0.378	-0.101	0.802			
		4:KOMBINASI	446.904	-2.84E 3	-0.060	-0.245	0.003	79.878			
		5:KOMB B. MA	-662.899	440.202	-12.673	0.198	-0.104	55.858			
16070	13086	1:BEBAN MATI	-143.464	597.218	-0.256	0.040	0.003	-3.328			
		2:BEBAN HIDL	-47.358	175.514	-0.045	0.007	0.001	-1.612			
		3:BEBAN GEM	239.195	-239.423	6.776	0.244	-0.046	-4.407			
		4:KOMBINASI	-247.929	997.485	-0.379	0.060	0.004	-6.573			
		5:KOMB B. MA	79.276	451.133	6.832	0.301	-0.045	-8.922			
	12841	1:BEBAN MATI	143.464	-308.904	0.256	-0.040	0.001	9.993			
		2:BEBAN HIDL	47.358	-175.514	0.045	-0.007	0.000	4.194			
		3:BEBAN GEM	-239.195	239.423	-6.776	-0.244	-0.054	0.885			
		4:KOMBINASI	247.929	-651.507	0.379	-0.060	0.001	18.701			
		5:KOMB B. MA	-79.276	-162.818	-6.832	-0.301	-0.055	13.438			
16074	13088	1:BEBAN MATI	-111.830	454.034	-0.288	-0.006	0.002	-7.329			
		2:BEBAN HIDL	-34.879	120.445	-0.173	-0.004	0.001	-3.021			
		3:BEBAN GEM	-379.949	-69.541	-27.514	-0.920	0.196	-1.000			
		4:KOMBINASI	-190.002	737.552	-0.623	-0.014	0.004	-13.628			
		5:KOMB B. MA	-531.704	453.283	-29.282	-0.974	0.209	-10.191			
	12841	1:BEBAN MATI	111.830	-165.719	0.288	0.006	0.002	11.887			
		2:BEBAN HIDL	34.879	-120.445	0.173	0.004	0.001	4.793			
		3:BEBAN GEM	379.949	69.541	27.514	0.920	0.208	-0.023			
		4:KOMBINASI	190.002	-391.575	0.623	0.014	0.005	21.933			
		5:KOMB B. MA	531.704	-164.969	29.282	0.974	0.222	14.738			
16077	13089	1:BEBAN MATI	-134.983	-1.11E 3	-0.178	-0.008	0.001	-2.076			
		2:BEBAN HIDL	-43.702	-554.909	-0.114	-0.006	0.001	-1.157			
		3:BEBAN GEM	-680.199	34.552	-60.664	0.683	0.420	1.319			
		4:KOMBINASI	-231.902	-2.22E 3	-0.396	-0.019	0.003	-4.343			
		5:KOMB B. MA	-875.413	-1.41E 3	-63.943	0.706	0.443	-1.385			
	12803	1:BEBAN MATI	134.983	1.4E 3	0.178	0.008	0.001	-16.387			
		2:BEBAN HIDL	43.702	554.909	0.114	0.006	0.001	-7.006			
		3:BEBAN GEM	680.199	-34.552	60.664	-0.683	0.472	-0.811			
		4:KOMBINASI	231.902	2.57E 3	0.396	0.019	0.003	-30.874			
		5:KOMB B. MA	875.413	1.7E 3	63.943	-0.706	0.498	-21.442			



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Job No 1	Sheet No 114	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16080	13091	1:BEBAN MATI	-240.765	-4.68E 3	-9.739	-1.570	0.075	-8.764			
		2:BEBAN HIDL	-82.193	-1.66E 3	-2.900	-0.505	0.022	-2.629			
		3:BEBAN GEM	656.376	-2.7E 3	22.393	1.671	-0.152	31.376			
		4:KOMBINASI	-420.427	-8.28E 3	-16.327	-2.691	0.126	-14.724			
		5:KOMB B. MA	399.114	-8.51E 3	12.034	-0.118	-0.071	22.603			
	100	1:BEBAN MATI	240.765	6.37E 3	9.739	1.570	0.068	-72.540			
		2:BEBAN HIDL	82.193	1.66E 3	2.900	0.505	0.020	-21.785			
		3:BEBAN GEM	-656.376	2.7E 3	-22.393	-1.671	-0.178	-71.107			
		4:KOMBINASI	420.427	10.3E 3	16.327	2.691	0.114	-121.903			
		5:KOMB B. MA	-399.114	10.2E 3	-12.034	0.118	-0.106	-160.273			
16082	13092	1:BEBAN MATI	-142.510	-1.04E 3	-0.103	-0.008	0.000	-1.673			
		2:BEBAN HIDL	-48.580	-538.428	0.026	0.006	-0.000	-0.944			
		3:BEBAN GEM	405.343	85.589	3.110	-0.181	-0.011	4.460			
		4:KOMBINASI	-248.741	-2.11E 3	-0.082	-0.000	-0.000	-3.518			
		5:KOMB B. MA	253.953	-1.27E 3	3.178	-0.195	-0.012	2.444			
	12833	1:BEBAN MATI	142.510	1.33E 3	0.103	0.008	0.001	-15.704			
		2:BEBAN HIDL	48.580	538.428	-0.026	-0.006	-0.000	-6.976			
		3:BEBAN GEM	-405.343	-85.589	-3.110	0.181	-0.035	-3.201			
		4:KOMBINASI	248.741	2.45E 3	0.082	0.000	0.001	-30.007			
		5:KOMB B. MA	-253.953	1.56E 3	-3.178	0.195	-0.035	-23.251			
16086	13094	1:BEBAN MATI	-277.531	3.33E 3	-0.215	0.024	0.002	-19.074			
		2:BEBAN HIDL	-88.382	872.247	-0.200	-0.039	0.001	-6.154			
		3:BEBAN GEM	-580.074	-534.028	-43.746	3.511	0.318	-7.670			
		4:KOMBINASI	-474.449	5.39E 3	-0.578	-0.034	0.004	-32.735			
		5:KOMB B. MA	-939.638	3.29E 3	-46.268	3.687	0.336	-30.820			
	12833	1:BEBAN MATI	277.531	-1.64E 3	0.215	-0.024	0.002	55.572			
		2:BEBAN HIDL	88.382	-872.247	0.200	0.039	0.001	18.985			
		3:BEBAN GEM	580.074	534.028	43.746	-3.511	0.326	-0.186			
		4:KOMBINASI	474.449	-3.36E 3	0.578	0.034	0.004	97.062			
		5:KOMB B. MA	939.638	-1.6E 3	46.268	-3.687	0.345	66.768			
16089	13095	1:BEBAN MATI	-239.519	-5.54E 3	-0.586	-0.092	0.004	-10.189			
		2:BEBAN HIDL	-78.718	-1.93E 3	-0.012	0.015	-0.000	-3.148			
		3:BEBAN GEM	-689.347	-771.614	-69.536	-7.166	0.498	8.556			
		4:KOMBINASI	-413.372	-9.74E 3	-0.722	-0.087	0.005	-17.264			
		5:KOMB B. MA	-1.01E 3	-7.51E 3	-73.606	-7.607	0.527	-3.095			
	103	1:BEBAN MATI	239.519	7.22E 3	0.586	0.092	0.004	-83.647			
		2:BEBAN HIDL	78.718	1.93E 3	0.012	-0.015	0.000	-25.310			
		3:BEBAN GEM	689.347	771.614	69.536	7.166	0.525	-19.906			
		4:KOMBINASI	413.372	11.8E 3	0.722	0.087	0.006	-140.873			
		5:KOMB B. MA	1.01E 3	9.19E 3	73.606	7.607	0.556	-119.735			
16092	13097	1:BEBAN MATI	-236.163	3.17E 3	2.714	0.083	-0.022	-10.637			
		2:BEBAN HIDL	-85.653	842.789	0.859	0.108	-0.007	-3.281			
		3:BEBAN GEM	196.895	-2.03E 3	21.141	-0.482	-0.156	-31.088			
		4:KOMBINASI	-420.442	5.15E 3	4.632	0.271	-0.038	-18.015			
		5:KOMB B. MA	-80.815	1.54E 3	25.428	-0.359	-0.191	-45.249			
	12798	1:BEBAN MATI	236.163	-1.48E 3	-2.714	-0.083	-0.017	44.849			
		2:BEBAN HIDL	85.653	-842.789	-0.859	-0.108	-0.006	15.679			
		3:BEBAN GEM	-196.895	2.03E 3	-21.141	0.482	-0.155	1.160			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	420.442	-3.13E 3	-4.632	-0.271	-0.030	78.905			
		5:KOMB B. MA	80.815	148.859	-25.428	0.359	-0.183	55.474			
16094	13098	1:BEBAN MATI	-148.243	671.996	0.169	0.067	-0.001	-3.724			
		2:BEBAN HIDL	-50.957	196.078	0.079	0.024	-0.000	-1.683			
		3:BEBAN GEM	406.781	-217.553	6.212	0.243	-0.045	-4.279			
		4:KOMBINASI	-259.422	1.12E 3	0.329	0.118	-0.002	-7.161			
		5:KOMB B. MA	248.304	561.213	6.739	0.336	-0.049	-9.227			
	12844	1:BEBAN MATI	148.243	-383.682	-0.169	-0.067	-0.002	11.488			
		2:BEBAN HIDL	50.957	-196.078	-0.079	-0.024	-0.001	4.567			
		3:BEBAN GEM	-406.781	217.553	-6.212	-0.243	-0.046	1.079			
		4:KOMBINASI	259.422	-774.143	-0.329	-0.118	-0.003	21.093			
		5:KOMB B. MA	-248.304	-272.898	-6.739	-0.336	-0.051	15.362			
16098	13100	1:BEBAN MATI	-113.012	402.930	-0.009	0.197	0.000	-6.856			
		2:BEBAN HIDL	-38.903	127.112	-0.028	0.015	0.000	-2.985			
		3:BEBAN GEM	-279.550	-70.131	-16.632	-0.882	0.119	-0.917			
		4:KOMBINASI	-197.859	686.895	-0.056	0.261	0.001	-13.004			
		5:KOMB B. MA	-429.881	405.560	-17.489	-0.721	0.125	-9.610			
	12844	1:BEBAN MATI	113.012	-114.616	0.009	-0.197	-0.000	10.663			
		2:BEBAN HIDL	38.903	-127.112	0.028	-0.015	0.000	4.855			
		3:BEBAN GEM	279.550	70.131	16.632	0.882	0.126	-0.115			
		4:KOMBINASI	197.859	-340.918	0.056	-0.261	0.000	20.564			
		5:KOMB B. MA	429.881	-117.245	17.489	0.721	0.132	13.455			
16101	13101	1:BEBAN MATI	-132.560	-1.03E 3	-0.156	-0.195	0.001	-2.104			
		2:BEBAN HIDL	-45.397	-556.250	-0.056	-0.010	0.000	-1.177			
		3:BEBAN GEM	-443.922	42.221	-18.124	0.676	0.137	1.307			
		4:KOMBINASI	-231.708	-2.13E 3	-0.276	-0.250	0.002	-4.407			
		5:KOMB B. MA	-625.917	-1.32E 3	-19.220	0.509	0.144	-1.438			
	12802	1:BEBAN MATI	132.560	1.32E 3	0.156	0.195	0.001	-15.201			
		2:BEBAN HIDL	45.397	556.250	0.056	0.010	0.001	-7.006			
		3:BEBAN GEM	443.922	-42.221	18.124	-0.676	0.130	-0.686			
		4:KOMBINASI	231.708	2.47E 3	0.276	0.250	0.003	-29.451			
		5:KOMB B. MA	625.917	1.61E 3	19.220	-0.509	0.138	-20.125			
16104	13103	1:BEBAN MATI	-296.257	-4.39E 3	-6.226	-1.726	0.049	-10.402			
		2:BEBAN HIDL	-104.556	-1.59E 3	-2.122	-0.603	0.017	-3.839			
		3:BEBAN GEM	247.423	-2.61E 3	20.022	1.807	-0.142	29.371			
		4:KOMBINASI	-522.798	-7.82E 3	-10.865	-3.037	0.086	-18.625			
		5:KOMB B. MA	-99.196	-8.1E 3	13.525	-0.191	-0.089	18.134			
	75	1:BEBAN MATI	296.257	6.08E 3	6.226	1.726	0.042	-66.655			
		2:BEBAN HIDL	104.556	1.59E 3	2.122	0.603	0.014	-19.603			
		3:BEBAN GEM	-247.423	2.61E 3	-20.022	-1.807	-0.153	-67.827			
		4:KOMBINASI	522.798	9.85E 3	10.865	3.037	0.073	-111.351			
		5:KOMB B. MA	99.196	9.78E 3	-13.525	0.191	-0.110	-149.636			
16106	13104	1:BEBAN MATI	-130.959	-1.13E 3	-0.093	-0.038	0.000	-3.059			
		2:BEBAN HIDL	-45.447	-501.441	-0.019	-0.019	0.000	-1.945			
		3:BEBAN GEM	438.473	81.184	11.044	-0.186	-0.080	3.939			
		4:KOMBINASI	-229.865	-2.16E 3	-0.141	-0.077	0.000	-6.784			
		5:KOMB B. MA	302.169	-1.34E 3	11.492	-0.245	-0.084	-0.091			
	12836	1:BEBAN MATI	130.959	1.42E 3	0.093	0.038	0.001	-15.671			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 116	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	45.447	501.441	0.019	0.019	0.000	-5.431			
		3:BEBAN GEM	-438.473	-81.184	-11.044	0.186	-0.082	-2.745			
		4:KOMBINASI	229.865	2.5E 3	0.141	0.077	0.002	-27.494			
		5:KOMB B. MA	-302.169	1.63E 3	-11.492	0.245	-0.085	-21.811			
16110	13106	1:BEBAN MATI	-254.211	2.19E 3	1.244	0.527	-0.011	-14.193			
		2:BEBAN HIDL	-89.343	751.622	0.418	0.270	-0.004	-5.570			
		3:BEBAN GEM	-747.412	-570.148	-24.890	3.291	0.179	-7.657			
		4:KOMBINASI	-448.002	3.83E 3	2.163	1.065	-0.020	-25.943			
		5:KOMB B. MA	-1.09E 3	2.04E 3	-24.639	4.145	0.175	-25.575			
	12836	1:BEBAN MATI	254.211	-1.74E 3	-1.244	-0.527	-0.007	43.050			
		2:BEBAN HIDL	89.343	-751.622	-0.418	-0.270	-0.002	16.626			
		3:BEBAN GEM	747.412	570.148	24.890	-3.291	0.187	-0.730			
		4:KOMBINASI	448.002	-3.29E 3	-2.163	-1.065	-0.012	78.262			
		5:KOMB B. MA	1.09E 3	-1.59E 3	24.639	-4.145	0.187	52.259			
16113	13107	1:BEBAN MATI	-235.661	-4.3E 3	-4.315	-0.944	0.033	-7.382			
		2:BEBAN HIDL	-84.124	-1.71E 3	-1.541	-0.396	0.012	-2.844			
		3:BEBAN GEM	-1.04E 3	-712.221	-10.841	-7.129	0.065	8.776			
		4:KOMBINASI	-417.391	-7.89E 3	-7.644	-1.766	0.059	-13.408			
		5:KOMB B. MA	-1.38E 3	-6.07E 3	-16.623	-8.666	0.109	0.126			
	77	1:BEBAN MATI	235.661	4.75E 3	4.315	0.944	0.030	-59.117			
		2:BEBAN HIDL	84.124	1.71E 3	1.541	0.396	0.011	-22.328			
		3:BEBAN GEM	1.04E 3	712.221	10.841	7.129	0.094	-19.253			
		4:KOMBINASI	417.391	8.43E 3	7.644	1.766	0.054	-106.665			
		5:KOMB B. MA	1.38E 3	6.52E 3	16.623	8.666	0.136	-92.729			
16116	13108	1:BEBAN MATI	128.318	-588.131	7.087	2.295	-0.070	0.974			
		2:BEBAN HIDL	60.980	-339.059	2.400	0.991	-0.024	1.885			
		3:BEBAN GEM	1.12E 3	-1.46E 3	-77.998	-2.465	0.670	0.449			
		4:KOMBINASI	251.551	-1.25E 3	12.344	4.340	-0.122	4.185			
		5:KOMB B. MA	1.34E 3	-2.32E 3	-73.371	0.302	0.619	2.577			
	101	1:BEBAN MATI	-128.318	2.61E 3	-7.087	-2.295	-0.055	-29.234			
		2:BEBAN HIDL	-60.980	339.059	-2.400	-0.991	-0.019	-7.870			
		3:BEBAN GEM	-1.12E 3	1.46E 3	77.998	2.465	0.707	-26.169			
		4:KOMBINASI	-251.551	3.68E 3	-12.344	-4.340	-0.096	-47.672			
		5:KOMB B. MA	-1.34E 3	4.35E 3	73.371	-0.302	0.676	-61.433			
16117	13110	1:BEBAN MATI	-216.564	2.36E 3	-48.320	-1.343	0.134	-9.166			
		2:BEBAN HIDL	-86.603	931.228	-15.607	-0.818	0.044	-3.931			
		3:BEBAN GEM	-218.399	-2.23E 3	-26.935	-0.513	0.108	-32.945			
		4:KOMBINASI	-398.442	4.32E 3	-82.955	-2.921	0.232	-17.289			
		5:KOMB B. MA	-497.844	575.773	-85.966	-2.372	0.274	-46.118			
	13200	1:BEBAN MATI	216.564	-2.21E 3	48.320	1.343	0.103	20.382			
		2:BEBAN HIDL	86.603	-931.228	15.607	0.818	0.032	8.497			
		3:BEBAN GEM	218.399	2.23E 3	26.935	0.513	0.024	21.993			
		4:KOMBINASI	398.442	-4.14E 3	82.955	2.921	0.175	38.054			
		5:KOMB B. MA	497.844	-425.610	85.966	2.372	0.147	48.573			
16120	13111	1:BEBAN MATI	-98.372	-244.917	-0.155	-0.006	0.001	1.402			
		2:BEBAN HIDL	-31.188	-257.709	-0.119	0.001	0.001	-0.105			
		3:BEBAN GEM	-222.348	-20.738	-21.197	-0.203	0.180	0.170			
		4:KOMBINASI	-167.948	-706.236	-0.376	-0.007	0.002	1.514			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 117	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-350.550	-421.318	-22.483	-0.219	0.191	1.518			
	12799	1:BEBAN MATI	98.372	590.895	0.155	0.006	0.002	-8.778			
		2:BEBAN HIDL	31.188	257.709	0.119	-0.001	0.001	-4.444			
		3:BEBAN GEM	222.348	20.738	21.197	0.203	0.194	-0.537			
		4:KOMBINASI	167.948	1.12E 3	0.376	0.007	0.005	-17.645			
		5:KOMB B. MA	350.550	767.296	22.483	0.219	0.206	-12.008			
16123	13113	1:BEBAN MATI	-217.246	-3.3E 3	-57.852	-1.179	0.146	-5.247			
		2:BEBAN HIDL	-76.746	-1.4E 3	-19.944	-0.148	0.050	-2.176			
		3:BEBAN GEM	598.134	-2.37E 3	0.884	0.633	0.013	32.982			
		4:KOMBINASI	-383.489	-6.2E 3	-101.333	-1.652	0.255	-9.778			
		5:KOMB B. MA	364.747	-6.63E 3	-68.890	-0.603	0.189	28.079			
	13211	1:BEBAN MATI	217.246	3.45E 3	57.852	1.179	0.138	-11.289			
		2:BEBAN HIDL	76.746	1.4E 3	19.944	0.148	0.048	-4.700			
		3:BEBAN GEM	-598.134	2.37E 3	-0.884	-0.633	-0.017	-44.607			
		4:KOMBINASI	383.489	6.38E 3	101.333	1.652	0.242	-21.067			
		5:KOMB B. MA	-364.747	6.78E 3	68.890	0.603	0.149	-60.946			
16126	13114	1:BEBAN MATI	87.810	-1.13E 3	-0.540	-0.005	0.004	-5.828			
		2:BEBAN HIDL	26.751	-611.554	-0.195	-0.007	0.002	-1.615			
		3:BEBAN GEM	-321.671	-1.42E 3	-26.106	-3.454	0.223	0.180			
		4:KOMBINASI	148.174	-2.34E 3	-0.961	-0.017	0.008	-9.579			
		5:KOMB B. MA	-233.893	-2.99E 3	-28.069	-3.635	0.239	-6.608			
	100	1:BEBAN MATI	-87.810	3.16E 3	0.540	0.005	0.005	-32.033			
		2:BEBAN HIDL	-26.751	611.554	0.195	0.007	0.002	-9.180			
		3:BEBAN GEM	321.671	1.42E 3	26.106	3.454	0.238	-25.258			
		4:KOMBINASI	-148.174	4.77E 3	0.961	0.017	0.009	-53.127			
		5:KOMB B. MA	233.893	5.02E 3	28.069	3.635	0.256	-64.061			
16129	13116	1:BEBAN MATI	-205.438	2.54E 3	-69.282	-1.485	0.195	-6.055			
		2:BEBAN HIDL	-80.767	1.03E 3	-25.183	-0.951	0.071	-2.301			
		3:BEBAN GEM	485.761	-2.11E 3	-25.938	-0.468	0.068	-32.106			
		4:KOMBINASI	-375.753	4.7E 3	-123.431	-3.304	0.348	-10.949			
		5:KOMB B. MA	256.150	947.269	-111.627	-2.547	0.310	-41.147			
	13222	1:BEBAN MATI	205.438	-2.39E 3	69.282	1.485	0.144	18.157			
		2:BEBAN HIDL	80.767	-1.03E 3	25.183	0.951	0.052	7.347			
		3:BEBAN GEM	-485.761	2.11E 3	25.938	0.468	0.059	21.770			
		4:KOMBINASI	375.753	-4.52E 3	123.431	3.304	0.257	33.544			
		5:KOMB B. MA	-256.150	-797.105	111.627	2.547	0.238	45.424			
16132	13117	1:BEBAN MATI	-87.895	-235.257	-0.122	0.059	0.001	0.922			
		2:BEBAN HIDL	-30.452	-259.623	-0.061	0.010	0.000	-0.116			
		3:BEBAN GEM	-198.512	-27.467	-11.766	-0.169	0.102	0.238			
		4:KOMBINASI	-154.198	-697.705	-0.244	0.088	0.002	0.920			
		5:KOMB B. MA	-314.604	-419.871	-12.513	-0.112	0.108	1.102			
	12798	1:BEBAN MATI	87.895	581.234	0.122	-0.059	0.001	-8.128			
		2:BEBAN HIDL	30.452	259.623	0.061	-0.010	0.001	-4.467			
		3:BEBAN GEM	198.512	27.467	11.766	0.169	0.106	-0.723			
		4:KOMBINASI	154.198	1.11E 3	0.244	-0.088	0.002	-16.900			
		5:KOMB B. MA	314.604	765.848	12.513	0.112	0.113	-11.567			
16135	13119	1:BEBAN MATI	-227.570	-3.16E 3	-55.824	-0.823	0.144	-6.749			
		2:BEBAN HIDL	-88.761	-1.33E 3	-19.632	-0.142	0.050	-3.311			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 118	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	726.029	-2.24E 3	-118.700	0.782	0.340	29.708			
		4:KOMBINASI	-415.102	-5.92E 3	-98.400	-1.214	0.253	-13.396			
		5:KOMB B. MA	481.504	-6.31E 3	-192.238	-0.087	0.531	22.458			
	13233	1:BEBAN MATI	227.570	3.31E 3	55.824	0.823	0.130	-9.096			
		2:BEBAN HIDL	88.761	1.33E 3	19.632	0.142	0.046	-3.221			
		3:BEBAN GEM	-726.029	2.24E 3	118.700	-0.782	0.242	-40.683			
		4:KOMBINASI	415.102	6.1E 3	98.400	1.214	0.230	-16.069			
		5:KOMB B. MA	-481.504	6.46E 3	192.238	0.087	0.412	-53.746			
16138	13120	1:BEBAN MATI	36.687	-1.08E 3	-1.753	-0.195	0.016	-3.589			
		2:BEBAN HIDL	14.730	-549.726	-0.526	-0.110	0.005	-1.492			
		3:BEBAN GEM	-492.444	-1.37E 3	-17.881	-4.010	0.144	0.586			
		4:KOMBINASI	67.592	-2.17E 3	-2.945	-0.409	0.028	-6.693			
		5:KOMB B. MA	-471.541	-2.85E 3	-20.844	-4.471	0.171	-3.868			
	75	1:BEBAN MATI	-36.687	1.62E 3	1.753	0.195	0.015	-20.186			
		2:BEBAN HIDL	-14.730	549.726	0.526	0.110	0.004	-8.212			
		3:BEBAN GEM	492.444	1.37E 3	17.881	4.010	0.171	-24.820			
		4:KOMBINASI	-67.592	2.82E 3	2.945	0.409	0.024	-37.362			
		5:KOMB B. MA	471.541	3.39E 3	20.844	4.471	0.197	-51.173			
16141	13121	1:BEBAN MATI	-100.531	1.82E 3	-6.011	-0.990	0.037	-4.489			
		2:BEBAN HIDL	-39.949	262.335	-2.700	-0.740	0.017	-1.255			
		3:BEBAN GEM	-354.789	-800.483	-10.099	1.585	0.077	-10.069			
		4:KOMBINASI	-184.556	2.6E 3	-11.533	-2.371	0.071	-7.395			
		5:KOMB B. MA	-497.029	1.13E 3	-18.235	0.231	0.128	-15.815			
	13123	1:BEBAN MATI	100.531	-467.503	6.011	0.990	0.034	17.936			
		2:BEBAN HIDL	39.949	-262.335	2.700	0.740	0.015	4.342			
		3:BEBAN GEM	354.789	800.483	10.099	-1.585	0.042	0.649			
		4:KOMBINASI	184.556	-980.741	11.533	2.371	0.064	28.471			
		5:KOMB B. MA	497.029	215.603	18.235	-0.231	0.087	21.223			
16142	13123	1:BEBAN MATI	-129.287	-231.334	4.694	1.883	-0.027	-17.886			
		2:BEBAN HIDL	-46.540	-197.361	2.031	1.092	-0.012	-4.320			
		3:BEBAN GEM	-377.772	-796.820	6.247	-1.635	-0.015	-0.440			
		4:KOMBINASI	-229.609	-593.379	8.883	4.006	-0.051	-28.375			
		5:KOMB B. MA	-553.871	-1.19E 3	12.473	0.821	-0.050	-20.940			
	13125	1:BEBAN MATI	129.287	1.58E 3	-4.694	-1.883	-0.028	7.218			
		2:BEBAN HIDL	46.540	197.361	-2.031	-1.092	-0.012	1.997			
		3:BEBAN GEM	377.772	796.820	-6.247	1.635	-0.058	-8.937			
		4:KOMBINASI	229.609	2.21E 3	-8.883	-4.006	-0.053	11.857			
		5:KOMB B. MA	553.871	2.54E 3	-12.473	-0.821	-0.097	-0.967			
16143	13125	1:BEBAN MATI	-284.265	-2.08E 3	30.009	4.379	-0.171	-5.761			
		2:BEBAN HIDL	-104.874	-516.589	13.106	2.518	-0.075	-1.272			
		3:BEBAN GEM	-502.191	-983.604	46.805	-4.737	-0.254	8.289			
		4:KOMBINASI	-508.917	-3.33E 3	56.980	9.284	-0.326	-8.948			
		5:KOMB B. MA	-874.490	-3.43E 3	87.017	0.916	-0.483	2.180			
	72	1:BEBAN MATI	284.265	3.43E 3	-30.009	-4.379	-0.182	-26.711			
		2:BEBAN HIDL	104.874	516.589	-13.106	-2.518	-0.079	-4.808			
		3:BEBAN GEM	502.191	983.604	-46.805	4.737	-0.297	-19.864			
		4:KOMBINASI	508.917	4.95E 3	-56.980	-9.284	-0.345	-39.745			
		5:KOMB B. MA	874.490	4.78E 3	-87.017	-0.916	-0.541	-50.453			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 119	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16144	13127	1:BEBAN MATI	-384.682	3.22E 3	21.948	-1.246	-0.019	6.624			
		2:BEBAN HIDL	-182.316	1.41E 3	7.902	-0.701	-0.006	3.276			
		3:BEBAN GEM	-833.502	-3.3E 3	59.852	-4.442	0.001	-67.212			
		4:KOMBINASI	-753.323	6.13E 3	38.981	-2.616	-0.033	13.190			
		5:KOMB B. MA	-1.37E 3	611.507	89.534	-6.330	-0.021	-61.982			
12892	12892	1:BEBAN MATI	384.682	-3.15E 3	-21.948	1.246	-0.035	1.185			
		2:BEBAN HIDL	182.316	-1.41E 3	-7.902	0.701	-0.013	0.192			
		3:BEBAN GEM	833.502	3.3E 3	-59.852	4.442	-0.148	59.133			
		4:KOMBINASI	753.323	-6.04E 3	-38.981	2.616	-0.062	1.730			
		5:KOMB B. MA	1.37E 3	-536.425	-89.534	6.330	-0.198	63.390			
16145	13131	1:BEBAN MATI	-287.733	1.94E 3	10.102	-1.560	-0.023	-14.411			
		2:BEBAN HIDL	-130.707	854.886	4.408	-0.672	-0.010	-6.175			
		3:BEBAN GEM	-446.307	-2.88E 3	5.080	-2.461	0.027	-43.233			
		4:KOMBINASI	-554.412	3.7E 3	19.176	-2.947	-0.044	-27.173			
		5:KOMB B. MA	-834.780	-576.123	18.082	-4.547	-0.001	-63.511			
12897	12897	1:BEBAN MATI	287.733	-1.79E 3	-10.102	1.560	-0.027	23.552			
		2:BEBAN HIDL	130.707	-854.886	-4.408	0.672	-0.011	10.366			
		3:BEBAN GEM	446.307	2.88E 3	-5.080	2.461	-0.052	29.091			
		4:KOMBINASI	554.412	-3.51E 3	-19.176	2.947	-0.050	44.849			
		5:KOMB B. MA	834.780	726.287	-18.082	4.547	-0.088	60.318			
16146	13135	1:BEBAN MATI	-259.503	925.225	0.124	-1.154	-0.009	-27.549			
		2:BEBAN HIDL	-110.543	391.997	0.909	-0.541	-0.006	-12.093			
		3:BEBAN GEM	-133.895	-2.64E 3	3.311	-0.895	0.013	-21.016			
		4:KOMBINASI	-488.272	1.74E 3	1.604	-2.250	-0.021	-52.408			
		5:KOMB B. MA	-466.419	-1.61E 3	4.147	-2.418	0.001	-56.872			
12796	12796	1:BEBAN MATI	259.503	-699.980	-0.124	1.154	0.008	33.526			
		2:BEBAN HIDL	110.543	-391.997	-0.909	0.541	-0.001	14.976			
		3:BEBAN GEM	133.895	2.64E 3	-3.311	0.895	-0.038	1.578			
		4:KOMBINASI	488.272	-1.47E 3	-1.604	2.250	0.009	64.193			
		5:KOMB B. MA	466.419	1.84E 3	-4.147	2.418	-0.032	44.169			
16147	13136	1:BEBAN MATI	-59.284	762.723	0.203	0.042	-0.002	-2.550			
		2:BEBAN HIDL	-23.493	301.293	0.118	-0.001	-0.001	-1.527			
		3:BEBAN GEM	148.522	-19.392	-0.858	-0.239	0.007	-0.945			
		4:KOMBINASI	-108.730	1.4E 3	0.433	0.048	-0.004	-5.504			
		5:KOMB B. MA	82.568	923.137	-0.627	-0.210	0.004	-4.458			
13137	13137	1:BEBAN MATI	59.284	-532.071	-0.203	-0.042	-0.000	10.169			
		2:BEBAN HIDL	23.493	-301.293	-0.118	0.001	-0.000	5.073			
		3:BEBAN GEM	-148.522	19.392	0.858	0.239	0.003	0.717			
		4:KOMBINASI	108.730	-1.12E 3	-0.433	-0.048	-0.001	20.319			
		5:KOMB B. MA	-82.568	-692.485	0.627	0.210	0.003	13.965			
16148	13137	1:BEBAN MATI	-54.097	-197.601	0.497	-0.094	-0.004	-10.322			
		2:BEBAN HIDL	-23.156	-169.415	0.183	-0.022	-0.002	-5.133			
		3:BEBAN GEM	163.169	-18.733	-2.302	0.211	0.018	-0.664			
		4:KOMBINASI	-101.966	-508.185	0.890	-0.148	-0.007	-20.599			
		5:KOMB B. MA	103.336	-318.919	-1.810	0.114	0.014	-14.098			
13138	13138	1:BEBAN MATI	54.097	428.252	-0.497	0.094	-0.002	6.639			
		2:BEBAN HIDL	23.156	169.415	-0.183	0.022	-0.001	3.139			
		3:BEBAN GEM	-163.169	18.733	2.302	-0.211	0.009	0.443			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	101.966	784.967	-0.890	0.148	-0.003	12.990			
		5:KOMB B. MA	-103.336	549.571	1.810	-0.114	0.008	8.988			
16149	13138	1:BEBAN MATI	-40.240	-729.489	1.000	-0.108	-0.005	-4.930			
		2:BEBAN HIDL	-19.470	-416.549	0.343	-0.012	-0.002	-2.244			
		3:BEBAN GEM	194.807	63.939	-2.930	0.067	0.032	-0.349			
		4:KOMBINASI	-79.440	-1.54E 3	1.749	-0.149	-0.009	-9.506			
		5:KOMB B. MA	152.626	-912.283	-1.871	-0.045	0.027	-6.642			
	12796	1:BEBAN MATI	40.240	960.140	-1.000	0.108	-0.006	-5.012			
		2:BEBAN HIDL	19.470	416.549	-0.343	0.012	-0.002	-2.658			
		3:BEBAN GEM	-194.807	-63.939	2.930	-0.067	0.002	1.101			
		4:KOMBINASI	79.440	1.82E 3	-1.749	0.149	-0.011	-10.267			
		5:KOMB B. MA	-152.626	1.14E 3	1.871	0.045	-0.005	-5.450			
16150	13142	1:BEBAN MATI	-235.515	-1.82E 3	32.475	2.350	-0.038	-23.120			
		2:BEBAN HIDL	-98.735	-782.138	15.298	1.091	-0.016	-10.557			
		3:BEBAN GEM	-12.167	-2.28E 3	-260.009	2.071	0.270	16.132			
		4:KOMBINASI	-440.595	-3.44E 3	63.446	4.566	-0.071	-44.635			
		5:KOMB B. MA	-307.532	-4.69E 3	-231.356	5.179	0.236	-12.515			
	12938	1:BEBAN MATI	235.515	1.9E 3	-32.475	-2.350	-0.041	18.558			
		2:BEBAN HIDL	98.735	782.138	-15.298	-1.091	-0.022	8.640			
		3:BEBAN GEM	12.167	2.28E 3	260.009	-2.071	0.367	-21.733			
		4:KOMBINASI	440.595	3.53E 3	-63.446	-4.566	-0.085	36.093			
		5:KOMB B. MA	307.532	4.77E 3	231.356	-5.179	0.331	0.923			
16151	13146	1:BEBAN MATI	-272.214	-2.79E 3	14.637	2.778	-0.038	-6.295			
		2:BEBAN HIDL	-114.411	-1.24E 3	6.066	1.236	-0.015	-3.373			
		3:BEBAN GEM	373.537	-2.44E 3	-194.892	2.777	0.468	34.348			
		4:KOMBINASI	-509.715	-5.33E 3	27.270	5.311	-0.069	-12.950			
		5:KOMB B. MA	51.353	-6.1E 3	-186.360	6.435	0.445	27.747			
	12942	1:BEBAN MATI	272.214	2.94E 3	-14.637	-2.778	-0.034	-7.770			
		2:BEBAN HIDL	114.411	1.24E 3	-6.066	-1.236	-0.015	-2.702			
		3:BEBAN GEM	-373.537	2.44E 3	194.892	-2.777	0.487	-46.323			
		4:KOMBINASI	509.715	5.51E 3	-27.270	-5.311	-0.065	-13.647			
		5:KOMB B. MA	-51.353	6.25E 3	186.360	-6.435	0.469	-58.031			
16152	13150	1:BEBAN MATI	-362.462	-3.82E 3	17.761	2.279	-0.066	17.740			
		2:BEBAN HIDL	-156.462	-1.68E 3	8.198	0.942	-0.030	7.075			
		3:BEBAN GEM	881.198	-2.9E 3	-114.211	3.599	0.393	53.596			
		4:KOMBINASI	-685.294	-7.28E 3	34.430	4.242	-0.128	32.608			
		5:KOMB B. MA	468.919	-7.88E 3	-97.242	6.623	0.328	78.261			
	99	1:BEBAN MATI	362.462	4.04E 3	-17.761	-2.279	-0.064	-46.660			
		2:BEBAN HIDL	156.462	1.68E 3	-8.198	-0.942	-0.030	-19.461			
		3:BEBAN GEM	-881.198	2.9E 3	114.211	-3.599	0.447	-74.939			
		4:KOMBINASI	685.294	7.55E 3	-34.430	-4.242	-0.126	-87.129			
		5:KOMB B. MA	-468.919	8.1E 3	97.242	-6.623	0.387	-137.023			
16153	13151	1:BEBAN MATI	-107.793	1.37E 3	0.539	0.369	-0.004	-6.096			
		2:BEBAN HIDL	-49.788	549.368	0.243	0.206	-0.002	-3.011			
		3:BEBAN GEM	741.147	-750.959	-15.260	1.657	0.094	-9.127			
		4:KOMBINASI	-209.012	2.53E 3	1.036	0.772	-0.007	-12.133			
		5:KOMB B. MA	640.538	915.229	-15.338	2.232	0.094	-17.486			
	13152	1:BEBAN MATI	107.793	-1.01E 3	-0.539	-0.369	-0.002	20.146			



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Job No 1	Sheet No 121	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	49.788	-549.368	-0.243	-0.206	-0.001	9.476			
		3:BEBAN GEM	-741.147	750.959	15.260	-1.657	0.085	0.290			
		4:KOMBINASI	209.012	-2.1E 3	-1.036	-0.772	-0.005	39.337			
		5:KOMB B. MA	-640.538	-554.836	15.338	-2.232	0.087	26.136			
16154	13152	1:BEBAN MATI	-144.292	-723.900	-1.310	0.322	0.005	-20.269			
		2:BEBAN HIDL	-64.239	-416.273	-0.767	0.201	0.003	-9.532			
		3:BEBAN GEM	1.09E 3	-798.142	-10.778	-2.003	0.059	0.080			
		4:KOMBINASI	-275.933	-1.53E 3	-2.799	0.708	0.012	-39.575			
		5:KOMB B. MA	966.167	-1.81E 3	-13.088	-1.661	0.069	-25.905			
	13153	1:BEBAN MATI	144.292	1.08E 3	1.310	-0.322	0.010	9.630			
		2:BEBAN HIDL	64.239	416.273	0.767	-0.201	0.006	4.634			
		3:BEBAN GEM	-1.09E 3	798.142	10.778	2.003	0.068	-9.472			
		4:KOMBINASI	275.933	1.97E 3	2.799	-0.708	0.021	18.970			
		5:KOMB B. MA	-966.167	2.17E 3	13.088	1.661	0.085	2.464			
16155	13153	1:BEBAN MATI	-242.962	-2.64E 3	-7.715	0.252	0.042	-8.481			
		2:BEBAN HIDL	-107.540	-1.23E 3	-3.984	0.172	0.022	-3.979			
		3:BEBAN GEM	1.72E 3	-975.193	-3.785	-6.416	0.010	9.624			
		4:KOMBINASI	-463.618	-5.14E 3	-15.633	0.577	0.086	-16.543			
		5:KOMB B. MA	1.5E 3	-4.4E 3	-14.080	-6.381	0.066	-0.763			
	99	1:BEBAN MATI	242.962	3E 3	7.715	-0.252	0.049	-24.680			
		2:BEBAN HIDL	107.540	1.23E 3	3.984	-0.172	0.025	-10.531			
		3:BEBAN GEM	-1.72E 3	975.193	3.785	6.416	0.034	-21.100			
		4:KOMBINASI	463.618	5.57E 3	15.633	-0.577	0.098	-46.465			
		5:KOMB B. MA	-1.5E 3	4.76E 3	14.080	6.381	0.100	-53.153			
16156	13154	1:BEBAN MATI	-117.625	1.25E 3	0.954	0.264	-0.006	-5.048			
		2:BEBAN HIDL	-51.336	490.845	0.333	0.144	-0.002	-2.519			
		3:BEBAN GEM	-338.327	-797.005	-19.720	1.744	0.121	-8.911			
		4:KOMBINASI	-223.288	2.28E 3	1.678	0.546	-0.011	-10.089			
		5:KOMB B. MA	-503.670	702.704	-19.552	2.181	0.120	-15.916			
	13156	1:BEBAN MATI	117.625	-884.659	-0.954	-0.264	-0.005	17.579			
		2:BEBAN HIDL	51.336	-490.845	-0.333	-0.144	-0.002	8.296			
		3:BEBAN GEM	338.327	797.005	19.720	-1.744	0.111	-0.468			
		4:KOMBINASI	223.288	-1.85E 3	-1.678	-0.546	-0.009	34.368			
		5:KOMB B. MA	503.670	-342.311	19.552	-2.181	0.110	22.065			
16157	13156	1:BEBAN MATI	-134.740	-685.784	-1.177	-0.331	0.007	-17.653			
		2:BEBAN HIDL	-58.473	-390.470	-0.582	-0.196	0.003	-8.333			
		3:BEBAN GEM	-381.908	-752.922	-18.348	-1.854	0.107	0.803			
		4:KOMBINASI	-255.244	-1.45E 3	-2.344	-0.711	0.014	-34.516			
		5:KOMB B. MA	-570.827	-1.71E 3	-20.792	-2.395	0.122	-21.809			
	13158	1:BEBAN MATI	134.740	1.05E 3	1.177	0.331	0.007	7.462			
		2:BEBAN HIDL	58.473	390.470	0.582	0.196	0.003	3.738			
		3:BEBAN GEM	381.908	752.922	18.348	1.854	0.109	-9.664			
		4:KOMBINASI	255.244	1.88E 3	2.344	0.711	0.014	14.935			
		5:KOMB B. MA	570.827	2.07E 3	20.792	2.395	0.123	-0.442			
16158	13158	1:BEBAN MATI	-172.851	-2.46E 3	-4.138	-0.761	0.026	-6.442			
		2:BEBAN HIDL	-77.688	-1.15E 3	-1.934	-0.430	0.012	-3.171			
		3:BEBAN GEM	-442.463	-834.190	-15.751	-6.343	0.087	9.791			
		4:KOMBINASI	-331.722	-4.8E 3	-8.059	-1.602	0.050	-12.804			



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Job No 1	Sheet No 122	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-684.050	-4.03E 3	-21.836	-7.680	0.124	1.936			
	73	1:BEBAN MATI	172.851	2.82E 3	4.138	0.761	0.023	-24.671			
		2:BEBAN HIDL	77.688	1.15E 3	1.934	0.430	0.011	-10.384			
		3:BEBAN GEM	442.463	834.190	15.751	6.343	0.099	-19.607			
		4:KOMBINASI	331.722	5.23E 3	8.059	1.602	0.045	-46.220			
		5:KOMB B. MA	684.050	4.39E 3	21.836	7.680	0.133	-51.490			
16159	13160	1:BEBAN MATI	-138.242	2.12E 3	-1.595	-0.364	0.010	-1.330			
		2:BEBAN HIDL	-55.090	770.711	-0.810	-0.196	0.005	-0.868			
		3:BEBAN GEM	177.850	-3.58E 3	23.216	-0.846	-0.131	-36.696			
		4:KOMBINASI	-254.035	3.77E 3	-3.209	-0.750	0.020	-2.985			
		5:KOMB B. MA	15.446	-1.18E 3	22.297	-1.369	-0.125	-40.381			
	12792	1:BEBAN MATI	138.242	-1.76E 3	1.595	0.364	0.009	24.128			
		2:BEBAN HIDL	55.090	-770.711	0.810	0.196	0.004	9.938			
		3:BEBAN GEM	-177.850	3.58E 3	-23.216	0.846	-0.142	-5.411			
		4:KOMBINASI	254.035	-3.34E 3	3.209	0.750	0.018	44.854			
		5:KOMB B. MA	-15.446	1.54E 3	-22.297	1.369	-0.138	24.409			
16160	13161	1:BEBAN MATI	-76.851	616.493	0.207	-0.099	0.000	-1.887			
		2:BEBAN HIDL	-29.075	226.260	0.009	-0.006	0.001	-1.127			
		3:BEBAN GEM	-344.420	-107.571	-6.224	-0.401	0.034	-1.028			
		4:KOMBINASI	-138.741	1.1E 3	0.263	-0.128	0.001	-4.068			
		5:KOMB B. MA	-455.937	639.300	-6.323	-0.523	0.036	-3.643			
	13162	1:BEBAN MATI	76.851	-385.841	-0.207	0.099	-0.003	7.785			
		2:BEBAN HIDL	29.075	-226.260	-0.009	0.006	-0.001	3.790			
		3:BEBAN GEM	344.420	107.571	6.224	0.401	0.039	-0.238			
		4:KOMBINASI	138.741	-825.026	-0.263	0.128	-0.004	15.406			
		5:KOMB B. MA	455.937	-408.648	6.323	0.523	0.038	9.809			
16161	13162	1:BEBAN MATI	-75.628	-236.177	0.047	0.107	0.001	-7.813			
		2:BEBAN HIDL	-28.971	-151.901	-0.013	0.010	0.001	-3.806			
		3:BEBAN GEM	-420.573	-111.682	-8.906	0.419	0.048	0.243			
		4:KOMBINASI	-137.108	-526.454	0.036	0.144	0.002	-15.465			
		5:KOMB B. MA	-534.613	-444.584	-9.312	0.553	0.051	-9.842			
	13163	1:BEBAN MATI	75.628	466.828	-0.047	-0.107	-0.002	3.677			
		2:BEBAN HIDL	28.971	151.901	0.013	-0.010	-0.000	2.018			
		3:BEBAN GEM	420.573	111.682	8.906	-0.419	0.057	-1.557			
		4:KOMBINASI	137.108	803.235	-0.036	-0.144	-0.003	7.641			
		5:KOMB B. MA	534.613	675.235	9.312	-0.553	0.058	3.253			
16162	13163	1:BEBAN MATI	-68.760	-834.508	-1.007	0.170	0.005	-2.433			
		2:BEBAN HIDL	-25.854	-421.812	-0.396	0.018	0.002	-1.369			
		3:BEBAN GEM	-517.054	-9.144	-12.751	0.194	0.073	1.580			
		4:KOMBINASI	-123.878	-1.68E 3	-1.841	0.232	0.008	-5.110			
		5:KOMB B. MA	-627.180	-1.1E 3	-14.633	0.384	0.082	-1.595			
	12792	1:BEBAN MATI	68.760	1.07E 3	1.007	-0.170	0.007	-8.745			
		2:BEBAN HIDL	25.854	421.812	0.396	-0.018	0.003	-3.595			
		3:BEBAN GEM	517.054	9.144	12.751	-0.194	0.077	-1.688			
		4:KOMBINASI	123.878	1.95E 3	1.841	-0.232	0.013	-16.245			
		5:KOMB B. MA	627.180	1.33E 3	14.633	-0.384	0.090	-12.674			
16163	13167	1:BEBAN MATI	-301.979	-2.53E 3	-1.743	0.881	0.005	-10.047			
		2:BEBAN HIDL	-128.594	-1.06E 3	-0.631	0.660	0.002	-3.821			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 123	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	846.263	-4.16E 3	4.256	2.029	0.022	51.011			
		4:KOMBINASI	-568.126	-4.74E 3	-3.101	2.113	0.009	-18.170			
		5:KOMB B. MA	509.440	-7.54E 3	2.347	3.407	0.029	41.222			
	120	1:BEBAN MATI	301.979	2.89E 3	1.743	-0.881	0.015	-21.852			
		2:BEBAN HIDL	128.594	1.06E 3	0.631	-0.660	0.006	-8.701			
		3:BEBAN GEM	-846.263	4.16E 3	-4.256	-2.029	-0.072	-99.990			
		4:KOMBINASI	568.126	5.17E 3	3.101	-2.113	0.028	-40.144			
		5:KOMB B. MA	-509.440	7.9E 3	-2.347	-3.407	-0.056	-132.062			
16164	13168	1:BEBAN MATI	-73.176	1.73E 3	1.961	0.542	-0.009	-4.207			
		2:BEBAN HIDL	-29.733	225.537	0.894	0.491	-0.004	-1.104			
		3:BEBAN GEM	-746.687	-866.657	-1.970	2.009	0.011	-10.771			
		4:KOMBINASI	-135.383	2.44E 3	3.783	1.436	-0.018	-6.815			
		5:KOMB B. MA	-875.037	959.026	0.428	2.946	0.000	-16.180			
	13169	1:BEBAN MATI	73.176	-383.301	-1.961	-0.542	-0.014	16.664			
		2:BEBAN HIDL	29.733	-225.537	-0.894	-0.491	-0.006	3.758			
		3:BEBAN GEM	746.687	866.657	1.970	-2.009	0.012	0.572			
		4:KOMBINASI	135.383	-820.819	-3.783	-1.436	-0.027	26.009			
		5:KOMB B. MA	875.037	391.367	-0.428	-2.946	-0.005	19.520			
16165	13169	1:BEBAN MATI	-73.659	-178.734	-2.441	-0.892	0.017	-16.662			
		2:BEBAN HIDL	-29.700	-165.029	-0.967	-0.652	0.007	-3.753			
		3:BEBAN GEM	-871.517	-853.346	5.276	-1.389	-0.033	-0.444			
		4:KOMBINASI	-135.911	-478.527	-4.477	-2.114	0.031	-26.000			
		5:KOMB B. MA	-1.01E 3	-1.17E 3	2.519	-2.741	-0.014	-19.380			
	13170	1:BEBAN MATI	73.659	1.53E 3	2.441	0.892	0.012	6.613			
		2:BEBAN HIDL	29.700	165.029	0.967	0.652	0.005	1.811			
		3:BEBAN GEM	871.517	853.346	-5.276	1.389	-0.029	-9.598			
		4:KOMBINASI	135.911	2.1E 3	4.477	2.114	0.022	10.834			
		5:KOMB B. MA	1.01E 3	2.52E 3	-2.519	2.741	-0.015	-2.379			
16166	13170	1:BEBAN MATI	-145.693	-2.01E 3	-20.245	-2.252	0.111	-5.632			
		2:BEBAN HIDL	-58.914	-476.033	-8.359	-1.537	0.046	-1.301			
		3:BEBAN GEM	-904.791	-945.614	37.997	-6.001	-0.215	10.538			
		4:KOMBINASI	-269.095	-3.18E 3	-37.668	-5.162	0.208	-8.840			
		5:KOMB B. MA	-1.13E 3	-3.29E 3	14.636	-9.476	-0.086	4.653			
	120	1:BEBAN MATI	145.693	3.36E 3	20.245	2.252	0.127	-26.002			
		2:BEBAN HIDL	58.914	476.033	8.359	1.537	0.052	-4.301			
		3:BEBAN GEM	904.791	945.614	-37.997	6.001	-0.233	-21.666			
		4:KOMBINASI	269.095	4.8E 3	37.668	5.162	0.236	-38.084			
		5:KOMB B. MA	1.13E 3	4.64E 3	-14.636	9.476	-0.086	-51.332			
16167	13174	1:BEBAN MATI	-169.912	1.87E 3	-1.960	-3.441	0.004	9.306			
		2:BEBAN HIDL	-52.107	644.634	-0.823	-1.710	0.002	3.703			
		3:BEBAN GEM	47.042	-2.3E 3	14.102	-1.417	-0.065	-44.666			
		4:KOMBINASI	-287.266	3.28E 3	-3.669	-6.865	0.008	17.093			
		5:KOMB B. MA	-151.783	-158.703	12.353	-5.954	-0.063	-35.371			
	13178	1:BEBAN MATI	169.912	-1.57E 3	1.960	3.441	0.015	7.600			
		2:BEBAN HIDL	52.107	-644.634	0.823	1.710	0.006	2.618			
		3:BEBAN GEM	-47.042	2.3E 3	-14.102	1.417	-0.074	22.067			
		4:KOMBINASI	287.266	-2.92E 3	3.669	6.865	0.028	13.310			
		5:KOMB B. MA	151.783	459.031	-12.353	5.954	-0.059	32.342			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16168	13178	1:BEBAN MATI	-158.957	1.02E 3	0.044	-1.968	-0.005	-8.409			
		2:BEBAN HIDL	-48.885	333.226	-0.013	-0.884	-0.002	-2.946			
		3:BEBAN GEM	-360.230	-2.26E 3	10.979	-1.590	-0.043	-21.988			
		4:KOMBINASI	-268.965	1.75E 3	0.032	-3.776	-0.010	-14.804			
		5:KOMB B. MA	-566.530	-1.15E 3	11.564	-4.168	-0.052	-33.264			
12795	12795	1:BEBAN MATI	158.957	-717.605	-0.044	1.968	0.005	16.919			
		2:BEBAN HIDL	48.885	-333.226	0.013	0.884	0.002	6.213			
		3:BEBAN GEM	360.230	2.26E 3	-10.979	1.590	-0.064	-0.154			
		4:KOMBINASI	268.965	-1.39E 3	-0.032	3.776	0.010	30.245			
		5:KOMB B. MA	566.530	1.45E 3	-11.564	4.168	-0.061	20.485			
16169	13179	1:BEBAN MATI	-13.509	799.451	-0.022	-0.043	0.000	-3.164			
		2:BEBAN HIDL	-5.312	325.114	-0.019	0.002	0.000	-1.860			
		3:BEBAN GEM	20.040	-64.202	-11.161	-0.241	0.067	-0.532			
		4:KOMBINASI	-24.710	1.48E 3	-0.057	-0.048	0.000	-6.773			
		5:KOMB B. MA	4.346	927.107	-11.753	-0.295	0.071	-4.838			
	13180	13180	1:BEBAN MATI	13.509	-568.799	0.022	0.043	0.000	11.214		
			2:BEBAN HIDL	5.312	-325.114	0.019	-0.002	0.000	5.686		
			3:BEBAN GEM	-20.040	64.202	11.161	0.241	0.064	-0.224		
			4:KOMBINASI	24.710	-1.2E 3	0.057	0.048	0.000	22.555		
			5:KOMB B. MA	-4.346	-696.456	11.753	0.295	0.068	14.391		
16170	13180	1:BEBAN MATI	0.499	-125.599	0.006	0.062	-0.000	-11.332			
		2:BEBAN HIDL	0.069	-126.358	-0.011	0.004	0.000	-5.736			
		3:BEBAN GEM	24.056	-70.264	-7.214	0.280	0.034	0.327			
		4:KOMBINASI	0.709	-352.891	-0.010	0.080	-0.000	-22.777			
		5:KOMB B. MA	25.799	-275.190	-7.575	0.358	0.035	-14.430			
	13181	13181	1:BEBAN MATI	-0.499	356.250	-0.006	-0.062	0.000	8.497		
			2:BEBAN HIDL	-0.069	126.358	0.011	-0.004	0.000	4.249		
			3:BEBAN GEM	-24.056	70.264	7.214	-0.280	0.051	-1.154		
			4:KOMBINASI	-0.709	629.673	0.010	-0.080	0.000	16.995		
			5:KOMB B. MA	-25.799	505.842	7.575	-0.358	0.054	9.835		
16171	13181	1:BEBAN MATI	7.862	-714.425	-0.028	0.095	-0.000	-7.086			
		2:BEBAN HIDL	2.549	-400.138	-0.026	0.001	0.000	-3.508			
		3:BEBAN GEM	28.942	0.261	-8.451	0.319	0.028	1.267			
		4:KOMBINASI	13.512	-1.5E 3	-0.075	0.117	0.000	-14.116			
		5:KOMB B. MA	39.780	-954.234	-8.917	0.432	0.030	-7.861			
	12795	12795	1:BEBAN MATI	-7.862	945.077	0.028	-0.095	0.000	-2.679		
			2:BEBAN HIDL	-2.549	400.138	0.026	-0.001	0.000	-1.201		
			3:BEBAN GEM	-28.942	-0.261	8.451	-0.319	0.071	-1.264		
			4:KOMBINASI	-13.512	1.77E 3	0.075	-0.117	0.001	-5.135		
			5:KOMB B. MA	-39.780	1.18E 3	8.917	-0.432	0.075	-4.726		
16172	13185	1:BEBAN MATI	-180.643	-1.53E 3	2.412	3.312	-0.017	-8.242			
		2:BEBAN HIDL	-57.635	-635.879	1.009	1.747	-0.007	-2.720			
		3:BEBAN GEM	-1.16E 3	-2.29E 3	13.952	0.754	-0.062	22.718			
		4:KOMBINASI	-308.988	-2.85E 3	4.509	6.770	-0.032	-14.241			
		5:KOMB B. MA	-1.43E 3	-4.32E 3	17.668	5.152	-0.087	13.981			
	13189	13189	1:BEBAN MATI	180.643	1.83E 3	-2.412	-3.312	-0.006	-8.206		
			2:BEBAN HIDL	57.635	635.879	-1.009	-1.747	-0.003	-3.516		
			3:BEBAN GEM	1.16E 3	2.29E 3	-13.952	-0.754	-0.074	-45.200		



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Job No 1	Sheet No 125	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	308.988	3.21E 3	-4.509	-6.770	-0.012	-15.473			
		5:KOMB B. MA	1.43E 3	4.62E 3	-17.668	-5.152	-0.086	-57.776			
16173	13189	1:BEBAN MATI	-249.685	-2.27E 3	29.903	5.070	-0.125	9.584			
		2:BEBAN HIDL	-84.257	-848.292	12.420	2.410	-0.052	4.217			
		3:BEBAN GEM	-1.86E 3	-2.51E 3	137.076	2.728	-0.511	45.820			
		4:KOMBINASI	-434.432	-4.08E 3	55.756	9.941	-0.234	18.248			
		5:KOMB B. MA	-2.25E 3	-5.42E 3	181.285	9.381	-0.692	60.225			
	98	1:BEBAN MATI	249.685	2.57E 3	-29.903	-5.070	-0.168	-33.300			
		2:BEBAN HIDL	84.257	848.292	-12.420	-2.410	-0.070	-12.536			
		3:BEBAN GEM	1.86E 3	2.51E 3	-137.076	-2.728	-0.834	-70.475			
		4:KOMBINASI	434.432	4.44E 3	-55.756	-9.941	-0.313	-60.018			
		5:KOMB B. MA	2.25E 3	5.72E 3	-181.285	-9.381	-1.085	-114.820			
16174	13190	1:BEBAN MATI	-127.072	2.23E 3	-0.557	-0.413	0.003	-7.268			
		2:BEBAN HIDL	-52.988	539.638	-0.091	-0.213	0.001	-2.923			
		3:BEBAN GEM	-475.331	-766.590	-20.836	1.661	0.130	-9.197			
		4:KOMBINASI	-237.267	3.54E 3	-0.813	-0.837	0.005	-13.398			
		5:KOMB B. MA	-657.962	1.75E 3	-22.489	1.203	0.140	-18.679			
	13191	1:BEBAN MATI	127.072	-884.243	0.557	0.413	0.003	25.619			
		2:BEBAN HIDL	52.988	-539.638	0.091	0.213	0.000	9.274			
		3:BEBAN GEM	475.331	766.590	20.836	-1.661	0.115	0.176			
		4:KOMBINASI	237.267	-1.92E 3	0.813	0.837	0.005	45.581			
		5:KOMB B. MA	657.962	-403.106	22.489	-1.203	0.124	31.369			
16175	13191	1:BEBAN MATI	-165.101	-562.578	0.896	-0.650	-0.003	-25.757			
		2:BEBAN HIDL	-68.541	-413.333	0.598	-0.314	-0.003	-9.335			
		3:BEBAN GEM	-620.468	-756.384	-16.311	-1.739	0.096	0.153			
		4:KOMBINASI	-307.788	-1.34E 3	2.032	-1.282	-0.008	-45.844			
		5:KOMB B. MA	-857.718	-1.6E 3	-15.872	-2.664	0.096	-31.197			
	13192	1:BEBAN MATI	165.101	1.91E 3	-0.896	0.650	-0.007	11.191			
		2:BEBAN HIDL	68.541	413.333	-0.598	0.314	-0.004	4.471			
		3:BEBAN GEM	620.468	756.384	16.311	1.739	0.096	-9.054			
		4:KOMBINASI	307.788	2.96E 3	-2.032	1.282	-0.016	20.582			
		5:KOMB B. MA	857.718	2.96E 3	15.872	2.664	0.090	4.366			
16176	13192	1:BEBAN MATI	-267.029	-3.26E 3	9.053	-0.794	-0.046	-9.881			
		2:BEBAN HIDL	-111.781	-1.23E 3	4.265	-0.354	-0.022	-3.870			
		3:BEBAN GEM	-940.241	-940.755	2.551	-5.898	0.029	9.197			
		4:KOMBINASI	-499.284	-5.88E 3	17.688	-1.520	-0.091	-18.049			
		5:KOMB B. MA	-1.32E 3	-4.98E 3	14.290	-7.200	-0.029	-2.546			
	98	1:BEBAN MATI	267.029	4.61E 3	-9.053	0.794	-0.060	-36.431			
		2:BEBAN HIDL	111.781	1.23E 3	-4.265	0.354	-0.028	-10.582			
		3:BEBAN GEM	940.241	940.755	-2.551	5.898	-0.059	-20.267			
		4:KOMBINASI	499.284	7.5E 3	-17.688	1.520	-0.117	-60.648			
		5:KOMB B. MA	1.32E 3	6.34E 3	-14.290	7.200	-0.139	-64.061			
16177	13196	1:BEBAN MATI	-366.342	3.27E 3	47.806	1.654	-0.112	6.912			
		2:BEBAN HIDL	-142.025	1.32E 3	14.097	0.363	-0.035	2.747			
		3:BEBAN GEM	-2.13E 3	-2.37E 3	66.009	-2.579	-0.185	-45.355			
		4:KOMBINASI	-666.850	6.03E 3	79.922	2.566	-0.190	12.690			
		5:KOMB B. MA	-2.69E 3	1.57E 3	125.573	-0.836	-0.327	-39.062			
	13110	1:BEBAN MATI	366.342	-3.12E 3	-47.806	-1.654	-0.122	8.731			



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Job No 1	Sheet No 126	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	142.025	-1.32E 3	-14.097	-0.363	-0.034	3.718			
		3:BEBAN GEM	2.13E 3	2.37E 3	-66.009	2.579	-0.139	33.749			
		4:KOMBINASI	666.850	-5.85E 3	-79.922	-2.566	-0.202	16.427			
		5:KOMB B. MA	2.69E 3	-1.42E 3	-125.573	0.836	-0.289	46.399			
16178	13200	1:BEBAN MATI	-252.556	1.71E 3	14.857	0.664	-0.078	-20.772			
		2:BEBAN HIDL	-98.469	649.334	4.845	0.151	-0.026	-8.655			
		3:BEBAN GEM	-1.07E 3	-2.17E 3	24.716	-0.972	-0.114	-21.854			
		4:KOMBINASI	-460.617	3.1E 3	25.580	1.039	-0.135	-38.775			
		5:KOMB B. MA	-1.43E 3	-170.409	43.716	-0.265	-0.213	-48.912			
	12794	1:BEBAN MATI	252.556	-1.41E 3	-14.857	-0.664	-0.067	36.110			
		2:BEBAN HIDL	98.469	-649.334	-4.845	-0.151	-0.022	15.023			
		3:BEBAN GEM	1.07E 3	2.17E 3	-24.716	0.972	-0.129	0.613			
		4:KOMBINASI	460.617	-2.74E 3	-25.580	-1.039	-0.116	67.370			
		5:KOMB B. MA	1.43E 3	470.737	-43.716	0.265	-0.216	45.768			
16179	13201	1:BEBAN MATI	-64.640	702.180	-0.332	0.017	0.002	-2.026			
		2:BEBAN HIDL	-22.807	280.873	-0.125	0.008	0.001	-1.300			
		3:BEBAN GEM	-52.482	-52.460	-13.157	-0.246	0.078	-0.588			
		4:KOMBINASI	-114.059	1.29E 3	-0.599	0.033	0.003	-4.512			
		5:KOMB B. MA	-133.430	815.621	-14.222	-0.237	0.084	-3.424			
	13202	1:BEBAN MATI	64.640	-471.528	0.332	-0.017	0.002	8.932			
		2:BEBAN HIDL	22.807	-280.873	0.125	-0.008	0.001	4.606			
		3:BEBAN GEM	52.482	52.460	13.157	0.246	0.077	-0.029			
		4:KOMBINASI	114.059	-1.02E 3	0.599	-0.033	0.004	18.088			
		5:KOMB B. MA	133.430	-584.970	14.222	0.237	0.083	11.665			
16180	13202	1:BEBAN MATI	-69.951	-302.519	-0.550	0.007	0.003	-8.998			
		2:BEBAN HIDL	-23.626	-191.009	-0.229	0.002	0.001	-4.639			
		3:BEBAN GEM	-17.293	-55.580	-18.720	0.258	0.107	0.125			
		4:KOMBINASI	-121.742	-668.638	-1.027	0.012	0.006	-18.220			
		5:KOMB B. MA	-102.284	-475.484	-20.344	0.279	0.117	-11.650			
	13203	1:BEBAN MATI	69.951	533.171	0.550	-0.007	0.003	4.081			
		2:BEBAN HIDL	23.626	191.009	0.229	-0.002	0.001	2.391			
		3:BEBAN GEM	17.293	55.580	18.720	-0.258	0.113	-0.779			
		4:KOMBINASI	121.742	945.419	1.027	-0.012	0.006	8.722			
		5:KOMB B. MA	102.284	706.135	20.344	-0.279	0.123	4.697			
16181	13203	1:BEBAN MATI	-100.310	-975.806	-0.512	-0.018	0.004	-2.600			
		2:BEBAN HIDL	-32.795	-492.704	-0.262	-0.010	0.002	-1.643			
		3:BEBAN GEM	13.863	11.566	-29.842	0.218	0.179	0.873			
		4:KOMBINASI	-172.845	-1.96E 3	-1.033	-0.038	0.008	-5.749			
		5:KOMB B. MA	-105.432	-1.26E 3	-32.003	0.205	0.193	-2.670			
	12794	1:BEBAN MATI	100.310	1.21E 3	0.512	0.018	0.002	-10.240			
		2:BEBAN HIDL	32.795	492.704	0.262	0.010	0.001	-4.155			
		3:BEBAN GEM	-13.863	-11.566	29.842	-0.218	0.172	-0.737			
		4:KOMBINASI	172.845	2.24E 3	1.033	0.038	0.004	-18.936			
		5:KOMB B. MA	105.432	1.49E 3	32.003	-0.205	0.184	-13.507			
16182	13207	1:BEBAN MATI	-249.713	-2.44E 3	73.584	1.560	-0.151	-18.023			
		2:BEBAN HIDL	-96.448	-1.03E 3	25.797	0.936	-0.053	-7.439			
		3:BEBAN GEM	-1.17E 3	-2.24E 3	83.212	1.361	-0.192	22.257			
		4:KOMBINASI	-453.973	-4.58E 3	129.576	3.370	-0.267	-33.530			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.53E 3	-5.42E 3	176.435	3.550	-0.385	0.883			
	13113	1:BEAN MATI	249.713	2.59E 3	-73.584	-1.560	-0.210	5.685			
		2:BEAN HIDL	96.448	1.03E 3	-25.797	-0.936	-0.073	2.371			
		3:BEAN GEM	1.17E 3	2.24E 3	-83.212	-1.361	-0.216	-33.260			
		4:KOMBINASI	453.973	4.76E 3	-129.576	-3.370	-0.369	10.615			
		5:KOMB B. MA	1.53E 3	5.57E 3	-176.435	-3.550	-0.480	-27.816			
16183	13211	1:BEAN MATI	-248.318	-3.96E 3	17.968	1.333	-0.094	12.150			
		2:BEAN HIDL	-91.421	-1.64E 3	7.180	0.812	-0.037	5.192			
		3:BEAN GEM	-292.271	-2.59E 3	50.454	2.644	-0.209	45.250			
		4:KOMBINASI	-444.254	-7.38E 3	33.051	2.898	-0.172	22.887			
		5:KOMB B. MA	-610.055	-7.67E 3	75.254	4.596	-0.335	62.778			
	97	1:BEAN MATI	248.318	4.26E 3	-17.968	-1.333	-0.082	-52.463			
		2:BEAN HIDL	91.421	1.64E 3	-7.180	-0.812	-0.034	-21.286			
		3:BEAN GEM	292.271	2.59E 3	-50.454	-2.644	-0.286	-70.653			
		4:KOMBINASI	444.254	7.74E 3	-33.051	-2.898	-0.153	-97.014			
		5:KOMB B. MA	610.055	7.97E 3	-75.254	-4.596	-0.403	-139.421			
16184	13212	1:BEAN MATI	-121.856	2.21E 3	-0.445	0.042	0.003	-6.665			
		2:BEAN HIDL	-48.613	527.663	-0.286	0.019	0.002	-2.655			
		3:BEAN GEM	-66.775	-767.211	-24.475	1.707	0.155	-9.316			
		4:KOMBINASI	-224.007	3.49E 3	-0.991	0.081	0.006	-12.247			
		5:KOMB B. MA	-221.137	1.72E 3	-26.315	1.846	0.167	-18.041			
	13213	1:BEAN MATI	121.856	-854.804	0.445	-0.042	0.002	24.670			
		2:BEAN HIDL	48.613	-527.663	0.286	-0.019	0.002	8.865			
		3:BEAN GEM	66.775	767.211	24.475	-1.707	0.133	0.288			
		4:KOMBINASI	224.007	-1.87E 3	0.991	-0.081	0.005	43.788			
		5:KOMB B. MA	221.137	-365.831	26.315	-1.846	0.143	30.291			
16185	13213	1:BEAN MATI	-141.506	-570.749	-0.716	0.018	0.004	-24.759			
		2:BEAN HIDL	-56.000	-418.974	-0.277	0.023	0.002	-8.904			
		3:BEAN GEM	-56.126	-770.262	-24.360	-1.664	0.145	0.041			
		4:KOMBINASI	-259.408	-1.36E 3	-1.302	0.059	0.008	-43.957			
		5:KOMB B. MA	-234.039	-1.63E 3	-26.460	-1.715	0.157	-30.058			
	13214	1:BEAN MATI	141.506	1.92E 3	0.716	-0.018	0.004	10.097			
		2:BEAN HIDL	56.000	418.974	0.277	-0.023	0.002	3.974			
		3:BEAN GEM	56.126	770.262	24.360	1.664	0.142	-9.106			
		4:KOMBINASI	259.408	2.98E 3	1.302	-0.059	0.008	18.474			
		5:KOMB B. MA	234.039	2.98E 3	26.460	1.715	0.154	2.920			
16186	13214	1:BEAN MATI	-205.262	-3.23E 3	-1.298	-0.030	0.008	-8.741			
		2:BEAN HIDL	-82.507	-1.23E 3	-0.347	0.020	0.002	-3.362			
		3:BEAN GEM	-85.723	-971.677	-30.106	-5.745	0.172	9.243			
		4:KOMBINASI	-378.326	-5.83E 3	-2.113	-0.005	0.012	-15.869			
		5:KOMB B. MA	-344.776	-4.98E 3	-33.117	-6.050	0.190	-1.053			
	97	1:BEAN MATI	205.262	4.58E 3	1.298	0.030	0.008	-37.194			
		2:BEAN HIDL	82.507	1.23E 3	0.347	-0.020	0.002	-11.058			
		3:BEAN GEM	85.723	971.677	30.106	5.745	0.182	-20.678			
		4:KOMBINASI	378.326	7.45E 3	2.113	0.005	0.013	-62.326			
		5:KOMB B. MA	344.776	6.33E 3	33.117	6.050	0.200	-65.541			
16187	13218	1:BEAN MATI	-241.782	3.4E 3	61.907	1.242	-0.144	10.706			
		2:BEAN HIDL	-92.671	1.4E 3	21.996	0.142	-0.052	4.742			



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Job No 1	Sheet No 128	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.01E 3	-2.29E 3	119.030	-2.817	-0.256	-44.003			
		4:KOMBINASI	-438.411	6.32E 3	109.483	1.718	-0.255	20.435			
		5:KOMB B. MA	-1.36E 3	1.83E 3	200.087	-1.630	-0.444	-32.652			
	13116	1:BEBAN MATI	241.782	-3.25E 3	-61.907	-1.242	-0.159	5.591			
		2:BEBAN HIDL	92.671	-1.4E 3	-21.996	-0.142	-0.056	2.112			
		3:BEBAN GEM	1.01E 3	2.29E 3	-119.030	2.817	-0.327	32.769			
		4:KOMBINASI	438.411	-6.13E 3	-109.483	-1.718	-0.281	10.089			
		5:KOMB B. MA	1.36E 3	-1.68E 3	-200.087	1.630	-0.537	41.266			
16188	13222	1:BEBAN MATI	-221.866	1.88E 3	14.143	0.624	-0.078	-18.612			
		2:BEBAN HIDL	-86.232	742.681	5.054	0.064	-0.028	-7.547			
		3:BEBAN GEM	-333.547	-2.04E 3	45.185	-0.950	-0.202	-21.662			
		4:KOMBINASI	-404.209	3.45E 3	25.059	0.852	-0.138	-34.410			
		5:KOMB B. MA	-623.829	187.442	64.620	-0.334	-0.307	-45.885			
	12793	1:BEBAN MATI	221.866	-1.58E 3	-14.143	-0.624	-0.061	35.608			
		2:BEBAN HIDL	86.232	-742.681	-5.054	-0.064	-0.022	14.831			
		3:BEBAN GEM	333.547	2.04E 3	-45.185	0.950	-0.241	1.661			
		4:KOMBINASI	404.209	-3.09E 3	-25.059	-0.852	-0.107	66.459			
		5:KOMB B. MA	623.829	112.885	-64.620	0.334	-0.327	46.251			
16189	13223	1:BEBAN MATI	-64.609	678.671	-0.281	0.039	0.002	-2.061			
		2:BEBAN HIDL	-23.853	277.302	-0.127	-0.005	0.001	-1.356			
		3:BEBAN GEM	-78.712	-49.456	-12.388	-0.252	0.074	-0.644			
		4:KOMBINASI	-115.696	1.26E 3	-0.540	0.039	0.004	-4.643			
		5:KOMB B. MA	-161.568	793.123	-13.364	-0.228	0.080	-3.551			
	13224	1:BEBAN MATI	64.609	-448.019	0.281	-0.039	0.001	8.690			
		2:BEBAN HIDL	23.853	-277.302	0.127	0.005	0.001	4.619			
		3:BEBAN GEM	78.712	49.456	12.388	0.252	0.072	0.062			
		4:KOMBINASI	115.696	-981.307	0.540	-0.039	0.003	17.819			
		5:KOMB B. MA	161.568	-562.472	13.364	0.228	0.077	11.527			
16190	13224	1:BEBAN MATI	-74.017	-305.630	-0.325	-0.044	0.002	-8.737			
		2:BEBAN HIDL	-26.963	-197.312	-0.134	0.006	0.001	-4.645			
		3:BEBAN GEM	-105.755	-55.691	-15.318	0.259	0.086	0.036			
		4:KOMBINASI	-131.962	-682.455	-0.604	-0.044	0.004	-17.916			
		5:KOMB B. MA	-201.237	-482.492	-16.489	0.231	0.093	-11.486			
	13225	1:BEBAN MATI	74.017	536.281	0.325	0.044	0.002	3.783			
		2:BEBAN HIDL	26.963	197.312	0.134	-0.006	0.001	2.323			
		3:BEBAN GEM	105.755	55.691	15.318	-0.259	0.094	-0.691			
		4:KOMBINASI	131.962	959.236	0.604	0.044	0.003	8.256			
		5:KOMB B. MA	201.237	713.143	16.489	-0.231	0.101	4.451			
16191	13225	1:BEBAN MATI	-104.776	-970.396	-0.477	-0.073	0.003	-2.304			
		2:BEBAN HIDL	-37.559	-497.779	-0.192	0.009	0.001	-1.558			
		3:BEBAN GEM	-174.736	11.156	-21.691	0.220	0.127	0.791			
		4:KOMBINASI	-185.826	-1.96E 3	-0.880	-0.073	0.005	-5.256			
		5:KOMB B. MA	-310.785	-1.26E 3	-23.368	0.164	0.136	-2.407			
	12793	1:BEBAN MATI	104.776	1.2E 3	0.477	0.073	0.003	-10.473			
		2:BEBAN HIDL	37.559	497.779	0.192	-0.009	0.001	-4.300			
		3:BEBAN GEM	174.736	-11.156	21.691	-0.220	0.129	-0.660			
		4:KOMBINASI	185.826	2.24E 3	0.880	0.073	0.005	-19.448			
		5:KOMB B. MA	310.785	1.49E 3	23.368	-0.164	0.139	-13.746			



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Job No 1	Sheet No 129	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16192	13229	1:BEBAN MATI	-240.711	-2.32E 3	68.609	1.663	-0.143	-18.978			
		2:BEBAN HIDL	-95.781	-956.321	25.160	0.976	-0.052	-8.155			
		3:BEBAN GEM	-595.069	-2.11E 3	190.310	1.455	-0.421	19.710			
		4:KOMBINASI	-442.104	-4.31E 3	122.586	3.557	-0.255	-35.821			
		5:KOMB B. MA	-923.002	-5.11E 3	283.530	3.777	-0.616	-3.175			
	13119	1:BEBAN MATI	240.711	2.47E 3	-68.609	-1.663	-0.194	7.258			
		2:BEBAN HIDL	95.781	956.321	-25.160	-0.976	-0.071	3.465			
		3:BEBAN GEM	595.069	2.11E 3	-190.310	-1.455	-0.513	-30.064			
		4:KOMBINASI	442.104	4.49E 3	-122.586	-3.557	-0.346	14.254			
		5:KOMB B. MA	923.002	5.26E 3	-283.530	-3.777	-0.774	-22.230			
16193	13233	1:BEBAN MATI	-262.689	-3.78E 3	15.378	1.288	-0.080	9.991			
		2:BEBAN HIDL	-106.330	-1.59E 3	6.531	0.870	-0.034	3.687			
		3:BEBAN GEM	38.930	-2.47E 3	67.786	2.809	-0.310	41.309			
		4:KOMBINASI	-485.355	-7.07E 3	28.904	2.938	-0.150	17.889			
		5:KOMB B. MA	-285.610	-7.33E 3	90.472	4.759	-0.426	55.578			
	73	1:BEBAN MATI	262.689	4.08E 3	-15.378	-1.288	-0.070	-48.493			
		2:BEBAN HIDL	106.330	1.59E 3	-6.531	-0.870	-0.030	-19.246			
		3:BEBAN GEM	-38.930	2.47E 3	-67.786	-2.809	-0.355	-65.568			
		4:KOMBINASI	485.355	7.43E 3	-28.904	-2.938	-0.133	-88.986			
		5:KOMB B. MA	285.610	7.63E 3	-90.472	-4.759	-0.461	-128.888			
16314	13235	1:BEBAN MATI	-168.083	2.93E 3	3.618	0.568	-0.021	-2.491			
		2:BEBAN HIDL	-55.705	717.478	1.300	0.130	-0.008	-0.876			
		3:BEBAN GEM	-102.072	-3.09E 3	24.051	-0.506	-0.142	-36.094			
		4:KOMBINASI	-290.827	4.66E 3	6.421	0.890	-0.038	-4.390			
		5:KOMB B. MA	-308.682	114.984	29.652	0.115	-0.175	-40.915			
	12797	1:BEBAN MATI	168.083	-1.58E 3	-3.618	-0.568	-0.021	28.973			
		2:BEBAN HIDL	55.705	-717.478	-1.300	-0.130	-0.008	9.319			
		3:BEBAN GEM	102.072	3.09E 3	-24.051	0.506	-0.141	-0.231			
		4:KOMBINASI	290.827	-3.04E 3	-6.421	-0.890	-0.038	49.678			
		5:KOMB B. MA	308.682	1.24E 3	-29.652	-0.115	-0.174	34.322			
16317	13236	1:BEBAN MATI	-95.282	-286.676	-0.564	-0.007	0.005	0.736			
		2:BEBAN HIDL	-36.608	-251.904	-0.135	0.002	0.001	-0.284			
		3:BEBAN GEM	-579.543	16.558	-10.091	-0.259	0.080	0.387			
		4:KOMBINASI	-172.910	-747.057	-0.893	-0.004	0.009	0.430			
		5:KOMB B. MA	-725.766	-420.432	-11.240	-0.277	0.090	0.973			
	12797	1:BEBAN MATI	95.282	632.654	0.564	0.007	0.005	-8.850			
		2:BEBAN HIDL	36.608	251.904	0.135	-0.002	0.001	-4.163			
		3:BEBAN GEM	579.543	-16.558	10.091	0.259	0.098	-0.095			
		4:KOMBINASI	172.910	1.16E 3	0.893	0.004	0.007	-17.281			
		5:KOMB B. MA	725.766	766.409	11.240	0.277	0.108	-11.448			
16320	13238	1:BEBAN MATI	-311.056	-3.56E 3	-13.804	-0.450	0.083	-7.853			
		2:BEBAN HIDL	-90.805	-1.24E 3	-4.772	0.024	0.029	-1.376			
		3:BEBAN GEM	-304.266	-3.4E 3	-2.106	1.477	-0.040	36.574			
		4:KOMBINASI	-518.554	-6.26E 3	-24.201	-0.501	0.145	-11.625			
		5:KOMB B. MA	-685.018	-7.88E 3	-18.879	1.115	0.057	29.724			
	121	1:BEBAN MATI	311.056	4.91E 3	13.804	0.450	0.080	-41.999			
		2:BEBAN HIDL	90.805	1.24E 3	4.772	-0.024	0.027	-13.203			
		3:BEBAN GEM	304.266	3.4E 3	2.106	-1.477	0.065	-76.614			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	518.554	7.88E 3	24.201	0.501	0.140	-71.523			
		5:KOMB B. MA	685.018	9.23E 3	18.879	-1.115	0.165	-130.365			
16323	13239	1:BEBAN MATI	58.700	-555.826	-8.278	-1.923	0.077	-0.682			
		2:BEBAN HIDL	19.527	-334.889	-2.134	-1.125	0.020	1.259			
		3:BEBAN GEM	-2.43E 3	-1.64E 3	-52.353	-0.597	0.403	-0.545			
		4:KOMBINASI	101.684	-1.2E 3	-13.348	-4.108	0.124	1.196			
		5:KOMB B. MA	-2.48E 3	-2.47E 3	-64.528	-3.225	0.512	-0.499			
	121	1:BEBAN MATI	-58.700	2.58E 3	8.278	1.923	0.069	-27.007			
		2:BEBAN HIDL	-19.527	334.889	2.134	1.125	0.018	-7.170			
		3:BEBAN GEM	2.43E 3	1.64E 3	52.353	0.597	0.521	-28.324			
		4:KOMBINASI	-101.684	3.63E 3	13.348	4.108	0.112	-43.882			
		5:KOMB B. MA	2.48E 3	4.5E 3	64.528	3.225	0.627	-61.049			
16327	13241	1:BEBAN MATI	-123.515	621.590	-0.056	-0.007	0.001	2.139			
		2:BEBAN HIDL	-44.092	146.446	0.027	-0.005	0.000	0.361			
		3:BEBAN GEM	464.139	-239.683	14.178	0.269	-0.085	-3.658			
		4:KOMBINASI	-218.765	980.221	-0.025	-0.017	0.001	3.144			
		5:KOMB B. MA	337.376	457.790	14.846	0.272	-0.088	-1.485			
	12847	1:BEBAN MATI	123.515	-390.938	0.056	0.007	-0.000	3.819			
		2:BEBAN HIDL	44.092	-146.446	-0.027	0.005	-0.000	1.362			
		3:BEBAN GEM	-464.139	239.683	-14.178	-0.269	-0.082	0.837			
		4:KOMBINASI	218.765	-703.440	0.025	0.017	-0.001	6.762			
		5:KOMB B. MA	-337.376	-227.139	-14.846	-0.272	-0.087	5.515			
16330	13243	1:BEBAN MATI	-124.910	3.18E 3	-0.024	-0.118	0.000	-2.108			
		2:BEBAN HIDL	-36.575	768.980	0.063	-0.048	-0.000	-0.663			
		3:BEBAN GEM	1.44E 3	-2.9E 3	28.254	-1.232	-0.174	-34.553			
		4:KOMBINASI	-208.412	5.05E 3	0.072	-0.218	-0.000	-3.591			
		5:KOMB B. MA	1.37E 3	596.272	29.680	-1.441	-0.183	-38.787			
	12801	1:BEBAN MATI	124.910	-1.83E 3	0.024	0.118	-0.000	31.613			
		2:BEBAN HIDL	36.575	-768.980	-0.063	0.048	-0.000	9.713			
		3:BEBAN GEM	-1.44E 3	2.9E 3	-28.254	1.232	-0.158	0.397			
		4:KOMBINASI	208.412	-3.43E 3	-0.072	0.218	-0.001	53.476			
		5:KOMB B. MA	-1.37E 3	754.121	-29.680	1.441	-0.167	37.858			
16332	13244	1:BEBAN MATI	-121.040	432.821	0.337	-0.164	-0.002	-6.549			
		2:BEBAN HIDL	-43.840	103.712	0.137	-0.020	-0.001	-2.805			
		3:BEBAN GEM	-721.472	-117.612	-7.883	-0.891	0.055	-1.585			
		4:KOMBINASI	-215.392	685.324	0.624	-0.229	-0.004	-12.347			
		5:KOMB B. MA	-904.890	371.556	-7.858	-1.112	0.055	-9.897			
	12847	1:BEBAN MATI	121.040	-144.507	-0.337	0.164	-0.003	10.796			
		2:BEBAN HIDL	43.840	-103.712	-0.137	0.020	-0.001	4.330			
		3:BEBAN GEM	721.472	117.612	7.883	0.891	0.061	-0.145			
		4:KOMBINASI	215.392	-339.347	-0.624	0.229	-0.005	19.883			
		5:KOMB B. MA	904.890	-83.241	7.858	1.112	0.060	13.242			
16335	13245	1:BEBAN MATI	-146.585	-1.03E 3	0.041	0.189	-0.001	-1.506			
		2:BEBAN HIDL	-54.312	-514.134	0.064	0.017	-0.001	-0.966			
		3:BEBAN GEM	-853.770	62.422	-6.183	0.737	0.040	1.778			
		4:KOMBINASI	-262.801	-2.06E 3	0.152	0.254	-0.002	-3.353			
		5:KOMB B. MA	-1.08E 3	-1.28E 3	-6.413	0.973	0.041	-0.219			
	12801	1:BEBAN MATI	146.585	1.32E 3	-0.041	-0.189	0.000	-15.817			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	54.312	514.134	-0.064	-0.017	-0.000	-6.597			
		3:BEBAN GEM	853.770	-62.422	6.183	-0.737	0.051	-0.859			
		4:KOMBINASI	262.801	2.41E 3	-0.152	-0.254	-0.000	-29.535			
		5:KOMB B. MA	1.08E 3	1.56E 3	6.413	-0.973	0.053	-20.678			
16339	13247	1:BEBAN MATI	-85.463	-570.788	0.729	0.099	-0.006	-0.750			
		2:BEBAN HIDL	-33.182	-349.238	0.384	0.055	-0.003	0.665			
		3:BEBAN GEM	415.101	-0.049	17.970	-0.210	-0.110	3.674			
		4:KOMBINASI	-155.647	-1.24E 3	1.490	0.207	-0.011	0.163			
		5:KOMB B. MA	330.483	-780.382	19.828	-0.089	-0.122	3.506			
	187	1:BEBAN MATI	85.463	801.440	-0.729	-0.099	-0.003	-7.324			
		2:BEBAN HIDL	33.182	349.238	-0.384	-0.055	-0.002	-4.774			
		3:BEBAN GEM	-415.101	0.049	-17.970	0.210	-0.102	-3.674			
		4:KOMBINASI	155.647	1.52E 3	-1.490	-0.207	-0.006	-16.428			
		5:KOMB B. MA	-330.483	1.01E 3	-19.828	0.089	-0.111	-14.047			
16342	13249	1:BEBAN MATI	-142.675	-4.21E 3	1.143	0.193	-0.008	-4.696			
		2:BEBAN HIDL	-20.775	-1.48E 3	0.482	0.073	-0.003	0.733			
		3:BEBAN GEM	1.33E 3	-3.55E 3	17.693	2.294	-0.108	33.985			
		4:KOMBINASI	-204.450	-7.41E 3	2.143	0.349	-0.014	-4.462			
		5:KOMB B. MA	1.24E 3	-8.82E 3	20.010	2.645	-0.123	31.428			
	122	1:BEBAN MATI	142.675	5.56E 3	-1.143	-0.193	-0.006	-52.805			
		2:BEBAN HIDL	20.775	1.48E 3	-0.482	-0.073	-0.002	-18.098			
		3:BEBAN GEM	-1.33E 3	3.55E 3	-17.693	-2.294	-0.100	-75.746			
		4:KOMBINASI	204.450	9.03E 3	-2.143	-0.349	-0.011	-92.323			
		5:KOMB B. MA	-1.24E 3	10.2E 3	-20.010	-2.645	-0.113	-143.197			
16344	13250	1:BEBAN MATI	-308.139	2.66E 3	2.124	0.096	-0.017	-19.319			
		2:BEBAN HIDL	-114.844	657.903	0.577	0.147	-0.004	-7.264			
		3:BEBAN GEM	-1.5E 3	-522.260	-25.376	2.969	0.194	-8.027			
		4:KOMBINASI	-553.517	4.25E 3	3.472	0.350	-0.028	-34.806			
		5:KOMB B. MA	-1.95E 3	2.51E 3	-24.174	3.302	0.184	-32.106			
	187	1:BEBAN MATI	308.139	-972.957	-2.124	-0.096	-0.014	46.047			
		2:BEBAN HIDL	114.844	-657.903	-0.577	-0.147	-0.004	16.942			
		3:BEBAN GEM	1.5E 3	522.260	25.376	-2.969	0.179	0.344			
		4:KOMBINASI	553.517	-2.22E 3	-3.472	-0.350	-0.023	82.363			
		5:KOMB B. MA	1.95E 3	-819.326	24.174	-3.302	0.172	56.574			
16347	13251	1:BEBAN MATI	-235.299	-4.73E 3	0.521	1.271	-0.005	-9.531			
		2:BEBAN HIDL	-86.844	-1.81E 3	1.779	0.820	-0.014	-3.345			
		3:BEBAN GEM	-1.28E 3	-828.398	-8.984	-6.930	0.050	8.765			
		4:KOMBINASI	-421.309	-8.57E 3	3.472	2.837	-0.029	-16.788			
		5:KOMB B. MA	-1.63E 3	-6.68E 3	-7.845	-5.514	0.039	-2.334			
	122	1:BEBAN MATI	235.299	6.41E 3	-0.521	-1.271	-0.003	-72.409			
		2:BEBAN HIDL	86.844	1.81E 3	-1.779	-0.820	-0.012	-23.315			
		3:BEBAN GEM	1.28E 3	828.398	8.984	6.930	0.082	-20.951			
		4:KOMBINASI	421.309	10.6E 3	-3.472	-2.837	-0.023	-124.194			
		5:KOMB B. MA	1.63E 3	8.37E 3	7.845	5.514	0.076	-108.396			
16351	13253	1:BEBAN MATI	-113.484	580.719	-0.000	0.000	-0.000	2.228			
		2:BEBAN HIDL	-40.983	130.793	-0.000	0.000	0.000	0.417			
		3:BEBAN GEM	1.25E 3	-243.322	-3.500	0.279	0.021	-3.617			
		4:KOMBINASI	-201.753	906.132	-0.000	0.000	0.000	3.340			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	1.18E 3	403.708	-3.675	0.293	0.022	-1.320			
	12846	1:BEBAN MATI	113.484	-350.068	0.000	-0.000	0.000	3.249			
		2:BEBAN HIDL	40.983	-130.793	0.000	-0.000	0.000	1.123			
		3:BEBAN GEM	-1.25E 3	243.322	3.500	-0.279	0.020	0.754			
		4:KOMBINASI	201.753	-629.351	0.000	-0.000	0.000	5.695			
		5:KOMB B. MA	-1.18E 3	-173.056	3.675	-0.293	0.021	4.714			
16354	13255	1:BEBAN MATI	-124.910	3.18E 3	0.024	0.118	-0.000	-2.108			
		2:BEBAN HIDL	-36.575	768.980	-0.063	0.048	0.000	-0.663			
		3:BEBAN GEM	1.48E 3	-2.88E 3	-40.443	-1.243	0.244	-34.454			
		4:KOMBINASI	-208.412	5.05E 3	-0.072	0.218	0.000	-3.591			
		5:KOMB B. MA	1.4E 3	621.303	-42.479	-1.158	0.256	-38.682			
	12806	1:BEBAN MATI	124.910	-1.83E 3	-0.024	-0.118	0.000	31.613			
		2:BEBAN HIDL	36.575	-768.980	0.063	-0.048	0.000	9.713			
		3:BEBAN GEM	-1.48E 3	2.88E 3	40.443	1.243	0.232	0.578			
		4:KOMBINASI	208.412	-3.43E 3	0.072	-0.218	0.001	53.476			
		5:KOMB B. MA	-1.4E 3	729.090	42.479	1.158	0.244	38.048			
16356	13256	1:BEBAN MATI	-138.206	570.896	0.098	-0.146	-0.000	-2.670			
		2:BEBAN HIDL	-49.301	152.437	0.010	-0.014	-0.000	-1.437			
		3:BEBAN GEM	-951.410	-109.816	-1.521	-0.876	0.002	-1.646			
		4:KOMBINASI	-244.729	928.974	0.133	-0.198	-0.001	-5.502			
		5:KOMB B. MA	-1.17E 3	547.051	-1.494	-1.074	0.001	-5.260			
	12846	1:BEBAN MATI	138.206	-282.582	-0.098	0.146	-0.001	8.947			
		2:BEBAN HIDL	49.301	-152.437	-0.010	0.014	-0.000	3.679			
		3:BEBAN GEM	951.410	109.816	1.521	0.876	0.021	0.030			
		4:KOMBINASI	244.729	-582.997	-0.133	0.198	-0.001	16.623			
		5:KOMB B. MA	1.17E 3	-258.737	1.494	1.074	0.021	11.186			
16359	13257	1:BEBAN MATI	-144.309	-980.871	-0.194	0.162	0.001	-0.878			
		2:BEBAN HIDL	-53.283	-495.212	-0.016	0.006	0.000	-0.745			
		3:BEBAN GEM	-921.728	53.340	7.129	0.738	-0.054	1.809			
		4:KOMBINASI	-258.423	-1.97E 3	-0.259	0.203	0.001	-2.245			
		5:KOMB B. MA	-1.14E 3	-1.22E 3	7.281	0.940	-0.056	0.574			
	12806	1:BEBAN MATI	144.309	1.27E 3	0.194	-0.162	0.002	-15.671			
		2:BEBAN HIDL	53.283	495.212	0.016	-0.006	0.000	-6.540			
		3:BEBAN GEM	921.728	-53.340	-7.129	-0.738	-0.051	-1.024			
		4:KOMBINASI	258.423	2.32E 3	0.259	-0.203	0.002	-29.269			
		5:KOMB B. MA	1.14E 3	1.51E 3	-7.281	-0.940	-0.051	-20.670			
16363	13259	1:BEBAN MATI	-92.392	-541.599	-0.000	-0.000	0.000	-0.442			
		2:BEBAN HIDL	-37.523	-336.572	-0.000	-0.000	0.000	0.823			
		3:BEBAN GEM	805.629	8.471	-2.871	-0.208	0.016	3.549			
		4:KOMBINASI	-170.906	-1.19E 3	-0.000	-0.000	0.000	0.786			
		5:KOMB B. MA	731.005	-734.647	-3.015	-0.218	0.017	3.779			
	12837	1:BEBAN MATI	92.392	772.251	0.000	0.000	0.000	-7.289			
		2:BEBAN HIDL	37.523	336.572	0.000	0.000	0.000	-4.784			
		3:BEBAN GEM	-805.629	-8.471	2.871	0.208	0.018	-3.450			
		4:KOMBINASI	170.906	1.47E 3	0.000	0.000	0.000	-16.400			
		5:KOMB B. MA	-731.005	965.299	3.015	0.218	0.019	-13.781			
16366	13261	1:BEBAN MATI	-142.675	-4.21E 3	-1.143	-0.193	0.008	-4.696			
		2:BEBAN HIDL	-20.775	-1.48E 3	-0.482	-0.073	0.003	0.733			



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Job No 1	Sheet No 133	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.37E 3	-3.55E 3	-37.551	2.294	0.223	33.781			
		4:KOMBINASI	-204.450	-7.41E 3	-2.143	-0.349	0.014	-4.462			
		5:KOMB B. MA	1.29E 3	-8.82E 3	-40.861	2.172	0.243	31.214			
	123	1:BEBAN MATI	142.675	5.56E 3	1.143	0.193	0.006	-52.805			
		2:BEBAN HIDL	20.775	1.48E 3	0.482	0.073	0.002	-18.098			
		3:BEBAN GEM	-1.37E 3	3.55E 3	37.551	-2.294	0.219	-75.564			
		4:KOMBINASI	204.450	9.03E 3	2.143	0.349	0.011	-92.323			
		5:KOMB B. MA	-1.29E 3	10.2E 3	40.861	-2.172	0.237	-143.006			
16368	13262	1:BEBAN MATI	-203.276	2.87E 3	0.747	0.552	-0.004	-10.211			
		2:BEBAN HIDL	-75.691	732.920	-0.121	0.436	0.002	-3.762			
		3:BEBAN GEM	-1.45E 3	-568.650	-12.378	2.804	0.083	-8.986			
		4:KOMBINASI	-365.036	4.62E 3	0.704	1.360	-0.002	-18.272			
		5:KOMB B. MA	-1.77E 3	2.71E 3	-12.322	3.758	0.085	-21.903			
	12837	1:BEBAN MATI	203.276	-1.18E 3	-0.747	-0.552	-0.007	40.020			
		2:BEBAN HIDL	75.691	-732.920	0.121	-0.436	-0.000	14.543			
		3:BEBAN GEM	1.45E 3	568.650	12.378	-2.804	0.099	0.621			
		4:KOMBINASI	365.036	-2.59E 3	-0.704	-1.360	-0.009	71.293			
		5:KOMB B. MA	1.77E 3	-1.03E 3	12.322	-3.758	0.097	49.398			
16371	13263	1:BEBAN MATI	-199.970	-4.42E 3	1.232	1.344	-0.010	-8.028			
		2:BEBAN HIDL	-73.765	-1.69E 3	2.121	0.853	-0.017	-2.732			
		3:BEBAN GEM	-1.37E 3	-851.020	22.225	-6.938	-0.174	8.848			
		4:KOMBINASI	-357.988	-8.01E 3	4.872	2.977	-0.038	-14.006			
		5:KOMB B. MA	-1.68E 3	-6.33E 3	25.841	-5.429	-0.202	-0.377			
	123	1:BEBAN MATI	199.970	6.11E 3	-1.232	-1.344	-0.008	-69.410			
		2:BEBAN HIDL	73.765	1.69E 3	-2.121	-0.853	-0.015	-22.160			
		3:BEBAN GEM	1.37E 3	851.020	-22.225	6.938	-0.153	-21.367			
		4:KOMBINASI	357.988	10E 3	-4.872	-2.977	-0.033	-118.747			
		5:KOMB B. MA	1.68E 3	8.02E 3	-25.841	5.429	-0.178	-105.141			
16374	13264	1:BEBAN MATI	-428.733	-1.91E 3	-14.033	-7.685	0.101	-8.361			
		2:BEBAN HIDL	-174.225	-852.116	-5.922	-4.115	0.044	-3.945			
		3:BEBAN GEM	1.54E 3	-2.93E 3	24.705	1.462	-0.050	47.170			
		4:KOMBINASI	-793.240	-3.65E 3	-26.316	-15.806	0.191	-16.345			
		5:KOMB B. MA	1.08E 3	-5.5E 3	8.354	-8.618	0.075	38.800			
	128	1:BEBAN MATI	428.733	2.36E 3	14.033	7.685	0.105	-23.042			
		2:BEBAN HIDL	174.225	852.116	5.922	4.115	0.044	-8.590			
		3:BEBAN GEM	-1.54E 3	2.93E 3	-24.705	-1.462	-0.313	-90.333			
		4:KOMBINASI	793.240	4.2E 3	26.316	15.806	0.196	-41.395			
		5:KOMB B. MA	-1.08E 3	5.95E 3	-8.354	8.618	-0.198	-123.045			
16375	13266	1:BEBAN MATI	-206.971	898.286	2.884	3.466	-0.021	-11.859			
		2:BEBAN HIDL	-91.784	284.465	1.047	1.967	-0.008	-5.314			
		3:BEBAN GEM	-862.916	-851.595	9.613	2.098	-0.073	-14.720			
		4:KOMBINASI	-395.220	1.53E 3	5.136	7.307	-0.038	-22.733			
		5:KOMB B. MA	-1.17E 3	174.791	13.605	6.849	-0.102	-30.503			
	13272	1:BEBAN MATI	206.971	-447.795	-2.884	-3.466	-0.021	21.759			
		2:BEBAN HIDL	91.784	-284.465	-1.047	-1.967	-0.008	9.498			
		3:BEBAN GEM	862.916	851.595	-9.613	-2.098	-0.069	2.193			
		4:KOMBINASI	395.220	-992.498	-5.136	-7.307	-0.038	41.308			
		5:KOMB B. MA	1.17E 3	275.700	-13.605	-6.849	-0.098	29.761			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 134	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16377	13267	1:BEBAN MATI	-229.973	-465.095	-2.629	-3.403	0.018	-21.008			
		2:BEBAN HIDL	-94.009	-288.784	-1.214	-1.736	0.009	-9.544			
		3:BEBAN GEM	957.995	-2.71E 3	10.786	2.069	-0.047	7.508			
		4:KOMBINASI	-426.382	-1.02E 3	-5.098	-6.861	0.036	-40.479			
		5:KOMB B. MA	719.516	-3.48E 3	7.967	-2.272	-0.025	-18.850			
	13264	1:BEBAN MATI	229.973	915.586	2.629	3.403	0.020	10.853			
		2:BEBAN HIDL	94.009	288.784	1.214	1.736	0.009	5.296			
		3:BEBAN GEM	-957.995	2.71E 3	-10.786	-2.069	-0.112	-47.333			
		4:KOMBINASI	426.382	1.56E 3	5.098	6.861	0.039	21.496			
		5:KOMB B. MA	-719.516	3.93E 3	-7.967	2.272	-0.092	-35.670			
16379	13269	1:BEBAN MATI	-166.384	1.29E 3	3.391	2.532	-0.027	-5.292			
		2:BEBAN HIDL	-71.472	471.047	1.144	1.681	-0.009	-2.555			
		3:BEBAN GEM	340.693	-2.72E 3	21.417	1.164	-0.157	-32.705			
		4:KOMBINASI	-314.015	2.3E 3	5.900	5.728	-0.046	-10.439			
		5:KOMB B. MA	148.461	-1.28E 3	26.565	4.763	-0.197	-41.165			
		13267	1:BEBAN MATI	166.384	-839.143	-3.391	-2.532	-0.023	20.949		
			2:BEBAN HIDL	71.472	-471.047	-1.144	-1.681	-0.008	9.484		
			3:BEBAN GEM	-340.693	2.72E 3	-21.417	-1.164	-0.158	-7.237		
			4:KOMBINASI	314.015	-1.76E 3	-5.900	-5.728	-0.041	40.314		
			5:KOMB B. MA	-148.461	1.73E 3	-26.565	-4.763	-0.194	19.041		
16382	13272	1:BEBAN MATI	-158.929	-853.562	-3.188	-2.311	0.022	-21.768			
		2:BEBAN HIDL	-72.229	-468.546	-1.693	-1.326	0.011	-9.510			
		3:BEBAN GEM	-939.008	-823.522	18.701	-1.198	-0.141	-2.099			
		4:KOMBINASI	-306.282	-1.77E 3	-6.535	-4.895	0.045	-41.338			
		5:KOMB B. MA	-1.19E 3	-2E 3	15.432	-4.365	-0.120	-29.678			
		13276	1:BEBAN MATI	158.929	1.3E 3	3.188	2.311	0.025	5.899		
			2:BEBAN HIDL	72.229	468.546	1.693	1.326	0.013	2.618		
			3:BEBAN GEM	939.008	823.522	-18.701	1.198	-0.134	-10.015		
			4:KOMBINASI	306.282	2.31E 3	6.535	4.895	0.051	11.267		
			5:KOMB B. MA	1.19E 3	2.45E 3	-15.432	4.365	-0.107	-3.047		
16387	13276	1:BEBAN MATI	-249.949	-2.13E 3	-23.146	-6.050	0.172	-3.391			
		2:BEBAN HIDL	-114.291	-933.773	-10.912	-3.322	0.081	-1.226			
		3:BEBAN GEM	-942.862	-856.837	38.440	-5.716	-0.297	11.152			
		4:KOMBINASI	-482.805	-4.05E 3	-45.235	-12.575	0.335	-6.032			
		5:KOMB B. MA	-1.31E 3	-3.59E 3	10.668	-14.045	-0.092	7.583			
		129	1:BEBAN MATI	249.949	2.58E 3	23.146	6.050	0.169	-31.200		
			2:BEBAN HIDL	114.291	933.773	10.912	3.322	0.080	-12.509		
			3:BEBAN GEM	942.862	856.837	-38.440	5.716	-0.268	-23.756		
			4:KOMBINASI	482.805	4.59E 3	45.235	12.575	0.330	-57.455		
			5:KOMB B. MA	1.31E 3	4.04E 3	-10.668	14.045	-0.065	-63.650		
16392	13279	1:BEBAN MATI	-603.498	-3.96E 3	0.560	0.160	-0.006	-18.526			
		2:BEBAN HIDL	-282.716	-1.99E 3	0.157	0.060	-0.002	-9.607			
		3:BEBAN GEM	996.885	-2.93E 3	9.900	1.921	-0.060	43.935			
		4:KOMBINASI	-1.18E 3	-7.92E 3	0.924	0.288	-0.009	-37.602			
		5:KOMB B. MA	273.602	-8.22E 3	11.049	2.213	-0.069	21.842			
		129	1:BEBAN MATI	603.498	4.41E 3	-0.560	-0.160	-0.003	-42.978		
2:BEBAN HIDL	282.716		1.99E 3	-0.157	-0.060	-0.001	-19.597				
		3:BEBAN GEM	-996.885	2.93E 3	-9.900	-1.921	-0.086	-87.024			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

135

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	1.18E 3	8.46E 3	-0.924	-0.288	-0.004	-82.928			
		5:KOMB B. MA	-273.602	8.67E 3	-11.049	-2.213	-0.093	-146.111			
16394	13280	1:BEBAN MATI	-351.229	-1.15E 3	0.346	0.090	-0.002	-40.430			
		2:BEBAN HIDL	-167.552	-666.075	0.080	0.030	-0.000	-20.417			
		3:BEBAN GEM	781.516	-2.42E 3	11.353	0.481	-0.078	7.789			
		4:KOMBINASI	-689.557	-2.44E 3	0.542	0.156	-0.002	-81.183			
		5:KOMB B. MA	368.832	-4.08E 3	12.314	0.613	-0.083	-44.502			
	13279	1:BEBAN MATI	351.229	1.6E 3	-0.346	-0.090	-0.003	20.271			
		2:BEBAN HIDL	167.552	666.075	-0.080	-0.030	-0.001	10.619			
		3:BEBAN GEM	-781.516	2.42E 3	-11.353	-0.481	-0.089	-43.318			
		4:KOMBINASI	689.557	2.98E 3	-0.542	-0.156	-0.006	41.316			
		5:KOMB B. MA	-368.832	4.53E 3	-12.314	-0.613	-0.098	-18.841			
16396	13281	1:BEBAN MATI	-254.772	2.04E 3	-0.104	-0.016	0.002	-13.355			
		2:BEBAN HIDL	-128.913	916.832	-0.076	-0.016	0.001	-6.788			
		3:BEBAN GEM	787.462	-2.43E 3	12.414	-0.532	-0.090	-29.284			
		4:KOMBINASI	-511.988	3.92E 3	-0.246	-0.045	0.004	-26.886			
		5:KOMB B. MA	494.715	36.007	12.886	-0.584	-0.092	-48.176			
	13280	1:BEBAN MATI	254.772	-1.59E 3	0.104	0.016	-0.000	40.077			
		2:BEBAN HIDL	128.913	-916.832	0.076	0.016	0.000	20.274			
		3:BEBAN GEM	-787.462	2.43E 3	-12.414	0.532	-0.093	-6.523			
		4:KOMBINASI	511.988	-3.38E 3	0.246	0.045	0.000	80.532			
		5:KOMB B. MA	-494.715	414.485	-12.886	0.584	-0.098	45.392			
16399	13283	1:BEBAN MATI	-102.569	1.08E 3	3.968	2.660	-0.031	-4.764			
		2:BEBAN HIDL	-45.576	363.290	1.851	1.531	-0.015	-2.124			
		3:BEBAN GEM	-1.43E 3	-672.977	-2.419	1.927	0.001	-10.131			
		4:KOMBINASI	-196.004	1.87E 3	7.723	5.642	-0.060	-9.116			
		5:KOMB B. MA	-1.63E 3	586.406	2.538	5.602	-0.039	-16.677			
	12786	1:BEBAN MATI	102.569	-624.566	-3.968	-2.660	-0.028	17.265			
		2:BEBAN HIDL	45.576	-363.290	-1.851	-1.531	-0.013	7.468			
		3:BEBAN GEM	1.43E 3	672.977	2.419	-1.927	0.035	0.232			
		4:KOMBINASI	196.004	-1.33E 3	-7.723	-5.642	-0.053	32.668			
		5:KOMB B. MA	1.63E 3	-135.915	-2.538	-5.602	0.001	21.990			
16408	13290	1:BEBAN MATI	-212.420	-1.88E 3	-23.803	-6.179	0.178	-2.232			
		2:BEBAN HIDL	-96.583	-819.189	-11.058	-3.418	0.083	-0.710			
		3:BEBAN GEM	-976.203	-682.603	26.874	-5.858	-0.207	10.593			
		4:KOMBINASI	-409.437	-3.56E 3	-46.256	-12.884	0.345	-3.815			
		5:KOMB B. MA	-1.3E 3	-3.09E 3	-2.219	-14.381	0.010	8.465			
	130	1:BEBAN MATI	212.420	2.33E 3	23.803	6.179	0.172	-28.706			
		2:BEBAN HIDL	96.583	819.189	11.058	3.418	0.080	-11.340			
		3:BEBAN GEM	976.203	682.603	-26.874	5.858	-0.189	-20.634			
		4:KOMBINASI	409.437	4.1E 3	46.256	12.884	0.335	-52.591			
		5:KOMB B. MA	1.3E 3	3.54E 3	2.219	14.381	0.022	-57.176			
16413	13293	1:BEBAN MATI	-603.498	-3.96E 3	-0.560	-0.160	0.006	-18.526			
		2:BEBAN HIDL	-282.716	-1.99E 3	-0.157	-0.060	0.002	-9.607			
		3:BEBAN GEM	989.791	-2.9E 3	-18.112	1.961	0.122	43.935			
		4:KOMBINASI	-1.18E 3	-7.92E 3	-0.924	-0.288	0.009	-37.602			
		5:KOMB B. MA	266.153	-8.19E 3	-19.672	1.863	0.135	21.842			
	130	1:BEBAN MATI	603.498	4.41E 3	0.560	0.160	0.003	-42.978			



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Job No 1	Sheet No 136	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	282.716	1.99E 3	0.157	0.060	0.001	-19.597			
		3:BEBAN GEM	-989.791	2.9E 3	18.112	-1.961	0.144	-86.552			
		4:KOMBINASI	1.18E 3	8.46E 3	0.924	0.288	0.004	-82.928			
		5:KOMB B. MA	-266.153	8.64E 3	19.672	-1.863	0.155	-145.616			
16415	13294	1:BEBAN MATI	-351.229	-1.15E 3	-0.346	-0.090	0.002	-40.430			
		2:BEBAN HIDL	-167.552	-666.075	-0.080	-0.030	0.000	-20.417			
		3:BEBAN GEM	795.751	-2.41E 3	-16.979	0.506	0.115	7.890			
		4:KOMBINASI	-689.557	-2.44E 3	-0.542	-0.156	0.002	-81.183			
		5:KOMB B. MA	383.779	-4.07E 3	-18.222	0.423	0.123	-44.395			
	13293	1:BEBAN MATI	351.229	1.6E 3	0.346	0.090	0.003	20.271			
		2:BEBAN HIDL	167.552	666.075	0.080	0.030	0.001	10.619			
		3:BEBAN GEM	-795.751	2.41E 3	16.979	-0.506	0.135	-43.317			
		4:KOMBINASI	689.557	2.98E 3	0.542	0.156	0.006	41.316			
		5:KOMB B. MA	-383.779	4.52E 3	18.222	-0.423	0.145	-18.840			
16417	13295	1:BEBAN MATI	-254.772	2.04E 3	0.104	0.016	-0.002	-13.355			
		2:BEBAN HIDL	-128.913	916.832	0.076	0.016	-0.001	-6.788			
		3:BEBAN GEM	821.583	-2.44E 3	-16.574	-0.524	0.120	-29.182			
		4:KOMBINASI	-511.988	3.92E 3	0.246	0.045	-0.004	-26.886			
		5:KOMB B. MA	530.542	34.539	-17.253	-0.525	0.124	-48.069			
	13294	1:BEBAN MATI	254.772	-1.59E 3	-0.104	-0.016	0.000	40.077			
		2:BEBAN HIDL	128.913	-916.832	-0.076	-0.016	-0.000	20.274			
		3:BEBAN GEM	-821.583	2.44E 3	16.574	0.524	0.124	-6.646			
		4:KOMBINASI	511.988	-3.38E 3	-0.246	-0.045	-0.000	80.532			
		5:KOMB B. MA	-530.542	415.953	17.253	0.525	0.130	45.263			
16420	13297	1:BEBAN MATI	-158.929	1.3E 3	3.188	2.311	-0.025	-5.899			
		2:BEBAN HIDL	-72.229	468.546	1.693	1.326	-0.013	-2.618			
		3:BEBAN GEM	-643.322	-809.347	-19.324	1.886	0.142	-10.796			
		4:KOMBINASI	-306.282	2.31E 3	6.535	4.895	-0.051	-11.267			
		5:KOMB B. MA	-877.754	735.366	-16.086	5.087	0.116	-18.805			
	13302	1:BEBAN MATI	158.929	-853.562	-3.188	-2.311	-0.022	21.768			
		2:BEBAN HIDL	72.229	-468.546	-1.693	-1.326	-0.011	9.510			
		3:BEBAN GEM	643.322	809.347	19.324	-1.886	0.143	-1.109			
		4:KOMBINASI	306.282	-1.77E 3	-6.535	-4.895	-0.045	41.338			
		5:KOMB B. MA	877.754	-284.876	16.086	-5.087	0.121	26.309			
16424	13300	1:BEBAN MATI	-249.854	3.15E 3	1.030	0.707	-0.007	-11.845			
		2:BEBAN HIDL	-92.987	840.776	-0.027	0.523	0.001	-4.424			
		3:BEBAN GEM	-1.51E 3	-562.659	14.893	2.787	-0.109	-8.990			
		4:KOMBINASI	-448.604	5.12E 3	1.194	1.686	-0.007	-21.292			
		5:KOMB B. MA	-1.89E 3	3.06E 3	16.652	3.947	-0.120	-23.939			
	199	1:BEBAN MATI	249.854	-1.46E 3	-1.030	-0.707	-0.008	45.728			
		2:BEBAN HIDL	92.987	-840.776	0.027	-0.523	-0.001	16.792			
		3:BEBAN GEM	1.51E 3	562.659	-14.893	-2.787	-0.110	0.714			
		4:KOMBINASI	448.604	-3.1E 3	-1.194	-1.686	-0.011	81.741			
		5:KOMB B. MA	1.89E 3	-1.37E 3	-16.652	-3.947	-0.125	56.553			
16426	13302	1:BEBAN MATI	-206.971	-447.794	-2.884	-3.466	0.021	-21.759			
		2:BEBAN HIDL	-91.784	-284.465	-1.047	-1.967	0.008	-9.498			
		3:BEBAN GEM	-302.034	-789.828	-10.202	-1.510	0.089	1.280			
		4:KOMBINASI	-395.219	-992.497	-5.136	-7.307	0.038	-41.308			



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Job No 1	Sheet No 137	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-579.177	-1.45E 3	-14.224	-6.232	0.119	-26.115			
	13306	1:BEBAN MATI	206.971	898.286	2.884	3.466	0.021	11.859			
		2:BEBAN HIDL	91.784	284.465	1.047	1.967	0.008	5.314			
		3:BEBAN GEM	302.034	789.828	10.202	1.510	0.061	-12.898			
		4:KOMBINASI	395.219	1.53E 3	5.136	7.307	0.038	22.733			
		5:KOMB B. MA	579.177	1.9E 3	14.224	6.232	0.090	1.504			
16431	13306	1:BEBAN MATI	-396.487	-1.89E 3	-13.943	-7.756	0.104	-9.336			
		2:BEBAN HIDL	-171.768	-838.208	-5.772	-4.247	0.043	-3.896			
		3:BEBAN GEM	53.773	-846.016	10.203	-6.272	-0.115	14.110			
		4:KOMBINASI	-750.613	-3.61E 3	-25.968	-16.102	0.193	-17.436			
		5:KOMB B. MA	-443.086	-3.28E 3	-6.694	-16.889	0.009	3.142			
	131	1:BEBAN MATI	396.487	2.34E 3	13.943	7.756	0.101	-21.781			
		2:BEBAN HIDL	171.768	838.208	5.772	4.247	0.042	-8.434			
		3:BEBAN GEM	-53.773	846.016	-10.203	6.272	-0.035	-26.555			
		4:KOMBINASI	750.613	4.15E 3	25.968	16.102	0.188	-39.632			
		5:KOMB B. MA	443.086	3.73E 3	6.694	16.889	0.089	-54.724			
16435	13309	1:BEBAN MATI	-480.914	-4.42E 3	-5.624	2.467	0.038	-17.598			
		2:BEBAN HIDL	-178.686	-1.72E 3	-1.204	1.502	0.007	-6.438			
		3:BEBAN GEM	-2.06E 3	-791.045	31.019	-7.554	-0.218	8.644			
		4:KOMBINASI	-862.994	-8.05E 3	-8.674	5.363	0.058	-31.418			
		5:KOMB B. MA	-2.75E 3	-6.28E 3	26.224	-4.564	-0.186	-12.384			
	124	1:BEBAN MATI	480.914	6.11E 3	5.624	-2.467	0.044	-59.854			
		2:BEBAN HIDL	178.686	1.72E 3	1.204	-1.502	0.010	-18.827			
		3:BEBAN GEM	2.06E 3	791.045	-31.019	7.554	-0.238	-20.280			
		4:KOMBINASI	862.994	10.1E 3	8.674	-5.363	0.070	-101.949			
		5:KOMB B. MA	2.75E 3	7.97E 3	-26.224	4.564	-0.200	-92.445			
16437	13310	1:BEBAN MATI	-428.733	-1.91E 3	14.033	7.685	-0.101	-8.361			
		2:BEBAN HIDL	-174.225	-852.116	5.922	4.115	-0.044	-3.945			
		3:BEBAN GEM	1.29E 3	-2.83E 3	-34.163	2.891	0.177	46.629			
		4:KOMBINASI	-793.240	-3.65E 3	26.316	15.806	-0.191	-16.345			
		5:KOMB B. MA	820.627	-5.4E 3	-18.284	13.190	0.058	38.233			
	131	1:BEBAN MATI	428.733	2.36E 3	-14.033	-7.685	-0.105	-23.042			
		2:BEBAN HIDL	174.225	852.116	-5.922	-4.115	-0.044	-8.590			
		3:BEBAN GEM	-1.29E 3	2.83E 3	34.163	-2.891	0.326	-88.325			
		4:KOMBINASI	793.240	4.2E 3	-26.316	-15.806	-0.196	-41.394			
		5:KOMB B. MA	-820.627	5.85E 3	18.284	-13.190	0.211	-120.938			
16439	13311	1:BEBAN MATI	-229.973	-465.095	2.629	3.403	-0.018	-21.008			
		2:BEBAN HIDL	-94.009	-288.784	1.214	1.736	-0.009	-9.544			
		3:BEBAN GEM	630.609	-2.63E 3	-15.322	-0.018	0.082	7.139			
		4:KOMBINASI	-426.382	-1.02E 3	5.098	6.861	-0.036	-40.479			
		5:KOMB B. MA	375.761	-3.4E 3	-12.730	4.426	0.062	-19.238			
	13310	1:BEBAN MATI	229.973	915.586	-2.629	-3.403	-0.020	10.853			
		2:BEBAN HIDL	94.009	288.784	-1.214	-1.736	-0.009	5.296			
		3:BEBAN GEM	-630.609	2.63E 3	15.322	0.018	0.143	-45.860			
		4:KOMBINASI	426.382	1.56E 3	-5.098	-6.861	-0.039	21.496			
		5:KOMB B. MA	-375.761	3.85E 3	12.730	-4.426	0.125	-34.123			
16441	13312	1:BEBAN MATI	-166.384	1.29E 3	-3.391	-2.532	0.027	-5.292			
		2:BEBAN HIDL	-71.472	471.047	-1.144	-1.681	0.009	-2.555			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

138

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-102.124	-2.65E 3	-25.065	-0.846	0.193	-32.417			
		4:KOMBINASI	-314.015	2.3E 3	-5.900	-5.728	0.046	-10.439			
		5:KOMB B. MA	-316.497	-1.21E 3	-30.396	-4.428	0.234	-40.863			
	13311	1:BEBAN MATI	166.384	-839.143	3.391	2.532	0.023	20.949			
		2:BEBAN HIDL	71.472	-471.047	1.144	1.681	0.008	9.484			
		3:BEBAN GEM	102.124	2.65E 3	25.065	0.846	0.176	-6.527			
		4:KOMBINASI	314.015	-1.76E 3	5.900	5.728	0.041	40.314			
		5:KOMB B. MA	316.497	1.66E 3	30.396	4.428	0.213	19.786			
16444	13313	1:BEBAN MATI	-336.911	-2.04E 3	25.280	4.577	-0.172	-9.785			
		2:BEBAN HIDL	-91.297	-515.320	6.542	2.749	-0.044	-2.008			
		3:BEBAN GEM	621.756	-1.19E 3	26.754	-5.162	-0.279	14.322			
		4:KOMBINASI	-550.369	-3.27E 3	40.804	9.891	-0.277	-14.954			
		5:KOMB B. MA	261.155	-3.6E 3	57.297	0.807	-0.491	4.049			
	86	1:BEBAN MATI	336.911	3.39E 3	-25.280	-4.577	-0.125	-22.158			
		2:BEBAN HIDL	91.297	515.320	-6.542	-2.749	-0.033	-4.056			
		3:BEBAN GEM	-621.756	1.19E 3	-26.754	5.162	-0.036	-28.363			
		4:KOMBINASI	550.369	4.89E 3	-40.804	-9.891	-0.203	-33.080			
		5:KOMB B. MA	-261.155	4.95E 3	-57.297	-0.807	-0.183	-54.374			
16445	13315	1:BEBAN MATI	-554.264	3.54E 3	-7.026	-2.933	0.022	7.525			
		2:BEBAN HIDL	-138.645	716.363	-2.209	-2.326	0.006	1.719			
		3:BEBAN GEM	-1.32E 3	-2.8E 3	-15.793	-1.857	0.104	-66.980			
		4:KOMBINASI	-886.948	5.39E 3	-11.966	-7.242	0.036	11.780			
		5:KOMB B. MA	-2.02E 3	1.03E 3	-24.934	-6.279	0.135	-61.773			
	13322	1:BEBAN MATI	554.264	-2.69E 3	7.026	2.933	0.030	15.385			
		2:BEBAN HIDL	138.645	-716.363	2.209	2.326	0.010	3.550			
		3:BEBAN GEM	1.32E 3	2.8E 3	15.793	1.857	0.012	46.413			
		4:KOMBINASI	886.948	-4.38E 3	11.966	7.242	0.052	24.142			
		5:KOMB B. MA	2.02E 3	-186.469	24.934	6.279	0.049	66.248			
16446	13316	1:BEBAN MATI	-149.844	-108.652	6.051	1.713	-0.037	-20.268			
		2:BEBAN HIDL	-41.092	-175.333	1.508	1.367	-0.010	-4.824			
		3:BEBAN GEM	567.316	-1.05E 3	7.544	-2.036	-0.063	2.496			
		4:KOMBINASI	-245.560	-410.915	9.674	4.243	-0.060	-32.040			
		5:KOMB B. MA	421.183	-1.32E 3	14.877	0.395	-0.109	-20.541			
	13313	1:BEBAN MATI	149.844	1.46E 3	-6.051	-1.713	-0.034	11.043			
		2:BEBAN HIDL	41.092	175.333	-1.508	-1.367	-0.008	2.761			
		3:BEBAN GEM	-567.316	1.05E 3	-7.544	2.036	-0.026	-14.885			
		4:KOMBINASI	245.560	2.03E 3	-9.674	-4.243	-0.054	17.670			
		5:KOMB B. MA	-421.183	2.67E 3	-14.877	-0.395	-0.066	-2.930			
16447	13318	1:BEBAN MATI	-114.111	1.95E 3	-5.686	-1.265	0.035	-5.248			
		2:BEBAN HIDL	-35.925	288.660	-2.616	-0.481	0.017	-1.493			
		3:BEBAN GEM	399.683	-1.06E 3	-8.552	1.153	0.046	-10.129			
		4:KOMBINASI	-194.413	2.8E 3	-11.009	-2.287	0.068	-8.687			
		5:KOMB B. MA	284.001	1.01E 3	-16.236	-0.343	0.093	-16.779			
	13316	1:BEBAN MATI	114.111	-599.800	5.686	1.265	0.032	20.252			
		2:BEBAN HIDL	35.925	-288.660	2.616	0.481	0.014	4.890			
		3:BEBAN GEM	-399.683	1.06E 3	8.552	-1.153	0.055	-2.308			
		4:KOMBINASI	194.413	-1.18E 3	11.009	2.287	0.061	32.127			
		5:KOMB B. MA	-284.001	336.751	16.236	0.343	0.098	20.762			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16448	13320	1:BEBAN MATI	-495.071	3.72E 3	0.790	0.193	-0.002	8.873			
		2:BEBAN HIDL	-217.349	1.6E 3	0.105	-0.054	-0.001	4.158			
		3:BEBAN GEM	-717.425	-2.68E 3	5.825	-1.640	-0.025	-64.053			
		4:KOMBINASI	-941.844	7.02E 3	1.116	0.146	-0.004	17.300			
		5:KOMB B. MA	-1.38E 3	1.86E 3	6.969	-1.561	-0.029	-55.888			
	13325	1:BEBAN MATI	495.071	-3.5E 3	-0.790	-0.193	-0.003	17.661			
		2:BEBAN HIDL	217.349	-1.6E 3	-0.105	0.054	-0.000	7.574			
		3:BEBAN GEM	717.425	2.68E 3	-5.825	1.640	-0.018	44.348			
		4:KOMBINASI	941.844	-6.75E 3	-1.116	-0.146	-0.004	33.312			
		5:KOMB B. MA	1.38E 3	-1.64E 3	-6.969	1.561	-0.022	68.771			
16449	13322	1:BEBAN MATI	-436.919	2.28E 3	-5.342	-1.696	0.016	-16.328			
		2:BEBAN HIDL	-108.404	445.560	-1.793	-1.519	0.005	-3.931			
		3:BEBAN GEM	-1.14E 3	-2.71E 3	-11.172	-2.093	0.063	-46.342			
		4:KOMBINASI	-697.749	3.45E 3	-9.280	-4.466	0.027	-25.883			
		5:KOMB B. MA	-1.7E 3	-297.113	-18.149	-4.805	0.085	-67.346			
	13327	1:BEBAN MATI	436.919	-1.44E 3	5.342	1.696	0.023	30.006			
		2:BEBAN HIDL	108.404	-445.560	1.793	1.519	0.008	7.208			
		3:BEBAN GEM	1.14E 3	2.71E 3	11.172	2.093	0.019	26.406			
		4:KOMBINASI	697.749	-2.44E 3	9.280	4.466	0.041	47.539			
		5:KOMB B. MA	1.7E 3	1.14E 3	18.149	4.805	0.048	62.057			
16450	13325	1:BEBAN MATI	-388.857	2.45E 3	0.738	0.152	-0.003	-18.794			
		2:BEBAN HIDL	-168.028	1.02E 3	0.158	-0.036	-0.001	-7.961			
		3:BEBAN GEM	-578.205	-2.47E 3	5.778	-1.164	-0.017	-43.304			
		4:KOMBINASI	-735.473	4.57E 3	1.139	0.124	-0.004	-35.290			
		5:KOMB B. MA	-1.1E 3	467.430	6.900	-1.092	-0.021	-69.040			
	13330	1:BEBAN MATI	388.857	-2.23E 3	-0.738	-0.152	-0.003	36.011			
		2:BEBAN HIDL	168.028	-1.02E 3	-0.158	0.036	-0.000	15.453			
		3:BEBAN GEM	578.205	2.47E 3	-5.778	1.164	-0.025	25.111			
		4:KOMBINASI	735.473	-4.3E 3	-1.139	-0.124	-0.004	67.938			
		5:KOMB B. MA	1.1E 3	-242.184	-6.900	1.092	-0.030	71.649			
16451	13327	1:BEBAN MATI	-367.698	1.05E 3	-3.353	-0.833	0.007	-30.650			
		2:BEBAN HIDL	-92.135	190.455	-1.072	-0.842	0.002	-7.499			
		3:BEBAN GEM	-1.03E 3	-2.71E 3	-5.685	-1.995	0.038	-26.223			
		4:KOMBINASI	-588.653	1.57E 3	-5.739	-2.346	0.011	-48.778			
		5:KOMB B. MA	-1.51E 3	-1.68E 3	-9.965	-3.433	0.048	-62.683			
	141	1:BEBAN MATI	367.698	-210.869	3.353	0.833	0.018	35.305			
		2:BEBAN HIDL	92.135	-190.455	1.072	0.842	0.006	8.900			
		3:BEBAN GEM	1.03E 3	2.71E 3	5.685	1.995	0.004	6.277			
		4:KOMBINASI	588.653	-557.770	5.739	2.346	0.032	56.605			
		5:KOMB B. MA	1.51E 3	2.52E 3	9.965	3.433	0.026	47.235			
16452	13330	1:BEBAN MATI	-336.006	1.32E 3	0.384	0.083	-0.002	-37.149			
		2:BEBAN HIDL	-141.549	528.148	0.300	-0.026	-0.001	-15.877			
		3:BEBAN GEM	-514.384	-2.41E 3	9.659	-0.746	-0.023	-23.875			
		4:KOMBINASI	-629.686	2.42E 3	0.940	0.058	-0.004	-69.981			
		5:KOMB B. MA	-961.038	-896.388	10.705	-0.716	-0.027	-71.744			
	12824	1:BEBAN MATI	336.006	-1.09E 3	-0.384	-0.083	-0.001	45.994			
		2:BEBAN HIDL	141.549	-528.148	-0.300	0.026	-0.001	19.761			
		3:BEBAN GEM	514.384	2.41E 3	-9.659	0.746	-0.048	6.164			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	629.686	-2.15E 3	-0.940	-0.058	-0.003	86.811			
		5:KOMB B. MA	961.038	1.12E 3	-10.705	0.716	-0.052	64.322			
16453	13331	1:BEBAN MATI	2.451	-646.072	0.944	-0.150	-0.004	-7.348			
		2:BEBAN HIDL	-0.410	-391.093	0.082	-0.007	-0.000	-3.536			
		3:BEBAN GEM	49.328	4.434	2.211	0.303	-0.009	2.067			
		4:KOMBINASI	2.286	-1.4E 3	1.264	-0.191	-0.005	-14.475			
		5:KOMB B. MA	54.000	-876.072	3.314	0.164	-0.013	-7.299			
	141	1:BEBAN MATI	-2.451	876.723	-0.944	0.150	-0.007	-1.612			
		2:BEBAN HIDL	0.410	391.093	-0.082	0.007	-0.001	-1.066			
		3:BEBAN GEM	-49.328	-4.434	-2.211	-0.303	-0.017	-2.015			
		4:KOMBINASI	-2.286	1.68E 3	-1.264	0.191	-0.010	-3.640			
		5:KOMB B. MA	-54.000	1.11E 3	-3.314	-0.164	-0.026	-4.367			
16454	13332	1:BEBAN MATI	-29.241	-107.478	0.382	-0.097	-0.003	-11.465			
		2:BEBAN HIDL	-10.456	-133.362	-0.066	-0.021	-0.000	-5.946			
		3:BEBAN GEM	54.352	-98.692	0.267	0.262	-0.005	0.698			
		4:KOMBINASI	-51.820	-342.352	0.353	-0.150	-0.004	-23.272			
		5:KOMB B. MA	21.555	-291.121	0.623	0.165	-0.009	-14.300			
	13331	1:BEBAN MATI	29.241	338.129	-0.382	0.097	-0.001	8.843			
		2:BEBAN HIDL	10.456	133.362	0.066	0.021	0.001	4.377			
		3:BEBAN GEM	-54.352	98.692	-0.267	-0.262	0.002	-1.859			
		4:KOMBINASI	51.820	619.134	-0.353	0.150	0.000	17.615			
		5:KOMB B. MA	-21.555	521.773	-0.623	-0.165	0.001	9.517			
16455	13333	1:BEBAN MATI	-47.807	823.149	0.150	0.058	-0.002	-2.921			
		2:BEBAN HIDL	-16.086	332.551	-0.171	-0.004	0.001	-1.946			
		3:BEBAN GEM	95.850	-95.444	-0.958	-0.219	0.003	-0.553			
		4:KOMBINASI	-83.106	1.52E 3	-0.094	0.064	-0.001	-6.619			
		5:KOMB B. MA	43.183	922.463	-0.959	-0.174	0.002	-4.670			
	13332	1:BEBAN MATI	47.807	-592.497	-0.150	-0.058	0.000	11.251			
		2:BEBAN HIDL	16.086	-332.551	0.171	0.004	0.001	5.859			
		3:BEBAN GEM	-95.850	95.444	0.958	0.219	0.008	-0.570			
		4:KOMBINASI	83.106	-1.24E 3	0.094	-0.064	0.002	22.876			
		5:KOMB B. MA	-43.183	-691.811	0.959	0.174	0.010	14.168			
16456	13335	1:BEBAN MATI	-325.314	-2.07E 3	-0.209	1.840	-0.007	-24.914			
		2:BEBAN HIDL	-91.272	-599.716	0.039	1.222	-0.004	-6.000			
		3:BEBAN GEM	-849.203	-2.69E 3	-4.880	0.741	0.029	14.205			
		4:KOMBINASI	-536.412	-3.45E 3	-0.188	4.163	-0.014	-39.497			
		5:KOMB B. MA	-1.27E 3	-5.26E 3	-5.310	3.351	0.022	-13.599			
	13340	1:BEBAN MATI	325.314	2.92E 3	0.209	-1.840	0.008	6.556			
		2:BEBAN HIDL	91.272	599.716	-0.039	-1.222	0.003	1.589			
		3:BEBAN GEM	849.203	2.69E 3	4.880	-0.741	0.007	-33.983			
		4:KOMBINASI	536.412	4.46E 3	0.188	-4.163	0.015	10.409			
		5:KOMB B. MA	1.27E 3	6.1E 3	5.310	-3.351	0.017	-28.173			
16457	13338	1:BEBAN MATI	-295.238	-3.01E 3	-0.238	-0.150	0.001	-29.638			
		2:BEBAN HIDL	-116.834	-1.31E 3	0.245	0.041	-0.001	-12.993			
		3:BEBAN GEM	-484.472	-2.44E 3	-1.259	1.140	0.015	13.559			
		4:KOMBINASI	-541.219	-5.71E 3	0.106	-0.115	-0.000	-56.354			
		5:KOMB B. MA	-874.034	-6.36E 3	-1.412	1.072	0.016	-23.196			
	13343	1:BEBAN MATI	295.238	3.24E 3	0.238	0.150	0.001	6.662			



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Job No 1	Sheet No 141	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	116.834	1.31E 3	-0.245	-0.041	-0.001	3.353			
		3:BEBAN GEM	484.472	2.44E 3	1.259	-1.140	-0.006	-31.507			
		4:KOMBINASI	541.219	5.98E 3	-0.106	0.115	-0.000	13.359			
		5:KOMB B. MA	874.034	6.59E 3	1.412	-1.072	-0.006	-24.409			
16458	13340	1:BEBAN MATI	-342.121	-3.25E 3	0.620	2.705	-0.016	-5.483			
		2:BEBAN HIDL	-104.826	-830.325	0.385	1.866	-0.008	-1.188			
		3:BEBAN GEM	-746.293	-2.77E 3	-5.189	1.907	0.031	34.897			
		4:KOMBINASI	-578.267	-5.23E 3	1.360	6.231	-0.032	-8.480			
		5:KOMB B. MA	-1.19E 3	-6.65E 3	-4.598	5.827	0.011	30.446			
	13345	1:BEBAN MATI	342.121	4.09E 3	-0.620	-2.705	0.012	-21.531			
		2:BEBAN HIDL	104.826	830.325	-0.385	-1.866	0.005	-4.919			
		3:BEBAN GEM	746.293	2.77E 3	5.189	-1.907	0.007	-55.242			
		4:KOMBINASI	578.267	6.24E 3	-1.360	-6.231	0.022	-33.708			
		5:KOMB B. MA	1.19E 3	7.5E 3	4.598	-5.827	0.022	-82.487			
16459	13343	1:BEBAN MATI	-290.302	-4.14E 3	-0.415	-0.148	0.002	-5.230			
		2:BEBAN HIDL	-111.947	-1.83E 3	0.281	0.054	-0.001	-2.747			
		3:BEBAN GEM	-457.981	-2.66E 3	-4.705	1.594	0.029	32.487			
		4:KOMBINASI	-527.478	-7.89E 3	-0.048	-0.091	0.002	-10.671			
		5:KOMB B. MA	-838.351	-8.03E 3	-5.186	1.558	0.033	27.233			
	13348	1:BEBAN MATI	290.302	4.36E 3	0.415	0.148	0.001	-26.037			
		2:BEBAN HIDL	111.947	1.83E 3	-0.281	-0.054	-0.001	-10.704			
		3:BEBAN GEM	457.981	2.66E 3	4.705	-1.594	0.005	-52.085			
		4:KOMBINASI	527.478	8.16E 3	0.048	0.091	-0.001	-48.372			
		5:KOMB B. MA	838.351	8.26E 3	5.186	-1.558	0.006	-87.149			
16460	13345	1:BEBAN MATI	-425.235	-4.32E 3	40.091	3.575	-0.116	22.875			
		2:BEBAN HIDL	-148.099	-959.783	19.088	2.278	-0.055	5.438			
		3:BEBAN GEM	-586.090	-2.99E 3	-27.377	3.896	0.075	56.169			
		4:KOMBINASI	-747.241	-6.72E 3	78.651	7.935	-0.227	36.151			
		5:KOMB B. MA	-1.13E 3	-8.04E 3	22.799	9.033	-0.070	85.116			
	89	1:BEBAN MATI	425.235	5.16E 3	-40.091	-3.575	-0.179	-57.753			
		2:BEBAN HIDL	148.099	959.783	-19.088	-2.278	-0.085	-12.497			
		3:BEBAN GEM	586.090	2.99E 3	27.377	-3.896	0.126	-78.179			
		4:KOMBINASI	747.241	7.73E 3	-78.651	-7.935	-0.351	-89.300			
		5:KOMB B. MA	1.13E 3	8.88E 3	-22.799	-9.033	-0.098	-147.340			
16461	13348	1:BEBAN MATI	-295.221	-5.21E 3	-1.478	-0.131	0.006	27.457			
		2:BEBAN HIDL	-111.659	-2.27E 3	0.837	0.060	-0.002	11.317			
		3:BEBAN GEM	-390.283	-3.2E 3	-11.697	2.416	0.052	52.688			
		4:KOMBINASI	-532.920	-9.88E 3	-0.434	-0.062	0.004	51.055			
		5:KOMB B. MA	-772.013	-9.93E 3	-13.257	2.442	0.060	89.570			
	117	1:BEBAN MATI	295.221	5.43E 3	1.478	0.131	0.005	-66.585			
		2:BEBAN HIDL	111.659	2.27E 3	-0.837	-0.060	-0.004	-28.004			
		3:BEBAN GEM	390.283	3.2E 3	11.697	-2.416	0.034	-76.226			
		4:KOMBINASI	532.920	10.1E 3	0.434	0.062	-0.001	-124.708			
		5:KOMB B. MA	772.013	10.2E 3	13.257	-2.442	0.037	-163.424			
16462	13349	1:BEBAN MATI	-340.457	-2.69E 3	-0.089	-0.190	0.004	-12.084			
		2:BEBAN HIDL	-166.746	-1.22E 3	-0.096	-0.093	0.002	-4.859			
		3:BEBAN GEM	316.325	-1.2E 3	15.489	-6.283	-0.099	13.372			
		4:KOMBINASI	-675.343	-5.19E 3	-0.261	-0.376	0.008	-22.276			



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Job No 1	Sheet No 142	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-108.364	-4.69E 3	16.116	-6.842	-0.098	-0.959			
	89	1:BEAN MATI	340.457	3.05E 3	0.089	0.190	-0.003	-21.740			
		2:BEAN HIDL	166.746	1.22E 3	0.096	0.093	-0.000	-9.554			
		3:BEAN GEM	-316.325	1.2E 3	-15.489	6.283	-0.084	-27.479			
		4:KOMBINASI	675.343	5.62E 3	0.261	0.376	-0.005	-41.374			
		5:KOMB B. MA	108.364	5.05E 3	-16.116	6.842	-0.091	-56.325			
16463	13350	1:BEAN MATI	-190.057	-618.322	-0.432	-0.094	0.002	-22.306			
		2:BEAN HIDL	-92.096	-393.457	-0.302	-0.057	0.002	-10.116			
		3:BEAN GEM	276.010	-965.769	7.602	-1.888	-0.039	1.846			
		4:KOMBINASI	-375.423	-1.37E 3	-1.002	-0.204	0.005	-42.952			
		5:KOMB B. MA	44.495	-1.87E 3	7.369	-2.111	-0.038	-26.437			
	13349	1:BEAN MATI	190.057	978.715	0.432	0.094	0.003	12.909			
		2:BEAN HIDL	92.096	393.457	0.302	0.057	0.002	5.485			
		3:BEAN GEM	-276.010	965.769	-7.602	1.888	-0.050	-13.211			
		4:KOMBINASI	375.423	1.8E 3	1.002	0.204	0.007	24.267			
		5:KOMB B. MA	-44.495	2.23E 3	-7.369	2.111	-0.049	2.328			
16464	13351	1:BEAN MATI	-138.150	1.51E 3	0.392	0.036	-0.003	-6.512			
		2:BEAN HIDL	-62.857	573.726	-0.019	-0.012	-0.000	-3.293			
		3:BEAN GEM	305.620	-915.268	2.555	1.657	-0.013	-9.382			
		4:KOMBINASI	-266.351	2.73E 3	0.440	0.024	-0.004	-13.083			
		5:KOMB B. MA	145.036	892.690	3.063	1.768	-0.017	-18.339			
	13350	1:BEAN MATI	138.150	-1.15E 3	-0.392	-0.036	-0.002	22.155			
		2:BEAN HIDL	62.857	-573.726	0.019	0.012	0.000	10.045			
		3:BEAN GEM	-305.620	915.268	-2.555	-1.657	-0.017	-1.389			
		4:KOMBINASI	266.351	-2.3E 3	-0.440	-0.024	-0.001	42.657			
		5:KOMB B. MA	-145.036	-532.296	-3.063	-1.768	-0.019	26.723			
16465	13352	1:BEAN MATI	-83.026	-1.28E 3	22.928	0.015	-0.140	-4.723			
		2:BEAN HIDL	-40.824	-319.038	10.983	0.212	-0.066	-0.954			
		3:BEAN GEM	-400.964	-1.65E 3	52.471	-5.354	-0.278	5.901			
		4:KOMBINASI	-164.949	-2.04E 3	45.087	0.357	-0.274	-7.194			
		5:KOMB B. MA	-528.532	-3.2E 3	84.613	-5.480	-0.472	0.900			
	82	1:BEAN MATI	83.026	2.63E 3	-22.928	-0.015	-0.129	-18.238			
		2:BEAN HIDL	40.824	319.038	-10.983	-0.212	-0.064	-2.800			
		3:BEAN GEM	400.964	1.65E 3	-52.471	5.354	-0.340	-25.274			
		4:KOMBINASI	164.949	3.66E 3	-45.087	-0.357	-0.257	-26.366			
		5:KOMB B. MA	528.532	4.55E 3	-84.613	5.480	-0.524	-46.456			
16466	13354	1:BEAN MATI	-375.137	2.57E 3	20.585	3.460	-0.047	-1.317			
		2:BEAN HIDL	-160.735	1.13E 3	7.641	1.657	-0.017	-0.307			
		3:BEAN GEM	-616.300	-2.55E 3	-34.788	-1.950	0.117	-57.102			
		4:KOMBINASI	-707.340	4.89E 3	36.927	6.802	-0.084	-2.070			
		5:KOMB B. MA	-1.12E 3	572.325	-11.359	2.406	0.066	-61.457			
	13355	1:BEAN MATI	375.137	-2.42E 3	-20.585	-3.460	-0.054	13.548			
		2:BEAN HIDL	160.735	-1.13E 3	-7.641	-1.657	-0.020	5.836			
		3:BEAN GEM	616.300	2.55E 3	34.788	1.950	0.053	44.615			
		4:KOMBINASI	707.340	-4.71E 3	-36.927	-6.802	-0.097	25.595			
		5:KOMB B. MA	1.12E 3	-422.161	11.359	-2.406	-0.011	63.895			
16467	13355	1:BEAN MATI	-92.297	506.915	1.520	-1.557	-0.005	-7.061			
		2:BEAN HIDL	-25.337	-21.368	1.033	-0.836	-0.005	-1.414			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 143	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-201.607	-1.47E 3	1.388	-1.972	0.011	-10.870			
		4:KOMBINASI	-151.296	574.108	3.477	-3.206	-0.014	-10.735			
		5:KOMB B. MA	-319.187	-1.05E 3	3.597	-4.130	0.003	-19.323			
	13352	1:BEBAN MATI	92.297	843.477	-1.520	1.557	-0.013	5.081			
		2:BEBAN HIDL	25.337	21.368	-1.033	0.836	-0.007	1.162			
		3:BEBAN GEM	201.607	1.47E 3	-1.388	1.972	-0.027	-6.408			
		4:KOMBINASI	151.296	1.05E 3	-3.477	3.206	-0.027	7.956			
		5:KOMB B. MA	319.187	2.4E 3	-3.597	4.130	-0.046	-0.950			
16468	13357	1:BEBAN MATI	-118.280	701.670	3.468	-1.467	-0.012	-5.457			
		2:BEBAN HIDL	-31.629	25.170	0.797	0.025	-0.002	-1.094			
		3:BEBAN GEM	-999.967	-7.2E 3	3.536	1.646	-0.046	-49.410			
		4:KOMBINASI	-192.543	882.277	5.437	-1.720	-0.018	-8.299			
		5:KOMB B. MA	-1.19E 3	-6.85E 3	7.660	0.276	-0.061	-57.994			
	13361	1:BEBAN MATI	118.280	423.658	-3.468	1.467	-0.022	6.821			
		2:BEBAN HIDL	31.629	-25.170	-0.797	-0.025	-0.006	1.341			
		3:BEBAN GEM	999.967	7.2E 3	-3.536	-1.646	0.011	-21.229			
		4:KOMBINASI	192.543	468.117	-5.437	1.720	-0.035	10.330			
		5:KOMB B. MA	1.19E 3	7.97E 3	-7.660	-0.276	-0.014	-14.665			
16469	13359	1:BEBAN MATI	-322.210	1.44E 3	42.812	2.608	-0.053	-23.395			
		2:BEBAN HIDL	-129.956	633.121	18.297	1.326	-0.024	-10.247			
		3:BEBAN GEM	-416.223	-2.35E 3	-166.238	-1.610	0.316	-31.415			
		4:KOMBINASI	-594.582	2.74E 3	80.650	5.251	-0.103	-44.469			
		5:KOMB B. MA	-837.218	-650.683	-120.759	1.713	0.264	-62.529			
	13539	1:BEBAN MATI	322.210	-1.36E 3	-42.812	-2.608	-0.051	26.832			
		2:BEBAN HIDL	129.956	-633.121	-18.297	-1.326	-0.021	11.799			
		3:BEBAN GEM	416.223	2.35E 3	166.238	1.610	0.091	25.648			
		4:KOMBINASI	594.582	-2.65E 3	-80.650	-5.251	-0.095	51.077			
		5:KOMB B. MA	837.218	725.765	120.759	-1.713	0.032	60.842			
16470	13361	1:BEBAN MATI	-72.524	-871.597	6.847	-3.916	-0.019	-5.973			
		2:BEBAN HIDL	-33.730	-264.883	-3.682	-1.203	0.018	-1.068			
		3:BEBAN GEM	-994.177	-7.67E 3	4.152	0.438	-0.159	22.093			
		4:KOMBINASI	-140.997	-1.47E 3	2.326	-6.624	0.005	-8.877			
		5:KOMB B. MA	-1.14E 3	-9.09E 3	8.997	-4.178	-0.176	16.583			
	138	1:BEBAN MATI	72.524	2E 3	-6.847	3.916	-0.048	-8.092			
		2:BEBAN HIDL	33.730	264.883	3.682	1.203	0.018	-1.529			
		3:BEBAN GEM	994.177	7.67E 3	-4.152	-0.438	0.119	-97.356			
		4:KOMBINASI	140.997	2.82E 3	-2.326	6.624	-0.028	-12.157			
		5:KOMB B. MA	1.14E 3	10.2E 3	-8.997	4.178	0.088	-111.233			
16471	13362	1:BEBAN MATI	-29.898	-292.472	-0.373	-0.028	0.002	-1.663			
		2:BEBAN HIDL	-19.668	-248.822	-0.076	-0.018	0.001	-1.078			
		3:BEBAN GEM	394.137	-170.236	-0.060	0.947	0.017	-1.215			
		4:KOMBINASI	-67.345	-749.081	-0.569	-0.062	0.004	-3.721			
		5:KOMB B. MA	372.146	-620.513	-0.482	0.956	0.021	-3.586			
	12819	1:BEBAN MATI	29.898	523.124	0.373	0.028	0.002	-3.136			
		2:BEBAN HIDL	19.668	248.822	0.076	0.018	0.000	-1.850			
		3:BEBAN GEM	-394.137	170.236	0.060	-0.947	-0.016	-0.788			
		4:KOMBINASI	67.345	1.03E 3	0.569	0.062	0.003	-6.723			
		5:KOMB B. MA	-372.146	851.165	0.482	-0.956	-0.015	-5.073			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 144	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16472	13363	1:BEBAN MATI	-25.082	543.362	0.610	0.090	-0.004	2.719			
		2:BEBAN HIDL	-26.649	136.242	0.030	0.034	0.000	0.070			
		3:BEBAN GEM	520.465	-283.370	-5.076	2.183	0.047	-4.848			
		4:KOMBINASI	-72.738	870.022	0.779	0.163	-0.005	3.375			
		5:KOMB B. MA	505.416	327.568	-4.702	2.403	0.045	-2.330			
	13362	1:BEBAN MATI	25.082	-312.711	-0.610	-0.090	-0.003	2.318			
		2:BEBAN HIDL	26.649	-136.242	-0.030	-0.034	-0.000	1.533			
		3:BEBAN GEM	-520.465	283.370	5.076	-2.183	0.013	1.514			
		4:KOMBINASI	72.738	-593.241	-0.779	-0.163	-0.005	5.235			
		5:KOMB B. MA	-505.416	-96.917	4.702	-2.403	0.010	4.827			
16473	13364	1:BEBAN MATI	-320.140	-2.58E 3	-2.997	-0.900	0.024	-11.526			
		2:BEBAN HIDL	-151.198	-1.16E 3	-0.536	-0.518	0.005	-4.566			
		3:BEBAN GEM	236.418	-1.12E 3	17.950	-6.541	-0.102	14.871			
		4:KOMBINASI	-626.085	-4.95E 3	-4.454	-1.909	0.037	-21.137			
		5:KOMB B. MA	-162.620	-4.44E 3	15.528	-8.079	-0.080	1.349			
	87	1:BEBAN MATI	320.140	2.94E 3	2.997	0.900	0.011	-20.912			
		2:BEBAN HIDL	151.198	1.16E 3	0.536	0.518	0.001	-9.070			
		3:BEBAN GEM	-236.418	1.12E 3	-17.950	6.541	-0.110	-28.014			
		4:KOMBINASI	626.085	5.38E 3	4.454	1.909	0.015	-39.607			
		5:KOMB B. MA	162.620	4.8E 3	-15.528	8.079	-0.103	-55.769			
16474	13366	1:BEBAN MATI	-149.569	2.36E 3	-0.436	-1.493	-0.000	-1.885			
		2:BEBAN HIDL	-41.975	422.833	-0.620	-0.747	0.003	-0.431			
		3:BEBAN GEM	494.251	-3.85E 3	-2.688	-2.333	0.006	-38.915			
		4:KOMBINASI	-246.642	3.51E 3	-1.516	-2.986	0.004	-2.952			
		5:KOMB B. MA	344.210	-1.43E 3	-3.631	-4.390	0.007	-43.005			
	181	1:BEBAN MATI	149.569	-1.01E 3	0.436	1.493	0.005	21.683			
		2:BEBAN HIDL	41.975	-422.833	0.620	0.747	0.005	5.407			
		3:BEBAN GEM	-494.251	3.85E 3	2.688	2.333	0.026	-6.356			
		4:KOMBINASI	246.642	-1.89E 3	1.516	2.986	0.014	34.671			
		5:KOMB B. MA	-344.210	2.78E 3	3.631	4.390	0.035	18.254			
16475	13367	1:BEBAN MATI	-191.457	-579.305	-0.937	-0.369	0.005	-21.176			
		2:BEBAN HIDL	-88.652	-370.786	-0.104	-0.278	0.001	-9.474			
		3:BEBAN GEM	106.633	-995.293	12.471	-1.912	-0.065	2.919			
		4:KOMBINASI	-371.591	-1.29E 3	-1.291	-0.888	0.008	-40.569			
		5:KOMB B. MA	-132.683	-1.85E 3	12.095	-2.543	-0.063	-23.795			
	13364	1:BEBAN MATI	191.457	939.699	0.937	0.369	0.006	12.238			
		2:BEBAN HIDL	88.652	370.786	0.104	0.278	0.000	5.111			
		3:BEBAN GEM	-106.633	995.293	-12.471	1.912	-0.081	-14.631			
		4:KOMBINASI	371.591	1.72E 3	1.291	0.888	0.007	22.862			
		5:KOMB B. MA	132.683	2.21E 3	-12.095	2.543	-0.080	-0.059			
16476	13369	1:BEBAN MATI	-146.066	1.43E 3	1.077	0.286	-0.007	-6.279			
		2:BEBAN HIDL	-63.087	533.095	0.699	0.073	-0.004	-3.116			
		3:BEBAN GEM	25.408	-1.02E 3	12.779	1.635	-0.073	-9.486			
		4:KOMBINASI	-276.219	2.57E 3	2.411	0.459	-0.015	-12.520			
		5:KOMB B. MA	-157.240	685.770	14.914	2.047	-0.086	-18.108			
	13367	1:BEBAN MATI	146.066	-1.07E 3	-1.077	-0.286	-0.006	21.027			
		2:BEBAN HIDL	63.087	-533.095	-0.699	-0.073	-0.004	9.389			
		3:BEBAN GEM	-25.408	1.02E 3	-12.779	-1.635	-0.078	-2.479			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	276.219	-2.14E 3	-2.411	-0.459	-0.013	40.256			
		5:KOMB B. MA	157.240	-325.376	-14.914	-2.047	-0.090	24.058			
16477	13371	1:BEBAN MATI	-161.088	2.53E 3	0.738	0.131	-0.005	-1.431			
		2:BEBAN HIDL	-62.633	974.689	-0.055	0.019	0.000	-0.895			
		3:BEBAN GEM	177.424	-3.57E 3	-17.088	-1.207	0.089	-35.361			
		4:KOMBINASI	-293.518	4.6E 3	0.797	0.188	-0.006	-3.149			
		5:KOMB B. MA	-12.372	-632.761	-17.237	-1.124	0.088	-39.097			
	12820	1:BEBAN MATI	161.088	-2.17E 3	-0.738	-0.131	-0.004	29.139			
		2:BEBAN HIDL	62.633	-974.689	0.055	-0.019	0.001	12.365			
		3:BEBAN GEM	-177.424	3.57E 3	17.088	1.207	0.113	-6.693			
		4:KOMBINASI	293.518	-4.17E 3	-0.797	-0.188	-0.004	54.751			
		5:KOMB B. MA	12.372	993.153	17.237	1.124	0.115	29.530			
16478	13372	1:BEBAN MATI	-7.995	-594.567	-0.986	0.179	0.004	-6.200			
		2:BEBAN HIDL	-3.737	-344.821	-0.180	-0.017	0.001	-2.840			
		3:BEBAN GEM	-18.748	13.168	5.257	0.304	-0.023	2.748			
		4:KOMBINASI	-15.573	-1.27E 3	-1.472	0.188	0.006	-11.983			
		5:KOMB B. MA	-29.922	-787.633	4.426	0.488	-0.020	-5.018			
	181	1:BEBAN MATI	7.995	825.219	0.986	-0.179	0.008	-2.154			
		2:BEBAN HIDL	3.737	344.821	0.180	0.017	0.001	-1.218			
		3:BEBAN GEM	18.748	-13.168	-5.257	-0.304	-0.038	-2.593			
		4:KOMBINASI	15.573	1.54E 3	1.472	-0.188	0.011	-4.534			
		5:KOMB B. MA	29.922	1.02E 3	-4.426	-0.488	-0.032	-5.608			
16479	13373	1:BEBAN MATI	-32.237	-77.381	-0.338	0.113	0.003	-9.535			
		2:BEBAN HIDL	-12.061	-92.277	0.082	0.002	-0.000	-4.561			
		3:BEBAN GEM	-7.474	-152.519	4.115	0.431	-0.026	0.872			
		4:KOMBINASI	-57.981	-240.499	-0.275	0.138	0.004	-18.740			
		5:KOMB B. MA	-47.321	-292.892	4.031	0.567	-0.024	-11.356			
	13372	1:BEBAN MATI	32.237	308.033	0.338	-0.113	0.001	7.267			
		2:BEBAN HIDL	12.061	92.277	-0.082	-0.002	-0.001	3.475			
		3:BEBAN GEM	7.474	152.519	-4.115	-0.431	-0.022	-2.666			
		4:KOMBINASI	57.981	517.282	0.275	-0.138	-0.001	14.281			
		5:KOMB B. MA	47.321	523.544	-4.031	-0.567	-0.023	6.552			
16480	13374	1:BEBAN MATI	-58.853	706.795	-0.399	-0.093	0.004	-2.445			
		2:BEBAN HIDL	-20.924	263.250	0.203	-0.001	-0.001	-1.436			
		3:BEBAN GEM	-27.797	-169.650	5.349	-0.380	-0.034	-1.154			
		4:KOMBINASI	-104.103	1.27E 3	-0.154	-0.113	0.004	-5.232			
		5:KOMB B. MA	-100.595	686.612	5.340	-0.493	-0.032	-4.518			
	13373	1:BEBAN MATI	58.853	-476.143	0.399	0.093	0.001	9.405			
		2:BEBAN HIDL	20.924	-263.250	-0.203	0.001	-0.002	4.534			
		3:BEBAN GEM	27.797	169.650	-5.349	0.380	-0.029	-0.843			
		4:KOMBINASI	104.103	-992.571	0.154	0.113	-0.002	18.541			
		5:KOMB B. MA	100.595	-455.960	-5.340	0.493	-0.031	11.241			
16481	13376	1:BEBAN MATI	-390.011	-2.15E 3	18.348	2.785	-0.103	-9.877			
		2:BEBAN HIDL	-95.805	-541.284	4.564	1.845	-0.026	-2.002			
		3:BEBAN GEM	1.15E 3	-4.03E 3	-29.633	3.368	0.115	52.613			
		4:KOMBINASI	-621.300	-3.45E 3	29.319	6.294	-0.164	-15.055			
		5:KOMB B. MA	757.898	-6.71E 3	-10.028	7.429	0.003	44.165			
	127	1:BEBAN MATI	390.011	3.5E 3	-18.348	-2.785	-0.113	-23.418			



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Job No 1	Sheet No 146	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	95.805	541.284	-4.564	-1.845	-0.028	-4.368			
		3:BEBAN GEM	-1.15E 3	4.03E 3	29.633	-3.368	0.234	-100.056			
		4:KOMBINASI	621.300	5.07E 3	-29.319	-6.294	-0.181	-35.090			
		5:KOMB B. MA	-757.898	8.06E 3	10.028	-7.429	0.115	-131.097			
16482	13379	1:BEBAN MATI	-363.920	-2.97E 3	0.035	-0.266	0.002	-11.645			
		2:BEBAN HIDL	-159.796	-1.28E 3	-0.047	-0.036	0.001	-4.573			
		3:BEBAN GEM	760.912	-3.99E 3	-9.861	2.594	0.053	50.232			
		4:KOMBINASI	-692.378	-5.61E 3	-0.033	-0.377	0.003	-21.291			
		5:KOMB B. MA	339.160	-7.92E 3	-10.348	2.436	0.058	38.355			
	126	1:BEBAN MATI	363.920	3.33E 3	-0.035	0.266	-0.002	-25.431			
		2:BEBAN HIDL	159.796	1.28E 3	0.047	0.036	0.000	-10.441			
		3:BEBAN GEM	-760.912	3.99E 3	9.861	-2.594	0.063	-97.172			
		4:KOMBINASI	692.378	6.04E 3	0.033	0.377	-0.003	-47.223			
		5:KOMB B. MA	-339.160	8.28E 3	10.348	-2.436	0.064	-133.726			
16483	13380	1:BEBAN MATI	-349.520	-1.99E 3	-17.315	-2.712	0.101	-9.571			
		2:BEBAN HIDL	-81.946	-486.143	-4.222	-1.803	0.025	-1.887			
		3:BEBAN GEM	177.983	-1.24E 3	32.613	-6.385	-0.233	15.546			
		4:KOMBINASI	-550.538	-3.17E 3	-27.534	-6.139	0.161	-14.505			
		5:KOMB B. MA	-211.805	-3.59E 3	14.395	-10.498	-0.129	5.620			
	127	1:BEBAN MATI	349.520	3.35E 3	17.315	2.712	0.103	-21.848			
		2:BEBAN HIDL	81.946	486.143	4.222	1.803	0.025	-3.834			
		3:BEBAN GEM	-177.983	1.24E 3	-32.613	6.385	-0.151	-30.109			
		4:KOMBINASI	550.538	4.79E 3	27.534	6.139	0.163	-32.351			
		5:KOMB B. MA	211.805	4.94E 3	-14.395	10.498	-0.041	-55.762			
16484	13381	1:BEBAN MATI	-193.342	-70.898	-2.553	-0.926	0.017	-19.251			
		2:BEBAN HIDL	-44.721	-156.420	-0.660	-0.867	0.005	-4.286			
		3:BEBAN GEM	-34.484	-1.1E 3	3.530	-1.496	-0.024	1.587			
		4:KOMBINASI	-303.564	-335.349	-4.119	-2.499	0.028	-29.959			
		5:KOMB B. MA	-256.383	-1.32E 3	0.757	-3.017	-0.006	-20.157			
	13380	1:BEBAN MATI	193.342	1.42E 3	2.553	0.926	0.013	10.471			
		2:BEBAN HIDL	44.721	156.420	0.660	0.867	0.003	2.445			
		3:BEBAN GEM	34.484	1.1E 3	-3.530	1.496	-0.017	-14.542			
		4:KOMBINASI	303.564	1.96E 3	4.119	2.499	0.020	16.478			
		5:KOMB B. MA	256.383	2.67E 3	-0.757	3.017	-0.003	-3.331			
16485	13382	1:BEBAN MATI	-141.989	1.88E 3	1.665	0.751	-0.007	-5.076			
		2:BEBAN HIDL	-37.881	250.014	0.785	0.384	-0.004	-1.365			
		3:BEBAN GEM	-125.229	-1.1E 3	-5.673	1.975	0.031	-11.609			
		4:KOMBINASI	-230.996	2.65E 3	3.254	1.516	-0.015	-8.275			
		5:KOMB B. MA	-296.208	867.027	-3.821	3.055	0.024	-18.085			
	13381	1:BEBAN MATI	141.989	-525.786	-1.665	-0.751	-0.013	19.209			
		2:BEBAN HIDL	37.881	-250.014	-0.785	-0.384	-0.005	4.307			
		3:BEBAN GEM	125.229	1.1E 3	5.673	-1.975	0.035	-1.382			
		4:KOMBINASI	230.996	-1.03E 3	-3.254	-1.516	-0.024	29.943			
		5:KOMB B. MA	296.208	483.368	3.821	-3.055	0.021	20.342			
16486	13384	1:BEBAN MATI	-282.195	-2.25E 3	18.613	-1.334	-0.045	-18.571			
		2:BEBAN HIDL	-116.863	-1.01E 3	6.880	-0.406	-0.016	-8.672			
		3:BEBAN GEM	-26.581	-2.7E 3	-211.754	1.693	0.559	18.642			
		4:KOMBINASI	-525.615	-4.31E 3	33.344	-2.251	-0.079	-36.159			



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Job No 1	Sheet No 147	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-380.222	-5.68E 3	-199.600	0.200	0.532	-4.200			
	13550	1:BEBAN MATI	282.195	2.4E 3	-18.613	1.334	-0.046	7.187			
		2:BEBAN HIDL	116.863	1.01E 3	-6.880	0.406	-0.018	3.739			
		3:BEBAN GEM	26.581	2.7E 3	211.754	-1.693	0.479	-31.868			
		4:KOMBINASI	525.615	4.49E 3	-33.344	2.251	-0.084	14.606			
		5:KOMB B. MA	380.222	5.83E 3	199.600	-0.200	0.447	-24.031			
16487	13386	1:BEBAN MATI	-164.112	584.768	-73.389	-4.194	0.166	-4.317			
		2:BEBAN HIDL	-79.038	157.471	-14.578	-1.925	0.037	-1.348			
		3:BEBAN GEM	-1.53E 3	-6.01E 3	757.113	-1.043	-1.563	-23.914			
		4:KOMBINASI	-323.395	953.675	-111.392	-8.113	0.259	-7.337			
		5:KOMB B. MA	-1.82E 3	-5.63E 3	712.833	-6.445	-1.453	-30.235			
	13470	1:BEBAN MATI	164.112	-22.104	73.389	4.194	0.194	5.804			
		2:BEBAN HIDL	79.038	-157.471	14.578	1.925	0.034	2.120			
		3:BEBAN GEM	1.53E 3	6.01E 3	-757.113	1.043	-2.150	-5.537			
		4:KOMBINASI	323.395	-278.478	111.392	8.113	0.288	10.358			
		5:KOMB B. MA	1.82E 3	6.19E 3	-712.833	6.445	-2.043	1.263			
16488	13388	1:BEBAN MATI	-334.695	-3.45E 3	24.322	-0.891	-0.017	8.217			
		2:BEBAN HIDL	-140.393	-1.52E 3	5.827	-0.245	0.002	2.936			
		3:BEBAN GEM	237.017	-3.08E 3	-618.450	3.327	0.993	46.853			
		4:KOMBINASI	-626.263	-6.57E 3	38.510	-1.460	-0.017	14.558			
		5:KOMB B. MA	-170.064	-7.59E 3	-621.554	2.456	1.027	59.175			
	13554	1:BEBAN MATI	334.695	3.52E 3	-24.322	0.891	-0.043	-16.759			
		2:BEBAN HIDL	140.393	1.52E 3	-5.827	0.245	-0.016	-6.661			
		3:BEBAN GEM	-237.017	3.08E 3	618.450	-3.327	0.524	-54.399			
		4:KOMBINASI	626.263	6.66E 3	-38.510	1.460	-0.078	-30.768			
		5:KOMB B. MA	170.064	7.66E 3	621.554	-2.456	0.497	-77.874			
16489	13390	1:BEBAN MATI	-59.214	-1.78E 3	-5.005	-1.030	0.028	-0.412			
		2:BEBAN HIDL	-53.634	-519.715	0.563	-1.066	-0.002	-0.781			
		3:BEBAN GEM	-1.38E 3	-5.97E 3	103.158	0.542	-0.631	35.890			
		4:KOMBINASI	-156.871	-2.97E 3	-5.106	-2.942	0.031	-1.743			
		5:KOMB B. MA	-1.54E 3	-8.36E 3	103.648	-1.100	-0.635	36.804			
	111	1:BEBAN MATI	59.214	2.91E 3	5.005	1.030	0.021	-22.559			
		2:BEBAN HIDL	53.634	519.715	-0.563	1.066	-0.003	-4.316			
		3:BEBAN GEM	1.38E 3	5.97E 3	-103.158	-0.542	-0.381	-94.446			
		4:KOMBINASI	156.871	4.32E 3	5.106	2.942	0.020	-33.977			
		5:KOMB B. MA	1.54E 3	9.49E 3	-103.648	1.100	-0.381	-124.317			
16490	13391	1:BEBAN MATI	49.265	-486.294	-18.526	-0.907	0.115	4.085			
		2:BEBAN HIDL	46.715	-198.999	-7.921	-0.668	0.050	1.675			
		3:BEBAN GEM	2.36E 3	-1.58E 3	82.624	-4.647	-0.351	8.054			
		4:KOMBINASI	133.862	-901.951	-34.904	-2.158	0.217	7.582			
		5:KOMB B. MA	2.55E 3	-2.27E 3	63.477	-6.188	-0.224	13.546			
	114	1:BEBAN MATI	-49.265	846.687	18.526	0.907	0.103	-11.928			
		2:BEBAN HIDL	-46.715	198.999	7.921	0.668	0.044	-4.017			
		3:BEBAN GEM	-2.36E 3	1.58E 3	-82.624	4.647	-0.621	-26.699			
		4:KOMBINASI	-133.862	1.33E 3	34.904	2.158	0.194	-20.741			
		5:KOMB B. MA	-2.55E 3	2.63E 3	-63.477	6.188	-0.523	-42.372			
16491	13392	1:BEBAN MATI	67.562	435.691	-2.897	1.868	0.020	6.857			
		2:BEBAN HIDL	53.841	116.639	-0.850	0.679	0.006	2.817			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.87E 3	-1.51E 3	26.764	-0.618	-0.129	-10.530			
		4:KOMBINASI	167.220	709.453	-4.837	3.328	0.034	12.736			
		5:KOMB B. MA	2.06E 3	-1.08E 3	24.695	1.627	-0.112	-2.509			
	13391	1:BEBAN MATI	-67.562	-75.299	2.897	-1.868	0.014	-3.851			
		2:BEBAN HIDL	-53.841	-116.639	0.850	-0.679	0.004	-1.445			
		3:BEBAN GEM	-1.87E 3	1.51E 3	-26.764	0.618	-0.186	-7.281			
		4:KOMBINASI	-167.220	-276.982	4.837	-3.328	0.023	-6.932			
		5:KOMB B. MA	-2.06E 3	1.44E 3	-24.695	-1.627	-0.179	-12.362			
16492	13394	1:BEBAN MATI	-270.225	3.38E 3	-2.038	-2.302	0.005	10.703			
		2:BEBAN HIDL	-90.630	645.336	-0.951	-1.529	0.002	2.465			
		3:BEBAN GEM	-974.490	-2.28E 3	0.454	-1.868	0.009	-43.761			
		4:KOMBINASI	-469.278	5.09E 3	-3.968	-5.208	0.009	16.787			
		5:KOMB B. MA	-1.35E 3	1.38E 3	-2.132	-5.181	0.016	-33.767			
	13399	1:BEBAN MATI	270.225	-2.26E 3	2.038	2.302	0.015	16.953			
		2:BEBAN HIDL	90.630	-645.336	0.951	1.529	0.007	3.864			
		3:BEBAN GEM	974.490	2.28E 3	-0.454	1.868	-0.014	21.450			
		4:KOMBINASI	469.278	-3.74E 3	3.968	5.208	0.030	26.525			
		5:KOMB B. MA	1.35E 3	-255.864	2.132	5.181	0.005	41.794			
16493	13397	1:BEBAN MATI	-261.649	3.55E 3	0.398	0.263	-0.001	13.914			
		2:BEBAN HIDL	-95.753	1.45E 3	0.297	0.039	-0.001	5.520			
		3:BEBAN GEM	-627.747	-2.14E 3	-13.235	-1.359	0.071	-40.814			
		4:KOMBINASI	-467.184	6.57E 3	0.954	0.378	-0.004	25.530			
		5:KOMB B. MA	-978.236	2.16E 3	-13.320	-1.141	0.072	-25.628			
	13402	1:BEBAN MATI	261.649	-3.25E 3	-0.398	-0.263	-0.003	19.383			
		2:BEBAN HIDL	95.753	-1.45E 3	-0.297	-0.039	-0.002	8.678			
		3:BEBAN GEM	627.747	2.14E 3	13.235	1.359	0.059	19.802			
		4:KOMBINASI	467.184	-6.21E 3	-0.954	-0.378	-0.006	37.145			
		5:KOMB B. MA	978.236	-1.86E 3	13.320	1.141	0.058	45.381			
16494	13399	1:BEBAN MATI	-251.053	1.8E 3	0.213	-1.371	-0.006	-17.764			
		2:BEBAN HIDL	-82.597	338.808	-0.017	-0.772	-0.002	-4.162			
		3:BEBAN GEM	-827.886	-2.23E 3	1.779	-1.872	-0.003	-21.474			
		4:KOMBINASI	-433.420	2.7E 3	0.228	-2.880	-0.011	-27.976			
		5:KOMB B. MA	-1.17E 3	-346.829	2.071	-3.800	-0.010	-42.809			
	12784	1:BEBAN MATI	251.053	-670.951	-0.213	1.371	0.004	29.862			
		2:BEBAN HIDL	82.597	-338.808	0.017	0.772	0.002	7.484			
		3:BEBAN GEM	827.886	2.23E 3	-1.779	1.872	-0.015	-0.441			
		4:KOMBINASI	433.420	-1.35E 3	-0.228	2.880	0.009	47.809			
		5:KOMB B. MA	1.17E 3	1.47E 3	-2.071	3.800	-0.010	33.890			
16495	13402	1:BEBAN MATI	-270.778	2.12E 3	-0.098	0.177	0.001	-20.467			
		2:BEBAN HIDL	-99.268	825.474	0.124	0.021	-0.001	-9.083			
		3:BEBAN GEM	-535.089	-2E 3	-18.449	-0.800	0.085	-18.938			
		4:KOMBINASI	-483.762	3.86E 3	0.081	0.245	0.000	-39.094			
		5:KOMB B. MA	-892.182	517.038	-19.395	-0.650	0.090	-45.802			
	12823	1:BEBAN MATI	270.778	-1.82E 3	0.098	-0.177	0.000	39.776			
		2:BEBAN HIDL	99.268	-825.474	-0.124	-0.021	-0.001	17.179			
		3:BEBAN GEM	535.089	2E 3	18.449	0.800	0.095	-0.651			
		4:KOMBINASI	483.762	-3.5E 3	-0.081	-0.245	-0.001	75.217			
		5:KOMB B. MA	892.182	-216.711	19.395	0.650	0.100	49.400			



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Job No 1	Sheet No 149	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16496	13403	1:BEBAN MATI	11.743	-667.076	0.087	0.152	-0.001	-7.679			
		2:BEBAN HIDL	3.483	-403.273	-0.003	0.004	-0.000	-3.750			
		3:BEBAN GEM	55.134	11.147	5.233	0.303	-0.024	2.030			
		4:KOMBINASI	19.664	-1.45E 3	0.100	0.188	-0.001	-15.215			
		5:KOMB B. MA	71.723	-897.335	5.580	0.472	-0.026	-7.797			
12784	12784	1:BEBAN MATI	-11.743	897.728	-0.087	-0.152	-0.000	-1.529			
		2:BEBAN HIDL	-3.483	403.273	0.003	-0.004	0.000	-0.995			
		3:BEBAN GEM	-55.134	-11.147	-5.233	-0.303	-0.037	-1.899			
		4:KOMBINASI	-19.664	1.72E 3	-0.100	-0.188	-0.000	-3.427			
		5:KOMB B. MA	-71.723	1.13E 3	-5.580	-0.472	-0.039	-4.120			
16497	13404	1:BEBAN MATI	1.225	-91.154	0.093	0.083	-0.001	-11.362			
		2:BEBAN HIDL	-0.873	-121.624	0.012	0.004	-0.000	-5.904			
		3:BEBAN GEM	71.339	-92.380	5.318	0.279	-0.030	0.790			
		4:KOMBINASI	0.074	-303.984	0.130	0.105	-0.001	-23.081			
		5:KOMB B. MA	75.607	-261.128	5.684	0.377	-0.032	-14.075			
	13403	13403	1:BEBAN MATI	-1.225	321.806	-0.093	-0.083	-0.001	8.932		
			2:BEBAN HIDL	0.873	121.624	-0.012	-0.004	-0.000	4.473		
			3:BEBAN GEM	-71.339	92.380	-5.318	-0.279	-0.032	-1.877		
			4:KOMBINASI	-0.074	580.766	-0.130	-0.105	-0.001	17.875		
			5:KOMB B. MA	-75.607	491.780	-5.684	-0.377	-0.035	9.645		
16498	13405	1:BEBAN MATI	-15.330	813.749	0.050	-0.047	-0.000	-2.965			
		2:BEBAN HIDL	-7.241	332.546	0.017	0.001	-0.000	-1.928			
		3:BEBAN GEM	82.587	-101.173	6.911	-0.226	-0.042	-0.539			
		4:KOMBINASI	-29.982	1.51E 3	0.087	-0.055	-0.000	-6.643			
		5:KOMB B. MA	67.041	907.045	7.317	-0.284	-0.044	-4.688			
	13404	13404	1:BEBAN MATI	15.330	-583.097	-0.050	0.047	-0.000	11.184		
			2:BEBAN HIDL	7.241	-332.546	-0.017	-0.001	-0.000	5.842		
			3:BEBAN GEM	-82.587	101.173	-6.911	0.226	-0.040	-0.651		
			4:KOMBINASI	29.982	-1.23E 3	-0.087	0.055	-0.001	22.768		
			5:KOMB B. MA	-67.041	-676.394	-7.317	0.284	-0.042	14.005		
16499	13407	1:BEBAN MATI	-275.066	-2.18E 3	2.859	1.681	-0.020	-18.061			
		2:BEBAN HIDL	-93.181	-627.769	1.060	1.533	-0.007	-4.056			
		3:BEBAN GEM	-477.759	-2.26E 3	-2.295	1.373	0.011	22.758			
		4:KOMBINASI	-479.169	-3.62E 3	5.128	4.470	-0.036	-28.164			
		5:KOMB B. MA	-832.621	-4.93E 3	1.086	4.043	-0.013	3.401			
	13412	13412	1:BEBAN MATI	275.066	3.31E 3	-2.859	-1.681	-0.008	-8.843		
			2:BEBAN HIDL	93.181	627.769	-1.060	-1.533	-0.003	-2.100		
			3:BEBAN GEM	477.759	2.26E 3	2.295	-1.373	0.011	-44.905		
			4:KOMBINASI	479.169	4.97E 3	-5.128	-4.470	-0.014	-13.971		
			5:KOMB B. MA	832.621	6.05E 3	-1.086	-4.043	0.002	-57.253		
16500	13410	1:BEBAN MATI	-259.364	-3.09E 3	-1.305	-0.227	0.007	-21.111			
		2:BEBAN HIDL	-95.499	-1.41E 3	-0.363	-0.034	0.002	-9.030			
		3:BEBAN GEM	-380.032	-2.1E 3	-18.672	1.367	0.088	21.431			
		4:KOMBINASI	-464.035	-5.97E 3	-2.146	-0.327	0.012	-39.781			
		5:KOMB B. MA	-715.697	-6.14E 3	-21.128	1.188	0.100	-4.026			
	13415	13415	1:BEBAN MATI	259.364	3.39E 3	1.305	0.227	0.006	-10.694		
			2:BEBAN HIDL	95.499	1.41E 3	0.363	0.034	0.002	-4.842		
			3:BEBAN GEM	380.032	2.1E 3	18.672	-1.367	0.095	-41.996		



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 150	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	464.035	6.34E 3	2.146	0.327	0.009	-20.580			
		5:KOMB B. MA	715.697	6.44E 3	21.128	-1.188	0.107	-57.695			
16501	13412	1:BEBAN MATI	-367.535	-3.71E 3	34.209	3.094	-0.154	10.132			
		2:BEBAN HIDL	-128.398	-835.561	12.646	2.114	-0.057	2.756			
		3:BEBAN GEM	-228.209	-2.47E 3	-23.574	3.561	0.085	45.681			
		4:KOMBINASI	-646.478	-5.79E 3	61.284	7.095	-0.275	16.568			
		5:KOMB B. MA	-684.193	-6.8E 3	17.044	8.102	-0.099	59.751			
	91	1:BEBAN MATI	367.535	4.83E 3	-34.209	-3.094	-0.182	-52.014			
		2:BEBAN HIDL	128.398	835.561	-12.646	-2.114	-0.067	-10.950			
		3:BEBAN GEM	228.209	2.47E 3	23.574	-3.561	0.147	-69.914			
		4:KOMBINASI	646.478	7.14E 3	-61.284	-7.095	-0.326	-79.938			
		5:KOMB B. MA	684.193	7.93E 3	-17.044	-8.102	-0.068	-131.995			
16502	13415	1:BEBAN MATI	-247.430	-4.59E 3	-2.507	-0.282	0.013	12.202			
		2:BEBAN HIDL	-91.720	-1.98E 3	-0.458	-0.054	0.003	5.638			
		3:BEBAN GEM	-272.629	-2.6E 3	-25.076	2.315	0.112	42.384			
		4:KOMBINASI	-443.669	-8.67E 3	-3.741	-0.424	0.020	23.663			
		5:KOMB B. MA	-588.723	-8.51E 3	-29.111	2.116	0.133	60.088			
	116	1:BEBAN MATI	247.430	4.89E 3	2.507	0.282	0.011	-58.719			
		2:BEBAN HIDL	91.720	1.98E 3	0.458	0.054	0.002	-25.014			
		3:BEBAN GEM	272.629	2.6E 3	25.076	-2.315	0.134	-67.914			
		4:KOMBINASI	443.669	9.03E 3	3.741	0.424	0.017	-110.484			
		5:KOMB B. MA	588.723	8.81E 3	29.111	-2.116	0.153	-145.037			
16503	13416	1:BEBAN MATI	-442.752	-3.27E 3	0.503	0.063	-0.002	-15.401			
		2:BEBAN HIDL	-163.455	-1.23E 3	0.137	-0.000	-0.001	-4.876			
		3:BEBAN GEM	281.551	-1.18E 3	17.112	-6.050	-0.107	13.835			
		4:KOMBINASI	-792.830	-5.89E 3	0.823	0.076	-0.004	-26.283			
		5:KOMB B. MA	-245.196	-5.25E 3	18.553	-6.289	-0.115	-3.800			
	91	1:BEBAN MATI	442.752	4.62E 3	-0.503	-0.063	-0.003	-31.064			
		2:BEBAN HIDL	163.455	1.23E 3	-0.137	0.000	-0.001	-9.557			
		3:BEBAN GEM	-281.551	1.18E 3	-17.112	6.050	-0.094	-27.755			
		4:KOMBINASI	792.830	7.51E 3	-0.823	-0.076	-0.006	-52.569			
		5:KOMB B. MA	245.196	6.6E 3	-18.553	6.289	-0.103	-65.941			
16504	13417	1:BEBAN MATI	-250.511	-406.783	0.477	0.026	-0.003	-29.134			
		2:BEBAN HIDL	-92.007	-394.164	0.155	-0.001	-0.001	-10.092			
		3:BEBAN GEM	181.698	-966.002	8.649	-1.805	-0.042	2.238			
		4:KOMBINASI	-447.825	-1.12E 3	0.820	0.030	-0.005	-51.109			
		5:KOMB B. MA	-114.933	-1.66E 3	9.652	-1.869	-0.047	-32.840			
	13416	1:BEBAN MATI	250.511	1.76E 3	-0.477	-0.026	-0.003	16.402			
		2:BEBAN HIDL	92.007	394.164	-0.155	0.001	-0.001	5.454			
		3:BEBAN GEM	-181.698	966.002	-8.649	1.805	-0.060	-13.606			
		4:KOMBINASI	447.825	2.74E 3	-0.820	-0.030	-0.005	28.408			
		5:KOMB B. MA	114.933	3.01E 3	-9.652	1.869	-0.067	5.388			
16505	13418	1:BEBAN MATI	-177.474	2.44E 3	0.539	0.000	-0.003	-8.213			
		2:BEBAN HIDL	-63.898	570.237	0.223	0.002	-0.001	-3.293			
		3:BEBAN GEM	122.748	-960.049	4.389	1.584	-0.021	-9.480			
		4:KOMBINASI	-315.205	3.84E 3	1.004	0.003	-0.006	-15.125			
		5:KOMB B. MA	-86.927	1.77E 3	5.281	1.664	-0.026	-20.142			
	13417	1:BEBAN MATI	177.474	-1.09E 3	-0.539	-0.000	-0.003	28.935			



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Job No 1	Sheet No 151	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	63.898	-570.237	-0.223	-0.002	-0.001	10.004			
		3:BEBAN GEM	-122.748	960.049	-4.389	-1.584	-0.031	-1.818			
		4:KOMBINASI	315.205	-2.22E 3	-1.004	-0.003	-0.006	50.728			
		5:KOMB B. MA	86.927	-419.788	-5.281	-1.664	-0.037	33.028			
16506	13420	1:BEBAN MATI	-259.651	3.33E 3	-2.683	-1.895	0.007	8.956			
		2:BEBAN HIDL	-86.701	633.194	-0.970	-1.527	0.002	2.115			
		3:BEBAN GEM	-656.511	-2.34E 3	-0.465	-1.922	0.009	-45.624			
		4:KOMBINASI	-450.302	5.01E 3	-4.773	-4.718	0.012	14.131			
		5:KOMB B. MA	-1E 3	1.26E 3	-3.754	-4.830	0.017	-37.680			
	13425	1:BEBAN MATI	259.651	-2.21E 3	2.683	1.895	0.020	18.204			
		2:BEBAN HIDL	86.701	-633.194	0.970	1.527	0.007	4.095			
		3:BEBAN GEM	656.511	2.34E 3	0.465	1.922	-0.004	22.688			
		4:KOMBINASI	450.302	-3.66E 3	4.773	4.718	0.035	28.397			
		5:KOMB B. MA	1E 3	-131.184	3.754	4.830	0.020	44.484			
16507	13423	1:BEBAN MATI	-251.861	3.42E 3	-0.230	0.257	0.001	10.975			
		2:BEBAN HIDL	-89.532	1.41E 3	-0.228	0.011	0.001	4.793			
		3:BEBAN GEM	-569.355	-2.21E 3	-14.910	-1.369	0.075	-42.773			
		4:KOMBINASI	-445.484	6.37E 3	-0.641	0.326	0.003	20.838			
		5:KOMB B. MA	-903.403	1.95E 3	-16.022	-1.174	0.081	-31.061			
	13428	1:BEBAN MATI	251.861	-3.12E 3	0.230	-0.257	0.001	21.116			
		2:BEBAN HIDL	89.532	-1.41E 3	0.228	-0.011	0.001	9.062			
		3:BEBAN GEM	569.355	2.21E 3	14.910	1.369	0.071	21.111			
		4:KOMBINASI	445.484	-6.01E 3	0.641	-0.326	0.003	39.839			
		5:KOMB B. MA	903.403	-1.65E 3	16.022	1.174	0.077	48.721			
16508	13425	1:BEBAN MATI	-226.205	1.75E 3	-0.299	-0.927	-0.005	-18.954			
		2:BEBAN HIDL	-74.380	326.038	-0.134	-0.767	-0.002	-4.389			
		3:BEBAN GEM	-530.095	-2.3E 3	0.306	-1.909	0.003	-22.707			
		4:KOMBINASI	-390.454	2.62E 3	-0.573	-2.340	-0.010	-29.768			
		5:KOMB B. MA	-827.432	-473.744	-0.058	-3.392	-0.003	-45.430			
	153	1:BEBAN MATI	226.205	-621.352	0.299	0.927	0.008	30.565			
		2:BEBAN HIDL	74.380	-326.038	0.134	0.767	0.003	7.587			
		3:BEBAN GEM	530.095	2.3E 3	-0.306	1.909	-0.006	0.142			
		4:KOMBINASI	390.454	-1.27E 3	0.573	2.340	0.015	48.817			
		5:KOMB B. MA	827.432	1.6E 3	0.058	3.392	0.004	35.266			
16509	13428	1:BEBAN MATI	-254.841	1.99E 3	-0.767	0.177	0.002	-22.217			
		2:BEBAN HIDL	-91.135	790.047	-0.340	0.010	0.001	-9.440			
		3:BEBAN GEM	-505.304	-2.07E 3	-16.135	-0.794	0.078	-20.215			
		4:KOMBINASI	-451.624	3.65E 3	-1.465	0.229	0.005	-41.764			
		5:KOMB B. MA	-840.091	294.572	-17.912	-0.651	0.085	-49.106			
	12822	1:BEBAN MATI	254.841	-1.69E 3	0.767	-0.177	0.005	40.277			
		2:BEBAN HIDL	91.135	-790.047	0.340	-0.010	0.002	17.187			
		3:BEBAN GEM	505.304	2.07E 3	16.135	0.794	0.080	-0.064			
		4:KOMBINASI	451.624	-3.29E 3	1.465	-0.229	0.010	75.832			
		5:KOMB B. MA	840.091	5.756	17.912	0.651	0.090	50.522			
16510	13429	1:BEBAN MATI	6.943	-684.152	0.144	0.000	-0.001	-8.043			
		2:BEBAN HIDL	2.126	-402.937	0.057	-0.001	-0.000	-3.753			
		3:BEBAN GEM	41.337	10.368	4.156	0.297	-0.018	2.069			
		4:KOMBINASI	11.733	-1.47E 3	0.263	-0.001	-0.001	-15.656			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 152	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	51.622	-915.028	4.542	0.312	-0.020	-8.122			
	153	1:BEBAN MATI	-6.943	914.804	-0.144	-0.000	-0.001	-1.365			
		2:BEBAN HIDL	-2.126	402.937	-0.057	0.001	-0.000	-0.989			
		3:BEBAN GEM	-41.337	-10.368	-4.156	-0.297	-0.031	-1.947			
		4:KOMBINASI	-11.733	1.74E 3	-0.263	0.001	-0.002	-3.220			
		5:KOMB B. MA	-51.622	1.15E 3	-4.542	-0.312	-0.034	-4.003			
16511	13430	1:BEBAN MATI	-9.854	-94.960	0.143	0.001	-0.001	-11.796			
		2:BEBAN HIDL	-3.916	-120.480	0.053	-0.001	-0.000	-5.893			
		3:BEBAN GEM	69.304	-94.914	4.056	0.276	-0.022	0.793			
		4:KOMBINASI	-18.091	-306.720	0.256	-0.000	-0.001	-23.584			
		5:KOMB B. MA	60.565	-266.907	4.433	0.290	-0.024	-14.499			
	13429	1:BEBAN MATI	9.854	325.612	-0.143	-0.001	-0.001	9.321			
		2:BEBAN HIDL	3.916	120.480	-0.053	0.001	-0.000	4.475			
		3:BEBAN GEM	-69.304	94.914	-4.056	-0.276	-0.026	-1.910			
		4:KOMBINASI	18.091	583.502	-0.256	0.000	-0.002	18.345			
		5:KOMB B. MA	-60.565	497.559	-4.433	-0.290	-0.028	10.001			
16512	13431	1:BEBAN MATI	-33.559	840.689	0.179	-0.000	-0.001	-3.071			
		2:BEBAN HIDL	-12.512	335.762	0.066	-0.000	-0.000	-1.877			
		3:BEBAN GEM	101.870	-101.924	5.634	-0.226	-0.033	-0.548			
		4:KOMBINASI	-60.291	1.55E 3	0.320	-0.001	-0.002	-6.689			
		5:KOMB B. MA	65.897	935.126	6.134	-0.237	-0.036	-4.773			
	13430	1:BEBAN MATI	33.559	-610.037	-0.179	0.000	-0.001	11.607			
		2:BEBAN HIDL	12.512	-335.762	-0.066	0.000	-0.000	5.829			
		3:BEBAN GEM	-101.870	101.924	-5.634	0.226	-0.033	-0.652			
		4:KOMBINASI	60.291	-1.27E 3	-0.320	0.001	-0.002	23.254			
		5:KOMB B. MA	-65.897	-704.474	-6.134	0.237	-0.036	14.420			
16513	13433	1:BEBAN MATI	-247.579	-2.24E 3	2.779	1.888	-0.020	-17.903			
		2:BEBAN HIDL	-81.282	-638.974	0.981	1.525	-0.007	-4.034			
		3:BEBAN GEM	-205.762	-2.32E 3	-2.145	1.394	0.012	22.861			
		4:KOMBINASI	-427.146	-3.71E 3	4.906	4.705	-0.036	-27.938			
		5:KOMB B. MA	-512.399	-5.06E 3	1.116	4.267	-0.012	3.681			
	13438	1:BEBAN MATI	247.579	3.36E 3	-2.779	-1.888	-0.007	-9.550			
		2:BEBAN HIDL	81.282	638.974	-0.981	-1.525	-0.002	-2.232			
		3:BEBAN GEM	205.762	2.32E 3	2.145	-1.394	0.009	-45.656			
		4:KOMBINASI	427.146	5.06E 3	-4.906	-4.705	-0.012	-15.031			
		5:KOMB B. MA	512.399	6.19E 3	-1.116	-4.267	0.001	-58.828			
16514	13436	1:BEBAN MATI	-249.519	-3.15E 3	-1.082	-0.246	0.005	-20.782			
		2:BEBAN HIDL	-88.786	-1.42E 3	-0.318	-0.008	0.002	-8.941			
		3:BEBAN GEM	-347.087	-2.16E 3	-17.996	1.407	0.088	21.561			
		4:KOMBINASI	-441.480	-6.05E 3	-1.807	-0.309	0.009	-39.245			
		5:KOMB B. MA	-667.232	-6.27E 3	-20.169	1.226	0.099	-3.508			
	13441	1:BEBAN MATI	249.519	3.45E 3	1.082	0.246	0.005	-11.559			
		2:BEBAN HIDL	88.786	1.42E 3	0.318	0.008	0.002	-4.994			
		3:BEBAN GEM	347.087	2.16E 3	17.996	-1.407	0.088	-42.755			
		4:KOMBINASI	441.480	6.41E 3	1.807	0.309	0.009	-21.861			
		5:KOMB B. MA	667.232	6.57E 3	20.169	-1.226	0.099	-59.448			
16515	13438	1:BEBAN MATI	-344.135	-3.76E 3	34.177	3.279	-0.154	10.887			
		2:BEBAN HIDL	-115.460	-846.099	12.463	2.103	-0.056	2.890			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	56.437	-2.54E 3	-25.265	3.602	0.094	46.454			
		4:KOMBINASI	-597.699	-5.87E 3	60.954	7.300	-0.275	17.688			
		5:KOMB B. MA	-354.153	-6.93E 3	15.127	8.323	-0.089	61.398			
	93	1:BEBAN MATI	344.135	4.89E 3	-34.177	-3.279	-0.181	-53.288			
		2:BEBAN HIDL	115.460	846.099	-12.463	-2.103	-0.066	-11.187			
		3:BEBAN GEM	-56.437	2.54E 3	25.265	-3.602	0.154	-71.322			
		4:KOMBINASI	597.699	7.22E 3	-60.954	-7.300	-0.323	-81.845			
		5:KOMB B. MA	354.153	8.06E 3	-15.127	-8.323	-0.059	-134.888			
16516	13441	1:BEBAN MATI	-245.545	-4.65E 3	-1.674	-0.260	0.010	13.061			
		2:BEBAN HIDL	-85.781	-1.98E 3	-0.152	-0.011	0.001	5.781			
		3:BEBAN GEM	-201.275	-2.67E 3	-29.682	2.372	0.133	43.168			
		4:KOMBINASI	-431.903	-8.76E 3	-2.252	-0.330	0.013	24.923			
		5:KOMB B. MA	-508.352	-8.64E 3	-32.931	2.223	0.150	61.856			
	115	1:BEBAN MATI	245.545	4.96E 3	1.674	0.260	0.007	-60.182			
		2:BEBAN HIDL	85.781	1.98E 3	0.152	0.011	0.000	-25.240			
		3:BEBAN GEM	201.275	2.67E 3	29.682	-2.372	0.158	-69.310			
		4:KOMBINASI	431.903	9.12E 3	2.252	0.330	0.009	-112.602			
		5:KOMB B. MA	508.352	8.94E 3	32.931	-2.223	0.173	-148.102			
16517	13442	1:BEBAN MATI	-445.815	-3.28E 3	0.048	-0.045	-0.000	-15.466			
		2:BEBAN HIDL	-164.372	-1.23E 3	0.168	0.023	-0.001	-4.895			
		3:BEBAN GEM	286.777	-1.22E 3	19.983	-6.018	-0.121	14.015			
		4:KOMBINASI	-797.972	-5.91E 3	0.327	-0.017	-0.002	-26.392			
		5:KOMB B. MA	-243.321	-5.31E 3	21.131	-6.350	-0.128	-3.688			
	93	1:BEBAN MATI	445.815	4.64E 3	-0.048	0.045	-0.000	-31.135			
		2:BEBAN HIDL	164.372	1.23E 3	-0.168	-0.023	-0.001	-9.583			
		3:BEBAN GEM	-286.777	1.22E 3	-19.983	6.018	-0.114	-28.413			
		4:KOMBINASI	797.972	7.53E 3	-0.327	0.017	-0.002	-52.694			
		5:KOMB B. MA	243.321	6.66E 3	-21.131	6.350	-0.121	-66.718			
16518	13443	1:BEBAN MATI	-255.244	-409.098	0.113	-0.028	-0.000	-29.222			
		2:BEBAN HIDL	-93.185	-394.946	0.096	0.013	-0.000	-10.119			
		3:BEBAN GEM	215.317	-989.143	12.269	-1.795	-0.061	2.148			
		4:KOMBINASI	-455.389	-1.12E 3	0.290	-0.013	-0.001	-51.256			
		5:KOMB B. MA	-85.072	-1.68E 3	13.053	-1.905	-0.065	-33.038			
	13442	1:BEBAN MATI	255.244	1.76E 3	-0.113	0.028	-0.001	16.462			
		2:BEBAN HIDL	93.185	394.946	-0.096	-0.013	-0.001	5.471			
		3:BEBAN GEM	-215.317	989.143	-12.269	1.795	-0.083	-13.788			
		4:KOMBINASI	455.389	2.74E 3	-0.290	0.013	-0.002	28.508			
		5:KOMB B. MA	85.072	3.04E 3	-13.053	1.905	-0.089	5.267			
16519	13444	1:BEBAN MATI	-182.935	2.44E 3	0.248	-0.015	-0.001	-8.256			
		2:BEBAN HIDL	-64.807	571.551	0.062	0.001	-0.000	-3.304			
		3:BEBAN GEM	205.433	-974.022	9.664	1.575	-0.051	-9.743			
		4:KOMBINASI	-323.212	3.84E 3	0.398	-0.016	-0.002	-15.194			
		5:KOMB B. MA	-6.113	1.76E 3	10.433	1.640	-0.055	-20.469			
	13443	1:BEBAN MATI	182.935	-1.09E 3	-0.248	0.015	-0.002	29.023			
		2:BEBAN HIDL	64.807	-571.551	-0.062	-0.001	-0.000	10.030			
		3:BEBAN GEM	-205.433	974.022	-9.664	-1.575	-0.063	-1.719			
		4:KOMBINASI	323.212	-2.22E 3	-0.398	0.016	-0.003	50.875			
		5:KOMB B. MA	6.113	-409.653	-10.433	-1.640	-0.068	33.235			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16520	13446	1:BEBAN MATI	-245.678	3.4E 3	-2.535	-1.680	0.006	9.219			
		2:BEBAN HIDL	-80.993	659.893	-0.958	-1.544	0.002	2.274			
		3:BEBAN GEM	-300.017	-2.22E 3	1.527	-1.943	-0.000	-44.788			
		4:KOMBINASI	-424.402	5.14E 3	-4.575	-4.487	0.011	14.701			
		5:KOMB B. MA	-609.291	1.47E 3	-1.507	-4.647	0.007	-36.444			
13451	13451	1:BEBAN MATI	245.678	-2.28E 3	2.535	1.680	0.019	18.641			
		2:BEBAN HIDL	80.993	-659.893	0.958	1.544	0.007	4.198			
		3:BEBAN GEM	300.017	2.22E 3	-1.527	1.943	-0.015	23.044			
		4:KOMBINASI	424.402	-3.79E 3	4.575	4.487	0.034	29.086			
		5:KOMB B. MA	609.291	-346.123	1.507	4.647	0.008	45.356			
16521	13449	1:BEBAN MATI	-240.062	3.45E 3	0.386	0.291	-0.002	10.946			
		2:BEBAN HIDL	-92.421	1.45E 3	-0.065	0.028	0.000	5.070			
		3:BEBAN GEM	-375.332	-2.09E 3	-22.377	-1.388	0.112	-41.948			
		4:KOMBINASI	-435.949	6.47E 3	0.359	0.393	-0.002	21.247			
		5:KOMB B. MA	-689.614	2.13E 3	-23.148	-1.150	0.116	-30.058			
13454	13454	1:BEBAN MATI	240.062	-3.15E 3	-0.386	-0.291	-0.002	21.430			
		2:BEBAN HIDL	92.421	-1.45E 3	0.065	-0.028	0.000	9.171			
		3:BEBAN GEM	375.332	2.09E 3	22.377	1.388	0.107	21.438			
		4:KOMBINASI	435.949	-6.1E 3	-0.359	-0.393	-0.002	40.389			
		5:KOMB B. MA	689.614	-1.83E 3	23.148	1.150	0.111	49.443			
16522	13451	1:BEBAN MATI	-220.732	1.81E 3	-0.059	-0.673	-0.006	-19.366			
		2:BEBAN HIDL	-69.329	352.212	-0.091	-0.780	-0.002	-4.500			
		3:BEBAN GEM	-110.065	-2.18E 3	0.213	-1.918	-0.001	-23.093			
		4:KOMBINASI	-375.805	2.74E 3	-0.215	-2.057	-0.011	-30.438			
		5:KOMB B. MA	-377.897	-264.272	0.111	-3.156	-0.008	-46.313			
163	163	1:BEBAN MATI	220.732	-688.309	0.059	0.673	0.007	31.633			
		2:BEBAN HIDL	69.329	-352.212	0.091	0.780	0.003	7.954			
		3:BEBAN GEM	110.065	2.18E 3	-0.213	1.918	-0.001	1.712			
		4:KOMBINASI	375.805	-1.39E 3	0.215	2.057	0.013	50.686			
		5:KOMB B. MA	377.897	1.39E 3	-0.111	3.156	0.007	38.204			
16523	13454	1:BEBAN MATI	-246.729	2.02E 3	-0.176	0.178	-0.001	-22.557			
		2:BEBAN HIDL	-94.666	833.723	-0.220	0.010	0.000	-9.567			
		3:BEBAN GEM	-248.436	-1.95E 3	-26.599	-0.811	0.121	-20.590			
		4:KOMBINASI	-447.540	3.76E 3	-0.563	0.230	0.000	-42.376			
		5:KOMB B. MA	-564.386	476.058	-28.237	-0.668	0.127	-49.917			
12821	12821	1:BEBAN MATI	246.729	-1.72E 3	0.176	-0.178	0.002	40.914			
		2:BEBAN HIDL	94.666	-833.723	0.220	-0.010	0.002	17.743			
		3:BEBAN GEM	248.436	1.95E 3	26.599	0.811	0.139	1.479			
		4:KOMBINASI	447.540	-3.4E 3	0.563	-0.230	0.005	77.486			
		5:KOMB B. MA	564.386	-175.731	28.237	0.668	0.150	53.113			
16524	13455	1:BEBAN MATI	5.543	-674.092	-0.122	-0.128	0.001	-7.715			
		2:BEBAN HIDL	1.217	-406.224	0.037	0.008	-0.000	-3.745			
		3:BEBAN GEM	8.794	7.504	6.994	0.305	-0.033	2.111			
		4:KOMBINASI	8.598	-1.46E 3	-0.087	-0.141	0.000	-15.251			
		5:KOMB B. MA	15.506	-909.946	7.244	0.197	-0.034	-7.746			
163	163	1:BEBAN MATI	-5.543	904.743	0.122	0.128	0.001	-1.574			
		2:BEBAN HIDL	-1.217	406.224	-0.037	-0.008	-0.000	-1.035			
		3:BEBAN GEM	-8.794	-7.504	-6.994	-0.305	-0.049	-2.023			



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Job No 1	Sheet No 155	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-8.598	1.74E 3	0.087	0.141	0.001	-3.546			
		5:KOMB B. MA	-15.506	1.14E 3	-7.244	-0.197	-0.051	-4.319			
16525	13456	1:BEBAN MATI	-11.942	-97.253	-0.028	-0.066	0.001	-11.489			
		2:BEBAN HIDL	-5.265	-124.453	0.054	0.009	-0.000	-5.943			
		3:BEBAN GEM	28.376	-99.959	7.473	0.279	-0.041	0.764			
		4:KOMBINASI	-22.755	-315.828	0.053	-0.065	0.000	-23.295			
		5:KOMB B. MA	14.693	-276.881	7.851	0.233	-0.043	-14.252			
	13455	1:BEBAN MATI	11.942	327.905	0.028	0.066	-0.000	8.987			
		2:BEBAN HIDL	5.265	124.453	-0.054	-0.009	-0.000	4.478			
		3:BEBAN GEM	-28.376	99.959	-7.473	-0.279	-0.046	-1.940			
		4:KOMBINASI	22.755	592.610	-0.053	0.065	-0.001	17.949			
		5:KOMB B. MA	-14.693	507.533	-7.851	-0.233	-0.049	9.637			
16526	13457	1:BEBAN MATI	-33.497	817.367	0.054	0.039	-0.000	-3.050			
		2:BEBAN HIDL	-13.079	334.581	0.072	0.001	-0.000	-1.945			
		3:BEBAN GEM	53.718	-103.557	10.068	-0.227	-0.060	-0.600			
		4:KOMBINASI	-61.122	1.52E 3	0.180	0.048	-0.001	-6.771			
		5:KOMB B. MA	15.060	909.381	10.668	-0.199	-0.063	-4.847			
	13456	1:BEBAN MATI	33.497	-586.715	-0.054	-0.039	-0.001	11.311			
		2:BEBAN HIDL	13.079	-334.581	-0.072	-0.001	-0.000	5.882			
		3:BEBAN GEM	-53.718	103.557	-10.068	0.227	-0.059	-0.618			
		4:KOMBINASI	61.122	-1.24E 3	-0.180	-0.048	-0.001	22.985			
		5:KOMB B. MA	-15.060	-678.729	-10.668	0.199	-0.063	14.191			
16527	13459	1:BEBAN MATI	-266.438	-2.18E 3	2.934	2.387	-0.019	-19.465			
		2:BEBAN HIDL	-82.111	-622.321	1.200	1.599	-0.008	-4.630			
		3:BEBAN GEM	318.563	-2.21E 3	-0.846	1.478	0.001	20.086			
		4:KOMBINASI	-451.103	-3.61E 3	5.440	5.422	-0.036	-30.767			
		5:KOMB B. MA	18.786	-4.87E 3	2.765	4.899	-0.023	-1.154			
	13464	1:BEBAN MATI	266.438	3.3E 3	-2.934	-2.387	-0.010	-7.392			
		2:BEBAN HIDL	82.111	622.321	-1.200	-1.599	-0.004	-1.473			
		3:BEBAN GEM	-318.563	2.21E 3	0.846	-1.478	0.008	-41.772			
		4:KOMBINASI	451.103	4.96E 3	-5.440	-5.422	-0.017	-11.226			
		5:KOMB B. MA	-18.786	6E 3	-2.765	-4.899	-0.004	-52.136			
16528	13462	1:BEBAN MATI	-263.638	-3.09E 3	-0.412	-0.318	0.002	-22.146			
		2:BEBAN HIDL	-102.863	-1.38E 3	-0.262	-0.028	0.001	-10.049			
		3:BEBAN GEM	-6.145	-2.05E 3	-24.083	1.411	0.112	18.715			
		4:KOMBINASI	-480.946	-5.91E 3	-0.913	-0.426	0.004	-42.654			
		5:KOMB B. MA	-331.808	-6.07E 3	-25.857	1.146	0.120	-8.524			
	13467	1:BEBAN MATI	263.638	3.39E 3	0.412	0.318	0.002	-9.617			
		2:BEBAN HIDL	102.863	1.38E 3	0.262	0.028	0.001	-3.443			
		3:BEBAN GEM	6.145	2.05E 3	24.083	-1.411	0.124	-38.827			
		4:KOMBINASI	480.946	6.27E 3	0.913	0.426	0.005	-17.049			
		5:KOMB B. MA	331.808	6.37E 3	25.857	-1.146	0.133	-52.451			
16529	13464	1:BEBAN MATI	-375.398	-3.66E 3	28.761	3.472	-0.123	8.836			
		2:BEBAN HIDL	-123.171	-846.221	12.576	2.242	-0.055	2.129			
		3:BEBAN GEM	614.306	-2.44E 3	-28.390	3.730	0.101	42.552			
		4:KOMBINASI	-647.551	-5.74E 3	54.635	7.753	-0.235	14.009			
		5:KOMB B. MA	195.721	-6.73E 3	6.497	8.734	-0.050	54.793			
	87	1:BEBAN MATI	375.398	4.78E 3	-28.761	-3.472	-0.159	-50.226			



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Job No 1	Sheet No 156	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	123.171	846.221	-12.576	-2.242	-0.069	-10.427			
		3:BEBAN GEM	-614.306	2.44E 3	28.390	-3.730	0.177	-66.471			
		4:KOMBINASI	647.551	7.09E 3	-54.635	-7.753	-0.300	-76.955			
		5:KOMB B. MA	-195.721	7.85E 3	-6.497	-8.734	-0.014	-126.277			
16530	13467	1:BEBAN MATI	-293.933	-4.48E 3	-0.787	-0.323	0.005	11.188			
		2:BEBAN HIDL	-117.852	-1.97E 3	-0.097	-0.021	0.001	4.188			
		3:BEBAN GEM	146.576	-2.59E 3	-36.511	2.390	0.155	39.166			
		4:KOMBINASI	-541.284	-8.52E 3	-1.099	-0.421	0.007	20.127			
		5:KOMB B. MA	-210.740	-8.37E 3	-39.182	2.174	0.168	54.824			
	85	1:BEBAN MATI	293.933	4.78E 3	0.787	0.323	0.003	-56.554			
		2:BEBAN HIDL	117.852	1.97E 3	0.097	0.021	0.000	-23.465			
		3:BEBAN GEM	-146.576	2.59E 3	36.511	-2.390	0.203	-64.550			
		4:KOMBINASI	541.284	8.88E 3	1.099	0.421	0.004	-105.408			
		5:KOMB B. MA	210.740	8.67E 3	39.182	-2.174	0.216	-138.410			
16531	13468	1:BEBAN MATI	-197.110	-2.44E 3	3.786	-1.115	-0.026	-1.510			
		2:BEBAN HIDL	-22.911	-555.312	1.572	0.333	-0.012	0.139			
		3:BEBAN GEM	1.98E 3	-279.583	-3.484	-2.456	-0.029	5.337			
		4:KOMBINASI	-273.191	-3.81E 3	7.058	-0.805	-0.051	-1.590			
		5:KOMB B. MA	1.87E 3	-3.06E 3	1.071	-3.494	-0.064	4.178			
	138	1:BEBAN MATI	197.110	3.96E 3	-3.786	1.115	-0.029	-45.544			
		2:BEBAN HIDL	22.911	555.312	-1.572	-0.333	-0.011	-8.308			
		3:BEBAN GEM	-1.98E 3	279.583	3.484	2.456	0.081	-9.450			
		4:KOMBINASI	273.191	5.64E 3	-7.058	0.805	-0.053	-67.945			
		5:KOMB B. MA	-1.87E 3	4.59E 3	-1.071	3.494	0.049	-60.451			
16532	13470	1:BEBAN MATI	-13.015	-744.866	70.525	1.794	-0.207	-5.755			
		2:BEBAN HIDL	-30.801	-257.594	16.404	0.164	-0.052	-2.301			
		3:BEBAN GEM	-522.580	-5.95E 3	-749.813	-0.297	1.978	5.591			
		4:KOMBINASI	-64.899	-1.31E 3	110.877	2.415	-0.331	-10.587			
		5:KOMB B. MA	-580.205	-7.15E 3	-706.936	1.580	1.839	-1.264			
	13390	1:BEBAN MATI	13.015	1.31E 3	-70.525	-1.794	-0.139	0.723			
		2:BEBAN HIDL	30.801	257.594	-16.404	-0.164	-0.029	1.038			
		3:BEBAN GEM	522.580	5.95E 3	749.813	0.297	1.699	-34.774			
		4:KOMBINASI	64.899	1.98E 3	-110.877	-2.415	-0.213	2.528			
		5:KOMB B. MA	580.205	7.71E 3	706.936	-1.580	1.628	-35.168			
16533	13471	1:BEBAN MATI	-26.263	-841.709	-0.374	1.369	0.003	3.652			
		2:BEBAN HIDL	-7.995	-345.712	-0.002	0.251	0.000	-0.671			
		3:BEBAN GEM	-120.153	79.175	-3.419	-0.054	0.027	2.239			
		4:KOMBINASI	-44.308	-1.56E 3	-0.452	2.045	0.005	3.308			
		5:KOMB B. MA	-157.221	-966.002	-3.965	1.463	0.032	5.600			
	12825	1:BEBAN MATI	26.263	1.13E 3	0.374	-1.369	0.002	-18.154			
		2:BEBAN HIDL	7.995	345.712	0.002	-0.251	-0.000	-4.414			
		3:BEBAN GEM	120.153	-79.175	3.419	0.054	0.023	-1.075			
		4:KOMBINASI	44.308	1.91E 3	0.452	-2.045	0.002	-28.847			
		5:KOMB B. MA	157.221	1.25E 3	3.965	-1.463	0.026	-21.931			
16534	13472	1:BEBAN MATI	-74.864	1.34E 3	-1.604	0.035	0.012	-9.817			
		2:BEBAN HIDL	-4.029	181.464	-0.310	-0.209	0.002	-0.812			
		3:BEBAN GEM	1.9E 3	-323.558	-2.208	-1.570	-0.001	-1.446			
		4:KOMBINASI	-96.283	1.9E 3	-2.420	-0.293	0.018	-13.080			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	1.92E 3	1.11E 3	-4.108	-1.739	0.012	-11.823			
	201	1:BEBAN MATI	74.864	181.986	1.604	-0.035	0.012	18.363			
		2:BEBAN HIDL	4.029	-181.464	0.310	0.209	0.003	3.481			
		3:BEBAN GEM	-1.9E 3	323.558	2.208	1.570	0.034	-3.313			
		4:KOMBINASI	96.283	-71.959	2.420	0.293	0.018	27.605			
		5:KOMB B. MA	-1.92E 3	412.843	4.108	1.739	0.049	16.972			
16535	13474	1:BEBAN MATI	-409.128	-4.02E 3	3.946	0.746	-0.037	-11.789			
		2:BEBAN HIDL	-125.953	-1.55E 3	0.847	1.052	-0.009	-4.679			
		3:BEBAN GEM	947.139	-704.432	4.144	-6.622	-0.094	7.085			
		4:KOMBINASI	-692.479	-7.3E 3	6.090	2.579	-0.060	-21.633			
		5:KOMB B. MA	509.796	-5.69E 3	8.805	-5.576	-0.141	-7.157			
	111	1:BEBAN MATI	409.128	4.47E 3	-3.946	-0.746	-0.021	-50.651			
		2:BEBAN HIDL	125.953	1.55E 3	-0.847	-1.052	-0.003	-18.111			
		3:BEBAN GEM	-947.139	704.432	-4.144	6.622	0.033	-17.447			
		4:KOMBINASI	692.479	7.84E 3	-6.090	-2.579	-0.030	-89.759			
		5:KOMB B. MA	-509.796	6.14E 3	-8.805	5.576	0.012	-79.838			
16536	13475	1:BEBAN MATI	-223.075	2.58E 3	-0.109	-1.484	-0.003	-10.676			
		2:BEBAN HIDL	-59.007	875.702	-0.200	-0.644	0.001	-3.532			
		3:BEBAN GEM	1.01E 3	-572.438	1.379	3.258	-0.027	-7.560			
		4:KOMBINASI	-362.101	4.5E 3	-0.450	-2.811	-0.003	-18.463			
		5:KOMB B. MA	800.281	2.5E 3	1.220	1.551	-0.031	-20.734			
	12825	1:BEBAN MATI	223.075	-2.13E 3	0.109	1.484	0.005	45.289			
		2:BEBAN HIDL	59.007	-875.702	0.200	0.644	0.002	16.414			
		3:BEBAN GEM	-1.01E 3	572.438	-1.379	-3.258	0.007	-0.861			
		4:KOMBINASI	362.101	-3.95E 3	0.450	2.811	0.009	80.610			
		5:KOMB B. MA	-800.281	-2.05E 3	-1.220	-1.551	0.013	54.234			
16537	13477	1:BEBAN MATI	-199.451	2.28E 3	-3.609	-2.447	0.027	-10.885			
		2:BEBAN HIDL	-65.842	344.104	-1.165	-1.296	0.009	-2.843			
		3:BEBAN GEM	-1.06E 3	-2.09E 3	-1.775	-2.042	0.043	-28.804			
		4:KOMBINASI	-344.688	3.28E 3	-6.195	-5.011	0.048	-17.612			
		5:KOMB B. MA	-1.35E 3	293.208	-6.172	-5.369	0.078	-42.836			
	12814	1:BEBAN MATI	199.451	-588.622	3.609	2.447	0.026	31.959			
		2:BEBAN HIDL	65.842	-344.104	1.165	1.296	0.008	7.905			
		3:BEBAN GEM	1.06E 3	2.09E 3	1.775	2.042	-0.017	-1.875			
		4:KOMBINASI	344.688	-1.26E 3	6.195	5.011	0.043	50.999			
		5:KOMB B. MA	1.35E 3	1.39E 3	6.172	5.369	0.013	34.734			
16538	13478	1:BEBAN MATI	-125.941	693.616	-0.006	-0.044	-0.001	-3.475			
		2:BEBAN HIDL	-38.700	138.437	-0.125	-0.047	0.001	-2.776			
		3:BEBAN GEM	-115.132	-262.934	-13.517	0.185	0.104	-4.016			
		4:KOMBINASI	-213.050	1.05E 3	-0.208	-0.128	-0.000	-8.611			
		5:KOMB B. MA	-270.050	500.596	-14.274	0.122	0.108	-9.357			
	12849	1:BEBAN MATI	125.941	-405.301	0.006	0.044	0.001	11.557			
		2:BEBAN HIDL	38.700	-138.437	0.125	0.047	0.001	4.812			
		3:BEBAN GEM	115.132	262.934	13.517	-0.185	0.095	0.148			
		4:KOMBINASI	213.050	-707.860	0.208	0.128	0.003	21.568			
		5:KOMB B. MA	270.050	-212.282	14.274	-0.122	0.101	14.600			
16539	13480	1:BEBAN MATI	-9.234	-670.717	0.699	0.337	-0.005	-9.221			
		2:BEBAN HIDL	-2.541	-395.470	0.323	0.033	-0.002	-4.499			



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Job No 1	Sheet No 158	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	83.057	-15.304	9.061	0.832	-0.046	1.334			
		4:KOMBINASI	-15.146	-1.44E 3	1.356	0.457	-0.009	-18.263			
		5:KOMB B. MA	76.452	-924.069	10.407	1.230	-0.054	-10.520			
	12814	1:BEBAN MATI	9.234	959.032	-0.699	-0.337	-0.006	-2.765			
		2:BEBAN HIDL	2.541	395.470	-0.323	-0.033	-0.003	-1.319			
		3:BEBAN GEM	-83.057	15.304	-9.061	-0.832	-0.087	-1.559			
		4:KOMBINASI	15.146	1.78E 3	-1.356	-0.457	-0.011	-5.428			
		5:KOMB B. MA	-76.452	1.21E 3	-10.407	-1.230	-0.099	-5.194			
16540	13481	1:BEBAN MATI	-83.570	683.305	0.234	-0.191	-0.002	-3.661			
		2:BEBAN HIDL	-24.660	246.718	0.135	-0.012	-0.001	-2.037			
		3:BEBAN GEM	369.304	-50.301	10.511	-0.856	-0.080	-1.360			
		4:KOMBINASI	-139.739	1.21E 3	0.496	-0.248	-0.004	-7.652			
		5:KOMB B. MA	289.403	778.520	11.351	-1.097	-0.087	-6.311			
	12849	1:BEBAN MATI	83.570	-394.991	-0.234	0.191	-0.001	11.592			
		2:BEBAN HIDL	24.660	-246.718	-0.135	0.012	-0.001	5.666			
		3:BEBAN GEM	-369.304	50.301	-10.511	0.856	-0.075	0.620			
		4:KOMBINASI	139.739	-868.738	-0.496	0.248	-0.003	22.975			
		5:KOMB B. MA	-289.403	-490.205	-11.351	1.097	-0.080	15.643			
16541	13483	1:BEBAN MATI	-229.544	-3.42E 3	24.600	4.507	-0.176	-3.799			
		2:BEBAN HIDL	-59.024	-917.834	7.865	2.443	-0.056	0.301			
		3:BEBAN GEM	846.634	-2.38E 3	-68.942	2.662	0.474	32.654			
		4:KOMBINASI	-369.891	-5.58E 3	42.103	9.317	-0.301	-4.077			
		5:KOMB B. MA	624.007	-6.47E 3	-43.071	8.767	0.289	30.667			
	110	1:BEBAN MATI	229.544	5.11E 3	-24.600	-4.507	-0.186	-58.980			
		2:BEBAN HIDL	59.024	917.834	-7.865	-2.443	-0.059	-13.802			
		3:BEBAN GEM	-846.634	2.38E 3	68.942	-2.662	0.540	-67.674			
		4:KOMBINASI	369.891	7.6E 3	-42.103	-9.317	-0.319	-92.859			
		5:KOMB B. MA	-624.007	8.16E 3	43.071	-8.767	0.345	-138.319			
16542	13484	1:BEBAN MATI	-132.597	-1.06E 3	0.920	0.078	-0.006	-2.314			
		2:BEBAN HIDL	-42.672	-554.240	0.249	0.063	-0.002	-1.040			
		3:BEBAN GEM	-237.189	121.442	-15.204	-0.147	0.106	4.473			
		4:KOMBINASI	-227.392	-2.16E 3	1.502	0.194	-0.010	-4.442			
		5:KOMB B. MA	-407.248	-1.27E 3	-14.895	-0.039	0.105	1.758			
	12828	1:BEBAN MATI	132.597	1.35E 3	-0.920	-0.078	-0.008	-15.448			
		2:BEBAN HIDL	42.672	554.240	-0.249	-0.063	-0.002	-7.113			
		3:BEBAN GEM	237.189	-121.442	15.204	0.147	0.117	-2.687			
		4:KOMBINASI	227.392	2.51E 3	-1.502	-0.194	-0.012	-29.918			
		5:KOMB B. MA	407.248	1.56E 3	14.895	0.039	0.114	-22.537			
16543	13486	1:BEBAN MATI	-482.766	-5.1E 3	7.605	-0.661	-0.050	-18.821			
		2:BEBAN HIDL	-151.876	-1.82E 3	3.327	-0.482	-0.023	-6.143			
		3:BEBAN GEM	1.49E 3	-709.947	35.351	-7.396	-0.251	7.560			
		4:KOMBINASI	-822.320	-9.03E 3	14.449	-1.563	-0.096	-32.414			
		5:KOMB B. MA	987.301	-6.94E 3	46.720	-8.716	-0.328	-14.569			
	110	1:BEBAN MATI	482.766	6.79E 3	-7.605	0.661	-0.062	-68.589			
		2:BEBAN HIDL	151.876	1.82E 3	-3.327	0.482	-0.026	-20.628			
		3:BEBAN GEM	-1.49E 3	709.947	-35.351	7.396	-0.269	-18.003			
		4:KOMBINASI	822.320	11.1E 3	-14.449	1.563	-0.116	-115.311			
		5:KOMB B. MA	-987.301	8.62E 3	-46.720	8.716	-0.360	-99.869			



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Job No 1	Sheet No 159	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16544	13487	1:BEBAN MATI	-243.018	3.82E 3	-0.284	-0.101	0.002	-12.365			
		2:BEBAN HIDL	-75.861	1.04E 3	0.183	-0.035	-0.002	-4.144			
		3:BEBAN GEM	910.886	-557.233	38.123	3.379	-0.274	-8.368			
		4:KOMBINASI	-412.999	6.25E 3	-0.048	-0.177	-0.000	-21.468			
		5:KOMB B. MA	667.896	3.86E 3	39.855	3.426	-0.287	-23.637			
12828		1:BEBAN MATI	243.018	-2.13E 3	0.284	0.101	0.002	56.088			
		2:BEBAN HIDL	75.861	-1.04E 3	-0.183	0.035	-0.001	19.502			
		3:BEBAN GEM	-910.886	557.233	-38.123	-3.379	-0.287	0.171			
		4:KOMBINASI	412.999	-4.22E 3	0.048	0.177	0.001	98.509			
		5:KOMB B. MA	-667.896	-2.17E 3	-39.855	-3.426	-0.299	67.969			
16545	13489	1:BEBAN MATI	-252.836	3.05E 3	-0.034	-0.194	0.002	-13.073			
		2:BEBAN HIDL	-89.688	751.773	-0.012	-0.008	0.001	-4.691			
		3:BEBAN GEM	229.116	-2.1E 3	-6.066	-1.247	0.040	-31.345			
		4:KOMBINASI	-446.904	4.87E 3	-0.060	-0.245	0.004	-23.194			
		5:KOMB B. MA	-66.077	1.3E 3	-6.410	-1.508	0.045	-48.800			
12813		1:BEBAN MATI	252.836	-1.36E 3	0.034	0.194	-0.002	45.565			
		2:BEBAN HIDL	89.688	-751.773	0.012	0.008	-0.001	15.750			
		3:BEBAN GEM	-229.116	2.1E 3	6.066	1.247	0.049	0.407			
		4:KOMBINASI	446.904	-2.84E 3	0.060	0.245	-0.003	79.878			
		5:KOMB B. MA	66.077	392.380	6.410	1.508	0.050	55.443			
16546	13490	1:BEBAN MATI	-143.464	597.218	0.256	-0.040	-0.003	-3.328			
		2:BEBAN HIDL	-47.358	175.514	0.045	-0.007	-0.001	-1.612			
		3:BEBAN GEM	-171.819	-246.859	-3.744	0.237	0.028	-4.337			
		4:KOMBINASI	-247.930	997.484	0.379	-0.060	-0.004	-6.573			
		5:KOMB B. MA	-352.289	443.324	-3.648	0.204	0.027	-8.849			
12839		1:BEBAN MATI	143.464	-308.904	-0.256	0.040	-0.001	9.993			
		2:BEBAN HIDL	47.358	-175.514	-0.045	0.007	-0.000	4.194			
		3:BEBAN GEM	171.819	246.859	3.744	-0.237	0.027	0.706			
		4:KOMBINASI	247.930	-651.507	-0.379	0.060	-0.001	18.701			
		5:KOMB B. MA	352.289	-155.010	3.648	-0.204	0.027	13.250			
16547	13492	1:BEBAN MATI	-102.070	-909.969	0.371	-0.014	-0.002	-6.267			
		2:BEBAN HIDL	-31.683	-489.394	0.220	-0.008	-0.001	-2.542			
		3:BEBAN GEM	459.280	15.228	18.567	0.787	-0.138	1.020			
		4:KOMBINASI	-173.176	-1.87E 3	0.797	-0.029	-0.005	-11.587			
		5:KOMB B. MA	361.164	-1.19E 3	19.999	0.807	-0.147	-6.721			
12813		1:BEBAN MATI	102.070	1.2E 3	-0.371	0.014	-0.003	-9.239			
		2:BEBAN HIDL	31.683	489.394	-0.220	0.008	-0.002	-4.657			
		3:BEBAN GEM	-459.280	-15.228	-18.567	-0.787	-0.136	-0.796			
		4:KOMBINASI	173.176	2.22E 3	-0.797	0.029	-0.007	-18.539			
		5:KOMB B. MA	-361.164	1.48E 3	-19.999	-0.807	-0.147	-12.869			
16548	13493	1:BEBAN MATI	-132.446	705.818	0.278	-0.000	-0.002	-3.466			
		2:BEBAN HIDL	-42.258	203.187	0.160	0.003	-0.001	-1.758			
		3:BEBAN GEM	651.178	-58.541	24.454	-0.881	-0.185	-1.239			
		4:KOMBINASI	-226.548	1.17E 3	0.590	0.005	-0.005	-6.971			
		5:KOMB B. MA	525.935	766.262	26.051	-0.924	-0.197	-5.821			
12839		1:BEBAN MATI	132.446	-417.504	-0.278	0.000	-0.002	11.728			
		2:BEBAN HIDL	42.258	-203.187	-0.160	-0.003	-0.001	4.747			
		3:BEBAN GEM	-651.178	58.541	-24.454	0.881	-0.175	0.377			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 160	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	226.548	-826.103	-0.590	-0.005	-0.004	21.668			
		5:KOMB B. MA	-525.935	-477.947	-26.051	0.924	-0.186	14.972			
16549	13495	1:BEBAN MATI	-240.765	-4.68E 3	9.739	1.570	-0.075	-8.764			
		2:BEBAN HIDL	-82.193	-1.66E 3	2.900	0.505	-0.022	-2.629			
		3:BEBAN GEM	71.137	-2.56E 3	-22.204	2.414	0.164	31.408			
		4:KOMBINASI	-420.427	-8.28E 3	16.327	2.691	-0.126	-14.724			
		5:KOMB B. MA	-215.387	-8.37E 3	-11.835	4.408	0.083	22.636			
	109	1:BEBAN MATI	240.765	6.37E 3	-9.739	-1.570	-0.068	-72.540			
		2:BEBAN HIDL	82.193	1.66E 3	-2.900	-0.505	-0.020	-21.785			
		3:BEBAN GEM	-71.137	2.56E 3	22.204	-2.414	0.163	-69.123			
		4:KOMBINASI	420.427	10.3E 3	-16.327	-2.691	-0.114	-121.903			
		5:KOMB B. MA	215.387	10.1E 3	11.835	-4.408	0.091	-158.190			
16550	13496	1:BEBAN MATI	-142.510	-1.04E 3	0.103	0.008	-0.000	-1.672			
		2:BEBAN HIDL	-48.580	-538.427	-0.026	-0.006	0.000	-0.944			
		3:BEBAN GEM	-82.796	97.252	-3.934	-0.193	0.027	4.413			
		4:KOMBINASI	-248.741	-2.11E 3	0.082	0.000	0.000	-3.518			
		5:KOMB B. MA	-258.594	-1.26E 3	-4.043	-0.198	0.028	2.395			
	12831	1:BEBAN MATI	142.510	1.33E 3	-0.103	-0.008	-0.001	-15.704			
		2:BEBAN HIDL	48.580	538.427	0.026	0.006	0.000	-6.976			
		3:BEBAN GEM	82.796	-97.252	3.934	0.193	0.031	-2.982			
		4:KOMBINASI	248.741	2.45E 3	-0.082	-0.000	-0.001	-30.007			
		5:KOMB B. MA	258.594	1.55E 3	4.043	0.198	0.031	-23.021			
16551	13498	1:BEBAN MATI	-377.436	-5.1E 3	0.042	-0.089	-0.000	-17.640			
		2:BEBAN HIDL	-117.558	-1.8E 3	0.303	0.040	-0.002	-5.529			
		3:BEBAN GEM	765.186	-753.386	57.765	-7.259	-0.428	7.670			
		4:KOMBINASI	-641.015	-8.99E 3	0.535	-0.043	-0.004	-30.014			
		5:KOMB B. MA	355.475	-6.97E 3	60.877	-7.687	-0.451	-12.904			
	109	1:BEBAN MATI	377.436	6.78E 3	-0.042	0.089	-0.000	-69.727			
		2:BEBAN HIDL	117.558	1.8E 3	-0.303	-0.040	-0.002	-20.923			
		3:BEBAN GEM	-765.186	753.386	-57.765	7.259	-0.421	-18.752			
		4:KOMBINASI	641.015	11E 3	-0.535	0.043	-0.004	-117.148			
		5:KOMB B. MA	-355.475	8.65E 3	-60.877	7.687	-0.444	-101.970			
16552	13499	1:BEBAN MATI	-244.331	3.8E 3	0.319	0.069	-0.002	-12.011			
		2:BEBAN HIDL	-79.301	1.02E 3	0.108	0.008	-0.001	-3.902			
		3:BEBAN GEM	1.08E 3	-546.772	75.173	3.439	-0.570	-8.535			
		4:KOMBINASI	-420.079	6.19E 3	0.555	0.095	-0.004	-20.656			
		5:KOMB B. MA	845.864	3.83E 3	79.315	3.684	-0.602	-23.314			
	12831	1:BEBAN MATI	244.331	-2.11E 3	-0.319	-0.069	-0.002	55.426			
		2:BEBAN HIDL	79.301	-1.02E 3	-0.108	-0.008	-0.001	18.934			
		3:BEBAN GEM	-1.08E 3	546.772	-75.173	-3.439	-0.536	0.492			
		4:KOMBINASI	420.079	-4.16E 3	-0.555	-0.095	-0.004	96.806			
		5:KOMB B. MA	-845.864	-2.15E 3	-79.315	-3.684	-0.565	67.303			
16553	13501	1:BEBAN MATI	-236.163	3.17E 3	-2.714	-0.083	0.022	-10.637			
		2:BEBAN HIDL	-85.653	842.788	-0.859	-0.108	0.007	-3.281			
		3:BEBAN GEM	-215.133	-2.01E 3	-23.143	-1.129	0.172	-30.371			
		4:KOMBINASI	-420.442	5.15E 3	-4.632	-0.271	0.038	-18.015			
		5:KOMB B. MA	-513.445	1.57E 3	-27.530	-1.333	0.208	-44.496			
	12812	1:BEBAN MATI	236.163	-1.48E 3	2.714	0.083	0.017	44.849			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 161	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	85.653	-842.788	0.859	0.108	0.006	15.679			
		3:BEBAN GEM	215.133	2.01E 3	23.143	1.129	0.168	0.868			
		4:KOMBINASI	420.442	-3.13E 3	4.632	0.271	0.030	78.904			
		5:KOMB B. MA	513.445	118.605	27.530	1.333	0.197	55.167			
16554	13502	1:BEBAN MATI	-148.243	671.996	-0.169	-0.067	0.001	-3.724			
		2:BEBAN HIDL	-50.957	196.078	-0.079	-0.024	0.000	-1.683			
		3:BEBAN GEM	154.574	-226.118	-11.493	0.243	0.083	-4.248			
		4:KOMBINASI	-259.422	1.12E 3	-0.329	-0.118	0.002	-7.161			
		5:KOMB B. MA	-16.514	552.219	-12.284	0.174	0.088	-9.194			
	12842	1:BEBAN MATI	148.243	-383.682	0.169	0.067	0.002	11.488			
		2:BEBAN HIDL	50.957	-196.078	0.079	0.024	0.001	4.567			
		3:BEBAN GEM	-154.574	226.118	11.493	-0.243	0.086	0.922			
		4:KOMBINASI	259.422	-774.143	0.329	0.118	0.003	21.093			
		5:KOMB B. MA	16.514	-263.905	12.284	-0.174	0.093	15.196			
16555	13504	1:BEBAN MATI	-99.058	-847.560	-0.070	-0.252	0.000	-5.840			
		2:BEBAN HIDL	-33.964	-493.598	0.015	-0.017	-0.000	-2.464			
		3:BEBAN GEM	197.399	14.882	25.872	0.746	-0.190	1.067			
		4:KOMBINASI	-173.211	-1.81E 3	-0.059	-0.330	0.000	-10.950			
		5:KOMB B. MA	87.833	-1.13E 3	27.105	0.521	-0.200	-6.198			
	12812	1:BEBAN MATI	99.058	1.14E 3	0.070	0.252	0.001	-8.749			
		2:BEBAN HIDL	33.964	493.598	-0.015	0.017	-0.000	-4.797			
		3:BEBAN GEM	-197.399	-14.882	-25.872	-0.746	-0.190	-0.848			
		4:KOMBINASI	173.211	2.15E 3	0.059	0.330	0.001	-18.173			
		5:KOMB B. MA	-87.833	1.42E 3	-27.105	-0.521	-0.199	-12.517			
16556	13505	1:BEBAN MATI	-129.466	629.071	0.123	0.203	-0.001	-3.374			
		2:BEBAN HIDL	-44.417	204.982	0.051	0.018	-0.000	-1.784			
		3:BEBAN GEM	92.810	-64.928	28.288	-0.866	-0.208	-1.261			
		4:KOMBINASI	-226.425	1.08E 3	0.229	0.271	-0.001	-6.904			
		5:KOMB B. MA	-58.665	683.885	29.857	-0.696	-0.219	-5.769			
	12842	1:BEBAN MATI	129.466	-340.757	-0.123	-0.203	-0.001	10.507			
		2:BEBAN HIDL	44.417	-204.982	-0.051	-0.018	-0.000	4.800			
		3:BEBAN GEM	-92.810	64.928	-28.288	0.866	-0.209	0.306			
		4:KOMBINASI	226.425	-736.879	-0.229	-0.271	-0.002	20.288			
		5:KOMB B. MA	58.665	-395.571	-29.857	0.696	-0.220	13.708			
16557	13507	1:BEBAN MATI	-296.257	-4.39E 3	6.225	1.726	-0.049	-10.402			
		2:BEBAN HIDL	-104.556	-1.59E 3	2.122	0.603	-0.017	-3.839			
		3:BEBAN GEM	-45.149	-2.48E 3	-32.239	2.337	0.227	29.422			
		4:KOMBINASI	-522.798	-7.82E 3	10.865	3.037	-0.086	-18.625			
		5:KOMB B. MA	-406.396	-7.96E 3	-26.353	4.543	0.178	18.187			
	81	1:BEBAN MATI	296.257	6.08E 3	-6.225	-1.726	-0.042	-66.655			
		2:BEBAN HIDL	104.556	1.59E 3	-2.122	-0.603	-0.014	-19.603			
		3:BEBAN GEM	45.149	2.48E 3	32.239	-2.337	0.248	-65.936			
		4:KOMBINASI	522.798	9.85E 3	-10.865	-3.037	-0.073	-111.351			
		5:KOMB B. MA	406.396	9.65E 3	26.353	-4.543	0.209	-147.650			
16558	13508	1:BEBAN MATI	-130.959	-1.13E 3	0.093	0.038	-0.000	-3.059			
		2:BEBAN HIDL	-45.447	-501.440	0.019	0.019	-0.000	-1.945			
		3:BEBAN GEM	346.519	90.746	-18.284	-0.192	0.130	3.906			
		4:KOMBINASI	-229.865	-2.16E 3	0.141	0.077	-0.000	-6.784			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 162	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	205.618	-1.33E 3	-19.095	-0.152	0.137	-0.125			
	12834	1:BEBAN MATI	130.959	1.42E 3	-0.093	-0.038	-0.001	-15.671			
		2:BEBAN HIDL	45.447	501.440	-0.019	-0.019	-0.000	-5.431			
		3:BEBAN GEM	-346.519	-90.746	18.284	0.192	0.139	-2.571			
		4:KOMBINASI	229.865	2.5E 3	-0.141	-0.077	-0.002	-27.494			
		5:KOMB B. MA	-205.618	1.62E 3	19.095	0.152	0.144	-21.629			
16559	13510	1:BEBAN MATI	-329.502	-4E 3	-4.625	-1.084	0.034	-13.168			
		2:BEBAN HIDL	-114.889	-1.6E 3	-1.596	-0.464	0.012	-4.990			
		3:BEBAN GEM	-249.067	-703.369	48.750	-7.122	-0.361	7.879			
		4:KOMBINASI	-579.225	-7.36E 3	-8.103	-2.043	0.059	-23.785			
		5:KOMB B. MA	-659.956	-5.7E 3	45.605	-8.840	-0.339	-7.888			
	81	1:BEBAN MATI	329.502	4.45E 3	4.625	1.084	0.034	-48.952			
		2:BEBAN HIDL	114.889	1.6E 3	1.596	0.464	0.012	-18.537			
		3:BEBAN GEM	249.067	703.369	-48.750	7.122	-0.356	-18.226			
		4:KOMBINASI	579.225	7.9E 3	8.103	2.043	0.060	-88.402			
		5:KOMB B. MA	659.956	6.15E 3	-45.605	8.840	-0.332	-79.212			
16560	13511	1:BEBAN MATI	-234.944	2.55E 3	1.016	0.317	-0.009	-8.755			
		2:BEBAN HIDL	-83.213	884.931	0.369	0.168	-0.003	-3.553			
		3:BEBAN GEM	-722.152	-580.558	27.595	3.271	-0.201	-8.537			
		4:KOMBINASI	-415.073	4.47E 3	1.810	0.649	-0.017	-16.191			
		5:KOMB B. MA	-1.04E 3	2.47E 3	30.212	3.852	-0.222	-19.851			
	12834	1:BEBAN MATI	234.944	-2.1E 3	-1.016	-0.317	-0.006	42.895			
		2:BEBAN HIDL	83.213	-884.931	-0.369	-0.168	-0.002	16.570			
		3:BEBAN GEM	722.152	580.558	-27.595	-3.271	-0.205	-0.003			
		4:KOMBINASI	415.073	-3.93E 3	-1.810	-0.649	-0.010	77.986			
		5:KOMB B. MA	1.04E 3	-2.02E 3	-30.212	-3.852	-0.223	52.834			
16561	13512	1:BEBAN MATI	46.992	-198.542	6.812	2.043	-0.065	1.082			
		2:BEBAN HIDL	34.079	-130.309	2.801	0.935	-0.027	1.833			
		3:BEBAN GEM	733.851	-1.43E 3	45.412	-2.502	-0.446	0.021			
		4:KOMBINASI	110.916	-446.744	12.656	3.947	-0.122	4.232			
		5:KOMB B. MA	837.983	-1.78E 3	56.175	-0.023	-0.550	2.204			
	113	1:BEBAN MATI	-46.992	2.22E 3	-6.812	-2.043	-0.055	-22.465			
		2:BEBAN HIDL	-34.079	130.309	-2.801	-0.935	-0.022	-4.134			
		3:BEBAN GEM	-733.851	1.43E 3	-45.412	2.502	-0.356	-25.288			
		4:KOMBINASI	-110.916	2.88E 3	-12.656	-3.947	-0.102	-33.571			
		5:KOMB B. MA	-837.983	3.81E 3	-56.175	0.023	-0.442	-51.497			
16562	13514	1:BEBAN MATI	-216.564	2.36E 3	48.320	1.343	-0.134	-9.166			
		2:BEBAN HIDL	-86.603	931.227	15.607	0.818	-0.044	-3.931			
		3:BEBAN GEM	-363.422	-2.22E 3	-320.842	-1.353	0.863	-33.497			
		4:KOMBINASI	-398.442	4.32E 3	82.955	2.921	-0.232	-17.289			
		5:KOMB B. MA	-650.118	588.649	-279.200	0.413	0.745	-46.697			
	13604	1:BEBAN MATI	216.564	-2.21E 3	-48.320	-1.343	-0.103	20.382			
		2:BEBAN HIDL	86.603	-931.227	-15.607	-0.818	-0.032	8.497			
		3:BEBAN GEM	363.422	2.22E 3	320.842	1.353	0.711	22.605			
		4:KOMBINASI	398.442	-4.14E 3	-82.955	-2.921	-0.175	38.054			
		5:KOMB B. MA	650.118	-438.485	279.200	-0.413	0.624	49.215			
16563	13515	1:BEBAN MATI	-103.557	-333.848	0.228	0.006	-0.003	1.345			
		2:BEBAN HIDL	-33.290	-225.258	0.151	0.003	-0.002	-0.188			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 163	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	501.477	-28.003	15.580	-0.144	-0.136	0.039			
		4:KOMBINASI	-177.532	-761.030	0.515	0.012	-0.006	1.314			
		5:KOMB B. MA	403.021	-498.406	16.678	-0.143	-0.146	1.274			
	12817	1:BEBAN MATI	103.557	679.825	-0.228	-0.006	-0.001	-10.292			
		2:BEBAN HIDL	33.290	225.258	-0.151	-0.003	-0.001	-3.788			
		3:BEBAN GEM	-501.477	28.003	-15.580	0.144	-0.139	-0.533			
		4:KOMBINASI	177.532	1.18E 3	-0.515	-0.012	-0.003	-18.412			
		5:KOMB B. MA	-403.021	844.383	-16.678	0.143	-0.148	-13.125			
16564	13517	1:BEBAN MATI	-217.246	-3.3E 3	57.852	1.179	-0.146	-5.247			
		2:BEBAN HIDL	-76.746	-1.4E 3	19.944	0.148	-0.050	-2.176			
		3:BEBAN GEM	383.440	-2.39E 3	-304.310	2.797	0.824	32.770			
		4:KOMBINASI	-383.489	-6.2E 3	101.333	1.652	-0.255	-9.778			
		5:KOMB B. MA	139.318	-6.65E 3	-249.707	4.204	0.689	27.856			
	13615	1:BEBAN MATI	217.246	3.45E 3	-57.852	-1.179	-0.138	-11.289			
		2:BEBAN HIDL	76.746	1.4E 3	-19.944	-0.148	-0.048	-4.700			
		3:BEBAN GEM	-383.440	2.39E 3	304.310	-2.797	0.668	-44.509			
		4:KOMBINASI	383.489	6.38E 3	-101.333	-1.652	-0.242	-21.067			
		5:KOMB B. MA	-139.318	6.8E 3	249.707	-4.204	0.535	-60.844			
16565	13518	1:BEBAN MATI	-9.603	-700.158	0.331	-0.019	-0.003	-5.529			
		2:BEBAN HIDL	2.032	-417.229	0.241	0.001	-0.002	-1.694			
		3:BEBAN GEM	656.467	-1.41E 3	35.598	-3.599	-0.316	-0.243			
		4:KOMBINASI	-8.273	-1.51E 3	0.783	-0.021	-0.007	-9.345			
		5:KOMB B. MA	680.907	-2.44E 3	37.854	-3.797	-0.336	-6.800			
	112	1:BEBAN MATI	9.603	2.73E 3	-0.331	0.019	-0.003	-24.708			
		2:BEBAN HIDL	-2.032	417.229	-0.241	-0.001	-0.002	-5.671			
		3:BEBAN GEM	-656.467	1.41E 3	-35.598	3.599	-0.312	-24.718			
		4:KOMBINASI	8.273	3.94E 3	-0.783	0.021	-0.007	-38.723			
		5:KOMB B. MA	-680.907	4.46E 3	-37.854	3.797	-0.332	-54.065			
16566	13520	1:BEBAN MATI	-205.438	2.54E 3	69.282	1.485	-0.195	-6.055			
		2:BEBAN HIDL	-80.767	1.03E 3	25.183	0.951	-0.071	-2.301			
		3:BEBAN GEM	409.490	-2.08E 3	-217.355	-1.366	0.569	-32.285			
		4:KOMBINASI	-375.754	4.7E 3	123.431	3.304	-0.348	-10.949			
		5:KOMB B. MA	176.066	978.379	-143.830	0.622	0.359	-41.335			
	13626	1:BEBAN MATI	205.438	-2.39E 3	-69.282	-1.485	-0.144	18.157			
		2:BEBAN HIDL	80.767	-1.03E 3	-25.183	-0.951	-0.052	7.347			
		3:BEBAN GEM	-409.490	2.08E 3	217.355	1.366	0.497	22.094			
		4:KOMBINASI	375.754	-4.52E 3	-123.431	-3.304	-0.257	33.544			
		5:KOMB B. MA	-176.066	-828.215	143.830	-0.622	0.346	45.765			
16567	13521	1:BEBAN MATI	-96.198	-361.979	0.191	0.039	-0.002	0.931			
		2:BEBAN HIDL	-33.701	-229.752	0.077	0.005	-0.001	-0.189			
		3:BEBAN GEM	202.052	-24.651	16.933	-0.138	-0.150	0.086			
		4:KOMBINASI	-169.360	-801.978	0.352	0.056	-0.003	0.814			
		5:KOMB B. MA	95.735	-525.714	18.016	-0.102	-0.160	0.907			
	12816	1:BEBAN MATI	96.198	707.956	-0.191	-0.039	-0.002	-10.374			
		2:BEBAN HIDL	33.701	229.752	-0.077	-0.005	-0.001	-3.866			
		3:BEBAN GEM	-202.052	24.651	-16.933	0.138	-0.148	-0.521			
		4:KOMBINASI	169.360	1.22E 3	-0.352	-0.056	-0.003	-18.635			
		5:KOMB B. MA	-95.735	871.691	-18.016	0.102	-0.158	-13.240			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 164	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16568	13523	1:BEBAN MATI	-227.570	-3.16E 3	55.824	0.823	-0.144	-6.749			
		2:BEBAN HIDL	-88.761	-1.33E 3	19.632	0.142	-0.050	-3.311			
		3:BEBAN GEM	830.730	-2.26E 3	-44.904	2.707	0.081	29.540			
		4:KOMBINASI	-415.102	-5.92E 3	98.400	1.214	-0.253	-13.396			
		5:KOMB B. MA	591.439	-6.33E 3	20.454	3.750	-0.089	22.282			
13637	13637	1:BEBAN MATI	227.570	3.31E 3	-55.824	-0.823	-0.130	-9.096			
		2:BEBAN HIDL	88.761	1.33E 3	-19.632	-0.142	-0.046	-3.221			
		3:BEBAN GEM	-830.730	2.26E 3	44.904	-2.707	0.139	-40.605			
		4:KOMBINASI	415.102	6.1E 3	-98.400	-1.214	-0.230	-16.069			
		5:KOMB B. MA	-591.439	6.48E 3	-20.454	-3.750	-0.012	-53.664			
16569	13524	1:BEBAN MATI	-35.663	-791.769	-0.990	-0.554	0.009	-3.311			
		2:BEBAN HIDL	-2.972	-388.505	-0.514	-0.159	0.005	-1.586			
		3:BEBAN GEM	-166.988	-1.37E 3	35.297	-3.599	-0.316	0.231			
		4:KOMBINASI	-47.552	-1.57E 3	-2.011	-0.919	0.018	-6.511			
		5:KOMB B. MA	-212.784	-2.47E 3	35.763	-4.428	-0.320	-4.020			
83	83	1:BEBAN MATI	35.663	1.33E 3	0.990	0.554	0.009	-15.437			
		2:BEBAN HIDL	2.972	388.505	0.514	0.159	0.004	-5.272			
		3:BEBAN GEM	166.988	1.37E 3	-35.297	3.599	-0.307	-24.476			
		4:KOMBINASI	47.552	2.22E 3	2.011	0.919	0.018	-26.959			
		5:KOMB B. MA	212.784	3.01E 3	-35.763	4.428	-0.311	-44.299			
16570	13525	1:BEBAN MATI	-199.577	-2.24E 3	36.644	3.386	-0.218	-3.023			
		2:BEBAN HIDL	-88.112	-547.689	16.373	2.115	-0.096	-0.537			
		3:BEBAN GEM	28.994	-978.277	48.717	-4.759	-0.288	9.129			
		4:KOMBINASI	-380.471	-3.56E 3	70.170	7.447	-0.416	-4.486			
		5:KOMB B. MA	-222.000	-3.59E 3	97.621	-0.342	-0.578	6.241			
84	84	1:BEBAN MATI	199.577	3.59E 3	-36.644	-3.386	-0.214	-31.237			
		2:BEBAN HIDL	88.112	547.689	-16.373	-2.115	-0.096	-5.908			
		3:BEBAN GEM	-28.994	978.277	-48.717	4.759	-0.285	-20.642			
		4:KOMBINASI	380.471	5.18E 3	-70.170	-7.447	-0.410	-46.938			
		5:KOMB B. MA	222.000	4.94E 3	-97.621	0.342	-0.571	-56.456			
16571	13527	1:BEBAN MATI	-100.531	-467.508	6.011	0.990	-0.034	-17.936			
		2:BEBAN HIDL	-39.949	-262.336	2.700	0.740	-0.015	-4.342			
		3:BEBAN GEM	19.531	-801.363	8.164	-1.754	-0.039	0.361			
		4:KOMBINASI	-184.556	-980.748	11.533	2.371	-0.064	-28.471			
		5:KOMB B. MA	-103.993	-1.47E 3	16.203	-0.408	-0.083	-20.162			
13525	13525	1:BEBAN MATI	100.531	1.82E 3	-6.011	-0.990	-0.037	4.489			
		2:BEBAN HIDL	39.949	262.336	-2.700	-0.740	-0.017	1.255			
		3:BEBAN GEM	-19.531	801.363	-8.164	1.754	-0.057	-9.792			
		4:KOMBINASI	184.556	2.6E 3	-11.533	-2.371	-0.071	7.395			
		5:KOMB B. MA	103.993	2.82E 3	-16.203	0.408	-0.107	-5.040			
16572	13529	1:BEBAN MATI	-129.287	1.58E 3	-4.694	-1.883	0.028	-7.218			
		2:BEBAN HIDL	-46.540	197.360	-2.031	-1.092	0.012	-1.997			
		3:BEBAN GEM	-137.979	-808.261	-8.166	1.411	0.065	-9.338			
		4:KOMBINASI	-229.608	2.21E 3	-8.883	-4.006	0.053	-11.857			
		5:KOMB B. MA	-302.089	851.466	-14.487	-1.057	0.104	-18.221			
13527	13527	1:BEBAN MATI	129.287	-231.329	4.694	1.883	0.027	17.886			
		2:BEBAN HIDL	46.540	-197.360	2.031	1.092	0.012	4.320			
		3:BEBAN GEM	137.979	808.261	8.166	-1.411	0.031	-0.174			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 165	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	229.608	-593.371	8.883	4.006	0.051	28.374			
		5:KOMB B. MA	302.089	498.929	14.487	1.057	0.067	20.295			
16573	13531	1:BEBAN MATI	-384.682	3.22E 3	-21.948	1.246	0.019	6.624			
		2:BEBAN HIDL	-182.315	1.41E 3	-7.902	0.701	0.006	3.276			
		3:BEBAN GEM	-709.489	-2.78E 3	17.543	-0.698	-0.087	-63.921			
		4:KOMBINASI	-753.323	6.13E 3	-38.981	2.616	0.033	13.190			
		5:KOMB B. MA	-1.24E 3	1.15E 3	-8.269	0.934	-0.068	-58.527			
	13354	1:BEBAN MATI	384.682	-3.15E 3	21.948	-1.246	0.035	1.185			
		2:BEBAN HIDL	182.315	-1.41E 3	7.902	-0.701	0.013	0.192			
		3:BEBAN GEM	709.489	2.78E 3	-17.543	0.698	0.044	57.105			
		4:KOMBINASI	753.323	-6.04E 3	38.981	-2.616	0.062	1.730			
		5:KOMB B. MA	1.24E 3	-1.08E 3	8.269	-0.934	0.088	61.261			
16574	13535	1:BEBAN MATI	-287.733	1.94E 3	-10.102	1.560	0.023	-14.411			
		2:BEBAN HIDL	-130.707	854.886	-4.408	0.672	0.010	-6.175			
		3:BEBAN GEM	-447.740	-2.46E 3	46.030	-0.774	-0.149	-43.769			
		4:KOMBINASI	-554.411	3.7E 3	-19.176	2.947	0.044	-27.173			
		5:KOMB B. MA	-836.284	-134.184	35.585	1.151	-0.127	-64.074			
	13359	1:BEBAN MATI	287.733	-1.79E 3	10.102	-1.560	0.027	23.552			
		2:BEBAN HIDL	130.707	-854.886	4.408	-0.672	0.011	10.366			
		3:BEBAN GEM	447.740	2.46E 3	-46.030	0.774	-0.077	31.691			
		4:KOMBINASI	554.411	-3.51E 3	19.176	-2.947	0.050	44.849			
		5:KOMB B. MA	836.284	284.348	-35.585	-1.151	-0.047	63.048			
16575	13539	1:BEBAN MATI	-259.503	925.225	-0.124	1.154	0.009	-27.549			
		2:BEBAN HIDL	-110.543	391.997	-0.909	0.541	0.006	-12.093			
		3:BEBAN GEM	-288.427	-2.3E 3	26.679	-0.920	-0.117	-24.803			
		4:KOMBINASI	-488.272	1.74E 3	-1.604	2.250	0.021	-52.408			
		5:KOMB B. MA	-628.678	-1.26E 3	27.343	0.513	-0.110	-60.848			
	12819	1:BEBAN MATI	259.503	-699.979	0.124	-1.154	-0.008	33.526			
		2:BEBAN HIDL	110.543	-391.997	0.909	-0.541	0.001	14.976			
		3:BEBAN GEM	288.427	2.3E 3	-26.679	0.920	-0.080	7.854			
		4:KOMBINASI	488.272	-1.47E 3	1.604	-2.250	-0.009	64.193			
		5:KOMB B. MA	628.678	1.48E 3	-27.343	-0.513	-0.092	50.758			
16576	13540	1:BEBAN MATI	-49.369	-1.06E 3	0.347	-0.089	-0.001	-0.454			
		2:BEBAN HIDL	-17.476	-541.681	0.061	-0.017	0.000	-0.474			
		3:BEBAN GEM	220.642	16.066	-3.343	0.136	0.022	0.800			
		4:KOMBINASI	-87.206	-2.13E 3	0.514	-0.134	-0.001	-1.303			
		5:KOMB B. MA	171.819	-1.36E 3	-3.126	0.043	0.022	0.102			
	12824	1:BEBAN MATI	49.369	1.29E 3	-0.347	0.089	-0.003	-13.324			
		2:BEBAN HIDL	17.476	541.681	-0.061	0.017	-0.001	-5.901			
		3:BEBAN GEM	-220.642	-16.066	3.343	-0.136	0.017	-0.611			
		4:KOMBINASI	87.206	2.41E 3	-0.514	0.134	-0.005	-25.430			
		5:KOMB B. MA	-171.819	1.59E 3	3.126	-0.043	0.014	-17.506			
16577	13541	1:BEBAN MATI	-59.284	-532.073	-0.203	-0.042	0.000	-10.169			
		2:BEBAN HIDL	-23.493	-301.294	-0.118	0.001	0.000	-5.073			
		3:BEBAN GEM	252.696	-53.100	-3.623	0.227	0.022	0.053			
		4:KOMBINASI	-108.730	-1.12E 3	-0.433	-0.048	0.001	-20.319			
		5:KOMB B. MA	191.951	-768.605	-4.078	0.197	0.023	-13.157			
	13540	1:BEBAN MATI	59.284	762.725	0.203	0.042	0.002	2.550			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 166	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	23.493	301.294	0.118	-0.001	0.001	1.527			
		3:BEBAN GEM	-252.696	53.100	3.623	-0.227	0.021	-0.678			
		4:KOMBINASI	108.730	1.4E 3	0.433	0.048	0.004	5.504			
		5:KOMB B. MA	-191.951	999.256	4.078	-0.197	0.025	2.755			
16578	13542	1:BEBAN MATI	-54.097	428.250	-0.497	0.094	0.002	-6.639			
		2:BEBAN HIDL	-23.156	169.414	-0.183	0.022	0.001	-3.139			
		3:BEBAN GEM	293.904	-47.767	-3.944	-0.226	0.027	-0.589			
		4:KOMBINASI	-101.966	784.963	-0.890	0.148	0.003	-12.990			
		5:KOMB B. MA	240.609	479.743	-4.748	-0.130	0.030	-9.142			
	13541	1:BEBAN MATI	54.097	-197.598	0.497	-0.094	0.004	10.322			
		2:BEBAN HIDL	23.156	-169.414	0.183	-0.022	0.002	5.133			
		3:BEBAN GEM	-293.904	47.767	3.944	0.226	0.020	0.027			
		4:KOMBINASI	101.966	-508.181	0.890	-0.148	0.007	20.599			
		5:KOMB B. MA	-240.609	-249.091	4.748	0.130	0.026	13.430			
16579	13546	1:BEBAN MATI	-235.515	-1.82E 3	-32.475	-2.350	0.038	-23.120			
		2:BEBAN HIDL	-98.735	-782.137	-15.298	-1.091	0.016	-10.557			
		3:BEBAN GEM	-85.384	-2.53E 3	409.306	0.243	-0.426	11.412			
		4:KOMBINASI	-440.595	-3.44E 3	-63.446	-4.566	0.071	-44.635			
		5:KOMB B. MA	-384.410	-4.95E 3	388.118	-2.749	-0.400	-17.471			
	13384	1:BEBAN MATI	235.515	1.9E 3	32.475	2.350	0.041	18.558			
		2:BEBAN HIDL	98.735	782.137	15.298	1.091	0.022	8.640			
		3:BEBAN GEM	85.384	2.53E 3	-409.306	-0.243	-0.578	-17.615			
		4:KOMBINASI	440.595	3.53E 3	63.446	4.566	0.085	36.093			
		5:KOMB B. MA	384.410	5.02E 3	-388.118	2.749	-0.552	5.246			
16580	13550	1:BEBAN MATI	-272.214	-2.79E 3	-14.637	-2.778	0.038	-6.295			
		2:BEBAN HIDL	-114.411	-1.24E 3	-6.066	-1.236	0.015	-3.373			
		3:BEBAN GEM	50.192	-2.83E 3	262.851	0.884	-0.619	32.073			
		4:KOMBINASI	-509.715	-5.33E 3	-27.270	-5.311	0.069	-12.950			
		5:KOMB B. MA	-288.159	-6.51E 3	257.717	-2.591	-0.603	25.359			
	13388	1:BEBAN MATI	272.214	2.94E 3	14.637	2.778	0.034	-7.770			
		2:BEBAN HIDL	114.411	1.24E 3	6.066	1.236	0.015	-2.702			
		3:BEBAN GEM	-50.192	2.83E 3	-262.851	-0.884	-0.670	-45.968			
		4:KOMBINASI	509.715	5.51E 3	27.270	5.311	0.065	-13.647			
		5:KOMB B. MA	288.159	6.66E 3	-257.717	2.591	-0.660	-57.658			
16581	13554	1:BEBAN MATI	-362.462	-3.82E 3	-17.761	-2.279	0.066	17.740			
		2:BEBAN HIDL	-156.462	-1.68E 3	-8.198	-0.942	0.030	7.075			
		3:BEBAN GEM	313.803	-3.38E 3	132.005	2.063	-0.436	54.334			
		4:KOMBINASI	-685.293	-7.28E 3	-34.430	-4.242	0.128	32.608			
		5:KOMB B. MA	-126.846	-8.38E 3	115.926	-0.678	-0.374	79.036			
	114	1:BEBAN MATI	362.462	4.04E 3	17.761	2.279	0.064	-46.660			
		2:BEBAN HIDL	156.462	1.68E 3	8.198	0.942	0.030	-19.461			
		3:BEBAN GEM	-313.803	3.38E 3	-132.005	-2.063	-0.535	-79.174			
		4:KOMBINASI	685.293	7.55E 3	34.430	4.242	0.126	-87.129			
		5:KOMB B. MA	126.846	8.6E 3	-115.926	0.678	-0.479	-141.470			
16582	13555	1:BEBAN MATI	-88.521	-2.79E 3	-1.697	-0.353	0.011	-4.577			
		2:BEBAN HIDL	-45.349	-1.31E 3	-0.811	-0.190	0.005	-2.196			
		3:BEBAN GEM	586.666	-963.321	23.852	-5.782	-0.136	9.071			
		4:KOMBINASI	-178.784	-5.44E 3	-3.334	-0.727	0.021	-9.007			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 167	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	500.268	-4.59E 3	22.861	-6.538	-0.129	3.629			
	117	1:BEBAN MATI	88.521	3.15E 3	1.697	0.353	0.009	-30.377			
		2:BEBAN HIDL	45.349	1.31E 3	0.811	0.190	0.004	-13.204			
		3:BEBAN GEM	-586.666	963.321	-23.852	5.782	-0.145	-20.407			
		4:KOMBINASI	178.784	5.87E 3	3.334	0.727	0.018	-57.579			
		5:KOMB B. MA	-500.268	4.95E 3	-22.861	6.538	-0.140	-59.727			
16583	13556	1:BEBAN MATI	-107.793	-1.01E 3	-0.539	-0.369	0.002	-20.146			
		2:BEBAN HIDL	-49.788	-549.369	-0.243	-0.206	0.001	-9.476			
		3:BEBAN GEM	761.990	-750.628	11.682	-1.743	-0.067	0.161			
		4:KOMBINASI	-209.012	-2.1E 3	-1.036	-0.772	0.005	-39.337			
		5:KOMB B. MA	662.424	-2.13E 3	11.581	-2.322	-0.068	-25.663			
	13555	1:BEBAN MATI	107.793	1.37E 3	0.539	0.369	0.004	6.096			
		2:BEBAN HIDL	49.788	549.369	0.243	0.206	0.002	3.011			
		3:BEBAN GEM	-761.990	750.628	-11.682	1.743	-0.070	-8.994			
		4:KOMBINASI	209.012	2.53E 3	1.036	0.772	0.007	12.133			
		5:KOMB B. MA	-662.424	2.49E 3	-11.581	2.322	-0.069	-1.541			
16584	13557	1:BEBAN MATI	-144.292	1.08E 3	1.310	-0.322	-0.010	-9.630			
		2:BEBAN HIDL	-64.239	416.271	0.767	-0.201	-0.006	-4.634			
		3:BEBAN GEM	1.04E 3	-698.805	8.683	1.736	-0.059	-8.412			
		4:KOMBINASI	-275.933	1.97E 3	2.799	-0.708	-0.021	-18.970			
		5:KOMB B. MA	912.934	600.306	10.887	1.381	-0.076	-21.242			
	13556	1:BEBAN MATI	144.292	-723.895	-1.310	0.322	-0.005	20.269			
		2:BEBAN HIDL	64.239	-416.271	-0.767	0.201	-0.003	9.532			
		3:BEBAN GEM	-1.04E 3	698.805	-8.683	-1.736	-0.043	0.188			
		4:KOMBINASI	275.933	-1.53E 3	-2.799	0.708	-0.012	39.575			
		5:KOMB B. MA	-912.934	-239.913	-10.887	-1.381	-0.052	26.186			
16585	13558	1:BEBAN MATI	-106.035	-2.62E 3	-5.697	-0.660	0.034	-3.846			
		2:BEBAN HIDL	-49.543	-1.23E 3	-2.386	-0.360	0.014	-1.859			
		3:BEBAN GEM	-11.787	-842.723	42.106	-6.057	-0.228	9.922			
		4:KOMBINASI	-206.512	-5.1E 3	-10.653	-1.368	0.064	-7.589			
		5:KOMB B. MA	-148.138	-4.24E 3	37.083	-7.235	-0.197	5.457			
	85	1:BEBAN MATI	106.035	2.98E 3	5.697	0.660	0.033	-29.058			
		2:BEBAN HIDL	49.543	1.23E 3	2.386	0.360	0.014	-12.561			
		3:BEBAN GEM	11.787	842.723	-42.106	6.057	-0.267	-19.839			
		4:KOMBINASI	206.512	5.53E 3	10.653	1.368	0.062	-54.967			
		5:KOMB B. MA	148.138	4.6E 3	-37.083	7.235	-0.239	-57.425			
16586	13560	1:BEBAN MATI	-117.625	-884.663	-0.954	-0.264	0.005	-17.579			
		2:BEBAN HIDL	-51.336	-490.847	-0.333	-0.144	0.002	-8.296			
		3:BEBAN GEM	-91.103	-755.991	29.026	-1.723	-0.165	0.883			
		4:KOMBINASI	-223.287	-1.85E 3	-1.678	-0.546	0.009	-34.368			
		5:KOMB B. MA	-244.085	-1.97E 3	29.323	-2.159	-0.166	-21.630			
	13558	1:BEBAN MATI	117.625	1.25E 3	0.954	0.264	0.006	5.048			
		2:BEBAN HIDL	51.336	490.847	0.333	0.144	0.002	2.519			
		3:BEBAN GEM	91.103	755.991	-29.026	1.723	-0.177	-9.779			
		4:KOMBINASI	223.287	2.28E 3	1.678	0.546	0.011	10.088			
		5:KOMB B. MA	244.085	2.33E 3	-29.323	2.159	-0.179	-3.709			
16587	13562	1:BEBAN MATI	-134.740	1.05E 3	1.177	0.331	-0.007	-7.462			
		2:BEBAN HIDL	-58.473	390.468	0.582	0.196	-0.003	-3.738			



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Job No 1	Sheet No 168	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-155.391	-789.532	30.303	1.794	-0.184	-8.740			
		4:KOMBINASI	-255.244	1.88E 3	2.344	0.711	-0.014	-14.935			
		5:KOMB B. MA	-332.983	451.445	33.345	2.332	-0.202	-18.881			
	13560	1:BEBAN MATI	134.740	-685.780	-1.177	-0.331	-0.007	17.653			
		2:BEBAN HIDL	58.473	-390.468	-0.582	-0.196	-0.003	8.333			
		3:BEBAN GEM	155.391	789.532	-30.303	-1.794	-0.172	-0.552			
		4:KOMBINASI	255.244	-1.45E 3	-2.344	-0.711	-0.014	34.516			
		5:KOMB B. MA	332.983	-91.052	-33.345	-2.332	-0.190	22.073			
16588	13564	1:BEBAN MATI	-138.242	2.12E 3	1.595	0.364	-0.010	-1.330			
		2:BEBAN HIDL	-55.090	770.710	0.810	0.196	-0.005	-0.868			
		3:BEBAN GEM	84.642	-3.55E 3	-31.180	-1.164	0.174	-36.668			
		4:KOMBINASI	-254.035	3.77E 3	3.209	0.750	-0.020	-2.985			
		5:KOMB B. MA	-82.422	-1.15E 3	-30.659	-0.741	0.169	-40.352			
	12815	1:BEBAN MATI	138.242	-1.76E 3	-1.595	-0.364	-0.009	24.128			
		2:BEBAN HIDL	55.090	-770.710	-0.810	-0.196	-0.004	9.938			
		3:BEBAN GEM	-84.642	3.55E 3	31.180	1.164	0.193	-5.091			
		4:KOMBINASI	254.035	-3.34E 3	-3.209	-0.750	-0.018	44.854			
		5:KOMB B. MA	82.422	1.51E 3	30.659	0.741	0.192	24.745			
16589	13565	1:BEBAN MATI	-65.956	-971.053	-0.825	0.165	0.003	-0.527			
		2:BEBAN HIDL	-23.938	-494.339	-0.196	0.029	0.000	-0.419			
		3:BEBAN GEM	-173.102	48.539	12.232	0.170	-0.064	1.155			
		4:KOMBINASI	-117.449	-1.96E 3	-1.304	0.244	0.005	-1.302			
		5:KOMB B. MA	-262.076	-1.22E 3	11.900	0.361	-0.064	0.435			
	12820	1:BEBAN MATI	65.956	1.2E 3	0.825	-0.165	0.006	-12.258			
		2:BEBAN HIDL	23.938	494.339	0.196	-0.029	0.002	-5.399			
		3:BEBAN GEM	173.102	-48.539	-12.232	-0.170	-0.080	-0.584			
		4:KOMBINASI	117.449	2.23E 3	1.304	-0.244	0.011	-23.347			
		5:KOMB B. MA	262.076	1.45E 3	-11.900	-0.361	-0.076	-16.110			
16590	13566	1:BEBAN MATI	-76.851	-385.843	-0.207	0.099	0.003	-7.785			
		2:BEBAN HIDL	-29.075	-226.261	-0.009	0.006	0.001	-3.790			
		3:BEBAN GEM	-230.929	-79.431	11.265	0.400	-0.068	0.202			
		4:KOMBINASI	-138.741	-825.029	-0.263	0.128	0.004	-15.406			
		5:KOMB B. MA	-336.771	-605.002	11.616	0.523	-0.068	-9.847			
	13565	1:BEBAN MATI	76.851	616.494	0.207	-0.099	-0.000	1.887			
		2:BEBAN HIDL	29.075	226.261	0.009	-0.006	-0.001	1.127			
		3:BEBAN GEM	230.929	79.431	-11.265	-0.400	-0.065	-1.137			
		4:KOMBINASI	138.741	1.1E 3	0.263	-0.128	-0.001	4.068			
		5:KOMB B. MA	336.771	835.653	-11.616	-0.523	-0.068	1.370			
16591	13567	1:BEBAN MATI	-75.628	466.826	-0.047	-0.107	0.002	-3.677			
		2:BEBAN HIDL	-28.971	151.900	0.013	-0.010	0.000	-2.018			
		3:BEBAN GEM	-313.233	-85.383	14.900	-0.406	-0.094	-0.798			
		4:KOMBINASI	-137.108	803.232	-0.036	-0.144	0.003	-7.641			
		5:KOMB B. MA	-421.905	468.314	15.606	-0.539	-0.096	-5.725			
	13566	1:BEBAN MATI	75.628	-236.174	0.047	0.107	-0.001	7.813			
		2:BEBAN HIDL	28.971	-151.900	-0.013	0.010	-0.001	3.806			
		3:BEBAN GEM	313.233	85.383	-14.900	0.406	-0.082	-0.207			
		4:KOMBINASI	137.108	-526.450	0.036	0.144	-0.002	15.465			
		5:KOMB B. MA	421.905	-237.662	-15.606	0.539	-0.087	9.879			



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Job No

1

Sheet No

169

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16592	13571	1:BEBAN MATI	-301.979	-2.53E 3	1.743	-0.881	-0.005	-10.047			
		2:BEBAN HIDL	-128.594	-1.06E 3	0.631	-0.660	-0.002	-3.821			
		3:BEBAN GEM	808.568	-4.15E 3	-10.187	2.883	0.005	50.040			
		4:KOMBINASI	-568.126	-4.74E 3	3.101	-2.113	-0.009	-18.170			
		5:KOMB B. MA	469.860	-7.53E 3	-8.575	1.750	-0.001	40.202			
	125	1:BEBAN MATI	301.979	2.89E 3	-1.743	0.881	-0.015	-21.852			
		2:BEBAN HIDL	128.594	1.06E 3	-0.631	0.660	-0.006	-8.701			
		3:BEBAN GEM	-808.568	4.15E 3	10.187	-2.883	0.115	-98.923			
		4:KOMBINASI	568.126	5.17E 3	-3.101	2.113	-0.028	-40.144			
		5:KOMB B. MA	-469.860	7.89E 3	8.575	-1.750	0.102	-130.942			
16593	13572	1:BEBAN MATI	-141.955	-2.2E 3	-19.865	-1.903	0.115	-3.231			
		2:BEBAN HIDL	-59.189	-522.219	-8.793	-1.344	0.051	-0.601			
		3:BEBAN GEM	-56.678	-998.828	45.742	-6.049	-0.238	11.173			
		4:KOMBINASI	-265.048	-3.48E 3	-37.906	-4.434	0.219	-4.839			
		5:KOMB B. MA	-236.980	-3.56E 3	22.889	-9.061	-0.104	8.140			
	126	1:BEBAN MATI	141.955	3.55E 3	19.865	1.903	0.118	-30.601			
		2:BEBAN HIDL	59.189	522.219	8.793	1.344	0.053	-5.545			
		3:BEBAN GEM	56.678	998.828	-45.742	6.049	-0.300	-22.927			
		4:KOMBINASI	265.048	5.1E 3	37.906	4.434	0.227	-45.593			
		5:KOMB B. MA	236.980	4.91E 3	-22.889	9.061	-0.165	-58.001			
16594	13573	1:BEBAN MATI	-73.175	-383.305	-1.961	-0.542	0.014	-16.664			
		2:BEBAN HIDL	-29.733	-225.537	-0.894	-0.491	0.006	-3.758			
		3:BEBAN GEM	-447.818	-890.596	2.492	-1.438	-0.011	-0.253			
		4:KOMBINASI	-135.383	-820.826	-3.783	-1.436	0.027	-26.009			
		5:KOMB B. MA	-561.224	-1.45E 3	0.120	-2.346	0.007	-19.184			
	13572	1:BEBAN MATI	73.175	1.73E 3	1.961	0.542	0.009	4.207			
		2:BEBAN HIDL	29.733	225.537	0.894	0.491	0.004	1.104			
		3:BEBAN GEM	447.818	890.596	-2.492	1.438	-0.019	-10.228			
		4:KOMBINASI	135.383	2.44E 3	3.783	1.436	0.018	6.815			
		5:KOMB B. MA	561.224	2.8E 3	-0.120	2.346	-0.008	-5.870			
16595	13574	1:BEBAN MATI	-73.659	1.53E 3	2.441	0.892	-0.012	-6.613			
		2:BEBAN HIDL	-29.700	165.028	0.967	0.652	-0.005	-1.811			
		3:BEBAN GEM	-736.312	-898.105	-4.165	1.940	0.021	-10.964			
		4:KOMBINASI	-135.910	2.1E 3	4.477	2.114	-0.022	-10.834			
		5:KOMB B. MA	-864.606	685.129	-1.351	3.321	0.007	-19.212			
	13573	1:BEBAN MATI	73.659	-178.729	-2.441	-0.892	-0.017	16.662			
		2:BEBAN HIDL	29.700	-165.028	-0.967	-0.652	-0.007	3.753			
		3:BEBAN GEM	736.312	898.105	4.165	-1.940	0.028	0.395			
		4:KOMBINASI	135.910	-478.519	-4.477	-2.114	-0.031	26.000			
		5:KOMB B. MA	864.606	665.265	1.351	-3.321	0.009	19.329			
16596	13578	1:BEBAN MATI	-169.912	1.87E 3	1.960	3.441	-0.004	9.306			
		2:BEBAN HIDL	-52.107	644.634	0.823	1.710	-0.002	3.703			
		3:BEBAN GEM	-449.306	-2.23E 3	-9.250	-0.667	0.032	-42.532			
		4:KOMBINASI	-287.266	3.28E 3	3.669	6.865	-0.008	17.093			
		5:KOMB B. MA	-672.948	-79.971	-7.258	3.767	0.028	-33.130			
	13582	1:BEBAN MATI	169.912	-1.57E 3	-1.960	-3.441	-0.015	7.600			
		2:BEBAN HIDL	52.107	-644.634	-0.823	-1.710	-0.006	2.618			
		3:BEBAN GEM	449.306	2.23E 3	9.250	0.667	0.059	20.668			



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Job No 1	Sheet No 170	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	287.266	-2.92E 3	-3.669	-6.865	-0.028	13.310			
		5:KOMB B. MA	672.948	380.299	7.258	-3.767	0.043	30.873			
16597	13582	1:BEBAN MATI	-158.957	1.02E 3	-0.044	1.968	0.005	-8.409			
		2:BEBAN HIDL	-48.885	333.226	0.013	0.884	0.002	-2.946			
		3:BEBAN GEM	-695.020	-2.17E 3	-8.117	0.219	0.024	-20.089			
		4:KOMBINASI	-268.965	1.75E 3	-0.032	3.776	0.010	-14.804			
		5:KOMB B. MA	-918.059	-1.06E 3	-8.559	2.728	0.032	-31.270			
	12818	1:BEBAN MATI	158.957	-717.605	0.044	-1.968	-0.005	16.919			
		2:BEBAN HIDL	48.885	-333.226	-0.013	-0.884	-0.002	6.213			
		3:BEBAN GEM	695.020	2.17E 3	8.117	-0.219	0.055	-1.203			
		4:KOMBINASI	268.965	-1.39E 3	0.032	-3.776	-0.010	30.245			
		5:KOMB B. MA	918.059	1.36E 3	8.559	-2.728	0.052	19.384			
16598	13583	1:BEBAN MATI	-26.389	-1.13E 3	0.091	0.059	-0.001	-1.431			
		2:BEBAN HIDL	-10.637	-583.314	0.032	0.000	-0.000	-0.979			
		3:BEBAN GEM	88.816	15.408	10.962	0.167	-0.059	0.660			
		4:KOMBINASI	-48.686	-2.29E 3	0.160	0.072	-0.001	-3.284			
		5:KOMB B. MA	60.486	-1.46E 3	11.619	0.235	-0.062	-1.325			
	12823	1:BEBAN MATI	26.389	1.36E 3	-0.091	-0.059	-0.001	-13.211			
		2:BEBAN HIDL	10.637	583.314	-0.032	-0.000	-0.000	-5.886			
		3:BEBAN GEM	-88.816	-15.408	-10.962	-0.167	-0.070	-0.479			
		4:KOMBINASI	48.686	2.56E 3	-0.160	-0.072	-0.001	-25.270			
		5:KOMB B. MA	-60.486	1.69E 3	-11.619	-0.235	-0.074	-17.245			
16599	13584	1:BEBAN MATI	-13.509	-568.801	0.022	0.043	-0.000	-11.214			
		2:BEBAN HIDL	-5.312	-325.115	0.019	-0.002	-0.000	-5.686			
		3:BEBAN GEM	73.759	-59.871	6.444	0.245	-0.037	-0.142			
		4:KOMBINASI	-24.710	-1.2E 3	0.057	0.048	-0.000	-22.555			
		5:KOMB B. MA	60.750	-826.734	6.799	0.299	-0.039	-14.776			
	13583	1:BEBAN MATI	13.509	799.452	-0.022	-0.043	-0.000	3.164			
		2:BEBAN HIDL	5.312	325.115	-0.019	0.002	-0.000	1.860			
		3:BEBAN GEM	-73.759	59.871	-6.444	-0.245	-0.039	-0.562			
		4:KOMBINASI	24.710	1.48E 3	-0.057	-0.048	-0.000	6.773			
		5:KOMB B. MA	-60.750	1.06E 3	-6.799	-0.299	-0.041	3.689			
16600	13585	1:BEBAN MATI	0.499	356.248	-0.006	-0.062	-0.000	-8.497			
		2:BEBAN HIDL	0.069	126.357	0.011	-0.004	-0.000	-4.249			
		3:BEBAN GEM	59.439	-70.773	4.149	-0.269	-0.030	-1.076			
		4:KOMBINASI	0.709	629.669	0.010	-0.080	-0.000	-16.995			
		5:KOMB B. MA	62.951	357.751	4.357	-0.346	-0.031	-12.177			
	13584	1:BEBAN MATI	-0.499	-125.596	0.006	0.062	0.000	11.332			
		2:BEBAN HIDL	-0.069	-126.357	-0.011	0.004	-0.000	5.736			
		3:BEBAN GEM	-59.439	70.773	-4.149	0.269	-0.019	0.243			
		4:KOMBINASI	-0.709	-352.887	-0.010	0.080	0.000	22.777			
		5:KOMB B. MA	-62.951	-127.099	-4.357	0.346	-0.020	15.029			
16601	13589	1:BEBAN MATI	-180.643	-1.53E 3	-2.412	-3.312	0.017	-8.242			
		2:BEBAN HIDL	-57.635	-635.879	-1.009	-1.747	0.007	-2.720			
		3:BEBAN GEM	-1.13E 3	-2.23E 3	-7.356	1.437	0.021	22.769			
		4:KOMBINASI	-308.988	-2.85E 3	-4.509	-6.770	0.032	-14.241			
		5:KOMB B. MA	-1.4E 3	-4.25E 3	-10.742	-2.851	0.043	14.034			
	13593	1:BEBAN MATI	180.643	1.83E 3	2.412	3.312	0.006	-8.206			



Software licensed to Snow Panther [LZ0]

Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	57.635	635.879	1.009	1.747	0.003	-3.516			
		3:BEBAN GEM	1.13E 3	2.23E 3	7.356	-1.437	0.051	-44.668			
		4:KOMBINASI	308.988	3.21E 3	4.509	6.770	0.012	-15.473			
		5:KOMB B. MA	1.4E 3	4.55E 3	10.742	2.851	0.062	-57.217			
16602	13593	1:BEBAN MATI	-249.685	-2.27E 3	-29.903	-5.070	0.125	9.584			
		2:BEBAN HIDL	-84.257	-848.292	-12.420	-2.410	0.052	4.217			
		3:BEBAN GEM	-1.48E 3	-2.46E 3	-74.809	0.663	0.224	44.623			
		4:KOMBINASI	-434.432	-4.08E 3	-55.756	-9.941	0.234	18.248			
		5:KOMB B. MA	-1.85E 3	-5.36E 3	-115.904	-5.820	0.391	58.968			
	113	1:BEBAN MATI	249.685	2.57E 3	29.903	5.070	0.168	-33.300			
		2:BEBAN HIDL	84.257	848.292	12.420	2.410	0.070	-12.536			
		3:BEBAN GEM	1.48E 3	2.46E 3	74.809	-0.663	0.510	-68.769			
		4:KOMBINASI	434.432	4.44E 3	55.756	9.941	0.313	-60.018			
		5:KOMB B. MA	1.85E 3	5.66E 3	115.904	5.820	0.745	-113.029			
16603	13594	1:BEBAN MATI	-111.243	-3.47E 3	1.378	0.256	-0.008	-5.606			
		2:BEBAN HIDL	-48.514	-1.31E 3	0.344	0.134	-0.002	-2.178			
		3:BEBAN GEM	127.256	-974.495	27.741	-5.530	-0.150	9.227			
		4:KOMBINASI	-211.114	-6.25E 3	2.204	0.521	-0.012	-10.212			
		5:KOMB B. MA	-6.732	-5.28E 3	30.713	-5.471	-0.166	2.775			
	116	1:BEBAN MATI	111.243	4.82E 3	-1.378	-0.256	-0.009	-43.176			
		2:BEBAN HIDL	48.514	1.31E 3	-0.344	-0.134	-0.002	-13.179			
		3:BEBAN GEM	-127.256	974.495	-27.741	5.530	-0.177	-20.694			
		4:KOMBINASI	211.114	7.87E 3	-2.204	-0.521	-0.014	-72.898			
		5:KOMB B. MA	6.732	6.63E 3	-30.713	5.471	-0.196	-72.812			
16604	13595	1:BEBAN MATI	-127.072	-884.249	0.557	0.413	-0.003	-25.619			
		2:BEBAN HIDL	-52.988	-539.640	0.091	0.213	-0.000	-9.274			
		3:BEBAN GEM	87.639	-773.387	11.190	-1.584	-0.056	-0.002			
		4:KOMBINASI	-237.266	-1.92E 3	0.813	0.837	-0.005	-45.581			
		5:KOMB B. MA	-66.843	-2.02E 3	12.361	-1.122	-0.062	-31.186			
	13594	1:BEBAN MATI	127.072	2.23E 3	-0.557	-0.413	-0.003	7.268			
		2:BEBAN HIDL	52.988	539.640	-0.091	-0.213	-0.001	2.923			
		3:BEBAN GEM	-87.639	773.387	-11.190	1.584	-0.076	-9.099			
		4:KOMBINASI	237.266	3.54E 3	-0.813	-0.837	-0.005	13.398			
		5:KOMB B. MA	66.843	3.37E 3	-12.361	1.122	-0.084	-0.532			
16605	13596	1:BEBAN MATI	-165.101	1.91E 3	-0.896	0.650	0.007	-11.191			
		2:BEBAN HIDL	-68.541	413.331	-0.598	0.314	0.004	-4.471			
		3:BEBAN GEM	73.422	-771.675	2.932	1.798	-0.004	-9.415			
		4:KOMBINASI	-307.788	2.96E 3	-2.032	1.282	0.016	-20.582			
		5:KOMB B. MA	-129.133	1.35E 3	1.824	2.726	0.006	-23.759			
	13595	1:BEBAN MATI	165.101	-562.571	0.896	-0.650	0.003	25.757			
		2:BEBAN HIDL	68.541	-413.331	0.598	-0.314	0.003	9.335			
		3:BEBAN GEM	-73.422	771.675	-2.932	-1.798	-0.031	0.334			
		4:KOMBINASI	307.788	-1.34E 3	2.032	-1.282	0.008	45.844			
		5:KOMB B. MA	129.133	-0.311	-1.824	-2.726	-0.027	31.708			
16606	13600	1:BEBAN MATI	-366.342	3.27E 3	-47.806	-1.654	0.112	6.912			
		2:BEBAN HIDL	-142.025	1.32E 3	-14.097	-0.363	0.035	2.747			
		3:BEBAN GEM	-1.84E 3	-2.3E 3	278.183	-0.914	-0.563	-44.587			
		4:KOMBINASI	-666.850	6.03E 3	-79.922	-2.566	0.190	12.690			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 172	Rev
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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-2.38E 3	1.64E 3	235.828	-2.832	-0.458	-38.255			
	13514	1:BEBAN MATI	366.342	-3.12E 3	47.806	1.654	0.122	8.731			
		2:BEBAN HIDL	142.025	-1.32E 3	14.097	0.363	0.034	3.718			
		3:BEBAN GEM	1.84E 3	2.3E 3	-278.183	0.914	-0.801	33.305			
		4:KOMBINASI	666.850	-5.85E 3	79.922	2.566	0.202	16.427			
		5:KOMB B. MA	2.38E 3	-1.49E 3	-235.828	2.832	-0.698	45.932			
16607	13604	1:BEBAN MATI	-252.556	1.71E 3	-14.857	-0.664	0.078	-20.772			
		2:BEBAN HIDL	-98.469	649.334	-4.845	-0.151	0.026	-8.655			
		3:BEBAN GEM	-1.08E 3	-2.15E 3	37.387	-0.399	-0.229	-21.900			
		4:KOMBINASI	-460.617	3.1E 3	-25.580	-1.039	0.135	-38.775			
		5:KOMB B. MA	-1.44E 3	-157.253	21.493	-1.174	-0.146	-48.960			
	12817	1:BEBAN MATI	252.556	-1.41E 3	14.857	0.664	0.067	36.110			
		2:BEBAN HIDL	98.469	-649.334	4.845	0.151	0.022	15.023			
		3:BEBAN GEM	1.08E 3	2.15E 3	-37.387	0.399	-0.138	0.782			
		4:KOMBINASI	460.617	-2.74E 3	25.580	1.039	0.116	67.370			
		5:KOMB B. MA	1.44E 3	457.580	-21.493	1.174	-0.064	45.945			
16608	13605	1:BEBAN MATI	-63.367	-1.06E 3	0.298	-0.017	-0.002	-0.312			
		2:BEBAN HIDL	-23.095	-551.140	0.108	-0.009	-0.001	-0.437			
		3:BEBAN GEM	191.314	19.928	11.760	0.147	-0.063	0.746			
		4:KOMBINASI	-112.992	-2.16E 3	0.530	-0.034	-0.003	-1.073			
		5:KOMB B. MA	123.656	-1.37E 3	12.711	0.132	-0.068	0.209			
	12822	1:BEBAN MATI	63.367	1.29E 3	-0.298	0.017	-0.002	-13.568			
		2:BEBAN HIDL	23.095	551.140	-0.108	0.009	-0.001	-6.049			
		3:BEBAN GEM	-191.314	-19.928	-11.760	-0.147	-0.075	-0.511			
		4:KOMBINASI	112.992	2.44E 3	-0.530	0.034	-0.003	-25.959			
		5:KOMB B. MA	-123.656	1.6E 3	-12.711	-0.132	-0.081	-17.734			
16609	13606	1:BEBAN MATI	-64.640	-471.530	0.332	-0.017	-0.002	-8.932			
		2:BEBAN HIDL	-22.807	-280.874	0.125	-0.008	-0.001	-4.606			
		3:BEBAN GEM	261.178	-53.336	11.737	0.231	-0.068	0.018			
		4:KOMBINASI	-114.059	-1.02E 3	0.599	-0.033	-0.004	-18.088			
		5:KOMB B. MA	195.913	-696.058	12.731	0.221	-0.074	-11.676			
	13605	1:BEBAN MATI	64.640	702.182	-0.332	0.017	-0.002	2.026			
		2:BEBAN HIDL	22.807	280.874	-0.125	0.008	-0.001	1.300			
		3:BEBAN GEM	-261.178	53.336	-11.737	-0.231	-0.070	-0.646			
		4:KOMBINASI	114.059	1.29E 3	-0.599	0.033	-0.003	4.512			
		5:KOMB B. MA	-195.913	926.709	-12.731	-0.221	-0.076	2.128			
16610	13607	1:BEBAN MATI	-69.951	533.169	0.550	-0.007	-0.003	-4.081			
		2:BEBAN HIDL	-23.626	191.008	0.229	-0.002	-0.001	-2.391			
		3:BEBAN GEM	371.247	-56.069	16.222	-0.261	-0.098	-0.742			
		4:KOMBINASI	-121.742	945.415	1.027	-0.012	-0.006	-8.722			
		5:KOMB B. MA	305.682	588.901	17.721	-0.282	-0.107	-6.294			
	13606	1:BEBAN MATI	69.951	-302.517	-0.550	0.007	-0.003	8.998			
		2:BEBAN HIDL	23.626	-191.008	-0.229	0.002	-0.001	4.639			
		3:BEBAN GEM	-371.247	56.069	-16.222	0.261	-0.093	0.082			
		4:KOMBINASI	121.742	-668.633	-1.027	0.012	-0.006	18.219			
		5:KOMB B. MA	-305.682	-358.249	-17.721	0.282	-0.102	11.867			
16611	13611	1:BEBAN MATI	-249.713	-2.44E 3	-73.584	-1.560	0.151	-18.023			
		2:BEBAN HIDL	-96.448	-1.03E 3	-25.797	-0.936	0.053	-7.439			



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Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.29E 3	-2.21E 3	219.215	0.483	-0.461	21.214			
		4:KOMBINASI	-453.974	-4.58E 3	-129.576	-3.370	0.267	-33.530			
		5:KOMB B. MA	-1.66E 3	-5.39E 3	141.114	-1.614	-0.301	-0.212			
	13517	1:BEBAN MATI	249.713	2.59E 3	73.584	1.560	0.210	5.685			
		2:BEBAN HIDL	96.448	1.03E 3	25.797	0.936	0.073	2.371			
		3:BEBAN GEM	1.29E 3	2.21E 3	-219.215	-0.483	-0.614	-32.073			
		4:KOMBINASI	453.974	4.76E 3	129.576	3.370	0.369	10.615			
		5:KOMB B. MA	1.66E 3	5.54E 3	-141.114	1.614	-0.391	-26.569			
16612	13615	1:BEBAN MATI	-248.318	-3.96E 3	-17.968	-1.333	0.094	12.150			
		2:BEBAN HIDL	-91.421	-1.64E 3	-7.180	-0.812	0.037	5.192			
		3:BEBAN GEM	-547.514	-2.66E 3	2.008	1.684	-0.080	44.349			
		4:KOMBINASI	-444.254	-7.38E 3	-33.051	-2.898	0.172	22.887			
		5:KOMB B. MA	-878.060	-7.74E 3	-20.169	-0.052	0.032	61.831			
	112	1:BEBAN MATI	248.318	4.26E 3	17.968	1.333	0.082	-52.463			
		2:BEBAN HIDL	91.421	1.64E 3	7.180	0.812	0.034	-21.286			
		3:BEBAN GEM	547.514	2.66E 3	-2.008	-1.684	0.060	-70.446			
		4:KOMBINASI	444.254	7.74E 3	33.051	2.898	0.153	-97.014			
		5:KOMB B. MA	878.060	8.04E 3	20.169	0.052	0.166	-139.204			
16613	13616	1:BEBAN MATI	-116.248	-3.44E 3	0.250	-0.056	-0.001	-5.039			
		2:BEBAN HIDL	-48.968	-1.29E 3	0.453	-0.003	-0.003	-1.927			
		3:BEBAN GEM	362.446	-993.355	43.492	-5.557	-0.238	9.377			
		4:KOMBINASI	-217.847	-6.19E 3	1.025	-0.072	-0.005	-9.130			
		5:KOMB B. MA	234.940	-5.26E 3	46.189	-5.893	-0.252	3.651			
	115	1:BEBAN MATI	116.248	4.79E 3	-0.250	0.056	-0.002	-43.352			
		2:BEBAN HIDL	48.968	1.29E 3	-0.453	0.003	-0.003	-13.293			
		3:BEBAN GEM	-362.446	993.355	-43.492	5.557	-0.274	-21.067			
		4:KOMBINASI	217.847	7.81E 3	-1.025	0.072	-0.007	-73.291			
		5:KOMB B. MA	-234.940	6.61E 3	-46.189	5.893	-0.291	-73.448			
16614	13617	1:BEBAN MATI	-121.855	-854.810	0.445	-0.042	-0.002	-24.670			
		2:BEBAN HIDL	-48.613	-527.664	0.286	-0.019	-0.002	-8.865			
		3:BEBAN GEM	398.670	-774.977	27.620	-1.659	-0.152	0.142			
		4:KOMBINASI	-224.007	-1.87E 3	0.991	-0.081	-0.005	-43.788			
		5:KOMB B. MA	267.581	-1.99E 3	29.618	-1.796	-0.163	-29.840			
	13616	1:BEBAN MATI	121.855	2.21E 3	-0.445	0.042	-0.003	6.665			
		2:BEBAN HIDL	48.613	527.664	-0.286	0.019	-0.002	2.655			
		3:BEBAN GEM	-398.670	774.977	-27.620	1.659	-0.173	-9.262			
		4:KOMBINASI	224.007	3.49E 3	-0.991	0.081	-0.006	12.247			
		5:KOMB B. MA	-267.581	3.34E 3	-29.618	1.796	-0.186	-1.467			
16615	13618	1:BEBAN MATI	-141.506	1.92E 3	0.716	-0.018	-0.004	-10.097			
		2:BEBAN HIDL	-56.000	418.972	0.277	-0.023	-0.002	-3.974			
		3:BEBAN GEM	474.493	-764.720	27.917	1.653	-0.167	-9.186			
		4:KOMBINASI	-259.408	2.98E 3	1.302	-0.059	-0.008	-18.474			
		5:KOMB B. MA	323.111	1.37E 3	30.195	1.704	-0.181	-22.126			
	13617	1:BEBAN MATI	141.506	-570.742	-0.716	0.018	-0.004	24.759			
		2:BEBAN HIDL	56.000	-418.972	-0.277	0.023	-0.002	8.904			
		3:BEBAN GEM	-474.493	764.720	-27.917	-1.653	-0.161	0.187			
		4:KOMBINASI	259.408	-1.36E 3	-1.302	0.059	-0.008	43.957			
		5:KOMB B. MA	-323.111	-19.169	-30.195	-1.704	-0.175	30.297			



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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
16616	13622	1:BEBAN MATI	-241.782	3.4E 3	-61.908	-1.242	0.144	10.706			
		2:BEBAN HIDL	-92.671	1.4E 3	-21.996	-0.142	0.052	4.742			
		3:BEBAN GEM	-1.38E 3	-2.2E 3	141.050	-0.668	-0.272	-42.762			
		4:KOMBINASI	-438.411	6.32E 3	-109.483	-1.718	0.255	20.435			
		5:KOMB B. MA	-1.74E 3	1.93E 3	72.997	-2.029	-0.111	-31.349			
	13520	1:BEBAN MATI	241.782	-3.25E 3	61.908	1.242	0.159	5.591			
		2:BEBAN HIDL	92.671	-1.4E 3	21.996	0.142	0.056	2.112			
		3:BEBAN GEM	1.38E 3	2.2E 3	-141.050	0.668	-0.419	31.967			
		4:KOMBINASI	438.411	-6.13E 3	109.483	1.718	0.281	10.089			
		5:KOMB B. MA	1.74E 3	-1.78E 3	-72.997	2.029	-0.247	40.423			
16617	13626	1:BEBAN MATI	-221.866	1.88E 3	-14.143	-0.624	0.078	-18.612			
		2:BEBAN HIDL	-86.232	742.680	-5.054	-0.064	0.028	-7.547			
		3:BEBAN GEM	-633.865	-2.01E 3	-3.567	-0.407	-0.026	-21.425			
		4:KOMBINASI	-404.209	3.45E 3	-25.059	-0.852	0.138	-34.410			
		5:KOMB B. MA	-939.163	217.045	-20.921	-1.091	0.068	-45.637			
	12816	1:BEBAN MATI	221.866	-1.58E 3	14.143	0.624	0.061	35.608			
		2:BEBAN HIDL	86.232	-742.680	5.054	0.064	0.022	14.831			
		3:BEBAN GEM	633.865	2.01E 3	3.567	0.407	0.061	1.701			
		4:KOMBINASI	404.209	-3.09E 3	25.059	0.852	0.107	66.459			
		5:KOMB B. MA	939.163	83.282	20.921	1.091	0.138	46.293			
16618	13627	1:BEBAN MATI	-59.611	-1.04E 3	0.194	-0.042	-0.001	-0.398			
		2:BEBAN HIDL	-22.155	-548.480	0.113	0.010	-0.001	-0.498			
		3:BEBAN GEM	100.838	18.831	19.428	0.167	-0.106	0.701			
		4:KOMBINASI	-106.981	-2.13E 3	0.412	-0.035	-0.003	-1.274			
		5:KOMB B. MA	32.976	-1.35E 3	20.660	0.140	-0.113	0.040			
	12821	1:BEBAN MATI	59.611	1.27E 3	-0.194	0.042	-0.001	-13.217			
		2:BEBAN HIDL	22.155	548.480	-0.113	-0.010	-0.001	-5.957			
		3:BEBAN GEM	-100.838	-18.831	-19.428	-0.167	-0.122	-0.480			
		4:KOMBINASI	106.981	2.4E 3	-0.412	0.035	-0.002	-25.391			
		5:KOMB B. MA	-32.976	1.58E 3	-20.660	-0.140	-0.130	-17.295			
16619	13628	1:BEBAN MATI	-64.609	-448.021	0.281	-0.039	-0.001	-8.690			
		2:BEBAN HIDL	-23.853	-277.303	0.127	0.005	-0.001	-4.619			
		3:BEBAN GEM	119.818	-54.846	17.390	0.244	-0.101	-0.047			
		4:KOMBINASI	-115.696	-981.311	0.540	-0.039	-0.003	-17.819			
		5:KOMB B. MA	46.889	-671.992	18.617	0.220	-0.108	-11.511			
	13627	1:BEBAN MATI	64.609	678.672	-0.281	0.039	-0.002	2.061			
		2:BEBAN HIDL	23.853	277.303	-0.127	-0.005	-0.001	1.356			
		3:BEBAN GEM	-119.818	54.846	-17.390	-0.244	-0.103	-0.599			
		4:KOMBINASI	115.696	1.26E 3	-0.540	0.039	-0.004	4.643			
		5:KOMB B. MA	-46.889	902.643	-18.617	-0.220	-0.111	2.246			
16620	13629	1:BEBAN MATI	-74.017	536.279	0.325	0.044	-0.002	-3.783			
		2:BEBAN HIDL	-26.963	197.311	0.134	-0.006	-0.001	-2.323			
		3:BEBAN GEM	147.845	-54.600	21.407	-0.258	-0.133	-0.787			
		4:KOMBINASI	-131.962	959.232	0.604	0.044	-0.003	-8.256			
		5:KOMB B. MA	65.042	597.335	22.883	-0.230	-0.141	-6.003			
	13628	1:BEBAN MATI	74.017	-305.627	-0.325	-0.044	-0.002	8.737			
		2:BEBAN HIDL	26.963	-197.311	-0.134	0.006	-0.001	4.645			
		3:BEBAN GEM	-147.845	54.600	-21.407	0.258	-0.119	0.144			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 175	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	131.962	-682.450	-0.604	-0.044	-0.004	17.916			
		5:KOMB B. MA	-65.042	-366.684	-22.883	0.230	-0.128	11.675			
16621	13633	1:BEBAN MATI	-240.711	-2.32E 3	-68.609	-1.663	0.143	-18.978			
		2:BEBAN HIDL	-95.781	-956.321	-25.160	-0.976	0.052	-8.155			
		3:BEBAN GEM	-1.07E 3	-2.08E 3	-32.236	0.422	0.104	18.731			
		4:KOMBINASI	-442.103	-4.31E 3	-122.586	-3.557	0.255	-35.821			
		5:KOMB B. MA	-1.42E 3	-5.07E 3	-117.552	-1.805	0.283	-4.204			
	13523	1:BEBAN MATI	240.711	2.47E 3	68.609	1.663	0.194	7.258			
		2:BEBAN HIDL	95.781	956.321	25.160	0.976	0.071	3.465			
		3:BEBAN GEM	1.07E 3	2.08E 3	32.236	-0.422	0.054	-28.909			
		4:KOMBINASI	442.103	4.49E 3	122.586	3.557	0.346	14.254			
		5:KOMB B. MA	1.42E 3	5.22E 3	117.552	1.805	0.293	-21.017			
16622	13637	1:BEBAN MATI	-262.689	-3.78E 3	-15.378	-1.288	0.080	9.991			
		2:BEBAN HIDL	-106.330	-1.59E 3	-6.531	-0.870	0.034	3.687			
		3:BEBAN GEM	-226.586	-2.54E 3	-57.704	1.580	0.234	40.412			
		4:KOMBINASI	-485.354	-7.07E 3	-28.904	-2.938	0.150	17.889			
		5:KOMB B. MA	-564.402	-7.4E 3	-79.885	-0.151	0.346	54.636			
	83	1:BEBAN MATI	262.689	4.08E 3	15.378	1.288	0.070	-48.493			
		2:BEBAN HIDL	106.330	1.59E 3	6.531	0.870	0.030	-19.246			
		3:BEBAN GEM	226.586	2.54E 3	57.704	-1.580	0.332	-65.330			
		4:KOMBINASI	485.354	7.43E 3	28.904	2.938	0.133	-88.986			
		5:KOMB B. MA	564.402	7.7E 3	79.885	0.151	0.437	-128.638			
16623	13639	1:BEBAN MATI	-168.083	2.93E 3	-3.618	-0.568	0.021	-2.491			
		2:BEBAN HIDL	-55.705	717.477	-1.300	-0.130	0.008	-0.876			
		3:BEBAN GEM	-392.816	-3.07E 3	-34.282	-1.585	0.198	-35.182			
		4:KOMBINASI	-290.827	4.66E 3	-6.421	-0.890	0.038	-4.390			
		5:KOMB B. MA	-613.963	134.599	-40.395	-2.311	0.234	-39.958			
	12811	1:BEBAN MATI	168.083	-1.58E 3	3.618	0.568	0.021	28.973			
		2:BEBAN HIDL	55.705	-717.477	1.300	0.130	0.008	9.319			
		3:BEBAN GEM	392.816	3.07E 3	34.282	1.585	0.206	-0.922			
		4:KOMBINASI	290.827	-3.04E 3	6.421	0.890	0.038	49.678			
		5:KOMB B. MA	613.963	1.22E 3	40.395	2.311	0.242	33.596			
16624	13640	1:BEBAN MATI	-80.869	-251.996	0.221	0.021	-0.001	0.436			
		2:BEBAN HIDL	-30.257	-192.922	0.020	0.015	-0.000	-0.438			
		3:BEBAN GEM	-495.561	-93.719	15.602	0.037	-0.138	0.442			
		4:KOMBINASI	-145.454	-611.070	0.297	0.050	-0.002	-0.177			
		5:KOMB B. MA	-619.361	-466.154	16.615	0.070	-0.146	0.638			
	12815	1:BEBAN MATI	80.869	597.973	-0.221	-0.021	-0.002	-7.938			
		2:BEBAN HIDL	30.257	192.922	-0.020	-0.015	-0.000	-2.968			
		3:BEBAN GEM	495.561	93.719	-15.602	-0.037	-0.138	-2.097			
		4:KOMBINASI	145.454	1.03E 3	-0.297	-0.050	-0.003	-14.274			
		5:KOMB B. MA	619.361	812.131	-16.615	-0.070	-0.147	-11.920			
16625	13642	1:BEBAN MATI	-311.056	-3.56E 3	13.804	0.450	-0.083	-7.853			
		2:BEBAN HIDL	-90.805	-1.24E 3	4.772	-0.024	-0.029	-1.376			
		3:BEBAN GEM	-756.629	-3.27E 3	-12.043	3.353	0.120	36.832			
		4:KOMBINASI	-518.554	-6.26E 3	24.201	0.501	-0.145	-11.625			
		5:KOMB B. MA	-1.16E 3	-7.74E 3	4.022	3.956	0.027	29.995			
	124	1:BEBAN MATI	311.056	4.91E 3	-13.804	-0.450	-0.080	-41.999			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	90.805	1.24E 3	-4.772	0.024	-0.027	-13.203			
		3:BEBAN GEM	756.629	3.27E 3	12.043	-3.353	0.021	-75.357			
		4:KOMBINASI	518.554	7.88E 3	-24.201	-0.501	-0.140	-71.523			
		5:KOMB B. MA	1.16E 3	9.09E 3	-4.022	-3.956	-0.074	-129.045			
16626	13643	1:BEBAN MATI	15.902	-63.283	-4.079	-0.355	0.039	-0.824			
		2:BEBAN HIDL	-4.984	-65.991	-2.258	-0.117	0.022	1.044			
		3:BEBAN GEM	-1.44E 3	-1.44E 3	38.949	-5.333	-0.383	0.019			
		4:KOMBINASI	11.108	-181.525	-8.507	-0.614	0.082	0.681			
		5:KOMB B. MA	-1.5E 3	-1.61E 3	35.463	-6.025	-0.349	-0.178			
	125	1:BEBAN MATI	-15.902	2.09E 3	4.079	0.355	0.033	-18.171			
		2:BEBAN HIDL	4.984	65.991	2.258	0.117	0.018	-2.209			
		3:BEBAN GEM	1.44E 3	1.44E 3	-38.949	5.333	-0.305	-25.354			
		4:KOMBINASI	-11.108	2.61E 3	8.507	0.614	0.068	-25.339			
		5:KOMB B. MA	1.5E 3	3.64E 3	-35.463	6.025	-0.277	-46.118			
16627	13645	1:BEBAN MATI	-123.514	621.589	0.056	0.007	-0.001	2.139			
		2:BEBAN HIDL	-44.092	146.446	-0.027	0.005	-0.000	0.361			
		3:BEBAN GEM	403.424	-245.300	-20.070	0.254	0.120	-3.659			
		4:KOMBINASI	-218.765	980.220	0.025	0.017	-0.001	3.144			
		5:KOMB B. MA	273.626	451.891	-21.033	0.277	0.125	-1.487			
	12845	1:BEBAN MATI	123.514	-390.938	-0.056	-0.007	0.000	3.819			
		2:BEBAN HIDL	44.092	-146.446	0.027	-0.005	0.000	1.362			
		3:BEBAN GEM	-403.424	245.300	20.070	-0.254	0.116	0.772			
		4:KOMBINASI	218.765	-703.438	-0.025	-0.017	0.001	6.762			
		5:KOMB B. MA	-273.626	-221.240	21.033	-0.277	0.123	5.447			
16628	13647	1:BEBAN MATI	-105.509	-846.165	-0.289	0.245	0.001	-5.060			
		2:BEBAN HIDL	-39.802	-450.087	-0.103	0.034	0.000	-2.230			
		3:BEBAN GEM	-555.956	65.306	15.170	0.796	-0.116	1.182			
		4:KOMBINASI	-190.294	-1.74E 3	-0.512	0.348	0.002	-9.639			
		5:KOMB B. MA	-713.144	-1.05E 3	15.577	1.101	-0.120	-5.156			
	12811	1:BEBAN MATI	105.509	1.13E 3	0.289	-0.245	0.003	-9.508			
		2:BEBAN HIDL	39.802	450.087	0.103	-0.034	0.001	-4.391			
		3:BEBAN GEM	555.956	-65.306	-15.170	-0.796	-0.107	-0.222			
		4:KOMBINASI	190.294	2.08E 3	0.512	-0.348	0.006	-18.436			
		5:KOMB B. MA	713.144	1.34E 3	-15.577	-1.101	-0.109	-12.376			
16629	13648	1:BEBAN MATI	-140.911	641.076	-0.169	-0.162	0.002	-3.401			
		2:BEBAN HIDL	-50.910	177.338	-0.099	-0.020	0.001	-1.698			
		3:BEBAN GEM	-781.463	-94.662	9.756	-0.859	-0.074	-1.675			
		4:KOMBINASI	-250.549	1.05E 3	-0.362	-0.227	0.003	-6.798			
		5:KOMB B. MA	-991.993	648.084	10.015	-1.077	-0.076	-6.178			
	12845	1:BEBAN MATI	140.911	-352.762	0.169	0.162	0.001	10.711			
		2:BEBAN HIDL	50.910	-177.338	0.099	0.020	0.001	4.306			
		3:BEBAN GEM	781.463	94.662	-9.756	0.859	-0.069	0.282			
		4:KOMBINASI	250.549	-707.054	0.362	0.227	0.002	19.743			
		5:KOMB B. MA	991.993	-359.770	-10.015	1.077	-0.071	13.591			
16630	13650	1:BEBAN MATI	-85.463	-570.788	-0.729	-0.099	0.006	-0.750			
		2:BEBAN HIDL	-33.182	-349.238	-0.384	-0.055	0.003	0.665			
		3:BEBAN GEM	390.696	10.478	-23.640	-0.190	0.142	3.566			
		4:KOMBINASI	-155.647	-1.24E 3	-1.490	-0.207	0.011	0.163			



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Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	304.858	-769.329	-25.781	-0.332	0.157	3.393			
	199	1:BEBAN MATI	85.463	801.440	0.729	0.099	0.003	-7.324			
		2:BEBAN HIDL	33.182	349.238	0.384	0.055	0.002	-4.774			
		3:BEBAN GEM	-390.696	-10.478	23.640	0.190	0.136	-3.442			
		4:KOMBINASI	155.647	1.52E 3	1.490	0.207	0.006	-16.428			
		5:KOMB B. MA	-304.858	999.981	25.781	0.332	0.147	-13.803			
18249	12717	1:BEBAN MATI	15.4E 3	-977.659	1.55E 3	-0.002	-26.151	-16.459			
		2:BEBAN HIDL	2.36E 3	-267.119	407.258	-0.002	-6.795	-4.481			
		3:BEBAN GEM	-1.99E 3	454.635	-1.38E 3	-0.008	17.780	6.355			
		4:KOMBINASI	22.2E 3	-1.6E 3	2.52E 3	-0.005	-42.253	-26.920			
		5:KOMB B. MA	14.7E 3	-660.564	353.632	-0.012	-11.558	-12.475			
	14533	1:BEBAN MATI	-14E 3	977.659	-1.55E 3	0.002	-27.208	-17.097			
		2:BEBAN HIDL	-2.36E 3	267.119	-407.258	0.002	-7.184	-4.688			
		3:BEBAN GEM	1.99E 3	-454.635	1.38E 3	0.008	29.465	9.250			
		4:KOMBINASI	-20.6E 3	1.6E 3	-2.52E 3	0.005	-44.143	-28.017			
		5:KOMB B. MA	-13.4E 3	660.564	-353.632	0.012	-0.580	-10.198			
18250	12718	1:BEBAN MATI	22E 3	-1.02E 3	-494.181	0.002	8.368	-17.382			
		2:BEBAN HIDL	4.46E 3	-496.722	-129.324	0.000	2.192	-8.344			
		3:BEBAN GEM	-1.25E 3	485.498	-2.39E 3	-0.025	36.498	6.828			
		4:KOMBINASI	33.5E 3	-2.02E 3	-799.936	0.002	13.549	-34.209			
		5:KOMB B. MA	23.4E 3	-808.452	-3.08E 3	-0.024	48.007	-15.219			
	14534	1:BEBAN MATI	-20.6E 3	1.02E 3	494.181	-0.002	8.594	-17.634			
		2:BEBAN HIDL	-4.46E 3	496.722	129.324	-0.000	2.247	-8.705			
		3:BEBAN GEM	1.25E 3	-485.498	2.39E 3	0.025	45.446	9.836			
		4:KOMBINASI	-31.9E 3	2.02E 3	799.936	-0.002	13.907	-35.089			
		5:KOMB B. MA	-22E 3	808.452	3.08E 3	0.024	57.660	-12.529			
18251	12719	1:BEBAN MATI	22.8E 3	3.474	1.83E 3	-0.001	-31.243	0.038			
		2:BEBAN HIDL	5.03E 3	-13.985	857.412	-0.000	-14.333	-0.240			
		3:BEBAN GEM	-1.52E 3	696.572	-1.44E 3	-0.018	19.039	10.801			
		4:KOMBINASI	35.5E 3	-18.208	3.57E 3	-0.002	-60.425	-0.339			
		5:KOMB B. MA	24.3E 3	726.483	826.796	-0.020	-19.852	11.234			
	14535	1:BEBAN MATI	-21.5E 3	-3.474	-1.83E 3	0.001	-31.500	0.082			
		2:BEBAN HIDL	-5.03E 3	13.985	-857.412	0.000	-15.096	-0.240			
		3:BEBAN GEM	1.52E 3	-696.572	1.44E 3	0.018	30.507	13.108			
		4:KOMBINASI	-33.8E 3	18.208	-3.57E 3	0.002	-61.954	-0.286			
		5:KOMB B. MA	-22.9E 3	-726.483	-826.796	0.020	-8.526	13.701			
18252	12720	1:BEBAN MATI	31.2E 3	39.928	-590.971	0.001	10.017	0.713			
		2:BEBAN HIDL	9.23E 3	-18.716	-267.571	-0.000	4.537	-0.317			
		3:BEBAN GEM	-666.127	758.747	-2.5E 3	-0.020	38.547	11.875			
		4:KOMBINASI	52.3E 3	17.969	-1.14E 3	0.001	19.279	0.348			
		5:KOMB B. MA	36.1E 3	825.383	-3.37E 3	-0.020	53.213	12.992			
	14536	1:BEBAN MATI	-29.9E 3	-39.928	590.971	-0.001	10.267	0.658			
		2:BEBAN HIDL	-9.23E 3	18.716	267.571	0.000	4.647	-0.325			
		3:BEBAN GEM	666.127	-758.747	2.5E 3	0.020	47.099	14.167			
		4:KOMBINASI	-50.6E 3	-17.969	1.14E 3	-0.001	19.756	0.269			
		5:KOMB B. MA	-34.7E 3	-825.383	3.37E 3	0.020	62.509	15.338			
18253	12721	1:BEBAN MATI	18.9E 3	518.379	1.39E 3	0.001	-23.716	8.743			
		2:BEBAN HIDL	3.9E 3	157.984	663.639	-0.001	-11.062	2.660			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-2.13E 3	806.659	-1.49E 3	-0.018	19.860	12.794			
		4:KOMBINASI	29E 3	874.830	2.73E 3	0.000	-46.160	14.748			
		5:KOMB B. MA	19E 3	1.46E 3	223.979	-0.018	-9.501	23.773			
	14537	1:BEBAN MATI	-17.6E 3	-518.379	-1.39E 3	-0.001	-23.858	9.049			
		2:BEBAN HIDL	-3.9E 3	-157.984	-663.639	0.001	-11.716	2.762			
		3:BEBAN GEM	2.13E 3	-806.659	1.49E 3	0.018	31.144	14.893			
		4:KOMBINASI	-27.4E 3	-874.830	-2.73E 3	-0.000	-47.375	15.279			
		5:KOMB B. MA	-17.7E 3	-1.46E 3	-223.979	0.018	1.814	26.344			
18254	12722	1:BEBAN MATI	27.7E 3	279.988	-525.941	0.001	8.916	4.838			
		2:BEBAN HIDL	7.89E 3	200.056	-224.920	-0.000	3.812	3.373			
		3:BEBAN GEM	-736.782	769.423	-2.48E 3	-0.021	38.244	12.119			
		4:KOMBINASI	45.9E 3	656.075	-991.002	0.001	16.799	11.202			
		5:KOMB B. MA	31.7E 3	1.21E 3	-3.26E 3	-0.022	51.359	19.587			
	14538	1:BEBAN MATI	-26.3E 3	-279.988	525.941	-0.001	9.136	4.772			
		2:BEBAN HIDL	-7.89E 3	-200.056	224.920	0.000	3.908	3.494			
		3:BEBAN GEM	736.782	-769.423	2.48E 3	0.021	46.826	14.290			
		4:KOMBINASI	-44.2E 3	-656.075	991.002	-0.001	17.216	11.317			
		5:KOMB B. MA	-30.3E 3	-1.21E 3	3.26E 3	0.022	60.649	21.873			
18255	12723	1:BEBAN MATI	10.4E 3	527.851	567.885	0.001	-9.587	8.915			
		2:BEBAN HIDL	1.26E 3	134.638	146.851	-0.001	-2.465	2.270			
		3:BEBAN GEM	-2.49E 3	503.343	-1.79E 3	-0.031	25.679	7.193			
		4:KOMBINASI	14.5E 3	848.842	916.424	0.000	-15.449	14.330			
		5:KOMB B. MA	8.53E 3	1.14E 3	-1.22E 3	-0.031	15.896	17.830			
	14539	1:BEBAN MATI	-9.04E 3	-527.851	-567.885	-0.001	-9.904	9.203			
		2:BEBAN HIDL	-1.26E 3	-134.638	-146.851	0.001	-2.576	2.351			
		3:BEBAN GEM	2.49E 3	-503.343	1.79E 3	0.031	35.698	10.083			
		4:KOMBINASI	-12.9E 3	-848.842	-916.424	-0.000	-16.006	14.805			
		5:KOMB B. MA	-7.18E 3	-1.14E 3	1.22E 3	0.031	26.033	21.200			
18256	12724	1:BEBAN MATI	35E 3	-1.25E 3	-623.688	0.001	10.605	-21.325			
		2:BEBAN HIDL	8.99E 3	-437.994	-218.625	-0.000	3.691	-7.388			
		3:BEBAN GEM	-239.778	742.249	-2.47E 3	-0.020	38.111	11.617			
		4:KOMBINASI	56.4E 3	-2.2E 3	-1.1E 3	0.001	18.631	-37.410			
		5:KOMB B. MA	40.2E 3	-736.922	-3.35E 3	-0.020	52.836	-13.559			
	14540	1:BEBAN MATI	-33.7E 3	1.25E 3	623.688	-0.001	10.802	-21.699			
		2:BEBAN HIDL	-8.99E 3	437.994	218.625	0.000	3.813	-7.646			
		3:BEBAN GEM	239.778	-742.249	2.47E 3	0.020	46.704	13.859			
		4:KOMBINASI	-54.8E 3	2.2E 3	1.1E 3	-0.001	19.064	-38.272			
		5:KOMB B. MA	-38.8E 3	736.922	3.35E 3	0.020	62.129	-11.734			
18257	12725	1:BEBAN MATI	21.2E 3	-1.51E 3	2.5E 3	-0.008	-41.993	-25.275			
		2:BEBAN HIDL	3.62E 3	-372.376	627.615	-0.001	-10.518	-6.192			
		3:BEBAN GEM	-1.85E 3	436.028	-1.4E 3	-0.003	18.281	5.976			
		4:KOMBINASI	31.2E 3	-2.4E 3	4.01E 3	-0.011	-67.220	-40.237			
		5:KOMB B. MA	21.4E 3	-1.27E 3	1.41E 3	-0.012	-29.108	-22.715			
	14541	1:BEBAN MATI	-19.8E 3	1.51E 3	-2.5E 3	0.008	-43.927	-26.449			
		2:BEBAN HIDL	-3.62E 3	372.376	-627.615	0.001	-11.024	-6.589			
		3:BEBAN GEM	1.85E 3	-436.028	1.4E 3	0.003	29.720	8.990			
		4:KOMBINASI	-29.6E 3	2.4E 3	-4.01E 3	0.011	-70.351	-42.281			
		5:KOMB B. MA	-20E 3	1.27E 3	-1.41E 3	0.012	-19.335	-20.963			



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Job No

1

Sheet No

179

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
18258	12726	1:BEBAN MATI	43.6E 3	52.186	-695.755	0.000	11.841	0.917			
		2:BEBAN HIDL	11.4E 3	23.486	-250.499	-0.000	4.206	0.379			
		3:BEBAN GEM	-454.119	686.194	-2.5E 3	-0.019	38.637	10.500			
		4:KOMBINASI	70.6E 3	100.201	-1.24E 3	0.000	20.939	1.707			
		5:KOMB B. MA	49.9E 3	786.781	-3.47E 3	-0.019	54.933	12.170			
14542		1:BEBAN MATI	-42.2E 3	-52.186	695.755	-0.000	12.040	0.874			
		2:BEBAN HIDL	-11.4E 3	-23.486	250.499	0.000	4.392	0.427			
		3:BEBAN GEM	454.119	-686.194	2.5E 3	0.019	47.105	13.052			
		4:KOMBINASI	-69E 3	-100.201	1.24E 3	-0.000	21.475	1.732			
		5:KOMB B. MA	-48.6E 3	-786.781	3.47E 3	0.019	64.135	14.835			
18259	12727	1:BEBAN MATI	21.2E 3	1.51E 3	2.5E 3	0.008	-41.993	25.275			
		2:BEBAN HIDL	3.62E 3	372.376	627.615	0.001	-10.518	6.192			
		3:BEBAN GEM	-1.15E 3	365.934	-1.42E 3	-0.041	18.740	4.677			
		4:KOMBINASI	31.2E 3	2.4E 3	4.01E 3	0.011	-67.220	40.237			
		5:KOMB B. MA	22.1E 3	2.11E 3	1.38E 3	-0.035	-28.627	33.900			
14543		1:BEBAN MATI	-19.8E 3	-1.51E 3	-2.5E 3	-0.008	-43.927	26.449			
		2:BEBAN HIDL	-3.62E 3	-372.376	-627.615	-0.001	-11.024	6.589			
		3:BEBAN GEM	1.15E 3	-365.934	1.42E 3	0.041	30.143	7.883			
		4:KOMBINASI	-29.6E 3	-2.4E 3	-4.01E 3	-0.011	-70.351	42.281			
		5:KOMB B. MA	-20.8E 3	-2.11E 3	-1.38E 3	0.035	-18.891	38.680			
18260	12728	1:BEBAN MATI	43.6E 3	-52.184	-695.755	-0.000	11.841	-0.917			
		2:BEBAN HIDL	11.4E 3	-23.485	-250.499	0.000	4.206	-0.379			
		3:BEBAN GEM	-522.676	687.832	-2.49E 3	-0.018	38.530	10.527			
		4:KOMBINASI	70.6E 3	-100.197	-1.24E 3	-0.000	20.939	-1.707			
		5:KOMB B. MA	49.9E 3	655.948	-3.46E 3	-0.019	54.821	9.909			
14544		1:BEBAN MATI	-42.2E 3	52.184	695.755	0.000	12.040	-0.874			
		2:BEBAN HIDL	-11.4E 3	23.485	250.499	-0.000	4.392	-0.427			
		3:BEBAN GEM	522.676	-687.832	2.49E 3	0.018	46.967	13.082			
		4:KOMBINASI	-69E 3	100.197	1.24E 3	0.000	21.475	-1.732			
		5:KOMB B. MA	-48.5E 3	-655.948	3.46E 3	0.019	63.990	12.606			
18261	12729	1:BEBAN MATI	10.4E 3	-527.851	567.884	-0.001	-9.587	-8.915			
		2:BEBAN HIDL	1.26E 3	-134.638	146.851	0.001	-2.465	-2.270			
		3:BEBAN GEM	-3.62E 3	384.666	-1.72E 3	-0.012	24.594	5.203			
		4:KOMBINASI	14.5E 3	-848.842	916.423	-0.000	-15.449	-14.330			
		5:KOMB B. MA	7.34E 3	-204.735	-1.15E 3	-0.013	14.758	-4.814			
14545		1:BEBAN MATI	-9.04E 3	527.851	-567.884	0.001	-9.904	-9.203			
		2:BEBAN HIDL	-1.26E 3	134.638	-146.851	-0.001	-2.576	-2.351			
		3:BEBAN GEM	3.62E 3	-384.666	1.72E 3	0.012	34.486	8.000			
		4:KOMBINASI	-12.9E 3	848.842	-916.423	0.000	-16.006	-14.805			
		5:KOMB B. MA	-5.99E 3	204.735	1.15E 3	0.013	24.761	-2.213			
18262	12730	1:BEBAN MATI	35E 3	1.25E 3	-623.687	-0.001	10.605	21.325			
		2:BEBAN HIDL	8.99E 3	437.993	-218.625	0.000	3.691	7.388			
		3:BEBAN GEM	-833.656	757.763	-2.45E 3	-0.018	37.853	11.868			
		4:KOMBINASI	56.4E 3	2.2E 3	-1.1E 3	-0.001	18.631	37.410			
		5:KOMB B. MA	39.6E 3	2.31E 3	-3.33E 3	-0.019	52.566	38.219			
14546		1:BEBAN MATI	-33.7E 3	-1.25E 3	623.687	0.001	10.802	21.699			
		2:BEBAN HIDL	-8.99E 3	-437.993	218.625	-0.000	3.813	7.645			
		3:BEBAN GEM	833.656	-757.763	2.45E 3	0.018	46.347	14.141			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-54.8E 3	-2.2E 3	1.1E 3	0.001	19.064	38.271			
		5:KOMB B. MA	-38.2E 3	-2.31E 3	3.33E 3	0.019	61.754	41.134			
18263	12731	1:BEBAN MATI	18.9E 3	-518.379	1.39E 3	-0.001	-23.716	-8.743			
		2:BEBAN HIDL	3.9E 3	-157.984	663.639	0.001	-11.062	-2.660			
		3:BEBAN GEM	-1.57E 3	654.787	-1.4E 3	-0.017	18.422	10.189			
		4:KOMBINASI	29E 3	-874.829	2.73E 3	-0.000	-46.160	-14.748			
		5:KOMB B. MA	19.6E 3	74.357	311.493	-0.019	-11.011	0.360			
	14547	1:BEBAN MATI	-17.6E 3	518.379	-1.39E 3	0.001	-23.858	-9.049			
		2:BEBAN HIDL	-3.9E 3	157.984	-663.639	-0.001	-11.716	-2.762			
		3:BEBAN GEM	1.57E 3	-654.787	1.4E 3	0.017	29.721	12.285			
		4:KOMBINASI	-27.4E 3	874.829	-2.73E 3	0.000	-47.375	-15.279			
		5:KOMB B. MA	-18.3E 3	-74.357	-311.493	0.019	0.320	2.193			
18264	12732	1:BEBAN MATI	27.7E 3	-279.987	-525.941	-0.001	8.916	-4.838			
		2:BEBAN HIDL	7.89E 3	-200.056	-224.921	0.000	3.812	-3.373			
		3:BEBAN GEM	-488.780	794.403	-2.45E 3	-0.016	37.777	12.561			
		4:KOMBINASI	45.9E 3	-656.074	-991.002	-0.001	16.799	-11.202			
		5:KOMB B. MA	31.9E 3	434.102	-3.23E 3	-0.018	50.869	6.328			
	14548	1:BEBAN MATI	-26.3E 3	279.987	525.941	0.001	9.136	-4.772			
		2:BEBAN HIDL	-7.89E 3	200.056	224.921	-0.000	3.908	-3.494			
		3:BEBAN GEM	488.780	-794.403	2.45E 3	0.016	46.230	14.705			
		4:KOMBINASI	-44.2E 3	656.074	991.002	0.001	17.216	-11.317			
		5:KOMB B. MA	-30.6E 3	-434.102	3.23E 3	0.018	60.022	8.572			
18265	12733	1:BEBAN MATI	22.8E 3	-3.476	1.83E 3	0.001	-31.243	-0.038			
		2:BEBAN HIDL	5.03E 3	13.985	857.413	0.000	-14.333	0.240			
		3:BEBAN GEM	-1.48E 3	691.534	-1.42E 3	-0.017	18.791	10.720			
		4:KOMBINASI	35.5E 3	18.204	3.57E 3	0.002	-60.425	0.339			
		5:KOMB B. MA	24.3E 3	731.025	849.537	-0.017	-20.113	11.363			
	14549	1:BEBAN MATI	-21.5E 3	3.476	-1.83E 3	-0.001	-31.500	-0.082			
		2:BEBAN HIDL	-5.03E 3	-13.985	-857.413	-0.000	-15.096	0.240			
		3:BEBAN GEM	1.48E 3	-691.534	1.42E 3	0.017	30.011	13.015			
		4:KOMBINASI	-33.8E 3	-18.204	-3.57E 3	-0.002	-61.954	0.286			
		5:KOMB B. MA	-23E 3	-731.025	-849.537	0.017	-9.046	13.728			
18266	12734	1:BEBAN MATI	31.2E 3	-39.931	-590.971	-0.001	10.017	-0.713			
		2:BEBAN HIDL	9.23E 3	18.714	-267.571	0.000	4.537	0.317			
		3:BEBAN GEM	-645.995	759.840	-2.45E 3	-0.017	37.914	11.888			
		4:KOMBINASI	52.3E 3	-17.974	-1.14E 3	-0.001	19.279	-0.348			
		5:KOMB B. MA	36.1E 3	769.130	-3.33E 3	-0.019	52.549	11.960			
	14550	1:BEBAN MATI	-29.9E 3	39.931	590.971	0.001	10.267	-0.658			
		2:BEBAN HIDL	-9.23E 3	-18.714	267.571	-0.000	4.647	0.325			
		3:BEBAN GEM	645.995	-759.840	2.45E 3	0.017	46.295	14.192			
		4:KOMBINASI	-50.6E 3	17.974	1.14E 3	0.001	19.756	-0.269			
		5:KOMB B. MA	-34.8E 3	-769.130	3.33E 3	0.019	61.665	14.439			
18267	12735	1:BEBAN MATI	15.4E 3	977.661	1.55E 3	0.002	-26.151	16.459			
		2:BEBAN HIDL	2.36E 3	267.120	407.258	0.002	-6.795	4.481			
		3:BEBAN GEM	-884.565	390.113	-1.32E 3	-0.035	16.901	5.150			
		4:KOMBINASI	22.2E 3	1.6E 3	2.52E 3	0.005	-42.253	26.920			
		5:KOMB B. MA	15.9E 3	1.55E 3	413.783	-0.034	-12.482	24.555			
	14551	1:BEBAN MATI	-14E 3	-977.661	-1.55E 3	-0.002	-27.208	17.097			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-2.36E 3	-267.120	-407.258	-0.002	-7.184	4.688			
		3:BEBAN GEM	884.565	-390.113	1.32E 3	0.035	28.379	8.240			
		4:KOMBINASI	-20.6E 3	-1.6E 3	-2.52E 3	-0.005	-44.143	28.017			
		5:KOMB B. MA	-14.5E 3	-1.55E 3	-413.783	0.034	-1.721	28.562			
18268	12736	1:BEBAN MATI	22E 3	1.02E 3	-494.181	-0.002	8.368	17.382			
		2:BEBAN HIDL	4.46E 3	496.723	-129.324	-0.000	2.192	8.344			
		3:BEBAN GEM	-58.991	466.091	-2.34E 3	-0.013	35.752	6.461			
		4:KOMBINASI	33.5E 3	2.02E 3	-799.936	-0.002	13.549	34.209			
		5:KOMB B. MA	24.6E 3	1.81E 3	-3.03E 3	-0.015	47.223	29.173			
	14552	1:BEBAN MATI	-20.6E 3	-1.02E 3	494.181	0.002	8.594	17.634			
		2:BEBAN HIDL	-4.46E 3	-496.723	129.324	0.000	2.247	8.705			
		3:BEBAN GEM	58.991	-466.091	2.34E 3	0.013	44.464	9.537			
		4:KOMBINASI	-31.9E 3	-2.02E 3	799.936	0.002	13.907	35.089			
		5:KOMB B. MA	-23.3E 3	-1.81E 3	3.03E 3	0.015	56.629	32.871			
18269	12737	1:BEBAN MATI	24E 3	-1.09E 3	-43.130	-0.002	0.697	-18.610			
		2:BEBAN HIDL	5.01E 3	-545.548	-15.386	-0.001	0.233	-9.171			
		3:BEBAN GEM	-427.399	458.000	-2.26E 3	-0.023	34.113	6.385			
		4:KOMBINASI	36.8E 3	-2.18E 3	-76.373	-0.003	1.210	-37.005			
		5:KOMB B. MA	26.6E 3	-937.036	-2.43E 3	-0.027	36.656	-17.408			
	14553	1:BEBAN MATI	-22.7E 3	1.09E 3	43.130	0.002	0.783	-18.824			
		2:BEBAN HIDL	-5.01E 3	545.548	15.386	0.001	0.295	-9.554			
		3:BEBAN GEM	427.399	-458.000	2.26E 3	0.023	43.581	9.335			
		4:KOMBINASI	-35.2E 3	2.18E 3	76.373	0.003	1.411	-37.875			
		5:KOMB B. MA	-25.2E 3	937.036	2.43E 3	0.027	46.720	-14.754			
18270	12738	1:BEBAN MATI	24E 3	1.09E 3	-43.130	0.002	0.697	18.610			
		2:BEBAN HIDL	5.01E 3	545.549	-15.386	0.001	0.233	9.171			
		3:BEBAN GEM	714.795	458.140	-2.21E 3	-0.015	33.355	6.398			
		4:KOMBINASI	36.8E 3	2.18E 3	-76.373	0.003	1.210	37.005			
		5:KOMB B. MA	27.8E 3	1.9E 3	-2.38E 3	-0.014	35.860	30.830			
	14554	1:BEBAN MATI	-22.7E 3	-1.09E 3	43.130	-0.002	0.783	18.824			
		2:BEBAN HIDL	-5.01E 3	-545.549	15.386	-0.001	0.295	9.554			
		3:BEBAN GEM	-714.795	-458.140	2.21E 3	0.015	42.583	9.327			
		4:KOMBINASI	-35.2E 3	-2.18E 3	76.373	-0.003	1.411	37.875			
		5:KOMB B. MA	-26.4E 3	-1.9E 3	2.38E 3	0.014	45.672	34.349			
18271	12739	1:BEBAN MATI	25.4E 3	-1.44E 3	16.461	0.000	-0.259	-24.380			
		2:BEBAN HIDL	4.92E 3	-543.125	-0.080	-0.000	0.014	-9.132			
		3:BEBAN GEM	-559.505	466.721	-2.23E 3	-0.022	33.495	6.512			
		4:KOMBINASI	38.4E 3	-2.6E 3	19.626	0.000	-0.289	-43.868			
		5:KOMB B. MA	27.8E 3	-1.28E 3	-2.32E 3	-0.023	34.919	-23.022			
	14555	1:BEBAN MATI	-24.1E 3	1.44E 3	-16.461	-0.000	-0.306	-25.106			
		2:BEBAN HIDL	-4.92E 3	543.125	0.080	0.000	-0.011	-9.509			
		3:BEBAN GEM	559.505	-466.721	2.23E 3	0.022	42.986	9.508			
		4:KOMBINASI	-36.8E 3	2.6E 3	-19.626	-0.000	-0.384	-45.343			
		5:KOMB B. MA	-26.5E 3	1.28E 3	2.32E 3	0.023	44.823	-20.829			
18272	12740	1:BEBAN MATI	25.4E 3	1.44E 3	16.461	-0.000	-0.259	24.380			
		2:BEBAN HIDL	4.92E 3	543.125	-0.080	0.000	0.014	9.132			
		3:BEBAN GEM	595.713	463.067	-2.18E 3	-0.016	32.747	6.472			
		4:KOMBINASI	38.4E 3	2.6E 3	19.626	-0.000	-0.289	43.868			



Software licensed to Snow Panther [LZ0]

Job No

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Sheet No

182

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	29E 3	2.25E 3	-2.27E 3	-0.017	34.133	36.656			
	14556	1:BEBAN MATI	-24.1E 3	-1.44E 3	-16.461	0.000	-0.306	25.107			
		2:BEBAN HIDL	-4.92E 3	-543.125	0.080	-0.000	-0.011	9.509			
		3:BEBAN GEM	-595.713	-463.067	2.18E 3	0.016	42.000	9.422			
		4:KOMBINASI	-36.8E 3	-2.6E 3	-19.626	0.000	-0.384	45.343			
		5:KOMB B. MA	-27.7E 3	-2.25E 3	2.27E 3	0.017	43.788	40.705			
18273	12741	1:BEBAN MATI	25.6E 3	-1.44E 3	-12.856	0.001	0.221	-24.373			
		2:BEBAN HIDL	4.95E 3	-543.522	8.086	-0.000	-0.134	-9.132			
		3:BEBAN GEM	-601.735	470.770	-2.23E 3	-0.022	33.503	6.568			
		4:KOMBINASI	38.6E 3	-2.6E 3	-2.489	0.001	0.051	-43.859			
		5:KOMB B. MA	27.9E 3	-1.27E 3	-2.35E 3	-0.022	35.319	-22.956			
	14557	1:BEBAN MATI	-24.2E 3	1.44E 3	12.856	-0.001	0.220	-25.128			
		2:BEBAN HIDL	-4.95E 3	543.522	-8.086	0.000	-0.144	-9.524			
		3:BEBAN GEM	601.735	-470.770	2.23E 3	0.022	43.009	9.590			
		4:KOMBINASI	-37E 3	2.6E 3	2.489	-0.001	0.034	-45.392			
		5:KOMB B. MA	-26.6E 3	1.27E 3	2.35E 3	0.022	45.293	-20.773			
18274	12742	1:BEBAN MATI	25.6E 3	1.44E 3	-12.856	-0.001	0.221	24.373			
		2:BEBAN HIDL	4.95E 3	543.522	8.086	0.000	-0.134	9.132			
		3:BEBAN GEM	562.093	470.283	-2.18E 3	-0.016	32.773	6.574			
		4:KOMBINASI	38.6E 3	2.6E 3	-2.489	-0.001	0.051	43.859			
		5:KOMB B. MA	29.1E 3	2.26E 3	-2.3E 3	-0.017	34.553	36.755			
	14558	1:BEBAN MATI	-24.2E 3	-1.44E 3	12.856	0.001	0.220	25.128			
		2:BEBAN HIDL	-4.95E 3	-543.522	-8.086	-0.000	-0.144	9.524			
		3:BEBAN GEM	-562.093	-470.283	2.18E 3	0.016	42.040	9.567			
		4:KOMBINASI	-37E 3	-2.6E 3	2.489	0.001	0.034	45.392			
		5:KOMB B. MA	-27.8E 3	-2.26E 3	2.3E 3	0.017	44.276	40.888			
18275	12743	1:BEBAN MATI	37.1E 3	40.473	-43.578	0.001	0.716	0.700			
		2:BEBAN HIDL	10.3E 3	-23.429	13.521	-0.000	-0.233	-0.396			
		3:BEBAN GEM	-33.445	750.238	-2.33E 3	-0.020	35.475	11.734			
		4:KOMBINASI	61E 3	11.082	-30.660	0.001	0.485	0.208			
		5:KOMB B. MA	43.2E 3	814.166	-2.49E 3	-0.020	37.824	12.784			
	14559	1:BEBAN MATI	-35.7E 3	-40.473	43.578	-0.001	0.780	0.689			
		2:BEBAN HIDL	-10.3E 3	23.429	-13.521	0.000	-0.231	-0.409			
		3:BEBAN GEM	33.445	-750.238	2.33E 3	0.020	44.646	14.016			
		4:KOMBINASI	-59.4E 3	-11.082	30.660	-0.001	0.567	0.173			
		5:KOMB B. MA	-41.9E 3	-814.166	2.49E 3	0.020	47.520	15.161			
18276	12744	1:BEBAN MATI	36.9E 3	59.082	33.744	0.001	-0.539	1.034			
		2:BEBAN HIDL	10.2E 3	-12.488	-1.686	-0.000	0.058	-0.200			
		3:BEBAN GEM	10.267	743.208	-2.33E 3	-0.020	35.422	11.624			
		4:KOMBINASI	60.6E 3	50.917	37.794	0.001	-0.554	0.921			
		5:KOMB B. MA	43E 3	831.957	-2.41E 3	-0.021	36.689	13.120			
	14560	1:BEBAN MATI	-35.5E 3	-59.082	-33.744	-0.001	-0.619	0.994			
		2:BEBAN HIDL	-10.2E 3	12.488	1.686	0.000	-0.000	-0.229			
		3:BEBAN GEM	-10.267	-743.208	2.33E 3	0.020	44.566	13.885			
		4:KOMBINASI	-59E 3	-50.917	-37.794	-0.001	-0.743	0.826			
		5:KOMB B. MA	-41.7E 3	-831.957	2.41E 3	0.021	46.176	15.436			
18277	12745	1:BEBAN MATI	34.2E 3	51.254	-51.666	0.000	0.919	0.941			
		2:BEBAN HIDL	10.4E 3	-16.219	-33.569	-0.000	0.509	-0.259			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 183	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	118.649	736.687	-2.38E 3	-0.019	36.261	11.536			
		4:KOMBINASI	57.6E 3	35.555	-115.709	-0.001	1.916	0.715			
		5:KOMB B. MA	40.5E 3	815.044	-2.57E 3	-0.020	39.298	12.898			
	14561	1:BEBAN MATI	-32.8E 3	-51.254	51.666	-0.000	0.854	0.818			
		2:BEBAN HIDL	-10.4E 3	16.219	33.569	0.000	0.644	-0.298			
		3:BEBAN GEM	-118.649	-736.687	2.38E 3	0.019	45.308	13.750			
		4:KOMBINASI	-56E 3	-35.555	115.709	0.001	2.055	0.505			
		5:KOMB B. MA	-39.2E 3	-815.044	2.57E 3	0.020	48.814	15.076			
18278	12746	1:BEBAN MATI	33E 3	406.731	-50.430	0.001	0.807	6.944			
		2:BEBAN HIDL	8.83E 3	213.858	4.378	-0.000	-0.099	3.604			
		3:BEBAN GEM	-141.990	773.204	-2.32E 3	-0.020	35.235	12.199			
		4:KOMBINASI	53.8E 3	830.250	-53.512	0.001	0.810	14.099			
		5:KOMB B. MA	38.2E 3	1.35E 3	-2.48E 3	-0.020	37.745	21.915			
	14562	1:BEBAN MATI	-31.7E 3	-406.731	50.430	-0.001	0.924	7.016			
		2:BEBAN HIDL	-8.83E 3	-213.858	-4.378	0.000	-0.051	3.736			
		3:BEBAN GEM	141.990	-773.204	2.32E 3	0.020	44.426	14.340			
		4:KOMBINASI	-52.1E 3	-830.250	53.512	-0.001	1.026	14.398			
		5:KOMB B. MA	-36.8E 3	-1.35E 3	2.48E 3	0.020	47.540	24.315			
18279	12747	1:BEBAN MATI	29.8E 3	680.865	639.419	0.004	-10.680	11.501			
		2:BEBAN HIDL	7.38E 3	344.245	286.168	-0.001	-4.728	5.767			
		3:BEBAN GEM	-145.150	774.031	-2.28E 3	-0.022	34.504	12.214			
		4:KOMBINASI	47.5E 3	1.37E 3	1.23E 3	0.004	-20.380	23.028			
		5:KOMB B. MA	34E 3	1.7E 3	-1.58E 3	-0.019	22.713	27.786			
	14563	1:BEBAN MATI	-28.4E 3	-680.865	-639.419	-0.004	-11.267	11.869			
		2:BEBAN HIDL	-7.38E 3	-344.245	-286.168	0.001	-5.095	6.049			
		3:BEBAN GEM	145.150	-774.031	2.28E 3	0.022	43.748	14.353			
		4:KOMBINASI	-45.9E 3	-1.37E 3	-1.23E 3	-0.004	-21.672	23.920			
		5:KOMB B. MA	-32.7E 3	-1.7E 3	1.58E 3	0.019	31.612	30.569			
18280	12748	1:BEBAN MATI	26E 3	763.955	-456.878	-0.001	7.643	12.827			
		2:BEBAN HIDL	7.17E 3	399.352	-258.361	-0.000	4.226	6.671			
		3:BEBAN GEM	354.210	672.597	-2.28E 3	-0.017	34.502	10.468			
		4:KOMBINASI	42.7E 3	1.56E 3	-961.632	-0.002	15.933	26.066			
		5:KOMB B. MA	30.7E 3	1.71E 3	-3.01E 3	-0.020	46.406	27.821			
	14564	1:BEBAN MATI	-24.6E 3	-763.955	456.878	0.001	8.038	13.395			
		2:BEBAN HIDL	-7.17E 3	-399.352	258.361	0.000	4.642	7.036			
		3:BEBAN GEM	-354.210	-672.597	2.28E 3	0.017	43.733	12.617			
		4:KOMBINASI	-41E 3	-1.56E 3	961.632	0.002	17.073	27.331			
		5:KOMB B. MA	-29.3E 3	-1.71E 3	3.01E 3	0.020	56.743	30.865			
18281	12749	1:BEBAN MATI	41.5E 3	-1.61E 3	-72.294	0.001	1.170	-27.305			
		2:BEBAN HIDL	10.1E 3	-491.884	3.550	-0.000	-0.078	-8.294			
		3:BEBAN GEM	254.949	741.980	-2.35E 3	-0.020	35.778	11.612			
		4:KOMBINASI	65.9E 3	-2.72E 3	-81.073	0.000	1.279	-46.036			
		5:KOMB B. MA	47.8E 3	-1.13E 3	-2.54E 3	-0.020	38.690	-20.088			
	14565	1:BEBAN MATI	-40.1E 3	1.61E 3	72.294	-0.001	1.311	-27.951			
		2:BEBAN HIDL	-10.1E 3	491.884	-3.550	0.000	-0.044	-8.589			
		3:BEBAN GEM	-254.949	-741.980	2.35E 3	0.020	44.864	13.855			
		4:KOMBINASI	-64.3E 3	2.72E 3	81.073	-0.000	1.504	-47.284			
		5:KOMB B. MA	-46.5E 3	1.13E 3	2.54E 3	0.020	48.392	-18.557			



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Job No 1	Sheet No 184	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
18282	12750	1:BEBAN MATI	38.6E 3	-1.87E 3	556.741	-0.001	-9.303	-31.697			
		2:BEBAN HIDL	8.68E 3	-632.478	275.587	-0.000	-4.571	-10.627			
		3:BEBAN GEM	294.726	705.000	-2.3E 3	-0.018	34.739	10.938			
		4:KOMBINASI	60.2E 3	-3.26E 3	1.11E 3	-0.002	-18.477	-55.040			
		5:KOMB B. MA	44.1E 3	-1.51E 3	-1.69E 3	-0.021	24.430	-26.588			
14566	14566	1:BEBAN MATI	-37.3E 3	1.87E 3	-556.741	0.001	-9.806	-32.604			
		2:BEBAN HIDL	-8.68E 3	632.478	-275.587	0.000	-4.888	-11.082			
		3:BEBAN GEM	-294.726	-705.000	2.3E 3	0.018	44.075	13.260			
		4:KOMBINASI	-58.6E 3	3.26E 3	-1.11E 3	0.002	-19.588	-56.855			
		5:KOMB B. MA	-42.8E 3	1.51E 3	1.69E 3	0.021	33.540	-25.330			
18283	12751	1:BEBAN MATI	27.9E 3	-1.44E 3	862.922	0.005	-14.719	-24.327			
		2:BEBAN HIDL	6.38E 3	-502.648	193.227	-0.000	-3.319	-8.428			
		3:BEBAN GEM	1.81E 3	661.570	-2.65E 3	-0.023	41.612	10.204			
		4:KOMBINASI	43.7E 3	-2.53E 3	1.34E 3	0.005	-22.973	-42.677			
		5:KOMB B. MA	33.7E 3	-1.05E 3	-1.81E 3	-0.019	26.982	-18.669			
14567	14567	1:BEBAN MATI	-26.6E 3	1.44E 3	-862.922	-0.005	-14.899	-25.154			
		2:BEBAN HIDL	-6.38E 3	502.648	-193.227	0.000	-3.313	-8.825			
		3:BEBAN GEM	-1.81E 3	-661.570	2.65E 3	0.023	49.461	12.503			
		4:KOMBINASI	-42.1E 3	2.53E 3	-1.34E 3	-0.005	-23.180	-44.304			
		5:KOMB B. MA	-32.3E 3	1.05E 3	1.81E 3	0.019	35.047	-17.321			
18284	12752	1:BEBAN MATI	51.6E 3	62.739	-94.264	0.000	1.549	1.073			
		2:BEBAN HIDL	12.8E 3	23.939	11.717	-0.000	-0.184	0.383			
		3:BEBAN GEM	3.288	679.234	-2.39E 3	-0.019	36.458	10.393			
		4:KOMBINASI	82.5E 3	113.589	-94.369	0.000	1.565	1.901			
		5:KOMB B. MA	59.3E 3	790.297	-2.59E 3	-0.020	39.719	12.216			
14568	14568	1:BEBAN MATI	-50.3E 3	-62.739	94.264	-0.000	1.687	1.080			
		2:BEBAN HIDL	-12.8E 3	-23.939	-11.717	0.000	-0.219	0.439			
		3:BEBAN GEM	-3.288	-679.234	2.39E 3	0.019	45.409	12.920			
		4:KOMBINASI	-80.9E 3	-113.589	94.369	-0.000	1.674	1.998			
		5:KOMB B. MA	-58E 3	-790.297	2.59E 3	0.020	49.235	14.910			
18285	12753	1:BEBAN MATI	51.6E 3	64.358	88.570	0.000	-1.395	1.080			
		2:BEBAN HIDL	12.9E 3	29.323	-16.086	-0.000	0.280	0.459			
		3:BEBAN GEM	54.316	675.088	-2.39E 3	-0.020	36.543	10.336			
		4:KOMBINASI	82.6E 3	124.147	80.546	0.000	-1.226	2.030			
		5:KOMB B. MA	59.4E 3	790.794	-2.43E 3	-0.021	37.143	12.209			
14569	14569	1:BEBAN MATI	-50.3E 3	-64.358	-88.570	-0.000	-1.645	1.129			
		2:BEBAN HIDL	-12.9E 3	-29.323	16.086	0.000	0.272	0.548			
		3:BEBAN GEM	-54.316	-675.088	2.39E 3	0.020	45.440	12.835			
		4:KOMBINASI	-81E 3	-124.147	-80.546	-0.000	-1.539	2.231			
		5:KOMB B. MA	-58.1E 3	-790.794	2.43E 3	0.021	46.230	14.934			
18286	12754	1:BEBAN MATI	46.7E 3	-130.523	-58.469	0.000	0.776	-2.299			
		2:BEBAN HIDL	12E 3	-107.945	151.443	0.000	-2.569	-1.845			
		3:BEBAN GEM	300.679	697.194	-2.42E 3	-0.021	37.189	10.743			
		4:KOMBINASI	75.3E 3	-329.340	172.146	0.001	-3.180	-5.711			
		5:KOMB B. MA	54.3E 3	536.763	-2.51E 3	-0.021	38.283	7.874			
14570	14570	1:BEBAN MATI	-45.4E 3	130.523	58.469	-0.000	1.231	-2.181			
		2:BEBAN HIDL	-12E 3	107.945	-151.443	-0.000	-2.629	-1.860			
		3:BEBAN GEM	-300.679	-697.194	2.42E 3	0.021	45.994	13.187			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 185	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-73.7E 3	329.340	-172.146	-0.001	-2.729	-5.593			
		5:KOMB B. MA	-52.9E 3	-536.763	2.51E 3	0.021	47.948	10.549			
18287	12755	1:BEBAN MATI	51.6E 3	-62.736	-94.264	-0.000	1.549	-1.073			
		2:BEBAN HIDL	12.8E 3	-23.937	11.717	0.000	-0.184	-0.383			
		3:BEBAN GEM	-62.016	679.772	-2.38E 3	-0.019	36.356	10.402			
		4:KOMBINASI	82.5E 3	-113.583	-94.369	-0.000	1.565	-1.900			
		5:KOMB B. MA	59.3E 3	636.662	-2.58E 3	-0.020	39.613	9.619			
	14571	1:BEBAN MATI	-50.3E 3	62.736	94.264	0.000	1.687	-1.080			
		2:BEBAN HIDL	-12.8E 3	23.937	-11.717	-0.000	-0.219	-0.439			
		3:BEBAN GEM	62.016	-679.772	2.38E 3	0.019	45.275	12.930			
		4:KOMBINASI	-80.9E 3	113.583	94.369	0.000	1.674	-1.998			
		5:KOMB B. MA	-57.9E 3	-636.662	2.58E 3	0.020	49.095	12.233			
18288	12756	1:BEBAN MATI	51.6E 3	-64.355	88.570	-0.000	-1.395	-1.080			
		2:BEBAN HIDL	12.9E 3	-29.322	-16.086	0.000	0.280	-0.459			
		3:BEBAN GEM	-7.259	668.768	-2.38E 3	-0.018	36.418	10.234			
		4:KOMBINASI	82.6E 3	-124.140	80.546	-0.000	-1.226	-2.030			
		5:KOMB B. MA	59.4E 3	620.258	-2.42E 3	-0.019	37.012	9.390			
	14572	1:BEBAN MATI	-50.3E 3	64.355	-88.570	0.000	-1.645	-1.128			
		2:BEBAN HIDL	-12.9E 3	29.322	16.086	-0.000	0.272	-0.548			
		3:BEBAN GEM	7.259	-668.768	2.38E 3	0.018	45.282	12.721			
		4:KOMBINASI	-81E 3	124.140	-80.546	0.000	-1.539	-2.231			
		5:KOMB B. MA	-58E 3	-620.258	2.42E 3	0.019	46.065	11.900			
18289	12757	1:BEBAN MATI	46.7E 3	130.526	-58.469	-0.000	0.776	2.299			
		2:BEBAN HIDL	12E 3	107.947	151.443	-0.000	-2.569	1.845			
		3:BEBAN GEM	161.712	652.759	-2.4E 3	-0.018	36.682	9.992			
		4:KOMBINASI	75.3E 3	329.345	172.146	-0.001	-3.180	5.711			
		5:KOMB B. MA	54.1E 3	880.690	-2.48E 3	-0.019	37.751	13.897			
	14573	1:BEBAN MATI	-45.4E 3	-130.526	58.469	0.000	1.231	2.181			
		2:BEBAN HIDL	-12E 3	-107.947	-151.443	0.000	-2.629	1.860			
		3:BEBAN GEM	-161.712	-652.759	2.4E 3	0.018	45.534	12.413			
		4:KOMBINASI	-73.7E 3	-329.345	-172.146	0.001	-2.729	5.594			
		5:KOMB B. MA	-52.8E 3	-880.690	2.48E 3	0.019	47.465	16.331			
18290	12758	1:BEBAN MATI	41.5E 3	1.61E 3	-72.294	-0.001	1.170	27.305			
		2:BEBAN HIDL	10.1E 3	491.882	3.550	0.000	-0.078	8.294			
		3:BEBAN GEM	-323.153	740.762	-2.33E 3	-0.018	35.475	11.599			
		4:KOMBINASI	65.9E 3	2.72E 3	-81.073	-0.000	1.279	46.036			
		5:KOMB B. MA	47.2E 3	2.68E 3	-2.52E 3	-0.019	38.372	44.459			
	14574	1:BEBAN MATI	-40.1E 3	-1.61E 3	72.294	0.001	1.311	27.951			
		2:BEBAN HIDL	-10.1E 3	-491.882	-3.550	-0.000	-0.044	8.589			
		3:BEBAN GEM	323.153	-740.762	2.33E 3	0.018	44.467	13.827			
		4:KOMBINASI	-64.3E 3	-2.72E 3	81.073	0.000	1.504	47.284			
		5:KOMB B. MA	-45.9E 3	-2.68E 3	2.52E 3	0.019	47.975	47.623			
18291	12759	1:BEBAN MATI	38.6E 3	1.87E 3	556.741	0.001	-9.303	31.697			
		2:BEBAN HIDL	8.68E 3	632.476	275.587	0.000	-4.571	10.627			
		3:BEBAN GEM	-255.906	739.774	-2.3E 3	-0.019	34.856	11.595			
		4:KOMBINASI	60.2E 3	3.26E 3	1.11E 3	0.002	-18.477	55.040			
		5:KOMB B. MA	43.6E 3	3.03E 3	-1.69E 3	-0.019	24.553	50.248			
	14575	1:BEBAN MATI	-37.3E 3	-1.87E 3	-556.741	-0.001	-9.806	32.603			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 186	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-8.68E 3	-632.476	-275.587	-0.000	-4.888	11.082			
		3:BEBAN GEM	255.906	-739.774	2.3E 3	0.019	44.003	13.797			
		4:KOMBINASI	-58.6E 3	-3.26E 3	-1.11E 3	-0.002	-19.588	56.855			
		5:KOMB B. MA	-42.2E 3	-3.03E 3	1.69E 3	0.019	33.464	53.739			
18292	12760	1:BEBAN MATI	27.9E 3	1.44E 3	862.921	-0.005	-14.719	24.327			
		2:BEBAN HIDL	6.38E 3	502.647	193.227	0.000	-3.319	8.428			
		3:BEBAN GEM	1.35E 3	690.476	-2.63E 3	-0.015	41.184	10.686			
		4:KOMBINASI	43.7E 3	2.53E 3	1.34E 3	-0.005	-22.973	42.677			
		5:KOMB B. MA	33.2E 3	2.47E 3	-1.78E 3	-0.021	26.533	40.604			
	14576	1:BEBAN MATI	-26.6E 3	-1.44E 3	-862.921	0.005	-14.899	25.154			
		2:BEBAN HIDL	-6.38E 3	-502.647	-193.227	-0.000	-3.313	8.825			
		3:BEBAN GEM	-1.35E 3	-690.476	2.63E 3	0.015	48.986	13.013			
		4:KOMBINASI	-42.1E 3	-2.53E 3	-1.34E 3	0.005	-23.180	44.304			
		5:KOMB B. MA	-31.8E 3	-2.47E 3	1.78E 3	0.021	34.548	44.112			
18293	12761	1:BEBAN MATI	33E 3	-406.730	-50.430	-0.001	0.807	-6.944			
		2:BEBAN HIDL	8.83E 3	-213.858	4.378	0.000	-0.099	-3.604			
		3:BEBAN GEM	97.180	773.560	-2.29E 3	-0.017	34.813	12.211			
		4:KOMBINASI	53.8E 3	-830.249	-53.512	-0.001	0.810	-14.099			
		5:KOMB B. MA	38.4E 3	277.193	-2.45E 3	-0.019	37.302	3.715			
	14577	1:BEBAN MATI	-31.7E 3	406.730	50.430	0.001	0.924	-7.016			
		2:BEBAN HIDL	-8.83E 3	213.858	-4.378	-0.000	-0.051	-3.736			
		3:BEBAN GEM	-97.180	-773.560	2.29E 3	0.017	43.871	14.340			
		4:KOMBINASI	-52.1E 3	830.249	53.512	0.001	1.026	-14.398			
		5:KOMB B. MA	-37.1E 3	-277.193	2.45E 3	0.019	46.957	5.799			
18294	12762	1:BEBAN MATI	29.8E 3	-680.864	639.419	-0.004	-10.680	-11.501			
		2:BEBAN HIDL	7.38E 3	-344.245	286.168	0.001	-4.728	-5.767			
		3:BEBAN GEM	77.234	735.206	-2.23E 3	-0.016	33.697	11.532			
		4:KOMBINASI	47.5E 3	-1.37E 3	1.23E 3	-0.004	-20.380	-23.028			
		5:KOMB B. MA	34.3E 3	-115.444	-1.53E 3	-0.020	21.865	-2.853			
	14578	1:BEBAN MATI	-28.4E 3	680.864	-639.419	0.004	-11.267	-11.869			
		2:BEBAN HIDL	-7.38E 3	344.245	-286.168	-0.001	-5.095	-6.049			
		3:BEBAN GEM	-77.234	-735.206	2.23E 3	0.016	42.892	13.703			
		4:KOMBINASI	-45.9E 3	1.37E 3	-1.23E 3	0.004	-21.672	-23.920			
		5:KOMB B. MA	-32.9E 3	115.444	1.53E 3	0.020	30.712	-1.110			
18295	12763	1:BEBAN MATI	26E 3	-763.954	-456.878	0.001	7.643	-12.827			
		2:BEBAN HIDL	7.17E 3	-399.351	-258.361	0.000	4.226	-6.671			
		3:BEBAN GEM	766.205	832.453	-2.33E 3	-0.021	35.598	13.255			
		4:KOMBINASI	42.7E 3	-1.56E 3	-961.631	0.002	15.933	-26.066			
		5:KOMB B. MA	31.1E 3	-129.489	-3.06E 3	-0.021	47.557	-2.912			
	14579	1:BEBAN MATI	-24.6E 3	763.954	456.878	-0.001	8.038	-13.395			
		2:BEBAN HIDL	-7.17E 3	399.351	258.361	-0.000	4.642	-7.036			
		3:BEBAN GEM	-766.205	-832.453	2.33E 3	0.021	44.488	15.318			
		4:KOMBINASI	-41E 3	1.56E 3	961.631	-0.002	17.073	-27.331			
		5:KOMB B. MA	-29.7E 3	129.489	3.06E 3	0.021	57.535	-1.533			
18296	12764	1:BEBAN MATI	37.1E 3	-40.476	-43.578	-0.001	0.716	-0.700			
		2:BEBAN HIDL	10.3E 3	23.428	13.521	0.000	-0.233	0.396			
		3:BEBAN GEM	-24.647	750.647	-2.29E 3	-0.017	34.886	11.751			
		4:KOMBINASI	61E 3	-11.087	-30.660	-0.001	0.485	-0.208			



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Job No 1	Sheet No 187	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	43.2E 3	761.759	-2.44E 3	-0.019	37.206	11.875			
	14580	1:BEAN MATI	-35.7E 3	40.476	43.578	0.001	0.780	-0.689			
		2:BEAN HIDL	-10.3E 3	-23.428	-13.521	-0.000	-0.231	0.409			
		3:BEAN GEM	24.647	-750.647	2.29E 3	0.017	43.875	14.014			
		4:KOMBINASI	-59.4E 3	11.087	30.660	0.001	0.567	-0.173			
		5:KOMB B. MA	-41.9E 3	-761.759	2.44E 3	0.019	46.710	14.271			
18297	12765	1:BEAN MATI	36.9E 3	-59.085	33.744	-0.001	-0.539	-1.034			
		2:BEAN HIDL	10.2E 3	12.487	-1.686	0.000	0.058	0.200			
		3:BEAN GEM	6.370	741.856	-2.29E 3	-0.018	34.866	11.623			
		4:KOMBINASI	60.6E 3	-50.922	37.795	-0.001	-0.554	-0.921			
		5:KOMB B. MA	43E 3	727.356	-2.37E 3	-0.019	36.104	11.290			
	14581	1:BEAN MATI	-35.5E 3	59.085	-33.744	0.001	-0.619	-0.994			
		2:BEAN HIDL	-10.2E 3	-12.487	1.686	-0.000	-0.000	0.229			
		3:BEAN GEM	-6.370	-741.856	2.29E 3	0.018	43.817	13.840			
		4:KOMBINASI	-59E 3	50.922	-37.795	0.001	-0.743	-0.826			
		5:KOMB B. MA	-41.7E 3	-727.356	2.37E 3	0.019	45.389	13.675			
18298	12766	1:BEAN MATI	34.2E 3	-51.256	-51.666	-0.000	0.919	-0.941			
		2:BEAN HIDL	10.4E 3	16.217	-33.569	0.000	0.509	0.259			
		3:BEAN GEM	134.764	734.464	-2.33E 3	-0.019	35.585	11.499			
		4:KOMBINASI	57.6E 3	-35.560	-115.709	0.001	1.916	-0.715			
		5:KOMB B. MA	40.5E 3	729.661	-2.52E 3	-0.019	38.589	11.288			
	14582	1:BEAN MATI	-32.8E 3	51.256	51.666	0.000	0.854	-0.818			
		2:BEAN HIDL	-10.4E 3	-16.217	33.569	-0.000	0.644	0.298			
		3:BEAN GEM	-134.764	-734.464	2.33E 3	0.019	44.473	13.710			
		4:KOMBINASI	-56E 3	35.560	115.709	-0.001	2.055	-0.505			
		5:KOMB B. MA	-39.2E 3	-729.661	2.52E 3	0.019	47.938	13.756			
18299	12767	1:BEAN MATI	13.5E 3	-914.237	-971.274	-0.001	16.388	-15.373			
		2:BEAN HIDL	1.88E 3	-223.939	-243.083	-0.000	4.087	-3.760			
		3:BEAN GEM	1.42E 3	410.437	-1.51E 3	-0.006	20.309	5.424			
		4:KOMBINASI	19.3E 3	-1.46E 3	-1.55E 3	-0.001	26.205	-24.464			
		5:KOMB B. MA	16.2E 3	-617.641	-2.7E 3	-0.007	40.165	-11.934			
	14583	1:BEAN MATI	-12.2E 3	914.237	971.274	0.001	16.949	-16.006			
		2:BEAN HIDL	-1.88E 3	223.939	243.083	0.000	4.256	-3.927			
		3:BEAN GEM	-1.42E 3	-410.437	1.51E 3	0.006	31.518	8.664			
		4:KOMBINASI	-17.6E 3	1.46E 3	1.55E 3	0.001	27.149	-25.490			
		5:KOMB B. MA	-14.8E 3	617.641	2.7E 3	0.007	52.597	-9.265			
18300	12768	1:BEAN MATI	19.9E 3	17.872	-1.12E 3	0.001	19.060	0.306			
		2:BEAN HIDL	3.94E 3	-4.183	-515.349	-0.000	8.667	-0.064			
		3:BEAN GEM	2.09E 3	727.043	-1.6E 3	-0.022	22.073	11.262			
		4:KOMBINASI	30.2E 3	14.754	-2.16E 3	0.000	36.739	0.264			
		5:KOMB B. MA	24.5E 3	778.757	-3.11E 3	-0.023	47.436	12.092			
	14584	1:BEAN MATI	-18.6E 3	-17.872	1.12E 3	-0.001	19.224	0.308			
		2:BEAN HIDL	-3.94E 3	4.183	515.349	0.000	9.021	-0.079			
		3:BEAN GEM	-2.09E 3	-727.043	1.6E 3	0.022	32.976	13.692			
		4:KOMBINASI	-28.6E 3	-14.754	2.16E 3	-0.000	37.503	0.243			
		5:KOMB B. MA	-23.2E 3	-778.757	3.11E 3	0.023	59.262	14.637			
18301	12769	1:BEAN MATI	18.1E 3	190.741	-976.117	0.000	16.653	3.280			
		2:BEAN HIDL	3.47E 3	60.546	-431.177	0.000	7.262	1.009			



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Job No 1	Sheet No 188	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.63E 3	808.780	-1.61E 3	-0.022	22.188	12.740			
		4:KOMBINASI	27.3E 3	325.763	-1.86E 3	0.000	31.603	5.550			
		5:KOMB B. MA	21.9E 3	1.08E 3	-2.93E 3	-0.022	44.308	17.262			
	14585	1:BEBAN MATI	-16.7E 3	-190.741	976.117	-0.000	16.850	3.267			
		2:BEBAN HIDL	-3.47E 3	-60.546	431.177	-0.000	7.537	1.069			
		3:BEBAN GEM	-1.63E 3	-808.780	1.61E 3	0.022	33.122	15.020			
		4:KOMBINASI	-25.6E 3	-325.763	1.86E 3	-0.000	32.280	5.631			
		5:KOMB B. MA	-20.5E 3	-1.08E 3	2.93E 3	0.022	56.151	19.680			
18302	12770	1:BEBAN MATI	30.1E 3	-1.69E 3	-471.913	0.003	7.849	-28.666			
		2:BEBAN HIDL	7.06E 3	-642.220	-43.187	0.000	0.752	-10.822			
		3:BEBAN GEM	942.635	799.256	-2.46E 3	-0.023	37.792	12.548			
		4:KOMBINASI	47.4E 3	-3.06E 3	-635.395	0.004	10.622	-51.714			
		5:KOMB B. MA	35.3E 3	-1.24E 3	-3.08E 3	-0.021	47.982	-21.983			
	14586	1:BEBAN MATI	-28.8E 3	1.69E 3	471.913	-0.003	8.348	-29.408			
		2:BEBAN HIDL	-7.06E 3	642.220	43.187	-0.000	0.731	-11.221			
		3:BEBAN GEM	-942.635	-799.256	2.46E 3	0.023	46.501	14.885			
		4:KOMBINASI	-45.8E 3	3.06E 3	635.395	-0.004	11.187	-53.243			
		5:KOMB B. MA	-34E 3	1.24E 3	3.08E 3	0.021	57.613	-20.511			
18303	12771	1:BEBAN MATI	42.6E 3	47.601	78.566	0.000	-1.528	0.822			
		2:BEBAN HIDL	11.6E 3	21.868	299.782	0.000	-5.001	0.346			
		3:BEBAN GEM	387.652	685.216	-2.52E 3	-0.018	39.043	10.460			
		4:KOMBINASI	69.7E 3	92.110	573.932	0.001	-9.835	1.540			
		5:KOMB B. MA	50E 3	780.198	-2.39E 3	-0.018	36.466	12.012			
	14587	1:BEBAN MATI	-41.2E 3	-47.601	-78.566	-0.000	-1.169	0.812			
		2:BEBAN HIDL	-11.6E 3	-21.868	-299.782	-0.000	-5.288	0.404			
		3:BEBAN GEM	-387.652	-685.216	2.52E 3	0.018	47.479	13.059			
		4:KOMBINASI	-68.1E 3	-92.110	-573.932	-0.001	-9.864	1.622			
		5:KOMB B. MA	-48.6E 3	-780.198	2.39E 3	0.018	45.511	14.766			
18304	12772	1:BEBAN MATI	42.6E 3	-47.600	78.567	-0.000	-1.528	-0.822			
		2:BEBAN HIDL	11.6E 3	-21.868	299.783	-0.000	-5.001	-0.346			
		3:BEBAN GEM	322.643	689.431	-2.52E 3	-0.018	38.994	10.538			
		4:KOMBINASI	69.7E 3	-92.108	573.932	-0.001	-9.835	-1.540			
		5:KOMB B. MA	49.9E 3	663.182	-2.38E 3	-0.020	36.415	10.036			
	14588	1:BEBAN MATI	-41.2E 3	47.600	-78.567	0.000	-1.169	-0.812			
		2:BEBAN HIDL	-11.6E 3	21.868	-299.783	0.000	-5.288	-0.404			
		3:BEBAN GEM	-322.643	-689.431	2.52E 3	0.018	47.392	13.125			
		4:KOMBINASI	-68.1E 3	92.108	-573.932	0.001	-9.864	-1.622			
		5:KOMB B. MA	-48.6E 3	-663.182	2.38E 3	0.020	45.419	12.727			
18305	12773	1:BEBAN MATI	30.1E 3	1.69E 3	-471.913	-0.003	7.849	28.666			
		2:BEBAN HIDL	7.06E 3	642.219	-43.187	-0.000	0.752	10.822			
		3:BEBAN GEM	428.436	676.569	-2.39E 3	-0.014	36.739	10.433			
		4:KOMBINASI	47.4E 3	3.06E 3	-635.395	-0.004	10.622	51.714			
		5:KOMB B. MA	34.8E 3	2.79E 3	-3.01E 3	-0.018	46.876	46.113			
	14589	1:BEBAN MATI	-28.8E 3	-1.69E 3	471.913	0.003	8.348	29.408			
		2:BEBAN HIDL	-7.06E 3	-642.219	43.187	0.000	0.731	11.221			
		3:BEBAN GEM	-428.436	-676.569	2.39E 3	0.014	45.415	12.789			
		4:KOMBINASI	-45.8E 3	-3.06E 3	635.395	0.004	11.187	53.243			
		5:KOMB B. MA	-33.5E 3	-2.79E 3	3.01E 3	0.018	56.472	49.569			



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Job No 1	Sheet No 189	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
18306	12774	1:BEBAN MATI	18.1E 3	-190.741	-976.117	-0.000	16.653	-3.280			
		2:BEBAN HIDL	3.47E 3	-60.546	-431.177	-0.000	7.262	-1.009			
		3:BEBAN GEM	1.92E 3	707.131	-1.59E 3	-0.018	21.990	10.992			
		4:KOMBINASI	27.3E 3	-325.762	-1.86E 3	-0.000	31.603	-5.550			
		5:KOMB B. MA	22.2E 3	515.419	-2.91E 3	-0.019	44.100	7.656			
	14590	1:BEBAN MATI	-16.7E 3	190.741	976.117	0.000	16.850	-3.267			
		2:BEBAN HIDL	-3.47E 3	60.546	431.177	0.000	7.537	-1.069			
		3:BEBAN GEM	-1.92E 3	-707.131	1.59E 3	0.018	32.730	13.279			
		4:KOMBINASI	-25.6E 3	325.762	1.86E 3	0.000	32.280	-5.631			
		5:KOMB B. MA	-20.8E 3	-515.419	2.91E 3	0.019	55.740	10.035			
18307	12775	1:BEBAN MATI	19.9E 3	-17.874	-1.12E 3	-0.001	19.060	-0.306			
		2:BEBAN HIDL	3.94E 3	4.183	-515.349	0.000	8.667	0.064			
		3:BEBAN GEM	2.05E 3	733.712	-1.57E 3	-0.017	21.645	11.367			
		4:KOMBINASI	30.2E 3	-14.757	-2.16E 3	-0.000	36.739	-0.264			
		5:KOMB B. MA	24.5E 3	755.033	-3.08E 3	-0.019	46.987	11.669			
	14591	1:BEBAN MATI	-18.6E 3	17.874	1.12E 3	0.001	19.224	-0.308			
		2:BEBAN HIDL	-3.94E 3	-4.183	515.349	-0.000	9.021	0.079			
		3:BEBAN GEM	-2.05E 3	-733.712	1.57E 3	0.017	32.353	13.816			
		4:KOMBINASI	-28.6E 3	14.757	2.16E 3	0.000	37.503	-0.243			
		5:KOMB B. MA	-23.1E 3	-755.033	3.08E 3	0.019	58.608	14.247			
18308	12776	1:BEBAN MATI	13.5E 3	914.239	-971.274	0.001	16.388	15.374			
		2:BEBAN HIDL	1.88E 3	223.939	-243.083	0.000	4.087	3.760			
		3:BEBAN GEM	2.5E 3	486.188	-1.5E 3	-0.022	20.321	6.804			
		4:KOMBINASI	19.3E 3	1.46E 3	-1.55E 3	0.001	26.205	24.464			
		5:KOMB B. MA	17.3E 3	1.56E 3	-2.69E 3	-0.022	40.177	24.774			
	14592	1:BEBAN MATI	-12.2E 3	-914.239	971.274	-0.001	16.949	16.006			
		2:BEBAN HIDL	-1.88E 3	-223.939	243.083	-0.000	4.256	3.927			
		3:BEBAN GEM	-2.5E 3	-486.188	1.5E 3	0.022	31.187	9.883			
		4:KOMBINASI	-17.6E 3	-1.46E 3	1.55E 3	-0.001	27.149	25.490			
		5:KOMB B. MA	-16E 3	-1.56E 3	2.69E 3	0.022	52.249	28.740			
18309	12777	1:BEBAN MATI	12.5E 3	-1.04E 3	-1.13E 3	0.001	19.384	-17.813			
		2:BEBAN HIDL	2.95E 3	-469.220	-481.175	0.000	8.055	-7.847			
		3:BEBAN GEM	1.07E 3	371.722	-1.38E 3	0.009	17.801	4.660			
		4:KOMBINASI	19.7E 3	-2E 3	-2.12E 3	0.002	36.148	-33.931			
		5:KOMB B. MA	15.4E 3	-931.142	-2.86E 3	0.011	42.907	-17.628			
	14593	1:BEBAN MATI	-11.2E 3	1.04E 3	1.13E 3	-0.001	19.353	-17.880			
		2:BEBAN HIDL	-2.95E 3	469.220	481.175	-0.000	8.461	-8.258			
		3:BEBAN GEM	-1.07E 3	-371.722	1.38E 3	-0.009	29.467	8.099			
		4:KOMBINASI	-18.1E 3	2E 3	2.12E 3	-0.002	36.762	-34.669			
		5:KOMB B. MA	-14E 3	931.142	2.86E 3	-0.011	55.370	-14.331			
18310	12778	1:BEBAN MATI	21.5E 3	13.922	-2.01E 3	-0.001	34.374	0.286			
		2:BEBAN HIDL	6.25E 3	16.634	-973.126	-0.000	16.282	0.245			
		3:BEBAN GEM	1.56E 3	657.537	-1.46E 3	-0.019	19.412	9.918			
		4:KOMBINASI	35.8E 3	43.321	-3.97E 3	-0.001	67.300	0.735			
		5:KOMB B. MA	26.9E 3	714.316	-4.13E 3	-0.021	64.526	10.846			
	14594	1:BEBAN MATI	-20.1E 3	-13.922	2.01E 3	0.001	34.592	0.192			
	2:BEBAN HIDL	-6.25E 3	-16.634	973.126	0.000	17.119	0.326				
	3:BEBAN GEM	-1.56E 3	-657.537	1.46E 3	0.019	30.768	12.651				



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 190	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-34.2E 3	-43.321	3.97E 3	0.001	68.900	0.752			
		5:KOMB B. MA	-25.5E 3	-714.316	4.13E 3	0.021	77.169	13.671			
18311	12779	1:BEBAN MATI	21.5E 3	-13.921	-2.01E 3	0.001	34.374	-0.286			
		2:BEBAN HIDL	6.25E 3	-16.634	-973.126	0.000	16.282	-0.245			
		3:BEBAN GEM	1.49E 3	658.677	-1.46E 3	-0.019	19.354	9.941			
		4:KOMBINASI	35.8E 3	-43.320	-3.97E 3	0.001	67.300	-0.735			
		5:KOMB B. MA	26.8E 3	667.709	-4.12E 3	-0.019	64.465	10.006			
	14595	1:BEBAN MATI	-20.1E 3	13.921	2.01E 3	-0.001	34.592	-0.192			
		2:BEBAN HIDL	-6.25E 3	16.634	973.126	-0.000	17.119	-0.326			
		3:BEBAN GEM	-1.49E 3	-658.677	1.46E 3	0.019	30.672	12.667			
		4:KOMBINASI	-34.2E 3	43.320	3.97E 3	-0.001	68.900	-0.752			
		5:KOMB B. MA	-25.5E 3	-667.709	4.12E 3	0.019	77.068	12.912			
18312	12780	1:BEBAN MATI	12.5E 3	1.04E 3	-1.13E 3	-0.001	19.384	17.813			
		2:BEBAN HIDL	2.95E 3	469.220	-481.175	-0.000	8.055	7.847			
		3:BEBAN GEM	1.82E 3	437.366	-1.36E 3	-0.033	17.614	5.865			
		4:KOMBINASI	19.7E 3	2E 3	-2.12E 3	-0.002	36.148	33.931			
		5:KOMB B. MA	16.2E 3	1.78E 3	-2.85E 3	-0.036	42.711	28.679			
	14596	1:BEBAN MATI	-11.2E 3	-1.04E 3	1.13E 3	0.001	19.353	17.880			
		2:BEBAN HIDL	-2.95E 3	-469.220	481.175	0.000	8.461	8.258			
		3:BEBAN GEM	-1.82E 3	-437.366	1.36E 3	0.033	29.095	9.147			
		4:KOMBINASI	-18.1E 3	-2E 3	2.12E 3	0.002	36.762	34.669			
		5:KOMB B. MA	-14.8E 3	-1.78E 3	2.85E 3	0.036	54.980	32.440			
18313	12781	1:BEBAN MATI	18.9E 3	-714.381	370.447	0.007	-6.109	-11.751			
		2:BEBAN HIDL	3.6E 3	31.281	152.969	-0.001	-2.535	0.502			
		3:BEBAN GEM	227.391	410.474	-2.97E 3	-0.021	47.849	5.512			
		4:KOMBINASI	28.5E 3	-807.208	689.286	0.007	-11.387	-13.297			
		5:KOMB B. MA	21.3E 3	-264.615	-2.66E 3	-0.016	42.611	-5.662			
	14597	1:BEBAN MATI	-17.6E 3	714.381	-370.447	-0.007	-6.606	-12.769			
		2:BEBAN HIDL	-3.6E 3	-31.281	-152.969	0.001	-2.715	0.571			
		3:BEBAN GEM	-227.391	-410.474	2.97E 3	0.021	54.146	8.577			
		4:KOMBINASI	-26.8E 3	807.208	-689.286	-0.007	-12.271	-14.409			
		5:KOMB B. MA	-20E 3	264.615	2.66E 3	0.016	48.618	-3.420			
18314	12782	1:BEBAN MATI	18.9E 3	714.380	370.447	-0.007	-6.109	11.751			
		2:BEBAN HIDL	3.6E 3	-31.281	152.969	0.001	-2.535	-0.502			
		3:BEBAN GEM	-359.323	310.647	-2.9E 3	-0.018	46.714	3.640			
		4:KOMBINASI	28.5E 3	807.206	689.286	-0.007	-11.387	13.297			
		5:KOMB B. MA	20.7E 3	1.02E 3	-2.59E 3	-0.025	41.420	15.272			
	14598	1:BEBAN MATI	-17.6E 3	-714.380	-370.447	0.007	-6.606	12.769			
		2:BEBAN HIDL	-3.6E 3	31.281	-152.969	-0.001	-2.715	-0.571			
		3:BEBAN GEM	359.323	-310.647	2.9E 3	0.018	52.944	7.022			
		4:KOMBINASI	-26.8E 3	-807.206	-689.286	0.007	-12.271	14.409			
		5:KOMB B. MA	-19.3E 3	-1.02E 3	2.59E 3	0.025	47.356	19.800			
19579	14533	1:BEBAN MATI	5.02E 3	-926.799	1.46E 3	-0.026	-25.867	-16.426			
		2:BEBAN HIDL	698.142	-248.443	354.933	-0.004	-6.524	-4.443			
		3:BEBAN GEM	-532.366	155.159	-484.248	-0.023	3.809	1.533			
		4:KOMBINASI	7.14E 3	-1.51E 3	2.32E 3	-0.037	-41.480	-26.819			
		5:KOMB B. MA	4.88E 3	-912.948	1.16E 3	-0.052	-25.783	-17.482			
	15480	1:BEBAN MATI	-3.67E 3	926.799	-1.46E 3	0.026	-24.191	-15.385			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 191	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-698.142	248.443	-354.933	0.004	-5.658	-4.084			
		3:BEBAN GEM	532.366	-155.159	484.248	0.023	12.812	3.793			
		4:KOMBINASI	-5.52E 3	1.51E 3	-2.32E 3	0.037	-38.083	-24.997			
		5:KOMB B. MA	-3.53E 3	912.948	-1.16E 3	0.052	-14.134	-13.853			
19580	14534	1:BEBAN MATI	7.7E 3	-1.17E 3	-467.537	0.005	8.211	-19.100			
		2:BEBAN HIDL	1.3E 3	-453.869	-121.992	0.002	2.160	-8.173			
		3:BEBAN GEM	-289.649	175.998	-1.08E 3	-0.026	15.137	1.889			
		4:KOMBINASI	11.3E 3	-2.13E 3	-756.233	0.009	13.310	-35.998			
		5:KOMB B. MA	8.17E 3	-1.26E 3	-1.68E 3	-0.021	25.400	-22.021			
	15481	1:BEBAN MATI	-6.35E 3	1.17E 3	467.537	-0.005	7.837	-20.986			
		2:BEBAN HIDL	-1.3E 3	453.869	121.992	-0.002	2.027	-7.405			
		3:BEBAN GEM	289.649	-175.998	1.08E 3	0.026	22.083	4.152			
		4:KOMBINASI	-9.7E 3	2.13E 3	756.233	-0.009	12.647	-37.031			
		5:KOMB B. MA	-6.83E 3	1.26E 3	1.68E 3	0.021	32.240	-21.070			
19581	14535	1:BEBAN MATI	8.15E 3	-10.414	2.13E 3	-0.004	-34.619	-0.017			
		2:BEBAN HIDL	1.43E 3	-20.096	736.245	-0.000	-13.657	-0.285			
		3:BEBAN GEM	-425.406	314.094	-514.068	-0.010	4.448	4.449			
		4:KOMBINASI	12.1E 3	-44.650	3.73E 3	-0.006	-63.395	-0.476			
		5:KOMB B. MA	8.56E 3	307.327	2.03E 3	-0.015	-38.144	4.483			
	15482	1:BEBAN MATI	-6.8E 3	10.414	-2.13E 3	0.004	-38.513	-0.341			
		2:BEBAN HIDL	-1.43E 3	20.096	-736.245	0.000	-11.613	-0.405			
		3:BEBAN GEM	425.406	-314.094	514.068	0.010	13.197	6.332			
		4:KOMBINASI	-10.4E 3	44.650	-3.73E 3	0.006	-64.796	-1.056			
		5:KOMB B. MA	-7.21E 3	-307.327	-2.03E 3	0.015	-31.624	6.065			
19582	14536	1:BEBAN MATI	13.5E 3	59.916	-631.919	-0.003	10.624	1.022			
		2:BEBAN HIDL	2.51E 3	-27.530	-251.963	-0.001	4.465	-0.388			
		3:BEBAN GEM	-158.653	350.702	-1.12E 3	-0.024	15.969	5.105			
		4:KOMBINASI	20.3E 3	27.851	-1.16E 3	-0.004	19.892	0.606			
		5:KOMB B. MA	14.9E 3	411.634	-1.96E 3	-0.029	30.071	6.149			
	15483	1:BEBAN MATI	-12.2E 3	-59.916	631.919	0.003	11.066	1.035			
		2:BEBAN HIDL	-2.51E 3	27.530	251.963	0.001	4.183	-0.557			
		3:BEBAN GEM	158.653	-350.702	1.12E 3	0.024	22.526	6.932			
		4:KOMBINASI	-18.7E 3	-27.851	1.16E 3	0.004	19.972	0.350			
		5:KOMB B. MA	-13.5E 3	-411.634	1.96E 3	0.029	37.228	7.979			
19583	14537	1:BEBAN MATI	6.74E 3	553.195	1.61E 3	-0.016	-26.103	9.447			
		2:BEBAN HIDL	1.06E 3	166.225	548.397	-0.004	-10.352	2.864			
		3:BEBAN GEM	-557.888	390.298	-513.106	-0.035	4.591	5.816			
		4:KOMBINASI	9.79E 3	929.795	2.81E 3	-0.025	-47.887	15.919			
		5:KOMB B. MA	6.79E 3	1.06E 3	1.4E 3	-0.055	-27.493	17.272			
	15484	1:BEBAN MATI	-5.4E 3	-553.195	-1.61E 3	0.016	-29.049	9.541			
		2:BEBAN HIDL	-1.06E 3	-166.225	-548.397	0.004	-8.471	2.841			
		3:BEBAN GEM	557.888	-390.298	513.106	0.035	13.020	7.580			
		4:KOMBINASI	-8.18E 3	-929.795	-2.81E 3	0.025	-48.412	15.994			
		5:KOMB B. MA	-5.45E 3	-1.06E 3	-1.4E 3	0.055	-20.460	19.205			
19584	14538	1:BEBAN MATI	12E 3	310.937	-559.888	-0.005	9.397	5.229			
		2:BEBAN HIDL	2.3E 3	164.837	-213.664	-0.001	3.774	3.125			
		3:BEBAN GEM	-93.325	339.095	-1.11E 3	-0.027	15.677	4.972			
		4:KOMBINASI	18.1E 3	636.864	-1.01E 3	-0.007	17.314	11.275			



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Job No 1	Sheet No 192	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	13.3E 3	765.889	-1.85E 3	-0.033	28.122	12.324			
	15485	1:BEBAN MATI	-10.6E 3	-310.937	559.888	0.005	9.820	5.443			
		2:BEBAN HIDL	-2.3E 3	-164.837	213.664	0.001	3.560	2.533			
		3:BEBAN GEM	93.325	-339.095	1.11E 3	0.027	22.291	6.667			
		4:KOMBINASI	-16.4E 3	-636.864	1.01E 3	0.007	17.480	10.584			
		5:KOMB B. MA	-11.9E 3	-765.889	1.85E 3	0.033	35.362	13.963			
19585	14539	1:BEBAN MATI	3.6E 3	549.225	627.018	-0.007	-10.406	9.427			
		2:BEBAN HIDL	435.211	148.010	158.505	-0.002	-2.646	2.505			
		3:BEBAN GEM	-572.943	212.516	-611.344	-0.018	6.766	2.414			
		4:KOMBINASI	5.02E 3	895.886	1.01E 3	-0.011	-16.720	15.321			
		5:KOMB B. MA	3.26E 3	861.173	80.209	-0.027	-4.889	13.465			
	15486	1:BEBAN MATI	-2.26E 3	-549.225	-627.018	0.007	-11.116	9.424			
		2:BEBAN HIDL	-435.211	-148.010	-158.505	0.002	-2.795	2.575			
		3:BEBAN GEM	572.943	-212.516	611.344	0.018	14.218	4.880			
		4:KOMBINASI	-3.4E 3	-895.886	-1.01E 3	0.011	-17.811	15.429			
		5:KOMB B. MA	-1.92E 3	-861.173	-80.209	0.027	2.136	16.093			
19586	14540	1:BEBAN MATI	13.2E 3	-1.37E 3	-622.698	-0.006	10.651	-22.886			
		2:BEBAN HIDL	2.55E 3	-371.523	-192.445	-0.001	3.510	-6.873			
		3:BEBAN GEM	-79.248	318.973	-1.1E 3	-0.021	15.585	4.614			
		4:KOMBINASI	20E 3	-2.24E 3	-1.06E 3	-0.009	18.398	-38.461			
		5:KOMB B. MA	14.7E 3	-1.26E 3	-1.9E 3	-0.028	29.121	-22.166			
	15487	1:BEBAN MATI	-11.9E 3	1.37E 3	622.698	0.006	10.722	-24.105			
		2:BEBAN HIDL	-2.55E 3	371.523	192.445	0.001	3.095	-5.878			
		3:BEBAN GEM	79.248	-318.973	1.1E 3	0.021	22.311	6.334			
		4:KOMBINASI	-18.4E 3	2.24E 3	1.06E 3	0.009	17.819	-38.331			
		5:KOMB B. MA	-13.3E 3	1.26E 3	1.9E 3	0.028	36.006	-20.981			
19587	14541	1:BEBAN MATI	6.85E 3	-1.43E 3	2.35E 3	-0.042	-42.021	-25.491			
		2:BEBAN HIDL	1.06E 3	-315.448	577.244	-0.013	-10.385	-5.944			
		3:BEBAN GEM	-488.552	170.297	-456.696	-0.021	3.404	1.763			
		4:KOMBINASI	9.92E 3	-2.22E 3	3.75E 3	-0.071	-67.041	-40.100			
		5:KOMB B. MA	6.98E 3	-1.44E 3	2.22E 3	-0.071	-44.678	-27.207			
	15488	1:BEBAN MATI	-5.51E 3	1.43E 3	-2.35E 3	0.042	-38.693	-23.439			
		2:BEBAN HIDL	-1.06E 3	315.448	-577.244	0.013	-9.428	-4.883			
		3:BEBAN GEM	488.552	-170.297	456.696	0.021	12.271	4.083			
		4:KOMBINASI	-8.31E 3	2.22E 3	-3.75E 3	0.071	-61.516	-35.940			
		5:KOMB B. MA	-5.63E 3	1.44E 3	-2.22E 3	0.071	-31.465	-22.082			
19588	14542	1:BEBAN MATI	16.8E 3	62.248	-691.216	-0.001	11.835	1.018			
		2:BEBAN HIDL	3.29E 3	8.853	-201.243	-0.000	3.830	0.271			
		3:BEBAN GEM	-74.598	313.327	-1.12E 3	-0.016	15.801	4.353			
		4:KOMBINASI	25.4E 3	88.862	-1.15E 3	-0.001	20.330	1.655			
		5:KOMB B. MA	18.7E 3	396.553	-1.98E 3	-0.017	30.724	5.751			
	15489	1:BEBAN MATI	-15.5E 3	-62.248	691.216	0.001	11.890	1.119			
		2:BEBAN HIDL	-3.29E 3	-8.853	201.243	0.000	3.077	0.033			
		3:BEBAN GEM	74.598	-313.327	1.12E 3	0.016	22.497	6.401			
		4:KOMBINASI	-23.8E 3	-88.862	1.15E 3	0.001	19.192	1.395			
		5:KOMB B. MA	-17.4E 3	-396.553	1.98E 3	0.017	37.359	7.860			
19589	14543	1:BEBAN MATI	6.85E 3	1.43E 3	2.35E 3	0.042	-42.021	25.491			
		2:BEBAN HIDL	1.06E 3	315.448	577.244	0.013	-10.385	5.944			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 193	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-311.147	132.506	-499.789	0.020	4.107	1.045			
		4:KOMBINASI	9.92E 3	2.22E 3	3.75E 3	0.071	-67.041	40.100			
		5:KOMB B. MA	7.16E 3	1.75E 3	2.17E 3	0.070	-43.940	30.155			
	15490	1:BEBAN MATI	-5.51E 3	-1.43E 3	-2.35E 3	-0.042	-38.693	23.439			
		2:BEBAN HIDL	-1.06E 3	-315.448	-577.244	-0.013	-9.428	4.883			
		3:BEBAN GEM	311.147	-132.506	499.789	-0.020	13.048	3.503			
		4:KOMBINASI	-8.31E 3	-2.22E 3	-3.75E 3	-0.071	-61.516	35.940			
		5:KOMB B. MA	-5.82E 3	-1.75E 3	-2.17E 3	-0.070	-30.649	30.048			
19590	14544	1:BEBAN MATI	16.8E 3	-62.246	-691.216	0.001	11.835	-1.018			
		2:BEBAN HIDL	3.29E 3	-8.852	-201.243	0.000	3.830	-0.271			
		3:BEBAN GEM	-124.904	310.529	-1.11E 3	-0.001	15.754	4.302			
		4:KOMBINASI	25.4E 3	-88.858	-1.15E 3	0.001	20.330	-1.655			
		5:KOMB B. MA	18.7E 3	258.498	-1.98E 3	-0.000	30.675	3.336			
	15491	1:BEBAN MATI	-15.5E 3	62.246	691.216	-0.001	11.890	-1.118			
		2:BEBAN HIDL	-3.29E 3	8.852	201.243	-0.000	3.077	-0.033			
		3:BEBAN GEM	124.904	-310.529	1.11E 3	0.001	22.430	6.357			
		4:KOMBINASI	-23.8E 3	88.858	1.15E 3	-0.001	19.192	-1.395			
		5:KOMB B. MA	-17.3E 3	-258.498	1.98E 3	0.000	37.288	5.536			
19591	14545	1:BEBAN MATI	3.6E 3	-549.225	627.018	0.007	-10.406	-9.427			
		2:BEBAN HIDL	435.211	-148.010	158.505	0.002	-2.646	-2.505			
		3:BEBAN GEM	-786.502	70.606	-541.423	0.007	5.716	0.371			
		4:KOMBINASI	5.02E 3	-895.886	1.01E 3	0.011	-16.720	-15.321			
		5:KOMB B. MA	3.04E 3	-563.895	153.626	0.015	-5.991	-10.541			
	15492	1:BEBAN MATI	-2.26E 3	549.225	-627.018	-0.007	-11.116	-9.424			
		2:BEBAN HIDL	-435.211	148.010	-158.505	-0.002	-2.795	-2.575			
		3:BEBAN GEM	786.502	-70.606	541.423	-0.007	12.867	2.052			
		4:KOMBINASI	-3.4E 3	895.886	-1.01E 3	-0.011	-17.811	-15.429			
		5:KOMB B. MA	-1.69E 3	563.895	-153.626	-0.015	0.718	-8.814			
19592	14546	1:BEBAN MATI	13.2E 3	1.37E 3	-622.698	0.006	10.651	22.886			
		2:BEBAN HIDL	2.55E 3	371.522	-192.445	0.001	3.510	6.873			
		3:BEBAN GEM	-147.040	330.127	-1.1E 3	0.003	15.510	4.783			
		4:KOMBINASI	20E 3	2.24E 3	-1.06E 3	0.009	18.398	38.461			
		5:KOMB B. MA	14.6E 3	1.94E 3	-1.89E 3	0.009	29.043	32.032			
	15493	1:BEBAN MATI	-11.9E 3	-1.37E 3	622.698	-0.006	10.722	24.104			
		2:BEBAN HIDL	-2.55E 3	-371.522	192.445	-0.001	3.095	5.878			
		3:BEBAN GEM	147.040	-330.127	1.1E 3	-0.003	22.179	6.548			
		4:KOMBINASI	-18.4E 3	-2.24E 3	1.06E 3	-0.009	17.819	38.331			
		5:KOMB B. MA	-13.3E 3	-1.94E 3	1.89E 3	-0.009	35.867	34.507			
19593	14547	1:BEBAN MATI	6.74E 3	-553.194	1.61E 3	0.016	-26.103	-9.447			
		2:BEBAN HIDL	1.06E 3	-166.225	548.396	0.004	-10.352	-2.864			
		3:BEBAN GEM	-508.923	265.633	-480.396	0.015	3.973	3.794			
		4:KOMBINASI	9.79E 3	-929.794	2.81E 3	0.025	-47.887	-15.919			
		5:KOMB B. MA	6.85E 3	-374.015	1.43E 3	0.034	-28.142	-7.181			
	15494	1:BEBAN MATI	-5.4E 3	553.194	-1.61E 3	-0.016	-29.049	-9.541			
		2:BEBAN HIDL	-1.06E 3	166.225	-548.396	-0.004	-8.471	-2.841			
		3:BEBAN GEM	508.923	-265.633	480.396	-0.015	12.515	5.323			
		4:KOMBINASI	-8.18E 3	929.794	-2.81E 3	-0.025	-48.412	-15.994			
		5:KOMB B. MA	-5.5E 3	374.015	-1.43E 3	-0.034	-20.990	-5.656			



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Job No 1	Sheet No 194	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
19594	14548	1:BEBAN MATI	12E 3	-310.936	-559.888	0.005	9.397	-5.229			
		2:BEBAN HIDL	2.3E 3	-164.837	-213.664	0.001	3.774	-3.125			
		3:BEBAN GEM	-135.319	350.459	-1.09E 3	0.009	15.504	5.164			
		4:KOMBINASI	18.1E 3	-636.863	-1.01E 3	0.007	17.314	-11.275			
		5:KOMB B. MA	13.2E 3	-41.857	-1.84E 3	0.015	27.941	-1.682			
15495	14549	1:BEBAN MATI	-10.6E 3	310.936	559.888	-0.005	9.820	-5.443			
		2:BEBAN HIDL	-2.3E 3	164.837	213.664	-0.001	3.560	-2.533			
		3:BEBAN GEM	135.319	-350.459	1.09E 3	-0.009	22.045	6.865			
		4:KOMBINASI	-16.4E 3	636.863	1.01E 3	-0.007	17.480	-10.584			
		5:KOMB B. MA	-11.9E 3	41.857	1.84E 3	-0.015	35.104	0.245			
19595	14549	1:BEBAN MATI	8.15E 3	10.411	2.13E 3	0.004	-34.619	0.017			
		2:BEBAN HIDL	1.43E 3	20.095	736.245	0.000	-13.657	0.285			
		3:BEBAN GEM	-365.268	345.137	-506.894	-0.001	4.431	4.983			
		4:KOMBINASI	12.1E 3	44.646	3.73E 3	0.006	-63.395	0.476			
		5:KOMB B. MA	8.62E 3	384.863	2.04E 3	0.004	-38.161	5.420			
15496	14549	1:BEBAN MATI	-6.8E 3	-10.411	-2.13E 3	-0.004	-38.513	0.341			
		2:BEBAN HIDL	-1.43E 3	-20.095	-736.245	-0.000	-11.613	0.405			
		3:BEBAN GEM	365.268	-345.137	506.894	0.001	12.967	6.863			
		4:KOMBINASI	-10.4E 3	-44.646	-3.73E 3	-0.006	-64.796	1.056			
		5:KOMB B. MA	-7.27E 3	-384.863	-2.04E 3	-0.004	-31.865	7.790			
19596	14550	1:BEBAN MATI	13.5E 3	-59.919	-631.919	0.003	10.624	-1.022			
		2:BEBAN HIDL	2.51E 3	27.529	-251.963	0.001	4.465	0.388			
		3:BEBAN GEM	-99.701	340.141	-1.11E 3	0.009	15.773	4.925			
		4:KOMBINASI	20.3E 3	-27.855	-1.16E 3	0.004	19.892	-0.606			
		5:KOMB B. MA	15E 3	313.747	-1.95E 3	0.013	29.865	4.382			
15497	14550	1:BEBAN MATI	-12.2E 3	59.919	631.919	-0.003	11.066	-1.035			
		2:BEBAN HIDL	-2.51E 3	-27.529	251.963	-0.001	4.183	0.557			
		3:BEBAN GEM	99.701	-340.141	1.11E 3	-0.009	22.217	6.750			
		4:KOMBINASI	-18.7E 3	27.855	1.16E 3	-0.004	19.972	-0.350			
		5:KOMB B. MA	-13.6E 3	-313.747	1.95E 3	-0.013	36.903	6.387			
19597	14551	1:BEBAN MATI	5.02E 3	926.800	1.46E 3	0.026	-25.867	16.426			
		2:BEBAN HIDL	698.143	248.443	354.934	0.004	-6.524	4.443			
		3:BEBAN GEM	-251.007	148.885	-468.027	0.020	3.614	1.408			
		4:KOMBINASI	7.14E 3	1.51E 3	2.32E 3	0.037	-41.480	26.820			
		5:KOMB B. MA	5.17E 3	1.23E 3	1.18E 3	0.049	-25.987	20.570			
15498	14551	1:BEBAN MATI	-3.67E 3	-926.800	-1.46E 3	-0.026	-24.191	15.385			
		2:BEBAN HIDL	-698.143	-248.443	-354.934	-0.004	-5.658	4.084			
		3:BEBAN GEM	251.007	-148.885	468.027	-0.020	12.450	3.702			
		4:KOMBINASI	-5.52E 3	-1.51E 3	-2.32E 3	-0.037	-38.083	24.997			
		5:KOMB B. MA	-3.83E 3	-1.23E 3	-1.18E 3	-0.049	-14.514	21.723			
19598	14552	1:BEBAN MATI	7.7E 3	1.17E 3	-467.537	-0.005	8.211	19.100			
		2:BEBAN HIDL	1.3E 3	453.869	-121.992	-0.002	2.160	8.173			
		3:BEBAN GEM	2.043	157.506	-1.07E 3	0.010	14.908	1.527			
		4:KOMBINASI	11.3E 3	2.13E 3	-756.233	-0.009	13.310	35.998			
		5:KOMB B. MA	8.48E 3	1.61E 3	-1.66E 3	0.004	25.161	25.607			
15499	14552	1:BEBAN MATI	-6.35E 3	-1.17E 3	467.537	0.005	7.837	20.986			
		2:BEBAN HIDL	-1.3E 3	-453.869	121.992	0.002	2.027	7.405			
		3:BEBAN GEM	-2.043	-157.506	1.07E 3	-0.010	21.712	3.880			



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Job No

1

Sheet No

195

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-9.7E 3	-2.13E 3	756.233	0.009	12.647	37.031			
		5:KOMB B. MA	-7.13E 3	-1.61E 3	1.66E 3	-0.004	31.850	29.503			
19599	14553	1:BEBAN MATI	8.36E 3	-1.27E 3	-59.774	-0.002	1.128	-20.675			
		2:BEBAN HIDL	1.48E 3	-506.574	-11.532	-0.001	0.303	-9.070			
		3:BEBAN GEM	-102.577	156.909	-1.04E 3	-0.009	14.104	1.569			
		4:KOMBINASI	12.4E 3	-2.33E 3	-90.180	-0.004	1.838	-39.323			
		5:KOMB B. MA	9.14E 3	-1.41E 3	-1.16E 3	-0.012	16.118	-24.470			
	15500	1:BEBAN MATI	-7.02E 3	1.27E 3	59.774	0.002	0.923	-22.869			
		2:BEBAN HIDL	-1.48E 3	506.574	11.532	0.001	0.093	-8.317			
		3:BEBAN GEM	102.577	-156.909	1.04E 3	0.009	21.483	3.817			
		4:KOMBINASI	-10.8E 3	2.33E 3	90.180	0.004	1.257	-40.750			
		5:KOMB B. MA	-7.8E 3	1.41E 3	1.16E 3	0.012	23.536	-23.851			
19600	14554	1:BEBAN MATI	8.36E 3	1.27E 3	-59.774	0.002	1.128	20.675			
		2:BEBAN HIDL	1.48E 3	506.575	-11.532	0.001	0.303	9.070			
		3:BEBAN GEM	183.571	175.690	-1.02E 3	0.001	13.952	1.917			
		4:KOMBINASI	12.4E 3	2.33E 3	-90.180	0.004	1.838	39.323			
		5:KOMB B. MA	9.44E 3	1.76E 3	-1.14E 3	0.004	15.960	28.130			
	15501	1:BEBAN MATI	-7.02E 3	-1.27E 3	59.774	-0.002	0.923	22.869			
		2:BEBAN HIDL	-1.48E 3	-506.575	11.532	-0.001	0.093	8.317			
		3:BEBAN GEM	-183.571	-175.690	1.02E 3	-0.001	21.154	4.114			
		4:KOMBINASI	-10.8E 3	-2.33E 3	90.180	-0.004	1.257	40.750			
		5:KOMB B. MA	-8.1E 3	-1.76E 3	1.14E 3	-0.004	23.191	32.178			
19601	14555	1:BEBAN MATI	8.23E 3	-1.45E 3	12.179	-0.002	-0.182	-25.002			
		2:BEBAN HIDL	1.46E 3	-504.250	-6.297	-0.000	0.091	-9.023			
		3:BEBAN GEM	-129.668	158.175	-1.02E 3	-0.011	13.649	1.581			
		4:KOMBINASI	12.2E 3	-2.54E 3	4.539	-0.003	-0.073	-44.439			
		5:KOMB B. MA	8.97E 3	-1.58E 3	-1.06E 3	-0.014	14.204	-28.756			
	15502	1:BEBAN MATI	-6.88E 3	1.45E 3	-12.179	0.002	-0.236	-24.672			
		2:BEBAN HIDL	-1.46E 3	504.250	6.297	0.000	0.125	-8.284			
		3:BEBAN GEM	129.668	-158.175	1.02E 3	0.011	21.193	3.848			
		4:KOMBINASI	-10.6E 3	2.54E 3	-4.539	0.003	-0.083	-42.861			
		5:KOMB B. MA	-7.62E 3	1.58E 3	1.06E 3	0.014	22.092	-25.602			
19602	14556	1:BEBAN MATI	8.23E 3	1.45E 3	12.179	0.002	-0.182	25.002			
		2:BEBAN HIDL	1.46E 3	504.251	-6.297	0.000	0.091	9.023			
		3:BEBAN GEM	160.165	173.522	-1E 3	0.004	13.497	1.852			
		4:KOMBINASI	12.2E 3	2.54E 3	4.539	0.003	-0.073	44.439			
		5:KOMB B. MA	9.27E 3	1.93E 3	-1.04E 3	0.006	14.044	32.360			
	15503	1:BEBAN MATI	-6.88E 3	-1.45E 3	-12.179	-0.002	-0.236	24.672			
		2:BEBAN HIDL	-1.46E 3	-504.251	6.297	-0.000	0.125	8.284			
		3:BEBAN GEM	-160.165	-173.522	1E 3	-0.004	20.869	4.104			
		4:KOMBINASI	-10.6E 3	-2.54E 3	-4.539	-0.003	-0.083	42.861			
		5:KOMB B. MA	-7.93E 3	-1.93E 3	1.04E 3	-0.006	21.751	33.951			
19603	14557	1:BEBAN MATI	8.27E 3	-1.44E 3	-23.567	-0.001	0.334	-24.931			
		2:BEBAN HIDL	1.46E 3	-501.200	6.026	-0.000	-0.106	-8.998			
		3:BEBAN GEM	-166.580	163.328	-1.03E 3	-0.022	13.836	1.657			
		4:KOMBINASI	12.3E 3	-2.53E 3	-18.639	-0.002	0.231	-44.314			
		5:KOMB B. MA	8.97E 3	-1.57E 3	-1.1E 3	-0.024	14.798	-28.591			
	15504	1:BEBAN MATI	-6.92E 3	1.44E 3	23.567	0.001	0.475	-24.512			



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Job No 1	Sheet No 196	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enginering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-1.46E 3	501.200	-6.026	0.000	-0.101	-8.205			
		3:BEBAN GEM	166.580	-163.328	1.03E 3	0.022	21.489	3.949			
		4:KOMBINASI	-10.6E 3	2.53E 3	18.639	0.002	0.409	-42.543			
		5:KOMB B. MA	-7.62E 3	1.57E 3	1.1E 3	0.024	22.978	-25.288			
19604	14558	1:BEBAN MATI	8.27E 3	1.44E 3	-23.567	0.001	0.334	24.931			
		2:BEBAN HIDL	1.46E 3	501.200	6.026	0.000	-0.106	8.998			
		3:BEBAN GEM	123.925	167.716	-1.01E 3	0.008	13.637	1.740			
		4:KOMBINASI	12.3E 3	2.53E 3	-18.639	0.002	0.231	44.314			
		5:KOMB B. MA	9.27E 3	1.92E 3	-1.08E 3	0.009	14.590	32.157			
	15505	1:BEBAN MATI	-6.92E 3	-1.44E 3	23.567	-0.001	0.475	24.512			
		2:BEBAN HIDL	-1.46E 3	-501.200	-6.026	-0.000	-0.101	8.205			
		3:BEBAN GEM	-123.925	-167.716	1.01E 3	-0.008	21.117	4.016			
		4:KOMBINASI	-10.6E 3	-2.53E 3	18.639	-0.002	0.409	42.543			
		5:KOMB B. MA	-7.93E 3	-1.92E 3	1.08E 3	-0.009	22.587	33.652			
19605	14559	1:BEBAN MATI	14.1E 3	42.508	-43.911	-0.002	0.762	0.838			
		2:BEBAN HIDL	2.85E 3	-33.416	13.412	-0.000	-0.216	-0.485			
		3:BEBAN GEM	-55.646	338.384	-1.07E 3	-0.021	14.792	4.902			
		4:KOMBINASI	21.5E 3	-2.456	-31.235	-0.004	0.568	0.230			
		5:KOMB B. MA	15.8E 3	377.761	-1.16E 3	-0.025	16.164	5.694			
	15506	1:BEBAN MATI	-12.8E 3	-42.508	43.911	0.002	0.745	0.621			
		2:BEBAN HIDL	-2.85E 3	33.416	-13.412	0.000	-0.244	-0.662			
		3:BEBAN GEM	55.646	-338.384	1.07E 3	0.021	22.068	6.712			
		4:KOMBINASI	-19.9E 3	2.456	31.235	0.004	0.504	-0.314			
		5:KOMB B. MA	-14.4E 3	-377.761	1.16E 3	0.025	23.771	7.272			
19606	14560	1:BEBAN MATI	14E 3	85.743	30.227	-0.002	-0.519	1.407			
		2:BEBAN HIDL	2.8E 3	-9.503	-12.296	-0.000	0.149	-0.161			
		3:BEBAN GEM	-12.056	329.934	-1.06E 3	-0.011	14.626	4.766			
		4:KOMBINASI	21.2E 3	87.687	16.599	-0.003	-0.384	1.431			
		5:KOMB B. MA	15.6E 3	426.471	-1.09E 3	-0.015	14.928	6.315			
	15507	1:BEBAN MATI	-12.6E 3	-85.743	-30.227	0.002	-0.519	1.536			
		2:BEBAN HIDL	-2.8E 3	9.503	12.296	0.000	0.273	-0.165			
		3:BEBAN GEM	12.056	-329.934	1.06E 3	0.011	21.799	6.558			
		4:KOMBINASI	-19.6E 3	-87.687	-16.599	0.003	-0.186	1.579			
		5:KOMB B. MA	-14.3E 3	-426.471	1.09E 3	0.015	22.534	8.323			
19607	14561	1:BEBAN MATI	14.7E 3	98.174	-95.812	-0.005	1.494	1.438			
		2:BEBAN HIDL	2.8E 3	-11.754	-11.804	-0.001	0.449	-0.218			
		3:BEBAN GEM	-7.207	334.244	-1.09E 3	-0.008	15.141	4.848			
		4:KOMBINASI	22.1E 3	99.002	-133.861	-0.008	2.512	1.377			
		5:KOMB B. MA	16.3E 3	442.078	-1.24E 3	-0.015	17.662	6.397			
	15508	1:BEBAN MATI	-13.3E 3	-98.174	95.812	0.005	1.794	1.932			
		2:BEBAN HIDL	-2.8E 3	11.754	11.804	0.001	-0.044	-0.186			
		3:BEBAN GEM	7.207	-334.244	1.09E 3	0.008	22.104	6.625			
		4:KOMBINASI	-20.5E 3	-99.002	133.861	0.008	2.082	2.021			
		5:KOMB B. MA	-15E 3	-442.078	1.24E 3	0.015	24.976	8.776			
19608	14562	1:BEBAN MATI	12.7E 3	370.609	-33.963	-0.003	0.695	6.710			
		2:BEBAN HIDL	2.58E 3	176.538	18.160	-0.001	-0.195	3.343			
		3:BEBAN GEM	-8.529	339.735	-1.06E 3	-0.027	14.484	4.989			
		4:KOMBINASI	19.4E 3	727.193	-11.700	-0.004	0.523	13.400			



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Job No 1	Sheet No 197	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	14.2E 3	833.254	-1.13E 3	-0.032	15.787	13.954			
	15509	1:BEBAN MATI	-11.4E 3	-370.609	33.963	0.003	0.470	6.010			
		2:BEBAN HIDL	-2.58E 3	-176.538	-18.160	0.001	-0.429	2.717			
		3:BEBAN GEM	8.529	-339.735	1.06E 3	0.027	21.743	6.672			
		4:KOMBINASI	-17.8E 3	-727.193	11.700	0.004	-0.121	11.559			
		5:KOMB B. MA	-12.9E 3	-833.254	1.13E 3	0.032	23.044	14.646			
19609	14563	1:BEBAN MATI	12.4E 3	552.460	490.891	-0.008	-9.556	10.513			
		2:BEBAN HIDL	2.62E 3	257.499	168.793	-0.001	-3.747	5.099			
		3:BEBAN GEM	25.128	332.130	-1.04E 3	-0.035	14.191	4.865			
		4:KOMBINASI	19.1E 3	1.07E 3	859.138	-0.012	-17.462	20.774			
		5:KOMB B. MA	14E 3	1.06E 3	-502.095	-0.046	3.097	18.680			
	15510	1:BEBAN MATI	-11.1E 3	-552.460	-490.891	0.008	-7.293	8.449			
		2:BEBAN HIDL	-2.62E 3	-257.499	-168.793	0.001	-2.046	3.739			
		3:BEBAN GEM	-25.128	-332.130	1.04E 3	0.035	21.579	6.535			
		4:KOMBINASI	-17.5E 3	-1.07E 3	-859.138	0.012	-12.026	16.122			
		5:KOMB B. MA	-12.7E 3	-1.06E 3	502.095	0.046	14.136	17.554			
19610	14564	1:BEBAN MATI	12.5E 3	664.358	-253.309	-0.002	5.885	12.346			
		2:BEBAN HIDL	2.54E 3	304.106	-104.555	-0.001	2.965	5.987			
		3:BEBAN GEM	177.279	257.627	-1.04E 3	0.033	14.243	3.630			
		4:KOMBINASI	19.1E 3	1.28E 3	-471.258	-0.005	11.806	24.394			
		5:KOMB B. MA	14.3E 3	1.12E 3	-1.41E 3	0.032	22.619	19.750			
	15511	1:BEBAN MATI	-11.2E 3	-664.358	253.309	0.002	2.810	10.457			
		2:BEBAN HIDL	-2.54E 3	-304.106	104.555	0.001	0.623	4.451			
		3:BEBAN GEM	-177.279	-257.627	1.04E 3	-0.033	21.562	5.212			
		4:KOMBINASI	-17.5E 3	-1.28E 3	471.258	0.005	4.369	19.670			
		5:KOMB B. MA	-12.9E 3	-1.12E 3	1.41E 3	-0.032	25.824	18.601			
19611	14565	1:BEBAN MATI	14.1E 3	-1.62E 3	-49.979	-0.002	1.001	-27.948			
		2:BEBAN HIDL	2.82E 3	-415.981	14.285	-0.000	-0.154	-7.712			
		3:BEBAN GEM	-5.606	321.998	-1.05E 3	-0.023	14.537	4.655			
		4:KOMBINASI	21.4E 3	-2.61E 3	-37.120	-0.002	0.955	-45.877			
		5:KOMB B. MA	15.8E 3	-1.53E 3	-1.15E 3	-0.026	16.173	-27.687			
	15512	1:BEBAN MATI	-12.7E 3	1.62E 3	49.979	0.002	0.715	-27.616			
		2:BEBAN HIDL	-2.82E 3	415.981	-14.285	0.000	-0.336	-6.566			
		3:BEBAN GEM	5.606	-321.998	1.05E 3	0.023	21.662	6.397			
		4:KOMBINASI	-19.8E 3	2.61E 3	37.120	0.002	0.320	-43.644			
		5:KOMB B. MA	-14.4E 3	1.53E 3	1.15E 3	0.026	23.258	-24.839			
19612	14566	1:BEBAN MATI	13.9E 3	-1.81E 3	427.367	0.002	-8.331	-31.759			
		2:BEBAN HIDL	2.87E 3	-502.539	164.934	-0.000	-3.617	-9.599			
		3:BEBAN GEM	107.092	293.993	-1.05E 3	-0.001	14.184	4.125			
		4:KOMBINASI	21.3E 3	-2.97E 3	776.735	0.002	-15.785	-53.469			
		5:KOMB B. MA	15.7E 3	-1.8E 3	-573.672	0.001	4.392	-33.187			
	15513	1:BEBAN MATI	-12.6E 3	1.81E 3	-427.367	-0.002	-6.338	-30.263			
		2:BEBAN HIDL	-2.87E 3	502.539	-164.934	0.000	-2.044	-7.650			
		3:BEBAN GEM	-107.092	-293.993	1.05E 3	0.001	21.774	5.966			
		4:KOMBINASI	-19.7E 3	2.97E 3	-776.735	-0.002	-10.875	-48.555			
		5:KOMB B. MA	-14.4E 3	1.8E 3	573.672	-0.001	15.299	-28.588			
19613	14567	1:BEBAN MATI	11.7E 3	-1.32E 3	1.06E 3	-0.015	-17.024	-23.753			
		2:BEBAN HIDL	2.37E 3	-355.209	266.645	-0.003	-4.086	-7.154			



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Job No 1	Sheet No 198	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	235.220	275.569	-1.18E 3	-0.038	17.034	3.886			
		4:KOMBINASI	17.9E 3	-2.16E 3	1.7E 3	-0.023	-26.966	-39.949			
		5:KOMB B. MA	13.4E 3	-1.25E 3	-13.216	-0.057	-1.591	-23.965			
	15514	1:BEBAN MATI	-10.4E 3	1.32E 3	-1.06E 3	0.015	-19.446	-21.669			
		2:BEBAN HIDL	-2.37E 3	355.209	-266.645	0.003	-5.067	-5.038			
		3:BEBAN GEM	-235.220	-275.569	1.18E 3	0.038	23.362	5.573			
		4:KOMBINASI	-16.3E 3	2.16E 3	-1.7E 3	0.023	-31.441	-34.064			
		5:KOMB B. MA	-12.1E 3	1.25E 3	13.216	0.057	2.044	-18.841			
19614	14568	1:BEBAN MATI	17.9E 3	55.336	-82.229	-0.001	1.476	1.026			
		2:BEBAN HIDL	3.64E 3	6.549	2.538	-0.000	-0.107	0.251			
		3:BEBAN GEM	-1.538	305.622	-1.07E 3	-0.004	14.771	4.233			
		4:KOMBINASI	27.4E 3	76.882	-94.615	-0.001	1.600	1.632			
		5:KOMB B. MA	20.1E 3	380.169	-1.2E 3	-0.005	16.922	5.621			
	15515	1:BEBAN MATI	-16.6E 3	-55.336	82.229	0.001	1.346	0.874			
		2:BEBAN HIDL	-3.64E 3	-6.549	-2.538	0.000	0.020	-0.026			
		3:BEBAN GEM	1.538	-305.622	1.07E 3	0.004	21.829	6.257			
		4:KOMBINASI	-25.8E 3	-76.882	94.615	0.001	1.648	1.007			
		5:KOMB B. MA	-18.8E 3	-380.169	1.2E 3	0.005	24.278	7.428			
19615	14569	1:BEBAN MATI	18.1E 3	42.339	43.339	-0.001	-1.141	0.905			
		2:BEBAN HIDL	3.67E 3	-3.875	-17.826	-0.000	0.316	0.182			
		3:BEBAN GEM	38.554	304.178	-1.07E 3	-0.013	14.766	4.217			
		4:KOMBINASI	27.6E 3	44.607	23.485	-0.002	-0.864	1.377			
		5:KOMB B. MA	20.3E 3	359.401	-1.09E 3	-0.015	14.552	5.442			
	15516	1:BEBAN MATI	-16.7E 3	-42.339	-43.339	0.001	-0.347	0.548			
		2:BEBAN HIDL	-3.67E 3	3.875	17.826	0.000	0.296	-0.315			
		3:BEBAN GEM	-38.554	-304.178	1.07E 3	0.013	21.823	6.223			
		4:KOMBINASI	-25.9E 3	-44.607	-23.485	0.002	0.058	0.154			
		5:KOMB B. MA	-19E 3	-359.401	1.09E 3	0.015	22.745	6.894			
19616	14570	1:BEBAN MATI	17.3E 3	-299.192	222.065	0.003	-1.845	-4.051			
		2:BEBAN HIDL	3.34E 3	-131.381	161.449	0.001	-2.699	-2.117			
		3:BEBAN GEM	103.235	350.543	-1.08E 3	-0.006	15.079	4.958			
		4:KOMBINASI	26.1E 3	-569.239	524.797	0.004	-6.532	-8.249			
		5:KOMB B. MA	19.4E 3	-9.950	-811.814	-0.004	12.368	-0.116			
	15517	1:BEBAN MATI	-16E 3	299.192	-222.065	-0.003	-5.777	-6.218			
		2:BEBAN HIDL	-3.34E 3	131.381	-161.449	-0.001	-2.843	-2.392			
		3:BEBAN GEM	-103.235	-350.543	1.08E 3	0.006	21.884	7.074			
		4:KOMBINASI	-24.5E 3	569.239	-524.797	-0.004	-11.481	-11.289			
		5:KOMB B. MA	-18.1E 3	9.950	811.814	0.004	15.496	-0.225			
19617	14571	1:BEBAN MATI	17.9E 3	-55.334	-82.230	0.001	1.476	-1.026			
		2:BEBAN HIDL	3.64E 3	-6.548	2.538	0.000	-0.107	-0.251			
		3:BEBAN GEM	-47.851	306.138	-1.06E 3	-0.019	14.745	4.233			
		4:KOMBINASI	27.4E 3	-76.877	-94.615	0.001	1.600	-1.632			
		5:KOMB B. MA	20.1E 3	262.182	-1.2E 3	-0.020	16.894	3.269			
	15518	1:BEBAN MATI	-16.6E 3	55.334	82.230	-0.001	1.346	-0.874			
		2:BEBAN HIDL	-3.64E 3	6.548	-2.538	-0.000	0.020	0.026			
		3:BEBAN GEM	47.851	-306.138	1.06E 3	0.019	21.786	6.275			
		4:KOMBINASI	-25.8E 3	76.877	94.615	-0.001	1.648	-1.007			
		5:KOMB B. MA	-18.7E 3	-262.182	1.2E 3	0.020	24.234	5.730			



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Job No 1	Sheet No 199	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
19618	14572	1:BEBAN MATI	18.1E 3	-42.336	43.339	0.001	-1.141	-0.905			
		2:BEBAN HIDL	3.67E 3	3.876	-17.826	0.000	0.316	-0.182			
		3:BEBAN GEM	-3.729	304.851	-1.06E 3	0.002	14.747	4.236			
		4:KOMBINASI	27.6E 3	-44.602	23.485	0.002	-0.864	-1.377			
		5:KOMB B. MA	20.3E 3	280.083	-1.08E 3	0.003	14.533	3.434			
15519		1:BEBAN MATI	-16.7E 3	42.336	-43.339	-0.001	-0.347	-0.548			
		2:BEBAN HIDL	-3.67E 3	-3.876	17.826	-0.000	0.296	0.315			
		3:BEBAN GEM	3.729	-304.851	1.06E 3	-0.002	21.767	6.227			
		4:KOMBINASI	-25.9E 3	44.602	-23.485	-0.002	0.058	-0.154			
		5:KOMB B. MA	-18.9E 3	-280.083	1.08E 3	-0.003	22.687	6.179			
19619	14573	1:BEBAN MATI	17.3E 3	299.194	222.065	-0.003	-1.845	4.052			
		2:BEBAN HIDL	3.34E 3	131.382	161.449	-0.001	-2.699	2.117			
		3:BEBAN GEM	56.461	277.486	-1.07E 3	0.001	14.936	3.874			
		4:KOMBINASI	26.1E 3	569.244	524.797	-0.004	-6.532	8.249			
		5:KOMB B. MA	19.4E 3	669.383	-804.946	-0.002	12.218	9.389			
15520		1:BEBAN MATI	-16E 3	-299.194	-222.065	0.003	-5.777	6.218			
		2:BEBAN HIDL	-3.34E 3	-131.382	-161.449	0.001	-2.843	2.392			
		3:BEBAN GEM	-56.461	-277.486	1.07E 3	-0.001	21.803	5.650			
		4:KOMBINASI	-24.5E 3	-569.244	-524.797	0.004	-11.481	11.289			
		5:KOMB B. MA	-18E 3	-669.383	804.946	0.002	15.410	13.586			
19620	14574	1:BEBAN MATI	14.1E 3	1.62E 3	-49.979	0.002	1.001	27.948			
		2:BEBAN HIDL	2.82E 3	415.979	14.284	0.000	-0.154	7.712			
		3:BEBAN GEM	-66.428	319.973	-1.05E 3	0.005	14.472	4.631			
		4:KOMBINASI	21.4E 3	2.61E 3	-37.120	0.002	0.955	45.877			
		5:KOMB B. MA	15.7E 3	2.2E 3	-1.14E 3	0.007	16.104	37.438			
15521		1:BEBAN MATI	-12.7E 3	-1.62E 3	49.979	-0.002	0.715	27.616			
		2:BEBAN HIDL	-2.82E 3	-415.979	-14.284	-0.000	-0.336	6.566			
		3:BEBAN GEM	66.428	-319.973	1.05E 3	-0.005	21.543	6.352			
		4:KOMBINASI	-19.8E 3	-2.61E 3	37.120	-0.002	0.320	43.644			
		5:KOMB B. MA	-14.4E 3	-2.2E 3	1.14E 3	-0.007	23.133	38.224			
19621	14575	1:BEBAN MATI	13.9E 3	1.81E 3	427.367	-0.002	-8.331	31.759			
		2:BEBAN HIDL	2.87E 3	502.538	164.934	0.000	-3.617	9.599			
		3:BEBAN GEM	19.996	337.989	-1.05E 3	-0.028	14.359	4.944			
		4:KOMBINASI	21.3E 3	2.97E 3	776.735	-0.002	-15.785	53.468			
		5:KOMB B. MA	15.6E 3	2.46E 3	-579.078	-0.031	4.576	42.709			
15522		1:BEBAN MATI	-12.6E 3	-1.81E 3	-427.367	0.002	-6.338	30.263			
		2:BEBAN HIDL	-2.87E 3	-502.538	-164.934	-0.000	-2.044	7.650			
		3:BEBAN GEM	-19.996	-337.989	1.05E 3	0.028	21.775	6.657			
		4:KOMBINASI	-19.7E 3	-2.97E 3	-776.735	0.002	-10.875	48.555			
		5:KOMB B. MA	-14.3E 3	-2.46E 3	579.078	0.031	15.300	41.843			
19622	14576	1:BEBAN MATI	11.7E 3	1.32E 3	1.06E 3	0.015	-17.024	23.753			
		2:BEBAN HIDL	2.37E 3	355.207	266.645	0.003	-4.086	7.154			
		3:BEBAN GEM	194.340	315.891	-1.19E 3	0.043	17.176	4.455			
		4:KOMBINASI	17.9E 3	2.16E 3	1.7E 3	0.023	-26.966	39.949			
		5:KOMB B. MA	13.4E 3	1.87E 3	-22.655	0.061	-1.441	32.723			
15523		1:BEBAN MATI	-10.4E 3	-1.32E 3	-1.06E 3	-0.015	-19.446	21.669			
		2:BEBAN HIDL	-2.37E 3	-355.207	-266.645	-0.003	-5.067	5.038			
		3:BEBAN GEM	-194.340	-315.891	1.19E 3	-0.043	23.528	6.387			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-16.3E 3	-2.16E 3	-1.7E 3	-0.023	-31.441	34.064			
		5:KOMB B. MA	-12E 3	-1.87E 3	22.655	-0.061	2.219	31.399			
19623	14577	1:BEBAN MATI	12.7E 3	-370.609	-33.964	0.003	0.695	-6.710			
		2:BEBAN HIDL	2.58E 3	-176.538	18.160	0.001	-0.195	-3.343			
		3:BEBAN GEM	-49.505	343.490	-1.04E 3	0.011	14.330	5.052			
		4:KOMBINASI	19.4E 3	-727.191	-11.701	0.004	0.523	-13.400			
		5:KOMB B. MA	14.2E 3	-115.867	-1.12E 3	0.015	15.625	-3.411			
	15524	1:BEBAN MATI	-11.4E 3	370.609	33.964	-0.003	0.470	-6.010			
		2:BEBAN HIDL	-2.58E 3	176.538	-18.160	-0.001	-0.429	-2.717			
		3:BEBAN GEM	49.505	-343.490	1.04E 3	-0.011	21.485	6.737			
		4:KOMBINASI	-17.8E 3	727.191	11.701	-0.004	-0.121	-11.559			
		5:KOMB B. MA	-12.9E 3	115.867	1.12E 3	-0.015	22.772	-0.566			
19624	14578	1:BEBAN MATI	12.4E 3	-552.459	490.891	0.008	-9.556	-10.513			
		2:BEBAN HIDL	2.62E 3	-257.499	168.793	0.001	-3.747	-5.099			
		3:BEBAN GEM	14.345	342.828	-1.02E 3	0.047	13.884	4.994			
		4:KOMBINASI	19.1E 3	-1.07E 3	859.138	0.012	-17.462	-20.774			
		5:KOMB B. MA	14E 3	-346.990	-483.909	0.059	2.774	-8.329			
	15525	1:BEBAN MATI	-11.1E 3	552.459	-490.891	-0.008	-7.293	-8.449			
		2:BEBAN HIDL	-2.62E 3	257.499	-168.793	-0.001	-2.046	-3.739			
		3:BEBAN GEM	-14.345	-342.828	1.02E 3	-0.047	21.292	6.773			
		4:KOMBINASI	-17.5E 3	1.07E 3	-859.138	-0.012	-12.026	-16.122			
		5:KOMB B. MA	-12.7E 3	346.990	483.909	-0.059	13.835	-3.581			
19625	14579	1:BEBAN MATI	12.5E 3	-664.357	-253.309	0.002	5.885	-12.346			
		2:BEBAN HIDL	2.54E 3	-304.106	-104.554	0.001	2.965	-5.987			
		3:BEBAN GEM	206.348	433.048	-1.08E 3	-0.051	14.990	6.543			
		4:KOMBINASI	19.1E 3	-1.28E 3	-471.258	0.005	11.806	-24.394			
		5:KOMB B. MA	14.3E 3	-392.121	-1.45E 3	-0.051	23.403	-9.068			
	15526	1:BEBAN MATI	-11.2E 3	664.357	253.309	-0.002	2.810	-10.457			
		2:BEBAN HIDL	-2.54E 3	304.106	104.554	-0.001	0.623	-4.451			
		3:BEBAN GEM	-206.348	-433.048	1.08E 3	0.051	22.007	8.321			
		4:KOMBINASI	-17.5E 3	1.28E 3	471.258	-0.005	4.369	-19.670			
		5:KOMB B. MA	-12.9E 3	392.121	1.45E 3	0.051	26.291	-4.391			
19626	14580	1:BEBAN MATI	14.1E 3	-42.511	-43.911	0.002	0.762	-0.838			
		2:BEBAN HIDL	2.85E 3	33.415	13.412	0.000	-0.216	0.485			
		3:BEBAN GEM	-0.950	345.210	-1.06E 3	0.008	14.614	5.020			
		4:KOMBINASI	21.5E 3	2.451	-31.235	0.004	0.568	-0.230			
		5:KOMB B. MA	15.8E 3	340.009	-1.15E 3	0.011	15.977	4.724			
	15527	1:BEBAN MATI	-12.8E 3	42.511	43.911	-0.002	0.745	-0.621			
		2:BEBAN HIDL	-2.85E 3	-33.415	-13.412	-0.000	-0.244	0.662			
		3:BEBAN GEM	0.950	-345.210	1.06E 3	-0.008	21.761	6.828			
		4:KOMBINASI	-19.9E 3	-2.451	31.235	-0.004	0.504	0.314			
		5:KOMB B. MA	-14.5E 3	-340.009	1.15E 3	-0.011	23.448	6.946			
19627	14581	1:BEBAN MATI	14E 3	-85.746	30.227	0.002	-0.519	-1.407			
		2:BEBAN HIDL	2.8E 3	9.502	-12.296	0.000	0.149	0.161			
		3:BEBAN GEM	28.186	348.240	-1.05E 3	0.003	14.474	5.097			
		4:KOMBINASI	21.2E 3	-87.692	16.599	0.003	-0.384	-1.431			
		5:KOMB B. MA	15.7E 3	285.607	-1.08E 3	0.006	14.769	4.041			
	15528	1:BEBAN MATI	-12.6E 3	85.746	-30.227	-0.002	-0.519	-1.536			



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Job No 1	Sheet No 201	Rev
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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-2.8E 3	-9.502	12.296	-0.000	0.273	0.165			
		3:BEBAN GEM	-28.186	-348.240	1.05E 3	-0.003	21.511	6.856			
		4:KOMBINASI	-19.6E 3	87.692	-16.599	-0.003	-0.186	-1.579			
		5:KOMB B. MA	-14.3E 3	-285.607	1.08E 3	-0.006	22.232	5.762			
19628	14582	1:BEBAN MATI	14.7E 3	-98.177	-95.812	0.005	1.494	-1.438			
		2:BEBAN HIDL	2.8E 3	11.753	-11.804	0.001	0.449	0.218			
		3:BEBAN GEM	48.186	352.129	-1.07E 3	-0.001	14.978	5.165			
		4:KOMBINASI	22.1E 3	-99.007	-133.862	0.008	2.512	-1.377			
		5:KOMB B. MA	16.4E 3	278.611	-1.23E 3	0.005	17.491	4.116			
	15529	1:BEBAN MATI	-13.3E 3	98.177	95.812	-0.005	1.794	-1.932			
		2:BEBAN HIDL	-2.8E 3	-11.753	11.804	-0.001	-0.044	0.186			
		3:BEBAN GEM	-48.186	-352.129	1.07E 3	0.001	21.840	6.922			
		4:KOMBINASI	-20.5E 3	99.007	133.862	-0.008	2.082	-2.021			
		5:KOMB B. MA	-15.1E 3	-278.611	1.23E 3	-0.005	24.700	5.447			
19629	14583	1:BEBAN MATI	4.46E 3	-838.851	-934.995	0.003	16.410	-14.968			
		2:BEBAN HIDL	564.498	-204.969	-226.822	0.000	4.059	-3.667			
		3:BEBAN GEM	368.940	146.648	-531.056	-0.049	4.901	1.273			
		4:KOMBINASI	6.26E 3	-1.33E 3	-1.48E 3	0.004	26.186	-23.829			
		5:KOMB B. MA	5.19E 3	-807.852	-1.63E 3	-0.049	23.991	-15.831			
	15530	1:BEBAN MATI	-3.12E 3	838.851	934.995	-0.003	15.682	-13.824			
		2:BEBAN HIDL	-564.498	204.969	226.822	-0.000	3.727	-3.368			
		3:BEBAN GEM	-368.940	-146.648	531.056	0.049	13.327	3.760			
		4:KOMBINASI	-4.64E 3	1.33E 3	1.48E 3	-0.004	24.781	-21.978			
		5:KOMB B. MA	-3.84E 3	807.852	1.63E 3	0.049	31.911	-11.897			
19630	14584	1:BEBAN MATI	6.94E 3	36.165	-1.31E 3	-0.002	21.275	0.668			
		2:BEBAN HIDL	1.11E 3	-0.696	-472.098	-0.001	8.514	-0.003			
		3:BEBAN GEM	521.758	341.236	-561.375	-0.028	5.593	4.905			
		4:KOMBINASI	10.1E 3	42.284	-2.33E 3	-0.003	39.153	0.797			
		5:KOMB B. MA	8.15E 3	394.045	-2.19E 3	-0.032	32.257	5.817			
	15531	1:BEBAN MATI	-5.59E 3	-36.165	1.31E 3	0.002	23.780	0.573			
		2:BEBAN HIDL	-1.11E 3	0.696	472.098	0.001	7.689	-0.021			
		3:BEBAN GEM	-521.758	-341.236	561.375	0.028	13.675	6.807			
		4:KOMBINASI	-8.49E 3	-42.284	2.33E 3	0.003	40.840	0.654			
		5:KOMB B. MA	-6.81E 3	-394.045	2.19E 3	0.032	42.753	7.708			
19631	14585	1:BEBAN MATI	6.48E 3	116.145	-1.13E 3	-0.000	18.427	2.562			
		2:BEBAN HIDL	1.1E 3	23.137	-398.601	0.000	7.152	0.681			
		3:BEBAN GEM	393.902	412.817	-573.156	-0.030	5.748	6.100			
		4:KOMBINASI	9.53E 3	176.393	-2E 3	0.000	33.556	4.164			
		5:KOMB B. MA	7.56E 3	563.485	-1.97E 3	-0.032	28.754	9.376			
	15532	1:BEBAN MATI	-5.14E 3	-116.145	1.13E 3	0.000	20.427	1.424			
		2:BEBAN HIDL	-1.1E 3	-23.137	398.601	-0.000	6.529	0.113			
		3:BEBAN GEM	-393.902	-412.817	573.156	0.030	13.925	8.069			
		4:KOMBINASI	-7.92E 3	-176.393	2E 3	-0.000	34.959	1.891			
		5:KOMB B. MA	-6.21E 3	-563.485	1.97E 3	0.032	38.965	9.965			
19632	14586	1:BEBAN MATI	10.7E 3	-1.72E 3	-343.041	-0.008	6.710	-29.603			
		2:BEBAN HIDL	1.97E 3	-569.479	-55.725	-0.001	0.852	-10.374			
		3:BEBAN GEM	221.130	398.234	-1.1E 3	-0.009	15.497	5.874			
		4:KOMBINASI	16E 3	-2.98E 3	-500.808	-0.011	9.415	-52.122			



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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	12.1E 3	-1.64E 3	-1.53E 3	-0.018	23.493	-29.660			
	15533	1:BEBAN MATI	-9.33E 3	1.72E 3	343.041	0.008	5.065	-29.455			
		2:BEBAN HIDL	-1.97E 3	569.479	55.725	0.001	1.061	-9.173			
		3:BEBAN GEM	-221.130	-398.234	1.1E 3	0.009	22.210	7.795			
		4:KOMBINASI	-14.3E 3	2.98E 3	500.808	0.011	7.775	-50.022			
		5:KOMB B. MA	-10.7E 3	1.64E 3	1.53E 3	0.018	29.022	-26.774			
19633	14587	1:BEBAN MATI	15.4E 3	38.183	234.456	0.001	-3.109	0.739			
		2:BEBAN HIDL	3.27E 3	-0.914	229.080	0.000	-4.510	0.157			
		3:BEBAN GEM	84.184	310.571	-1.12E 3	-0.011	16.041	4.309			
		4:KOMBINASI	23.7E 3	44.357	647.875	0.002	-10.947	1.138			
		5:KOMB B. MA	17.4E 3	363.734	-807.911	-0.011	11.028	5.358			
	15534	1:BEBAN MATI	-14E 3	-38.183	-234.456	-0.001	-4.939	0.571			
		2:BEBAN HIDL	-3.27E 3	0.914	-229.080	-0.000	-3.353	-0.188			
		3:BEBAN GEM	-84.184	-310.571	1.12E 3	0.011	22.526	6.350			
		4:KOMBINASI	-22.1E 3	-44.357	-647.875	-0.002	-11.291	0.384			
		5:KOMB B. MA	-16.1E 3	-363.734	807.911	0.011	16.702	7.126			
19634	14588	1:BEBAN MATI	15.4E 3	-38.182	234.456	-0.001	-3.109	-0.739			
		2:BEBAN HIDL	3.27E 3	0.915	229.080	-0.000	-4.510	-0.157			
		3:BEBAN GEM	44.293	312.193	-1.12E 3	-0.007	16.027	4.316			
		4:KOMBINASI	23.7E 3	-44.355	647.875	-0.002	-10.947	-1.138			
		5:KOMB B. MA	17.4E 3	290.170	-806.142	-0.008	11.014	3.698			
	15535	1:BEBAN MATI	-14E 3	38.182	-234.456	0.001	-4.939	-0.571			
		2:BEBAN HIDL	-3.27E 3	-0.915	-229.080	0.000	-3.353	0.188			
		3:BEBAN GEM	-44.293	-312.193	1.12E 3	0.007	22.482	6.400			
		4:KOMBINASI	-22.1E 3	44.355	-647.875	0.002	-11.291	-0.384			
		5:KOMB B. MA	-16E 3	-290.170	806.142	0.008	16.655	6.262			
19635	14589	1:BEBAN MATI	10.7E 3	1.72E 3	-343.040	0.008	6.710	29.603			
		2:BEBAN HIDL	1.97E 3	569.478	-55.724	0.001	0.852	10.374			
		3:BEBAN GEM	169.961	241.840	-1.05E 3	-0.007	14.753	3.295			
		4:KOMBINASI	16E 3	2.98E 3	-500.808	0.011	9.415	52.122			
		5:KOMB B. MA	12E 3	2.32E 3	-1.48E 3	0.001	22.711	39.287			
	15536	1:BEBAN MATI	-9.33E 3	-1.72E 3	343.040	-0.008	5.065	29.455			
		2:BEBAN HIDL	-1.97E 3	-569.478	55.724	-0.001	1.061	9.173			
		3:BEBAN GEM	-169.961	-241.840	1.05E 3	0.007	21.431	5.006			
		4:KOMBINASI	-14.3E 3	-2.98E 3	500.808	-0.011	7.775	50.022			
		5:KOMB B. MA	-10.7E 3	-2.32E 3	1.48E 3	-0.001	28.204	40.214			
19636	14590	1:BEBAN MATI	6.48E 3	-116.145	-1.13E 3	0.000	18.427	-2.562			
		2:BEBAN HIDL	1.1E 3	-23.136	-398.601	-0.000	7.152	-0.681			
		3:BEBAN GEM	391.718	257.218	-560.823	0.014	5.622	3.579			
		4:KOMBINASI	9.53E 3	-176.392	-2E 3	-0.000	33.556	-4.164			
		5:KOMB B. MA	7.55E 3	140.052	-1.96E 3	0.014	28.622	0.787			
	15537	1:BEBAN MATI	-5.14E 3	116.145	1.13E 3	-0.000	20.427	-1.424			
		2:BEBAN HIDL	-1.1E 3	23.136	398.601	0.000	6.529	-0.113			
		3:BEBAN GEM	-391.718	-257.218	560.823	-0.014	13.627	5.250			
		4:KOMBINASI	-7.92E 3	176.392	2E 3	0.000	34.959	-1.891			
		5:KOMB B. MA	-6.21E 3	-140.052	1.96E 3	-0.014	38.653	4.020			
19637	14591	1:BEBAN MATI	6.94E 3	-36.167	-1.31E 3	0.002	21.275	-0.668			
		2:BEBAN HIDL	1.11E 3	0.695	-472.098	0.001	8.514	0.003			



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By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enginering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	550.253	323.866	-556.031	0.012	5.555	4.556			
		4:KOMBINASI	10.1E 3	-42.287	-2.33E 3	0.003	39.153	-0.797			
		5:KOMB B. MA	8.18E 3	304.309	-2.18E 3	0.015	32.217	4.117			
	15538	1:BEBAN MATI	-5.59E 3	36.167	1.31E 3	-0.002	23.780	-0.573			
		2:BEBAN HIDL	-1.11E 3	-0.695	472.098	-0.001	7.689	0.021			
		3:BEBAN GEM	-550.253	-323.866	556.031	-0.012	13.530	6.560			
		4:KOMBINASI	-8.49E 3	42.287	2.33E 3	-0.003	40.840	-0.654			
		5:KOMB B. MA	-6.84E 3	-304.309	2.18E 3	-0.015	42.600	6.327			
19638	14592	1:BEBAN MATI	4.46E 3	838.852	-934.995	-0.003	16.410	14.968			
		2:BEBAN HIDL	564.498	204.970	-226.822	-0.000	4.059	3.667			
		3:BEBAN GEM	648.125	161.500	-535.562	0.020	5.096	1.586			
		4:KOMBINASI	6.26E 3	1.33E 3	-1.48E 3	-0.004	26.186	23.829			
		5:KOMB B. MA	5.48E 3	1.13E 3	-1.63E 3	0.018	24.197	18.833			
	15539	1:BEBAN MATI	-3.12E 3	-838.852	934.995	0.003	15.682	13.824			
		2:BEBAN HIDL	-564.498	-204.970	226.822	0.000	3.727	3.368			
		3:BEBAN GEM	-648.125	-161.500	535.562	-0.020	13.286	3.957			
		4:KOMBINASI	-4.64E 3	-1.33E 3	1.48E 3	0.004	24.781	21.978			
		5:KOMB B. MA	-4.13E 3	-1.13E 3	1.63E 3	-0.018	31.868	20.000			
19639	14593	1:BEBAN MATI	5.49E 3	-1.26E 3	-1.41E 3	0.010	22.169	-20.252			
		2:BEBAN HIDL	860.314	-417.099	-430.689	0.001	7.853	-7.645			
		3:BEBAN GEM	306.860	123.960	-495.902	-0.033	3.867	0.783			
		4:KOMBINASI	7.96E 3	-2.18E 3	-2.38E 3	0.014	39.169	-36.534			
		5:KOMB B. MA	6.33E 3	-1.38E 3	-2.19E 3	-0.024	30.942	-24.017			
	15540	1:BEBAN MATI	-4.14E 3	1.26E 3	1.41E 3	-0.010	26.111	-23.080			
		2:BEBAN HIDL	-860.314	417.099	430.689	-0.001	6.929	-6.671			
		3:BEBAN GEM	-306.860	-123.960	495.902	0.033	13.154	3.472			
		4:KOMBINASI	-6.35E 3	2.18E 3	2.38E 3	-0.014	42.420	-38.370			
		5:KOMB B. MA	-4.98E 3	1.38E 3	2.19E 3	0.024	44.080	-23.437			
19640	14594	1:BEBAN MATI	9.3E 3	39.681	-2.38E 3	0.001	38.412	0.511			
		2:BEBAN HIDL	1.8E 3	1.002	-848.559	-0.000	15.673	0.158			
		3:BEBAN GEM	417.373	294.409	-512.415	-0.015	4.401	3.996			
		4:KOMBINASI	14E 3	49.219	-4.21E 3	0.002	71.170	0.867			
		5:KOMB B. MA	10.8E 3	349.411	-3.43E 3	-0.014	52.437	4.802			
	15541	1:BEBAN MATI	-7.95E 3	-39.681	2.38E 3	-0.001	43.225	0.851			
		2:BEBAN HIDL	-1.8E 3	-1.002	848.559	0.000	13.453	-0.124			
		3:BEBAN GEM	-417.373	-294.409	512.415	0.015	13.186	6.109			
		4:KOMBINASI	-12.4E 3	-49.219	4.21E 3	-0.002	73.395	0.823			
		5:KOMB B. MA	-9.47E 3	-349.411	3.43E 3	0.014	65.143	7.191			
19641	14595	1:BEBAN MATI	9.3E 3	-39.680	-2.38E 3	-0.001	38.412	-0.511			
		2:BEBAN HIDL	1.8E 3	-1.002	-848.559	0.000	15.673	-0.158			
		3:BEBAN GEM	403.461	292.590	-511.610	-0.004	4.396	3.943			
		4:KOMBINASI	14E 3	-49.218	-4.21E 3	-0.002	71.170	-0.867			
		5:KOMB B. MA	10.8E 3	266.939	-3.42E 3	-0.005	52.431	3.534			
	15542	1:BEBAN MATI	-7.95E 3	39.680	2.38E 3	0.001	43.225	-0.851			
		2:BEBAN HIDL	-1.8E 3	1.002	848.559	-0.000	13.453	0.124			
		3:BEBAN GEM	-403.461	-292.590	511.610	0.004	13.165	6.100			
		4:KOMBINASI	-12.4E 3	49.218	4.21E 3	0.002	73.395	-0.823			
		5:KOMB B. MA	-9.45E 3	-266.939	3.42E 3	0.005	65.120	5.628			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 204	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
19642	14596	1:BEBAN MATI	5.49E 3	1.26E 3	-1.41E 3	-0.010	22.169	20.252			
		2:BEBAN HIDL	860.314	417.099	-430.689	-0.001	7.853	7.645			
		3:BEBAN GEM	497.322	149.562	-460.331	0.006	3.404	1.294			
		4:KOMBINASI	7.96E 3	2.18E 3	-2.38E 3	-0.014	39.169	36.534			
		5:KOMB B. MA	6.53E 3	1.67E 3	-2.15E 3	-0.005	30.456	26.197			
15543	14597	1:BEBAN MATI	-4.14E 3	-1.26E 3	1.41E 3	0.010	26.111	23.080			
		2:BEBAN HIDL	-860.314	-417.099	430.689	0.001	6.929	6.671			
		3:BEBAN GEM	-497.322	-149.562	460.331	-0.006	12.396	3.840			
		4:KOMBINASI	-6.35E 3	-2.18E 3	2.38E 3	0.014	42.420	38.370			
		5:KOMB B. MA	-5.18E 3	-1.67E 3	2.15E 3	0.005	43.284	31.114			
19643	14597	1:BEBAN MATI	5.82E 3	-401.159	425.992	-0.010	-7.094	-9.221			
		2:BEBAN HIDL	917.378	21.089	157.468	-0.001	-2.710	0.468			
		3:BEBAN GEM	55.798	129.674	-1.24E 3	-0.078	18.940	1.070			
		4:KOMBINASI	8.45E 3	-447.649	763.139	-0.014	-12.849	-10.317			
		5:KOMB B. MA	6.43E 3	-252.348	-782.834	-0.092	11.167	-7.818			
15544	14598	1:BEBAN MATI	-4.47E 3	401.159	-425.992	0.010	-7.528	-4.548			
		2:BEBAN HIDL	-917.378	-21.089	-157.468	0.001	-2.695	0.256			
		3:BEBAN GEM	-55.798	-129.674	1.24E 3	0.078	23.664	3.381			
		4:KOMBINASI	-6.84E 3	447.649	-763.139	0.014	-13.345	-5.047			
		5:KOMB B. MA	-5.08E 3	252.348	782.834	0.092	15.703	-0.844			
19644	14598	1:BEBAN MATI	5.82E 3	401.158	425.992	0.010	-7.094	9.221			
		2:BEBAN HIDL	917.377	-21.089	157.468	0.001	-2.710	-0.468			
		3:BEBAN GEM	-138.840	105.124	-1.2E 3	0.062	18.189	0.505			
		4:KOMBINASI	8.45E 3	447.647	763.138	0.014	-12.849	10.317			
		5:KOMB B. MA	6.22E 3	498.885	-734.338	0.076	10.378	9.471			
15545	14599	1:BEBAN MATI	-4.47E 3	-401.158	-425.992	-0.010	-7.528	4.548			
		2:BEBAN HIDL	-917.377	21.089	-157.468	-0.001	-2.695	-0.256			
		3:BEBAN GEM	138.840	-105.124	1.2E 3	-0.062	22.830	3.103			
		4:KOMBINASI	-6.84E 3	-447.647	-763.138	-0.014	-13.345	5.047			
		5:KOMB B. MA	-4.88E 3	-498.885	734.338	-0.076	14.827	7.652			
20943	12717	1:BEBAN MATI	103.435	4.92E 3	-4.154	4.998	0.021	46.224			
		2:BEBAN HIDL	22.129	934.219	-0.864	3.002	0.004	10.303			
		3:BEBAN GEM	-306.737	-1.8E 3	20.292	-2.255	-0.112	-53.620			
		4:KOMBINASI	159.528	7.4E 3	-6.366	10.801	0.032	71.954			
		5:KOMB B. MA	-205.361	3.59E 3	16.635	4.432	-0.094	-3.896			
13734	12718	1:BEBAN MATI	-103.435	-4.08E 3	4.154	-4.998	0.010	-13.119			
		2:BEBAN HIDL	-22.129	-934.219	0.864	-3.002	0.002	-3.432			
		3:BEBAN GEM	306.737	1.8E 3	-20.292	2.255	-0.038	40.365			
		4:KOMBINASI	-159.528	-6.39E 3	6.366	-10.801	0.015	-21.234			
		5:KOMB B. MA	205.361	-2.75E 3	-16.635	-4.432	-0.029	27.205			
20944	12719	1:BEBAN MATI	127.441	5.29E 3	1.150	-0.241	-0.004	52.697			
		2:BEBAN HIDL	35.174	2.2E 3	0.324	0.056	-0.001	23.052			
		3:BEBAN GEM	-215.109	-1.9E 3	5.576	-1.657	-0.012	-52.577			
		4:KOMBINASI	209.209	9.87E 3	1.898	-0.200	-0.007	100.119			
		5:KOMB B. MA	-77.319	4.61E 3	7.199	-1.947	-0.017	11.322			
13739	12720	1:BEBAN MATI	-127.441	-5.07E 3	-1.150	0.241	-0.004	-14.588			
		2:BEBAN HIDL	-35.174	-2.2E 3	-0.324	-0.056	-0.001	-6.903			
		3:BEBAN GEM	215.109	1.9E 3	-5.576	1.657	-0.029	38.586			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 205	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-209.209	-9.6E 3	-1.898	0.200	-0.007	-28.551			
		5:KOMB B. MA	77.319	-4.39E 3	-7.199	1.947	-0.035	21.785			
20945	12721	1:BEBAN MATI	88.584	4.09E 3	0.178	-3.372	-0.001	40.260			
		2:BEBAN HIDL	25.229	1.7E 3	-0.087	-1.526	0.000	17.869			
		3:BEBAN GEM	-167.659	-2.1E 3	6.300	-1.889	-0.056	-54.610			
		4:KOMBINASI	146.668	7.62E 3	0.074	-6.488	-0.001	76.903			
		5:KOMB B. MA	-72.320	2.9E 3	6.741	-6.271	-0.060	-6.359			
	14008	1:BEBAN MATI	-88.584	-3.86E 3	-0.178	3.372	-0.000	-11.035			
		2:BEBAN HIDL	-25.229	-1.7E 3	0.087	1.526	0.000	-5.371			
		3:BEBAN GEM	167.659	2.1E 3	-6.300	1.889	0.010	39.162			
		4:KOMBINASI	-146.668	-7.35E 3	-0.074	6.488	0.000	-21.836			
		5:KOMB B. MA	72.320	-2.68E 3	-6.741	6.271	0.010	26.863			
20946	12723	1:BEBAN MATI	-12.573	2.51E 3	0.094	-0.600	0.001	15.588			
		2:BEBAN HIDL	-3.929	350.209	-0.057	-0.852	0.001	3.058			
		3:BEBAN GEM	-778.955	-4.62E 3	-9.604	-0.936	0.099	-75.281			
		4:KOMBINASI	-21.374	3.57E 3	0.022	-2.084	0.002	23.599			
		5:KOMB B. MA	-832.834	-2.14E 3	-10.024	-2.095	0.105	-61.622			
	13776	1:BEBAN MATI	12.573	-1.38E 3	-0.094	0.600	-0.002	3.464			
		2:BEBAN HIDL	3.929	-350.209	0.057	0.852	0.000	0.376			
		3:BEBAN GEM	778.955	4.62E 3	9.604	0.936	-0.005	29.968			
		4:KOMBINASI	21.374	-2.22E 3	-0.022	2.084	-0.002	4.759			
		5:KOMB B. MA	832.834	3.26E 3	10.024	2.095	-0.006	35.156			
20947	12725	1:BEBAN MATI	101.328	7E 3	-2.695	0.186	0.018	76.208			
		2:BEBAN HIDL	17.673	1.34E 3	-0.475	1.399	0.003	17.183			
		3:BEBAN GEM	-218.074	-1.77E 3	26.961	-2.224	-0.197	-51.799			
		4:KOMBINASI	149.870	10.5E 3	-3.993	2.461	0.026	118.943			
		5:KOMB B. MA	-117.046	5.95E 3	25.329	-1.310	-0.187	32.129			
	13785	1:BEBAN MATI	-101.328	-5.31E 3	2.695	-0.186	0.022	14.344			
		2:BEBAN HIDL	-17.673	-1.34E 3	0.475	-1.399	0.004	2.499			
		3:BEBAN GEM	218.074	1.77E 3	-26.961	2.224	-0.200	25.818			
		4:KOMBINASI	-149.870	-8.52E 3	3.993	-2.461	0.033	21.211			
		5:KOMB B. MA	117.046	-4.26E 3	-25.329	1.310	-0.185	42.952			
20948	12727	1:BEBAN MATI	101.328	7E 3	2.695	-0.186	-0.018	76.208			
		2:BEBAN HIDL	17.673	1.34E 3	0.475	-1.399	-0.003	17.183			
		3:BEBAN GEM	-316.651	-1.97E 3	-24.830	-1.229	0.197	-54.368			
		4:KOMBINASI	149.870	10.5E 3	3.993	-2.461	-0.026	118.943			
		5:KOMB B. MA	-220.552	5.74E 3	-23.092	-2.315	0.188	29.431			
	13789	1:BEBAN MATI	-101.328	-5.31E 3	-2.695	0.186	-0.022	14.344			
		2:BEBAN HIDL	-17.673	-1.34E 3	-0.475	1.399	-0.004	2.499			
		3:BEBAN GEM	316.651	1.97E 3	24.830	1.229	0.168	25.421			
		4:KOMBINASI	-149.870	-8.52E 3	-3.993	2.461	-0.033	21.211			
		5:KOMB B. MA	220.552	-4.05E 3	23.092	2.315	0.152	42.535			
20949	12729	1:BEBAN MATI	-12.573	2.51E 3	-0.094	0.600	-0.001	15.588			
		2:BEBAN HIDL	-3.929	350.209	0.057	0.852	-0.001	3.058			
		3:BEBAN GEM	-678.057	-4.49E 3	17.978	-0.204	-0.136	-72.925			
		4:KOMBINASI	-21.374	3.57E 3	-0.022	2.084	-0.002	23.599			
		5:KOMB B. MA	-726.891	-2E 3	18.816	0.897	-0.144	-59.148			
	14238	1:BEBAN MATI	12.573	-1.38E 3	0.094	-0.600	0.002	3.464			



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Job No

1

Sheet No

206

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	3.929	-350.209	-0.057	-0.852	-0.000	0.376			
		3:BEBAN GEM	678.057	4.49E 3	-17.978	0.204	-0.040	28.918			
		4:KOMBINASI	21.374	-2.22E 3	0.022	-2.084	0.002	4.759			
		5:KOMB B. MA	726.891	3.12E 3	-18.816	-0.897	-0.041	34.054			
20950	12731	1:BEBAN MATI	88.584	4.09E 3	-0.178	3.372	0.001	40.260			
		2:BEBAN HIDL	25.229	1.7E 3	0.087	1.526	-0.000	17.869			
		3:BEBAN GEM	-192.785	-1.78E 3	14.469	-1.836	-0.049	-50.843			
		4:KOMBINASI	146.668	7.62E 3	-0.074	6.488	0.001	76.903			
		5:KOMB B. MA	-98.702	3.23E 3	15.067	2.360	-0.051	-2.404			
	14412	1:BEBAN MATI	-88.584	-3.86E 3	0.178	-3.372	0.000	-11.035			
		2:BEBAN HIDL	-25.229	-1.7E 3	-0.087	-1.526	-0.000	-5.371			
		3:BEBAN GEM	192.785	1.78E 3	-14.469	1.836	-0.057	37.728			
		4:KOMBINASI	-146.668	-7.35E 3	0.074	-6.488	-0.000	-21.836			
		5:KOMB B. MA	98.702	-3.01E 3	-15.067	-2.360	-0.060	25.357			
20951	12733	1:BEBAN MATI	127.441	5.29E 3	-1.150	0.241	0.004	52.697			
		2:BEBAN HIDL	35.174	2.2E 3	-0.324	-0.056	0.001	23.052			
		3:BEBAN GEM	-246.607	-1.9E 3	16.641	-1.683	-0.068	-52.064			
		4:KOMBINASI	209.209	9.87E 3	-1.898	0.200	0.007	100.119			
		5:KOMB B. MA	-110.391	4.61E 3	16.129	-1.560	-0.066	11.860			
	14201	1:BEBAN MATI	-127.441	-5.07E 3	1.150	-0.241	0.004	-14.588			
		2:BEBAN HIDL	-35.174	-2.2E 3	0.324	0.056	0.001	-6.903			
		3:BEBAN GEM	246.607	1.9E 3	-16.641	1.683	-0.055	38.076			
		4:KOMBINASI	-209.209	-9.6E 3	1.898	-0.200	0.007	-28.551			
		5:KOMB B. MA	110.391	-4.39E 3	-16.129	1.560	-0.052	21.250			
20952	12735	1:BEBAN MATI	103.436	4.92E 3	4.154	-4.998	-0.021	46.224			
		2:BEBAN HIDL	22.129	934.220	0.864	-3.002	-0.004	10.303			
		3:BEBAN GEM	-338.452	-1.79E 3	-12.684	-0.831	0.095	-52.273			
		4:KOMBINASI	159.529	7.4E 3	6.366	-10.801	-0.032	71.954			
		5:KOMB B. MA	-238.661	3.6E 3	-8.646	-7.672	0.077	-2.481			
	14196	1:BEBAN MATI	-103.436	-4.08E 3	-4.154	4.998	-0.010	-13.119			
		2:BEBAN HIDL	-22.129	-934.220	-0.864	3.002	-0.002	-3.432			
		3:BEBAN GEM	338.452	1.79E 3	12.684	0.831	-0.002	39.089			
		4:KOMBINASI	-159.529	-6.39E 3	-6.366	10.801	-0.015	-21.234			
		5:KOMB B. MA	238.661	-2.76E 3	8.646	7.672	-0.013	25.865			
20953	12717	1:BEBAN MATI	26.699	3.54E 3	3.643	-4.962	-0.018	26.383			
		2:BEBAN HIDL	4.182	563.640	0.720	-2.791	-0.003	5.341			
		3:BEBAN GEM	-44.288	-647.307	-2.994	3.418	-0.005	-16.041			
		4:KOMBINASI	38.729	5.15E 3	5.525	-10.420	-0.027	40.206			
		5:KOMB B. MA	-17.295	3.2E 3	0.932	-3.048	-0.025	12.745			
	13732	1:BEBAN MATI	-26.699	-2.19E 3	-3.643	4.962	-0.025	7.299			
		2:BEBAN HIDL	-4.182	-563.640	-0.720	2.791	-0.005	1.292			
		3:BEBAN GEM	44.288	647.307	2.994	-3.418	0.040	8.424			
		4:KOMBINASI	-38.729	-3.53E 3	-5.525	10.420	-0.038	10.826			
		5:KOMB B. MA	17.295	-1.85E 3	-0.932	3.048	0.014	16.919			
20954	12737	1:BEBAN MATI	37.989	3.24E 3	-0.753	0.102	0.002	26.505			
		2:BEBAN HIDL	8.778	1.33E 3	-0.179	0.045	0.001	12.139			
		3:BEBAN GEM	-12.841	-688.267	-18.993	4.120	0.090	-16.036			
		4:KOMBINASI	59.632	6.01E 3	-1.190	0.194	0.004	51.229			



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Job No 1	Sheet No 207	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	29.773	3.31E 3	-20.804	4.455	0.097	16.951			
	13768	1:BEAN MATI	-37.989	-2.88E 3	0.753	-0.102	0.006	9.498			
		2:BEAN HIDL	-8.778	-1.33E 3	0.179	-0.045	0.002	3.493			
		3:BEAN GEM	12.841	688.267	18.993	-4.120	0.134	7.937			
		4:KOMBINASI	-59.632	-5.58E 3	1.190	-0.194	0.010	16.987			
		5:KOMB B. MA	-29.773	-2.95E 3	20.804	-4.455	0.148	19.928			
20955	12739	1:BEAN MATI	39.665	4.88E 3	0.059	-0.055	-0.001	37.345			
		2:BEAN HIDL	8.381	1.33E 3	0.028	0.011	-0.000	12.139			
		3:BEAN GEM	-101.442	-710.634	-20.135	3.995	0.106	-16.366			
		4:KOMBINASI	61.008	7.99E 3	0.116	-0.049	-0.001	64.237			
		5:KOMB B. MA	-61.821	4.93E 3	-21.066	4.145	0.111	27.444			
	13851	1:BEAN MATI	-39.665	-3.53E 3	-0.059	0.055	-0.000	12.124			
		2:BEAN HIDL	-8.381	-1.33E 3	-0.028	-0.011	-0.000	3.565			
		3:BEAN GEM	101.442	710.634	20.135	-3.995	0.131	8.003			
		4:KOMBINASI	-61.008	-6.37E 3	-0.116	0.049	-0.000	20.251			
		5:KOMB B. MA	61.821	-3.58E 3	21.066	-4.145	0.137	22.666			
20956	12741	1:BEAN MATI	40.602	4.88E 3	0.121	0.061	-0.001	37.334			
		2:BEAN HIDL	8.609	1.33E 3	0.044	-0.021	-0.000	12.133			
		3:BEAN GEM	-99.943	-716.244	-17.229	3.985	0.084	-16.529			
		4:KOMBINASI	62.496	7.99E 3	0.216	0.039	-0.001	64.215			
		5:KOMB B. MA	-59.174	4.93E 3	-17.942	4.232	0.088	27.259			
	13877	1:BEAN MATI	-40.602	-3.53E 3	-0.121	-0.061	-0.001	12.153			
		2:BEAN HIDL	-8.609	-1.33E 3	-0.044	0.021	-0.000	3.568			
		3:BEAN GEM	99.943	716.244	17.229	-3.985	0.119	8.101			
		4:KOMBINASI	-62.496	-6.37E 3	-0.216	-0.039	-0.001	20.293			
		5:KOMB B. MA	59.174	-3.58E 3	17.942	-4.232	0.124	22.800			
20957	12718	1:BEAN MATI	35.480	3.1E 3	0.227	1.079	-0.001	25.265			
		2:BEAN HIDL	8.032	1.25E 3	0.073	0.572	-0.000	11.368			
		3:BEAN GEM	-126.817	-797.811	-19.207	4.335	0.088	-17.323			
		4:KOMBINASI	55.428	5.72E 3	0.390	2.210	-0.001	48.506			
		5:KOMB B. MA	-92.858	3.01E 3	-19.896	5.974	0.092	13.896			
	13799	1:BEAN MATI	-35.480	-2.74E 3	-0.227	-1.079	-0.002	9.122			
		2:BEAN HIDL	-8.032	-1.25E 3	-0.073	-0.572	-0.001	3.340			
		3:BEAN GEM	126.817	797.811	19.207	-4.335	0.138	7.935			
		4:KOMBINASI	-55.428	-5.29E 3	-0.390	-2.210	-0.003	16.291			
		5:KOMB B. MA	92.858	-2.65E 3	19.896	-5.974	0.143	19.458			
20958	12767	1:BEAN MATI	26.989	3.49E 3	-1.470	3.071	0.009	25.818			
		2:BEAN HIDL	3.678	526.315	-0.214	1.880	0.001	4.886			
		3:BEAN GEM	-206.661	-713.238	1.613	3.501	-0.055	-17.215			
		4:KOMBINASI	38.271	5.03E 3	-2.106	6.694	0.012	38.799			
		5:KOMB B. MA	-187.799	3.06E 3	0.095	7.876	-0.049	10.673			
	13815	1:BEAN MATI	-26.989	-2.14E 3	1.470	-3.071	0.009	7.297			
		2:BEAN HIDL	-3.678	-526.315	0.214	-1.880	0.001	1.308			
		3:BEAN GEM	206.661	713.238	-1.613	-3.501	0.036	8.822			
		4:KOMBINASI	-38.271	-3.41E 3	2.106	-6.694	0.013	10.849			
		5:KOMB B. MA	187.799	-1.71E 3	-0.095	-7.876	0.047	17.345			
20959	12777	1:BEAN MATI	78.729	2.44E 3	-2.088	8.067	0.017	25.600			
		2:BEAN HIDL	21.218	883.718	-0.574	4.338	0.004	10.137			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 208	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-156.850	-539.596	13.302	3.303	-0.107	-15.473			
		4:KOMBINASI	128.423	4.35E 3	-3.424	16.621	0.027	46.939			
		5:KOMB B. MA	-73.233	2.41E 3	11.535	14.138	-0.093	15.436			
	14147	1:BEBAN MATI	-78.729	-1.99E 3	2.088	-8.067	0.014	7.029			
		2:BEBAN HIDL	-21.218	-883.718	0.574	-4.338	0.004	2.863			
		3:BEBAN GEM	156.850	539.596	-13.302	-3.303	-0.089	7.536			
		4:KOMBINASI	-128.423	-3.81E 3	3.424	-16.621	0.023	13.016			
		5:KOMB B. MA	73.233	-1.96E 3	-11.535	-14.138	-0.077	16.659			
20960	13652	1:BEBAN MATI	-0.818	876.238	0.043	0.147	-0.000	1.960			
		2:BEBAN HIDL	-0.226	390.780	-0.000	-0.003	0.000	1.192			
		3:BEBAN GEM	19.745	8.650	-0.550	-0.188	0.005	-1.072			
		4:KOMBINASI	-1.343	1.68E 3	0.051	0.172	-0.000	4.259			
		5:KOMB B. MA	19.779	1.12E 3	-0.535	-0.051	0.005	1.549			
	13750	1:BEBAN MATI	0.818	-645.587	-0.043	-0.147	-0.000	6.995			
		2:BEBAN HIDL	0.226	-390.780	0.000	0.003	0.000	3.407			
		3:BEBAN GEM	-19.745	-8.650	0.550	0.188	0.001	1.174			
		4:KOMBINASI	1.343	-1.4E 3	-0.051	-0.172	-0.000	13.844			
		5:KOMB B. MA	-19.779	-889.137	0.535	0.051	0.001	10.271			
20961	13654	1:BEBAN MATI	-0.106	913.155	0.029	0.001	-0.000	1.878			
		2:BEBAN HIDL	-0.053	403.042	0.011	0.001	-0.000	1.195			
		3:BEBAN GEM	-21.860	3.813	-4.061	-0.199	0.031	-1.117			
		4:KOMBINASI	-0.211	1.74E 3	0.052	0.003	-0.000	4.166			
		5:KOMB B. MA	-23.091	1.16E 3	-4.229	-0.207	0.032	1.423			
	13864	1:BEBAN MATI	0.106	-682.504	-0.029	-0.001	-0.000	7.511			
		2:BEBAN HIDL	0.053	-403.042	-0.011	-0.001	-0.000	3.548			
		3:BEBAN GEM	21.860	-3.813	4.061	0.199	0.017	1.161			
		4:KOMBINASI	0.211	-1.46E 3	-0.052	-0.003	-0.000	14.690			
		5:KOMB B. MA	23.091	-928.332	4.229	0.207	0.018	10.859			
20962	13656	1:BEBAN MATI	-0.272	903.131	0.023	0.121	-0.000	2.015			
		2:BEBAN HIDL	-0.067	405.956	0.011	-0.008	-0.000	1.232			
		3:BEBAN GEM	-25.597	5.430	-4.731	-0.205	0.034	-1.119			
		4:KOMBINASI	-0.433	1.73E 3	0.045	0.132	-0.000	4.389			
		5:KOMB B. MA	-27.189	1.15E 3	-4.938	-0.099	0.035	1.579			
	13890	1:BEBAN MATI	0.272	-672.480	-0.023	-0.121	-0.000	7.256			
		2:BEBAN HIDL	0.067	-405.956	-0.011	0.008	-0.000	3.545			
		3:BEBAN GEM	25.597	-5.430	4.731	0.205	0.022	1.182			
		4:KOMBINASI	0.433	-1.46E 3	-0.045	-0.132	-0.000	14.380			
		5:KOMB B. MA	27.189	-921.755	4.938	0.099	0.023	10.625			
20963	13658	1:BEBAN MATI	1.066	822.373	-0.012	-0.182	0.000	2.584			
		2:BEBAN HIDL	0.230	344.011	0.002	0.021	-0.000	1.381			
		3:BEBAN GEM	-32.864	-6.129	-2.542	-0.201	0.019	-1.587			
		4:KOMBINASI	1.647	1.54E 3	-0.011	-0.185	0.000	5.310			
		5:KOMB B. MA	-33.303	1.02E 3	-2.680	-0.380	0.020	1.746			
	13807	1:BEBAN MATI	-1.066	-591.721	0.012	0.182	0.000	5.737			
		2:BEBAN HIDL	-0.230	-344.011	-0.002	-0.021	0.000	2.667			
		3:BEBAN GEM	32.864	6.129	2.542	0.201	0.011	1.514			
		4:KOMBINASI	-1.647	-1.26E 3	0.011	0.185	0.000	11.152			
		5:KOMB B. MA	33.303	-791.693	2.680	0.380	0.011	8.927			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
20964	13661	1:BEBAN MATI	-1.610	-61.442	-0.148	-1.253	0.001	-0.840			
		2:BEBAN HIDL	-0.397	37.307	-0.023	-0.224	0.000	-0.360			
		3:BEBAN GEM	-146.738	-116.543	1.353	-0.361	-0.023	-0.060			
		4:KOMBINASI	-2.567	-14.038	-0.215	-1.863	0.001	-1.584			
		5:KOMB B. MA	-155.922	-161.428	1.258	-1.767	-0.023	-1.119			
	13948	1:BEBAN MATI	1.610	349.756	0.148	1.253	0.001	-2.185			
		2:BEBAN HIDL	0.397	-37.307	0.023	0.224	0.000	0.909			
		3:BEBAN GEM	146.738	116.543	-1.353	0.361	0.003	-1.654			
		4:KOMBINASI	2.567	360.016	0.215	1.863	0.002	-1.167			
		5:KOMB B. MA	155.922	449.742	-1.258	1.767	0.005	-3.376			
20965	13663	1:BEBAN MATI	-1.610	-61.442	0.148	1.253	-0.001	-0.840			
		2:BEBAN HIDL	-0.397	37.307	0.023	0.224	-0.000	-0.360			
		3:BEBAN GEM	-172.160	-76.776	-0.512	0.202	0.013	0.107			
		4:KOMBINASI	-2.567	-14.039	0.215	1.863	-0.001	-1.584			
		5:KOMB B. MA	-182.616	-119.673	-0.376	1.600	0.013	-0.943			
	14352	1:BEBAN MATI	1.610	349.756	-0.148	-1.253	-0.001	-2.185			
		2:BEBAN HIDL	0.397	-37.307	-0.023	-0.224	-0.000	0.909			
		3:BEBAN GEM	172.160	76.776	0.512	-0.202	-0.006	-1.237			
		4:KOMBINASI	2.567	360.016	-0.215	-1.863	-0.002	-1.167			
		5:KOMB B. MA	182.616	407.987	0.376	-1.600	-0.007	-2.938			
20966	12725	1:BEBAN MATI	114.019	4.9E 3	4.024	-4.750	-0.031	47.717			
		2:BEBAN HIDL	24.593	845.524	0.837	-2.596	-0.007	9.861			
		3:BEBAN GEM	-61.820	-503.376	14.927	4.919	-0.103	-14.941			
		4:KOMBINASI	176.171	7.24E 3	6.167	-9.853	-0.048	73.038			
		5:KOMB B. MA	63.863	4.88E 3	20.199	-1.143	-0.142	37.946			
	13783	1:BEBAN MATI	-114.019	-3.21E 3	-4.024	4.750	-0.028	11.981			
		2:BEBAN HIDL	-24.593	-845.524	-0.837	2.596	-0.006	2.577			
		3:BEBAN GEM	61.820	503.376	-14.927	-4.919	-0.117	7.536			
		4:KOMBINASI	-176.171	-5.21E 3	-6.167	9.853	-0.043	18.500			
		5:KOMB B. MA	-63.863	-3.19E 3	-20.199	1.143	-0.155	21.440			
20967	13664	1:BEBAN MATI	17.623	-606.035	0.120	-0.976	-0.001	-30.485			
		2:BEBAN HIDL	4.086	-327.925	0.028	-0.892	-0.000	-7.638			
		3:BEBAN GEM	-12.250	-1.5E 3	2.363	1.178	-0.013	0.226			
		4:KOMBINASI	27.685	-1.25E 3	0.188	-2.598	-0.002	-48.803			
		5:KOMB B. MA	7.212	-2.38E 3	2.617	-0.274	-0.015	-34.830			
	13842	1:BEBAN MATI	-17.623	1.73E 3	-0.120	0.976	-0.000	19.024			
		2:BEBAN HIDL	-4.086	327.925	-0.028	0.892	-0.000	4.422			
		3:BEBAN GEM	12.250	1.5E 3	-2.363	-1.178	-0.010	-14.953			
		4:KOMBINASI	-27.685	2.6E 3	-0.188	2.598	-0.000	29.904			
		5:KOMB B. MA	-7.212	3.5E 3	-2.617	0.274	-0.011	5.976			
20968	13665	1:BEBAN MATI	17.623	-606.035	-0.120	0.976	0.001	-30.485			
		2:BEBAN HIDL	4.086	-327.925	-0.028	0.892	0.000	-7.638			
		3:BEBAN GEM	-311.710	-1.45E 3	-4.007	0.090	0.024	0.001			
		4:KOMBINASI	27.685	-1.25E 3	-0.188	2.598	0.002	-48.803			
		5:KOMB B. MA	-307.221	-2.32E 3	-4.343	1.606	0.027	-35.067			
	14288	1:BEBAN MATI	-17.623	1.73E 3	0.120	-0.976	0.000	19.024			
		2:BEBAN HIDL	-4.086	327.925	0.028	-0.892	0.000	4.422			
		3:BEBAN GEM	311.710	1.45E 3	4.007	-0.090	0.015	-14.181			



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Job No 1	Sheet No 210	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-27.685	2.6E 3	0.188	-2.598	0.000	29.904			
		5:KOMB B. MA	307.221	3.45E 3	4.343	-1.606	0.016	6.787			
20969	13664	1:BEBAN MATI	-1.293	897.171	0.042	-0.144	-0.000	1.994			
		2:BEBAN HIDL	-0.361	403.686	0.015	-0.001	-0.000	1.212			
		3:BEBAN GEM	7.592	3.598	-7.338	-0.202	0.052	-1.106			
		4:KOMBINASI	-2.129	1.72E 3	0.074	-0.175	-0.000	4.332			
		5:KOMB B. MA	6.462	1.14E 3	-7.653	-0.357	0.054	1.560			
	13838	1:BEBAN MATI	1.293	-666.519	-0.042	0.144	-0.000	7.207			
		2:BEBAN HIDL	0.361	-403.686	-0.015	0.001	-0.000	3.538			
		3:BEBAN GEM	-7.592	-3.598	7.338	0.202	0.035	1.148			
		4:KOMBINASI	2.129	-1.45E 3	-0.074	0.175	-0.000	14.310			
		5:KOMB B. MA	-6.462	-912.509	7.653	0.357	0.036	10.536			
20970	13666	1:BEBAN MATI	75.475	-787.256	-0.771	1.689	0.005	-37.602			
		2:BEBAN HIDL	16.692	-417.793	-0.146	1.248	0.001	-9.575			
		3:BEBAN GEM	79.680	-540.912	-7.315	-2.743	0.043	-0.039			
		4:KOMBINASI	117.277	-1.61E 3	-1.159	4.023	0.007	-60.442			
		5:KOMB B. MA	169.154	-1.61E 3	-8.539	-0.442	0.051	-43.388			
	13787	1:BEBAN MATI	-75.475	2.48E 3	0.771	-1.689	0.007	13.606			
		2:BEBAN HIDL	-16.692	417.793	0.146	-1.248	0.001	3.429			
		3:BEBAN GEM	-79.680	540.912	7.315	2.743	0.064	-7.917			
		4:KOMBINASI	-117.277	3.64E 3	1.159	-4.023	0.010	21.814			
		5:KOMB B. MA	-169.154	3.29E 3	8.539	0.442	0.075	7.350			
20971	13667	1:BEBAN MATI	3.221	-623.393	0.571	-2.816	-0.004	-17.742			
		2:BEBAN HIDL	0.867	-362.423	0.205	-1.596	-0.001	-7.682			
		3:BEBAN GEM	-1.13E 3	-420.871	-0.487	-0.792	-0.012	-0.135			
		4:KOMBINASI	5.254	-1.33E 3	1.013	-5.933	-0.007	-33.581			
		5:KOMB B. MA	-1.18E 3	-1.28E 3	0.183	-4.605	-0.018	-22.493			
	14171	1:BEBAN MATI	-3.221	1.07E 3	-0.571	2.816	-0.005	5.258			
		2:BEBAN HIDL	-0.867	362.423	-0.205	1.596	-0.002	2.351			
		3:BEBAN GEM	1.13E 3	420.871	0.487	0.792	0.019	-6.056			
		4:KOMBINASI	-5.254	1.87E 3	-1.013	5.933	-0.008	10.071			
		5:KOMB B. MA	1.18E 3	1.73E 3	-0.183	4.605	0.015	0.310			
20972	13666	1:BEBAN MATI	1.319	1.01E 3	0.000	0.000	-0.000	2.534			
		2:BEBAN HIDL	0.270	383.085	-0.000	-0.000	0.000	1.410			
		3:BEBAN GEM	-120.319	37.095	1.180	0.180	-0.010	-4.232			
		4:KOMBINASI	2.014	1.83E 3	0.000	0.000	-0.000	5.296			
		5:KOMB B. MA	-124.854	1.28E 3	1.239	0.189	-0.010	-1.064			
	13786	1:BEBAN MATI	-1.319	-724.625	-0.000	-0.000	-0.000	10.246			
		2:BEBAN HIDL	-0.270	-383.085	0.000	0.000	-0.000	4.225			
		3:BEBAN GEM	120.319	-37.095	-1.180	-0.180	-0.008	4.778			
		4:KOMBINASI	-2.014	-1.48E 3	-0.000	-0.000	-0.000	19.056			
		5:KOMB B. MA	124.854	-993.426	-1.239	-0.189	-0.008	17.798			
20973	12737	1:BEBAN MATI	18.320	4.81E 3	-2.204	3.729	0.010	53.177			
		2:BEBAN HIDL	4.140	841.662	-0.493	2.357	0.002	11.159			
		3:BEBAN GEM	-773.673	-1.67E 3	23.763	-2.156	-0.172	-46.565			
		4:KOMBINASI	28.608	7.12E 3	-3.434	8.246	0.016	81.667			
		5:KOMB B. MA	-791.552	3.56E 3	22.451	2.879	-0.169	10.979			
	13829	1:BEBAN MATI	-18.320	-3.68E 3	2.204	-3.729	0.011	-11.540			



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Job No 1	Sheet No 211	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-4.140	-841.662	0.493	-2.357	0.003	-2.905			
		3:BEBAN GEM	773.673	1.67E 3	-23.763	2.156	-0.062	30.187			
		4:KOMBINASI	-28.608	-5.77E 3	3.434	-8.246	0.018	-18.497			
		5:KOMB B. MA	791.552	-2.43E 3	-22.451	-2.879	-0.052	18.413			
20974	13652	1:BEBAN MATI	55.679	-736.349	-0.199	-1.311	0.000	-33.696			
		2:BEBAN HIDL	12.650	-320.491	-0.039	-0.709	0.000	-8.522			
		3:BEBAN GEM	-144.171	-1.66E 3	4.827	1.140	-0.024	-2.158			
		4:KOMBINASI	87.055	-1.4E 3	-0.302	-2.707	0.001	-54.070			
		5:KOMB B. MA	-88.111	-2.68E 3	4.846	-0.539	-0.025	-41.074			
	13754	1:BEBAN MATI	-55.679	1.58E 3	0.199	1.311	0.001	25.176			
		2:BEBAN HIDL	-12.650	320.491	0.039	0.709	0.000	6.165			
		3:BEBAN GEM	144.171	1.66E 3	-4.827	-1.140	-0.011	-10.087			
		4:KOMBINASI	-87.055	2.41E 3	0.302	2.707	0.002	40.075			
		5:KOMB B. MA	88.111	3.52E 3	-4.846	0.539	-0.011	18.283			
20975	13668	1:BEBAN MATI	30.157	-1.43E 3	-0.170	0.177	0.001	-28.542			
		2:BEBAN HIDL	6.637	-716.362	-0.056	0.015	0.000	-12.094			
		3:BEBAN GEM	140.646	-2.2E 3	3.695	0.858	-0.015	3.317			
		4:KOMBINASI	46.808	-2.87E 3	-0.293	0.236	0.002	-53.601			
		5:KOMB B. MA	181.818	-4.17E 3	3.676	1.087	-0.015	-32.316			
	13814	1:BEBAN MATI	-30.157	1.79E 3	0.170	-0.177	0.001	9.545			
		2:BEBAN HIDL	-6.637	716.362	0.056	-0.015	0.000	3.664			
		3:BEBAN GEM	-140.646	2.2E 3	-3.695	-0.858	-0.028	-29.215			
		4:KOMBINASI	-46.808	3.3E 3	0.293	-0.236	0.002	17.316			
		5:KOMB B. MA	-181.818	4.54E 3	-3.676	-1.087	-0.029	-18.933			
20976	12720	1:BEBAN MATI	25.020	3.69E 3	0.502	-0.208	-0.003	40.080			
		2:BEBAN HIDL	6.383	1.42E 3	0.200	-0.043	-0.001	15.749			
		3:BEBAN GEM	-258.953	-2.56E 3	18.810	-1.545	-0.110	-54.158			
		4:KOMBINASI	40.236	6.69E 3	0.923	-0.318	-0.005	73.295			
		5:KOMB B. MA	-243.051	1.85E 3	20.373	-1.856	-0.119	-7.336			
	13806	1:BEBAN MATI	-25.020	-3.33E 3	-0.502	0.208	-0.003	1.192			
		2:BEBAN HIDL	-6.383	-1.42E 3	-0.200	0.043	-0.001	0.944			
		3:BEBAN GEM	258.953	2.56E 3	-18.810	1.545	-0.112	24.003			
		4:KOMBINASI	-40.236	-6.26E 3	-0.923	0.318	-0.006	2.941			
		5:KOMB B. MA	243.051	-1.49E 3	-20.373	1.856	-0.121	26.962			
20977	13669	1:BEBAN MATI	13.864	-1.66E 3	-0.115	0.197	0.001	-40.431			
		2:BEBAN HIDL	2.408	-745.409	-0.065	0.009	0.000	-17.586			
		3:BEBAN GEM	56.489	-1.33E 3	15.863	0.543	-0.079	-0.408			
		4:KOMBINASI	20.489	-3.19E 3	-0.242	0.251	0.001	-76.655			
		5:KOMB B. MA	74.622	-3.51E 3	16.503	0.773	-0.082	-51.411			
	13897	1:BEBAN MATI	-13.864	1.96E 3	0.115	-0.197	0.001	22.653			
		2:BEBAN HIDL	-2.408	745.409	0.065	-0.009	0.000	10.276			
		3:BEBAN GEM	-56.489	1.33E 3	-15.863	-0.543	-0.077	-12.632			
		4:KOMBINASI	-20.489	3.55E 3	0.242	-0.251	0.001	43.626			
		5:KOMB B. MA	-74.622	3.81E 3	-16.503	-0.773	-0.080	15.555			
20978	12743	1:BEBAN MATI	15.656	4.87E 3	0.844	-0.307	-0.004	58.060			
		2:BEBAN HIDL	3.409	1.99E 3	0.324	-0.006	-0.002	25.266			
		3:BEBAN GEM	-364.862	-1.74E 3	30.736	-1.531	-0.162	-45.410			
		4:KOMBINASI	24.241	9.03E 3	1.532	-0.379	-0.007	110.097			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-365.405	4.23E 3	33.311	-1.919	-0.175	25.539			
	13884	1:BEBAN MATI	-15.656	-4.57E 3	-0.844	0.307	-0.004	-11.771			
		2:BEBAN HIDL	-3.409	-1.99E 3	-0.324	0.006	-0.002	-5.740			
		3:BEBAN GEM	364.862	1.74E 3	-30.736	1.531	-0.140	28.305			
		4:KOMBINASI	-24.241	-8.67E 3	-1.532	0.379	-0.008	-23.309			
		5:KOMB B. MA	365.405	-3.93E 3	-33.311	1.919	-0.152	14.506			
20979	13670	1:BEBAN MATI	12.673	-1.68E 3	-0.195	0.199	0.001	-39.637			
		2:BEBAN HIDL	2.760	-783.557	-0.077	0.014	0.000	-16.915			
		3:BEBAN GEM	-79.177	-1.35E 3	15.316	0.535	-0.076	0.104			
		4:KOMBINASI	19.622	-3.27E 3	-0.356	0.261	0.002	-74.629			
		5:KOMB B. MA	-68.808	-3.57E 3	15.841	0.769	-0.079	-49.678			
	13871	1:BEBAN MATI	-12.673	1.98E 3	0.195	-0.199	0.001	21.676			
		2:BEBAN HIDL	-2.760	783.557	0.077	-0.014	0.000	9.231			
		3:BEBAN GEM	79.177	1.35E 3	-15.316	-0.535	-0.074	-13.353			
		4:KOMBINASI	-19.622	3.63E 3	0.356	-0.261	0.002	40.781			
		5:KOMB B. MA	68.808	3.87E 3	-15.841	-0.769	-0.076	13.194			
20980	12744	1:BEBAN MATI	12.160	4.88E 3	0.455	-0.261	-0.002	58.811			
		2:BEBAN HIDL	3.056	1.96E 3	0.196	0.011	-0.001	24.802			
		3:BEBAN GEM	-391.795	-1.77E 3	34.468	-1.507	-0.174	-45.640			
		4:KOMBINASI	19.481	8.98E 3	0.860	-0.294	-0.004	110.256			
		5:KOMB B. MA	-397.391	4.2E 3	36.765	-1.836	-0.185	25.770			
	13858	1:BEBAN MATI	-12.160	-4.58E 3	-0.455	0.261	-0.002	-12.459			
		2:BEBAN HIDL	-3.056	-1.96E 3	-0.196	-0.011	-0.001	-5.609			
		3:BEBAN GEM	391.795	1.77E 3	-34.468	1.507	-0.164	28.305			
		4:KOMBINASI	-19.481	-8.62E 3	-0.860	0.294	-0.004	-23.925			
		5:KOMB B. MA	397.391	-3.89E 3	-36.765	1.836	-0.176	13.896			
20981	13671	1:BEBAN MATI	16.697	-1.64E 3	-0.414	0.156	0.002	-39.830			
		2:BEBAN HIDL	3.522	-794.945	-0.125	0.007	0.001	-17.168			
		3:BEBAN GEM	-111.943	-1.34E 3	27.882	0.539	-0.142	0.304			
		4:KOMBINASI	25.670	-3.24E 3	-0.696	0.199	0.004	-75.265			
		5:KOMB B. MA	-98.731	-3.53E 3	28.787	0.727	-0.146	-49.812			
	13845	1:BEBAN MATI	-16.697	1.94E 3	0.414	-0.156	0.002	22.269			
		2:BEBAN HIDL	-3.522	794.945	0.125	-0.007	0.001	9.372			
		3:BEBAN GEM	111.943	1.34E 3	-27.882	-0.539	-0.132	-13.462			
		4:KOMBINASI	-25.670	3.6E 3	0.696	-0.199	0.003	41.719			
		5:KOMB B. MA	98.731	3.83E 3	-28.787	-0.727	-0.136	13.758			
20982	12745	1:BEBAN MATI	5.141	4.8E 3	0.382	-0.279	-0.001	60.370			
		2:BEBAN HIDL	0.501	1.97E 3	0.213	-0.027	-0.001	25.058			
		3:BEBAN GEM	-579.575	-1.78E 3	35.290	-1.506	-0.199	-45.562			
		4:KOMBINASI	6.971	8.9E 3	0.799	-0.377	-0.003	112.537			
		5:KOMB B. MA	-603.111	4.11E 3	37.565	-1.876	-0.211	27.565			
	13832	1:BEBAN MATI	-5.141	-4.5E 3	-0.382	0.279	-0.002	-14.782			
		2:BEBAN HIDL	-0.501	-1.97E 3	-0.213	0.027	-0.001	-5.779			
		3:BEBAN GEM	579.575	1.78E 3	-35.290	1.506	-0.147	28.101			
		4:KOMBINASI	-6.971	-8.54E 3	-0.799	0.377	-0.005	-26.985			
		5:KOMB B. MA	603.111	-3.81E 3	-37.565	1.876	-0.157	11.256			
20983	13672	1:BEBAN MATI	52.435	-1.75E 3	0.063	0.078	0.000	-43.698			
		2:BEBAN HIDL	14.336	-764.100	0.024	-0.023	-0.000	-18.789			



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Job No

1

Sheet No

213

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-98.125	-1.49E 3	2.805	0.475	-0.015	-2.428			
		4:KOMBINASI	85.860	-3.33E 3	0.114	0.057	-0.000	-82.499			
		5:KOMB B. MA	-41.994	-3.78E 3	3.023	0.563	-0.016	-57.520			
	13757	1:BEBAN MATI	-52.435	1.98E 3	-0.063	-0.078	-0.000	29.980			
		2:BEBAN HIDL	-14.336	764.100	-0.024	0.023	-0.000	13.169			
		3:BEBAN GEM	98.125	1.49E 3	-2.805	-0.475	-0.005	-8.547			
		4:KOMBINASI	-85.860	3.6E 3	-0.114	-0.057	-0.001	57.047			
		5:KOMB B. MA	41.994	4E 3	-3.023	-0.563	-0.006	28.907			
20984	13673	1:BEBAN MATI	18.384	-1.18E 3	-0.384	0.391	0.002	-24.553			
		2:BEBAN HIDL	3.574	-580.106	-0.127	0.356	0.001	-10.048			
		3:BEBAN GEM	132.815	-2.26E 3	4.161	0.526	-0.027	2.999			
		4:KOMBINASI	27.778	-2.35E 3	-0.663	1.038	0.004	-45.540			
		5:KOMB B. MA	159.984	-3.9E 3	3.910	1.157	-0.026	-27.432			
	14048	1:BEBAN MATI	-18.384	1.54E 3	0.384	-0.391	0.002	8.525			
		2:BEBAN HIDL	-3.574	580.106	0.127	-0.356	0.001	3.221			
		3:BEBAN GEM	-132.815	2.26E 3	-4.161	-0.526	-0.022	-29.556			
		4:KOMBINASI	-27.778	2.78E 3	0.663	-1.038	0.004	15.384			
		5:KOMB B. MA	-159.984	4.26E 3	-3.910	-1.157	-0.020	-20.576			
20985	12722	1:BEBAN MATI	16.680	3.34E 3	1.149	-0.637	-0.007	35.723			
		2:BEBAN HIDL	4.386	1.23E 3	0.227	-0.410	-0.001	13.522			
		3:BEBAN GEM	-373.935	-2.53E 3	40.850	-1.359	-0.256	-54.061			
		4:KOMBINASI	27.034	5.98E 3	1.742	-1.421	-0.010	64.503			
		5:KOMB B. MA	-373.320	1.42E 3	44.178	-2.311	-0.277	-12.928			
	14041	1:BEBAN MATI	-16.680	-2.98E 3	-1.149	0.637	-0.007	1.417			
		2:BEBAN HIDL	-4.386	-1.23E 3	-0.227	0.410	-0.001	0.995			
		3:BEBAN GEM	373.935	2.53E 3	-40.850	1.359	-0.224	24.329			
		4:KOMBINASI	-27.034	-5.54E 3	-1.742	1.421	-0.011	3.292			
		5:KOMB B. MA	373.320	-1.06E 3	-44.178	2.311	-0.243	27.560			
20986	13674	1:BEBAN MATI	6.513	-1.56E 3	0.069	-0.325	0.000	-36.099			
		2:BEBAN HIDL	0.601	-679.231	-0.125	-0.028	0.001	-15.008			
		3:BEBAN GEM	115.502	-1.36E 3	0.404	0.309	-0.041	-0.318			
		4:KOMBINASI	8.777	-2.96E 3	-0.118	-0.435	0.001	-67.332			
		5:KOMB B. MA	128.151	-3.4E 3	0.418	-0.018	-0.042	-45.437			
	14110	1:BEBAN MATI	-6.513	1.86E 3	-0.069	0.325	-0.001	19.327			
		2:BEBAN HIDL	-0.601	679.231	0.125	0.028	0.001	8.347			
		3:BEBAN GEM	-115.502	1.36E 3	-0.404	-0.309	0.037	-13.055			
		4:KOMBINASI	-8.777	3.32E 3	0.118	0.435	-0.000	36.548			
		5:KOMB B. MA	-128.151	3.7E 3	-0.418	0.018	0.038	10.628			
20987	12746	1:BEBAN MATI	11.885	4.23E 3	1.380	-1.426	-0.007	50.984			
		2:BEBAN HIDL	2.225	1.64E 3	0.103	-0.908	-0.001	21.216			
		3:BEBAN GEM	-277.201	-1.68E 3	35.823	-1.091	-0.231	-45.127			
		4:KOMBINASI	17.821	7.7E 3	1.821	-3.165	-0.009	95.126			
		5:KOMB B. MA	-277.842	3.45E 3	39.056	-3.117	-0.250	16.330			
	14099	1:BEBAN MATI	-11.885	-3.93E 3	-1.380	1.426	-0.006	-10.998			
		2:BEBAN HIDL	-2.225	-1.64E 3	-0.103	0.908	-0.000	-5.105			
		3:BEBAN GEM	277.201	1.68E 3	-35.823	1.091	-0.121	28.630			
		4:KOMBINASI	-17.821	-7.34E 3	-1.821	3.165	-0.008	-21.365			
		5:KOMB B. MA	277.842	-3.15E 3	-39.056	3.117	-0.133	16.000			



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Job No 1	Sheet No 214	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
20988	13675	1:BEBAN MATI	8.864	-1.63E 3	-0.069	-0.430	0.001	-36.342			
		2:BEBAN HIDL	2.347	-736.883	-0.202	-0.019	0.001	-14.982			
		3:BEBAN GEM	-224.487	-1.4E 3	17.239	0.272	-0.107	0.050			
		4:KOMBINASI	14.392	-3.13E 3	-0.406	-0.546	0.003	-67.581			
		5:KOMB B. MA	-225.439	-3.54E 3	17.911	-0.156	-0.110	-45.278			
14088		1:BEBAN MATI	-8.864	1.93E 3	0.069	0.430	-0.000	18.903			
		2:BEBAN HIDL	-2.347	736.883	0.202	0.019	0.001	7.755			
		3:BEBAN GEM	224.487	1.4E 3	-17.239	-0.272	-0.062	-13.744			
		4:KOMBINASI	-14.392	3.49E 3	0.406	0.546	0.001	35.092			
		5:KOMB B. MA	225.439	3.84E 3	-17.911	0.156	-0.065	9.125			
20989	12747	1:BEBAN MATI	21.712	4.19E 3	1.757	-0.995	-0.008	48.641			
		2:BEBAN HIDL	6.883	1.6E 3	0.159	-0.683	-0.001	19.576			
		3:BEBAN GEM	-1.36E 3	-1.68E 3	8.759	-0.976	-0.104	-45.438			
		4:KOMBINASI	37.067	7.58E 3	2.363	-2.287	-0.011	89.691			
		5:KOMB B. MA	-1.4E 3	3.38E 3	11.049	-2.430	-0.118	12.676			
14077		1:BEBAN MATI	-21.712	-3.88E 3	-1.757	0.995	-0.009	-9.072			
		2:BEBAN HIDL	-6.883	-1.6E 3	-0.159	0.683	-0.001	-3.897			
		3:BEBAN GEM	1.36E 3	1.68E 3	-8.759	0.976	0.019	28.929			
		4:KOMBINASI	-37.067	-7.22E 3	-2.363	2.287	-0.012	-17.122			
		5:KOMB B. MA	1.4E 3	-3.08E 3	-11.049	2.430	0.010	18.966			
20990	13676	1:BEBAN MATI	1.411	-658.933	-0.209	1.933	0.002	-17.867			
		2:BEBAN HIDL	0.054	-331.474	-0.052	0.989	0.000	-6.676			
		3:BEBAN GEM	-682.412	-1.46E 3	5.944	-0.087	-0.029	-0.110			
		4:KOMBINASI	1.779	-1.32E 3	-0.334	3.903	0.002	-32.122			
		5:KOMB B. MA	-715.090	-2.39E 3	6.001	2.435	-0.029	-21.988			
14066		1:BEBAN MATI	-1.411	959.261	0.209	-1.933	0.000	9.932			
		2:BEBAN HIDL	-0.054	331.474	0.052	-0.989	0.000	3.426			
		3:BEBAN GEM	682.412	1.46E 3	-5.944	0.087	-0.029	-14.202			
		4:KOMBINASI	-1.779	1.68E 3	0.334	-3.903	0.001	17.400			
		5:KOMB B. MA	715.090	2.69E 3	-6.001	-2.435	-0.030	-2.925			
20991	12748	1:BEBAN MATI	-22.131	2.54E 3	0.084	-5.005	0.001	33.542			
		2:BEBAN HIDL	-8.450	842.137	-0.321	-2.480	0.002	12.079			
		3:BEBAN GEM	449.442	-1.65E 3	128.779	-0.494	-0.718	-45.520			
		4:KOMBINASI	-40.078	4.39E 3	-0.413	-9.974	0.004	59.577			
		5:KOMB B. MA	444.713	1.31E 3	135.109	-7.011	-0.752	-7.006			
14055		1:BEBAN MATI	22.131	-2.24E 3	-0.084	5.005	-0.002	-10.132			
		2:BEBAN HIDL	8.450	-842.137	0.321	2.480	0.001	-3.821			
		3:BEBAN GEM	-449.442	1.65E 3	-128.779	0.494	-0.545	29.298			
		4:KOMBINASI	40.078	-4.03E 3	0.413	9.974	-0.000	-18.272			
		5:KOMB B. MA	-444.713	-1.01E 3	-135.109	7.011	-0.573	18.338			
20992	13677	1:BEBAN MATI	29.316	-1.15E 3	-0.587	1.159	0.003	-32.654			
		2:BEBAN HIDL	8.136	-526.226	-0.259	0.411	0.001	-14.344			
		3:BEBAN GEM	332.063	-1.37E 3	33.542	0.901	-0.126	-0.392			
		4:KOMBINASI	48.196	-2.22E 3	-1.120	2.049	0.005	-62.135			
		5:KOMB B. MA	382.864	-2.9E 3	34.476	2.352	-0.129	-41.672			
14023		1:BEBAN MATI	-29.316	1.37E 3	0.587	-1.159	0.001	23.393			
		2:BEBAN HIDL	-8.136	526.226	0.259	-0.411	0.001	10.474			
		3:BEBAN GEM	-332.063	1.37E 3	-33.542	-0.901	-0.121	-9.664			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-48.196	2.49E 3	1.120	-2.049	0.003	44.829			
		5:KOMB B. MA	-382.864	3.12E 3	-34.476	-2.352	-0.125	19.530			
20993	12770	1:BEBAN MATI	32.723	2.53E 3	-0.130	7.467	0.002	29.575			
		2:BEBAN HIDL	12.424	914.403	-0.093	3.942	0.001	12.093			
		3:BEBAN GEM	-1.46E 3	-1.81E 3	90.183	-1.252	-0.693	-48.003			
		4:KOMBINASI	59.146	4.5E 3	-0.305	15.267	0.004	54.838			
		5:KOMB B. MA	-1.5E 3	1.18E 3	94.506	8.518	-0.725	-13.573			
	14150	1:BEBAN MATI	-32.723	-2.08E 3	0.130	-7.467	0.000	4.372			
		2:BEBAN HIDL	-12.424	-914.403	0.093	-3.942	0.000	1.358			
		3:BEBAN GEM	1.46E 3	1.81E 3	-90.183	1.252	-0.634	21.387			
		4:KOMBINASI	-59.146	-3.96E 3	0.305	-15.267	0.001	7.420			
		5:KOMB B. MA	1.5E 3	-731.313	-94.506	-8.518	-0.665	27.644			
20994	13678	1:BEBAN MATI	-0.758	-1.08E 3	-0.449	-0.256	0.002	-29.151			
		2:BEBAN HIDL	0.128	-643.719	-0.160	-0.032	0.001	-9.429			
		3:BEBAN GEM	-415.751	-1.95E 3	20.806	0.844	-0.133	0.536			
		4:KOMBINASI	-0.706	-2.32E 3	-0.794	-0.358	0.004	-50.067			
		5:KOMB B. MA	-437.221	-3.51E 3	21.302	0.611	-0.136	-34.246			
	14119	1:BEBAN MATI	0.758	2.43E 3	0.449	0.256	0.003	8.510			
		2:BEBAN HIDL	-0.128	643.719	0.160	0.032	0.001	1.853			
		3:BEBAN GEM	415.751	1.95E 3	-20.806	-0.844	-0.112	-23.432			
		4:KOMBINASI	0.706	3.94E 3	0.794	0.358	0.005	13.177			
		5:KOMB B. MA	437.221	4.86E 3	-21.302	-0.611	-0.115	-14.982			
20995	12724	1:BEBAN MATI	3.331	5.17E 3	-0.688	1.807	0.004	50.978			
		2:BEBAN HIDL	1.020	1.29E 3	-0.283	0.606	0.002	14.334			
		3:BEBAN GEM	-424.755	-2.33E 3	33.097	-1.602	-0.207	-51.305			
		4:KOMBINASI	5.630	8.26E 3	-1.277	3.137	0.007	84.109			
		5:KOMB B. MA	-442.050	3.5E 3	33.895	0.488	-0.213	5.708			
	14116	1:BEBAN MATI	-3.331	-3.82E 3	0.688	-1.807	0.004	1.936			
		2:BEBAN HIDL	-1.020	-1.29E 3	0.283	-0.606	0.002	0.788			
		3:BEBAN GEM	424.755	2.33E 3	-33.097	1.602	-0.182	23.891			
		4:KOMBINASI	-5.630	-6.64E 3	1.277	-3.137	0.008	3.584			
		5:KOMB B. MA	442.050	-2.15E 3	-33.895	-0.488	-0.186	27.494			
20996	13679	1:BEBAN MATI	7.942	-1.41E 3	-0.059	-0.911	0.001	-44.392			
		2:BEBAN HIDL	1.907	-777.325	-0.037	-0.253	0.000	-15.610			
		3:BEBAN GEM	109.440	-1.33E 3	18.000	0.775	-0.138	-0.255			
		4:KOMBINASI	12.582	-2.94E 3	-0.130	-1.497	0.001	-78.246			
		5:KOMB B. MA	123.998	-3.27E 3	18.819	-0.248	-0.144	-54.025			
	13984	1:BEBAN MATI	-7.942	3.1E 3	0.059	0.911	0.000	11.173			
		2:BEBAN HIDL	-1.907	777.325	0.037	0.253	0.000	4.176			
		3:BEBAN GEM	-109.440	1.33E 3	-18.000	-0.775	-0.127	-19.264			
		4:KOMBINASI	-12.582	4.97E 3	0.130	1.497	0.001	20.089			
		5:KOMB B. MA	-123.998	4.96E 3	-18.819	0.248	-0.133	-6.549			
20997	12749	1:BEBAN MATI	9.454	6.22E 3	-0.532	1.860	0.004	69.473			
		2:BEBAN HIDL	1.929	1.64E 3	-0.212	0.667	0.002	21.424			
		3:BEBAN GEM	11.789	-1.64E 3	24.908	-1.577	-0.191	-44.521			
		4:KOMBINASI	14.431	10.1E 3	-0.977	3.300	0.007	117.646			
		5:KOMB B. MA	22.990	5.49E 3	25.494	0.604	-0.196	35.580			
	13978	1:BEBAN MATI	-9.454	-4.54E 3	0.532	-1.860	0.004	9.682			



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Job No 1	Sheet No 216	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-1.929	-1.64E 3	0.212	-0.667	0.002	2.765			
		3:BEBAN GEM	-11.789	1.64E 3	-24.908	1.577	-0.175	20.416			
		4:KOMBINASI	-14.431	-8.08E 3	0.977	-3.300	0.008	16.042			
		5:KOMB B. MA	-22.990	-3.8E 3	-25.494	-0.604	-0.179	32.777			
20998	13680	1:BEBAN MATI	0.731	-1.5E 3	0.027	-0.622	0.000	-44.976			
		2:BEBAN HIDL	-0.060	-822.544	-0.013	-0.197	0.000	-15.525			
		3:BEBAN GEM	613.513	-1.36E 3	16.320	0.792	-0.116	-0.075			
		4:KOMBINASI	0.780	-3.11E 3	0.011	-1.061	0.000	-78.811			
		5:KOMB B. MA	644.882	-3.42E 3	17.156	0.091	-0.121	-54.370			
	13972	1:BEBAN MATI	-0.731	3.18E 3	-0.027	0.622	-0.000	10.543			
		2:BEBAN HIDL	0.060	822.544	0.013	0.197	0.000	3.425			
		3:BEBAN GEM	-613.513	1.36E 3	-16.320	-0.792	-0.124	-19.912			
		4:KOMBINASI	-0.780	5.14E 3	-0.011	1.061	-0.000	18.132			
		5:KOMB B. MA	-644.882	5.1E 3	-17.156	-0.091	-0.131	-8.309			
20999	12750	1:BEBAN MATI	-3.286	6.24E 3	-0.431	1.635	0.003	68.466			
		2:BEBAN HIDL	-1.406	1.6E 3	-0.163	0.435	0.001	19.849			
		3:BEBAN GEM	898.256	-1.64E 3	10.254	-1.710	-0.087	-44.968			
		4:KOMBINASI	-6.193	10E 3	-0.778	2.658	0.005	113.918			
		5:KOMB B. MA	939.039	5.48E 3	10.238	0.100	-0.087	33.159			
	13966	1:BEBAN MATI	3.286	-4.55E 3	0.431	-1.635	0.003	10.934			
		2:BEBAN HIDL	1.406	-1.6E 3	0.163	-0.435	0.001	3.654			
		3:BEBAN GEM	-898.256	1.64E 3	-10.254	1.710	-0.064	20.833			
		4:KOMBINASI	6.193	-8.02E 3	0.778	-2.658	0.006	18.967			
		5:KOMB B. MA	-939.039	-3.79E 3	-10.238	-0.100	-0.063	35.001			
21000	13681	1:BEBAN MATI	-10.685	-893.886	0.015	-1.744	-0.000	-32.383			
		2:BEBAN HIDL	-4.069	-477.069	-0.008	-1.213	0.000	-8.040			
		3:BEBAN GEM	-16.428	-1.41E 3	14.430	1.232	-0.099	0.832			
		4:KOMBINASI	-19.331	-1.84E 3	0.005	-4.034	-0.000	-51.723			
		5:KOMB B. MA	-30.375	-2.66E 3	15.161	-1.178	-0.105	-36.333			
	13960	1:BEBAN MATI	10.685	2.58E 3	-0.015	1.744	-0.000	6.819			
		2:BEBAN HIDL	4.069	477.069	0.008	1.213	0.000	1.022			
		3:BEBAN GEM	16.428	1.41E 3	-14.430	-1.232	-0.113	-21.586			
		4:KOMBINASI	19.331	3.86E 3	-0.005	4.034	0.000	9.818			
		5:KOMB B. MA	30.375	4.35E 3	-15.161	1.178	-0.118	-15.234			
21001	12751	1:BEBAN MATI	-8.554	4.7E 3	-1.146	5.105	0.008	48.878			
		2:BEBAN HIDL	-2.638	787.036	-0.320	2.752	0.002	9.758			
		3:BEBAN GEM	-2.77E 3	-1.58E 3	54.400	-1.718	-0.562	-42.929			
		4:KOMBINASI	-14.486	6.9E 3	-1.887	10.530	0.014	74.266			
		5:KOMB B. MA	-2.91E 3	3.52E 3	55.782	4.952	-0.580	9.658			
	13954	1:BEBAN MATI	8.554	-3.02E 3	1.146	-5.105	0.009	7.907			
		2:BEBAN HIDL	2.638	-787.036	0.320	-2.752	0.002	1.819			
		3:BEBAN GEM	2.77E 3	1.58E 3	-54.400	1.718	-0.239	19.663			
		4:KOMBINASI	14.486	-4.88E 3	1.887	-10.530	0.014	12.400			
		5:KOMB B. MA	2.91E 3	-1.83E 3	-55.782	-4.952	-0.240	29.645			
21002	12781	1:BEBAN MATI	-43.809	2.44E 3	0.012	0.848	0.001	14.254			
		2:BEBAN HIDL	-10.534	529.827	-0.040	0.250	0.000	4.039			
		3:BEBAN GEM	-1.73E 3	-4.35E 3	163.734	-0.409	-0.873	-60.716			
		4:KOMBINASI	-69.425	3.77E 3	-0.050	1.418	0.002	23.568			



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Job No 1	Sheet No 217	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.87E 3	-1.81E 3	171.909	0.569	-0.915	-47.074			
	13821	1:BEBAN MATI	43.809	-1.31E 3	-0.012	-0.848	-0.001	4.128			
		2:BEBAN HIDL	10.534	-529.827	0.040	-0.250	-0.000	1.156			
		3:BEBAN GEM	1.73E 3	4.35E 3	-163.734	0.409	-0.733	18.056			
		4:KOMBINASI	69.425	-2.42E 3	0.050	-1.418	-0.001	6.804			
		5:KOMB B. MA	1.87E 3	2.94E 3	-171.909	-0.569	-0.771	23.781			
21003	12771	1:BEBAN MATI	59.759	4.65E 3	0.610	-0.107	-0.004	52.537			
		2:BEBAN HIDL	20.662	2.04E 3	0.181	-0.051	-0.001	24.559			
		3:BEBAN GEM	490.446	-1.89E 3	18.223	-1.106	-0.142	-47.045			
		4:KOMBINASI	104.770	8.85E 3	1.022	-0.210	-0.007	102.338			
		5:KOMB B. MA	587.124	3.89E 3	19.853	-1.299	-0.154	17.875			
	14162	1:BEBAN MATI	-59.759	-4.2E 3	-0.610	0.107	-0.005	12.515			
		2:BEBAN HIDL	-20.662	-2.04E 3	-0.181	0.051	-0.001	5.498			
		3:BEBAN GEM	-490.446	1.89E 3	-18.223	1.106	-0.126	19.299			
		4:KOMBINASI	-104.770	-8.31E 3	-1.022	0.210	-0.008	23.815			
		5:KOMB B. MA	-587.124	-3.44E 3	-19.853	1.299	-0.138	36.077			
21004	13682	1:BEBAN MATI	5.094	-1.47E 3	-0.203	0.071	0.001	-32.576			
		2:BEBAN HIDL	0.619	-797.080	-0.083	0.026	0.000	-10.149			
		3:BEBAN GEM	1.27E 3	-1.89E 3	21.715	0.805	-0.139	0.143			
		4:KOMBINASI	7.103	-3.04E 3	-0.376	0.128	0.002	-55.329			
		5:KOMB B. MA	1.34E 3	-3.93E 3	22.548	0.933	-0.145	-38.515			
	14130	1:BEBAN MATI	-5.094	2.82E 3	0.203	-0.071	0.001	7.363			
		2:BEBAN HIDL	-0.619	797.080	0.083	-0.026	0.001	0.769			
		3:BEBAN GEM	-1.27E 3	1.89E 3	-21.715	-0.805	-0.117	-22.371			
		4:KOMBINASI	-7.103	4.66E 3	0.376	-0.128	0.002	10.065			
		5:KOMB B. MA	-1.34E 3	5.28E 3	-22.548	-0.933	-0.121	-15.665			
21005	12726	1:BEBAN MATI	4.880	5.72E 3	0.581	-0.137	-0.003	58.240			
		2:BEBAN HIDL	0.283	1.45E 3	0.152	-0.052	-0.001	16.664			
		3:BEBAN GEM	1.2E 3	-2.39E 3	37.149	-1.432	-0.238	-51.143			
		4:KOMBINASI	6.310	9.18E 3	0.941	-0.248	-0.005	96.550			
		5:KOMB B. MA	1.26E 3	4.08E 3	39.679	-1.672	-0.254	14.538			
	14124	1:BEBAN MATI	-4.880	-4.37E 3	-0.581	0.137	-0.003	1.117			
		2:BEBAN HIDL	-0.283	-1.45E 3	-0.152	0.052	-0.001	0.396			
		3:BEBAN GEM	-1.2E 3	2.39E 3	-37.149	1.432	-0.199	22.981			
		4:KOMBINASI	-6.310	-7.56E 3	-0.941	0.248	-0.006	1.973			
		5:KOMB B. MA	-1.26E 3	-2.73E 3	-39.679	1.672	-0.213	25.484			
21006	13683	1:BEBAN MATI	18.326	-1.83E 3	-0.155	0.077	0.001	-51.511			
		2:BEBAN HIDL	5.551	-923.810	-0.053	0.025	0.000	-18.195			
		3:BEBAN GEM	1.79E 3	-1.28E 3	30.302	0.640	-0.235	-0.320			
		4:KOMBINASI	30.874	-3.68E 3	-0.271	0.133	0.002	-90.925			
		5:KOMB B. MA	1.9E 3	-3.73E 3	31.630	0.764	-0.246	-62.764			
	13939	1:BEBAN MATI	-18.326	3.52E 3	0.155	-0.077	0.001	12.107			
		2:BEBAN HIDL	-5.551	923.810	0.053	-0.025	0.000	4.606			
		3:BEBAN GEM	-1.79E 3	1.28E 3	-30.302	-0.640	-0.210	-18.443			
		4:KOMBINASI	-30.874	5.71E 3	0.271	-0.133	0.002	21.897			
		5:KOMB B. MA	-1.9E 3	5.42E 3	-31.630	-0.764	-0.219	-4.496			
21007	12752	1:BEBAN MATI	19.371	6.91E 3	0.439	-0.144	-0.003	78.320			
		2:BEBAN HIDL	5.352	1.88E 3	0.107	-0.052	-0.001	24.555			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	914.972	-1.74E 3	-7.961	-1.309	0.064	-44.820			
		4:KOMBINASI	31.809	11.3E 3	0.698	-0.256	-0.005	133.271			
		5:KOMB B. MA	983.303	6.22E 3	-7.855	-1.549	0.063	45.991			
	13932	1:BEBAN MATI	-19.371	-5.23E 3	-0.439	0.144	-0.003	10.959			
		2:BEBAN HIDL	-5.352	-1.88E 3	-0.107	0.052	-0.001	3.127			
		3:BEBAN GEM	-914.972	1.74E 3	7.961	1.309	0.054	19.277			
		4:KOMBINASI	-31.809	-9.28E 3	-0.698	0.256	-0.005	18.154			
		5:KOMB B. MA	-983.303	-4.53E 3	7.855	1.549	0.052	33.076			
21008	13684	1:BEBAN MATI	6.587	-1.88E 3	-0.085	0.080	0.000	-51.667			
		2:BEBAN HIDL	1.432	-938.144	-0.035	0.025	0.000	-17.439			
		3:BEBAN GEM	413.784	-1.29E 3	-60.526	0.635	0.457	-0.015			
		4:KOMBINASI	10.196	-3.76E 3	-0.158	0.136	0.001	-89.902			
		5:KOMB B. MA	441.919	-3.8E 3	-63.659	0.761	0.481	-62.145			
	13925	1:BEBAN MATI	-6.587	3.57E 3	0.085	-0.080	0.001	11.567			
		2:BEBAN HIDL	-1.432	938.144	0.035	-0.025	0.000	3.639			
		3:BEBAN GEM	-413.784	1.29E 3	60.526	-0.635	0.433	-18.996			
		4:KOMBINASI	-10.196	5.79E 3	0.158	-0.136	0.001	19.702			
		5:KOMB B. MA	-441.919	5.49E 3	63.659	-0.761	0.456	-6.196			
21009	12753	1:BEBAN MATI	7.037	6.98E 3	0.673	-0.171	-0.005	80.134			
		2:BEBAN HIDL	1.296	1.84E 3	0.178	-0.050	-0.001	24.219			
		3:BEBAN GEM	-1.58E 3	-1.75E 3	86.900	-1.292	-0.670	-44.897			
		4:KOMBINASI	10.517	11.3E 3	1.092	-0.285	-0.008	134.911			
		5:KOMB B. MA	-1.65E 3	6.25E 3	92.025	-1.557	-0.709	47.524			
	13918	1:BEBAN MATI	-7.037	-5.29E 3	-0.673	0.171	-0.005	10.102			
		2:BEBAN HIDL	-1.296	-1.84E 3	-0.178	0.050	-0.001	2.896			
		3:BEBAN GEM	1.58E 3	1.75E 3	-86.900	1.292	-0.608	19.160			
		4:KOMBINASI	-10.517	-9.3E 3	-1.092	0.285	-0.008	16.755			
		5:KOMB B. MA	1.65E 3	-4.56E 3	-92.025	1.557	-0.645	31.957			
21010	13685	1:BEBAN MATI	9.752	-1.75E 3	-0.015	0.018	-0.000	-50.341			
		2:BEBAN HIDL	1.545	-977.498	-0.027	0.038	0.000	-18.205			
		3:BEBAN GEM	-1.11E 3	-1.29E 3	55.450	0.666	-0.400	0.069			
		4:KOMBINASI	14.174	-3.66E 3	-0.061	0.082	-0.000	-89.537			
		5:KOMB B. MA	-1.15E 3	-3.69E 3	58.192	0.740	-0.420	-61.192			
	13911	1:BEBAN MATI	-9.752	3.44E 3	0.015	-0.018	0.000	12.200			
		2:BEBAN HIDL	-1.545	977.498	0.027	-0.038	0.000	3.826			
		3:BEBAN GEM	1.11E 3	1.29E 3	-55.450	-0.666	-0.416	-19.053			
		4:KOMBINASI	-14.174	5.69E 3	0.061	-0.082	0.001	20.762			
		5:KOMB B. MA	1.15E 3	5.38E 3	-58.192	-0.740	-0.436	-5.510			
21011	12754	1:BEBAN MATI	-1.499	6.83E 3	0.517	-0.361	-0.004	80.460			
		2:BEBAN HIDL	-1.023	1.87E 3	0.113	-0.276	-0.001	23.861			
		3:BEBAN GEM	-809.771	-1.75E 3	33.480	-1.295	-0.253	-44.815			
		4:KOMBINASI	-3.435	11.2E 3	0.801	-0.875	-0.006	134.730			
		5:KOMB B. MA	-852.372	6.11E 3	35.739	-1.886	-0.269	47.721			
	13904	1:BEBAN MATI	1.499	-5.14E 3	-0.517	0.361	-0.004	7.588			
		2:BEBAN HIDL	1.023	-1.87E 3	-0.113	0.276	-0.001	3.640			
		3:BEBAN GEM	809.771	1.75E 3	-33.480	1.295	-0.240	19.028			
		4:KOMBINASI	3.435	-9.16E 3	-0.801	0.875	-0.006	14.930			
		5:KOMB B. MA	852.372	-4.42E 3	-35.739	1.886	-0.256	29.752			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 219	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21012	13686	1:BEBAN MATI	46.152	-2.52E 3	0.019	0.670	-0.001	-62.487			
		2:BEBAN HIDL	8.273	-762.866	0.004	-0.741	-0.000	-15.439			
		3:BEBAN GEM	138.859	-1.43E 3	-8.220	0.578	0.144	-1.993			
		4:KOMBINASI	68.619	-4.24E 3	0.028	-0.382	-0.002	-99.688			
		5:KOMB B. MA	196.918	-4.48E 3	-8.610	0.832	0.150	-73.844			
13793	13793	1:BEBAN MATI	-46.152	4.2E 3	-0.019	-0.670	0.001	13.063			
		2:BEBAN HIDL	-8.273	762.866	-0.004	0.741	0.000	4.217			
		3:BEBAN GEM	-138.859	1.43E 3	8.220	-0.578	-0.023	-19.083			
		4:KOMBINASI	-68.619	6.27E 3	-0.028	0.382	0.001	22.424			
		5:KOMB B. MA	-196.918	6.17E 3	8.610	-0.832	-0.024	-4.443			
21013	12772	1:BEBAN MATI	59.759	4.65E 3	-0.610	0.107	0.004	52.537			
		2:BEBAN HIDL	20.662	2.04E 3	-0.181	0.051	0.001	24.559			
		3:BEBAN GEM	514.881	-1.89E 3	-15.547	-1.112	0.124	-47.007			
		4:KOMBINASI	104.770	8.85E 3	-1.022	0.210	0.007	102.338			
		5:KOMB B. MA	612.781	3.89E 3	-17.043	-1.030	0.136	17.915			
14176	14176	1:BEBAN MATI	-59.759	-4.2E 3	0.610	-0.107	0.005	12.515			
		2:BEBAN HIDL	-20.662	-2.04E 3	0.181	-0.051	0.001	5.498			
		3:BEBAN GEM	-514.881	1.89E 3	15.547	1.112	0.104	19.257			
		4:KOMBINASI	-104.770	-8.31E 3	1.022	-0.210	0.008	23.815			
		5:KOMB B. MA	-612.781	-3.44E 3	17.043	1.030	0.115	36.033			
21014	13687	1:BEBAN MATI	5.094	-1.47E 3	0.203	-0.071	-0.001	-32.576			
		2:BEBAN HIDL	0.619	-797.080	0.083	-0.026	-0.000	-10.149			
		3:BEBAN GEM	1.31E 3	-1.88E 3	-31.872	0.799	0.197	0.100			
		4:KOMBINASI	7.103	-3.04E 3	0.376	-0.128	-0.002	-55.329			
		5:KOMB B. MA	1.38E 3	-3.92E 3	-33.212	0.752	0.206	-38.560			
14142	14142	1:BEBAN MATI	-5.094	2.82E 3	-0.203	0.071	-0.001	7.363			
		2:BEBAN HIDL	-0.619	797.080	-0.083	0.026	-0.001	0.769			
		3:BEBAN GEM	-1.31E 3	1.88E 3	31.872	-0.799	0.178	-22.281			
		4:KOMBINASI	-7.103	4.66E 3	-0.376	0.128	-0.002	10.065			
		5:KOMB B. MA	-1.38E 3	5.28E 3	33.212	-0.752	0.185	-15.571			
21015	12728	1:BEBAN MATI	4.880	5.72E 3	-0.581	0.137	0.003	58.240			
		2:BEBAN HIDL	0.283	1.45E 3	-0.152	0.052	0.001	16.664			
		3:BEBAN GEM	1.26E 3	-2.38E 3	-44.707	-1.433	0.285	-50.942			
		4:KOMBINASI	6.310	9.18E 3	-0.941	0.248	0.005	96.550			
		5:KOMB B. MA	1.33E 3	4.09E 3	-47.614	-1.336	0.304	14.750			
14136	14136	1:BEBAN MATI	-4.880	-4.37E 3	0.581	-0.137	0.003	1.117			
		2:BEBAN HIDL	-0.283	-1.45E 3	0.152	-0.052	0.001	0.396			
		3:BEBAN GEM	-1.26E 3	2.38E 3	44.707	1.433	0.241	22.916			
		4:KOMBINASI	-6.310	-7.56E 3	0.941	-0.248	0.006	1.973			
		5:KOMB B. MA	-1.33E 3	-2.74E 3	47.614	1.336	0.257	25.417			
21016	13688	1:BEBAN MATI	18.326	-1.83E 3	0.155	-0.077	-0.001	-51.511			
		2:BEBAN HIDL	5.551	-923.809	0.053	-0.025	-0.000	-18.195			
		3:BEBAN GEM	1.89E 3	-1.27E 3	-61.449	0.638	0.466	-0.347			
		4:KOMBINASI	30.874	-3.68E 3	0.271	-0.133	-0.002	-90.925			
		5:KOMB B. MA	2E 3	-3.73E 3	-64.334	0.578	0.488	-62.792			
13942	13942	1:BEBAN MATI	-18.326	3.52E 3	-0.155	0.077	-0.001	12.107			
		2:BEBAN HIDL	-5.551	923.809	-0.053	0.025	-0.000	4.606			
		3:BEBAN GEM	-1.89E 3	1.27E 3	61.449	-0.638	0.438	-18.381			



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Job No 1	Sheet No 220	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-30.874	5.71E 3	-0.271	0.133	-0.002	21.897			
		5:KOMB B. MA	-2E 3	5.41E 3	64.334	-0.578	0.459	-4.430			
21017	12755	1:BEBAN MATI	19.371	6.91E 3	-0.439	0.144	0.003	78.320			
		2:BEBAN HIDL	5.352	1.88E 3	-0.107	0.052	0.001	24.555			
		3:BEBAN GEM	440.164	-1.73E 3	-15.150	-1.308	0.065	-44.643			
		4:KOMBINASI	31.809	11.3E 3	-0.698	0.256	0.005	133.271			
		5:KOMB B. MA	484.754	6.23E 3	-16.411	-1.198	0.072	46.177			
	13935	1:BEBAN MATI	-19.371	-5.23E 3	0.439	-0.144	0.003	10.959			
		2:BEBAN HIDL	-5.352	-1.88E 3	0.107	-0.052	0.001	3.127			
		3:BEBAN GEM	-440.164	1.73E 3	15.150	1.308	0.158	19.219			
		4:KOMBINASI	-31.809	-9.28E 3	0.698	-0.256	0.005	18.154			
		5:KOMB B. MA	-484.754	-4.54E 3	16.411	1.198	0.170	33.015			
21018	13689	1:BEBAN MATI	6.587	-1.88E 3	0.085	-0.080	-0.000	-51.667			
		2:BEBAN HIDL	1.432	-938.143	0.035	-0.025	-0.000	-17.439			
		3:BEBAN GEM	-548.479	-1.29E 3	52.886	0.633	-0.313	-0.041			
		4:KOMBINASI	10.196	-3.76E 3	0.158	-0.136	-0.001	-89.902			
		5:KOMB B. MA	-568.457	-3.8E 3	55.636	0.569	-0.330	-62.173			
	13928	1:BEBAN MATI	-6.587	3.57E 3	-0.085	0.080	-0.001	11.567			
		2:BEBAN HIDL	-1.432	938.143	-0.035	0.025	-0.000	3.639			
		3:BEBAN GEM	548.479	1.29E 3	-52.886	-0.633	-0.465	-18.933			
		4:KOMBINASI	-10.196	5.79E 3	-0.158	0.136	-0.001	19.702			
		5:KOMB B. MA	568.457	5.49E 3	-55.636	-0.569	-0.489	-6.129			
21019	12756	1:BEBAN MATI	7.037	6.98E 3	-0.673	0.171	0.005	80.134			
		2:BEBAN HIDL	1.296	1.84E 3	-0.178	0.050	0.001	24.219			
		3:BEBAN GEM	-1.48E 3	-1.74E 3	-28.837	-1.298	0.232	-44.736			
		4:KOMBINASI	10.517	11.3E 3	-1.092	0.285	0.008	134.911			
		5:KOMB B. MA	-1.54E 3	6.25E 3	-31.059	-1.163	0.249	47.693			
	13921	1:BEBAN MATI	-7.037	-5.29E 3	0.673	-0.171	0.005	10.102			
		2:BEBAN HIDL	-1.296	-1.84E 3	0.178	-0.050	0.001	2.896			
		3:BEBAN GEM	1.48E 3	1.74E 3	28.837	1.298	0.193	19.106			
		4:KOMBINASI	-10.517	-9.3E 3	1.092	-0.285	0.008	16.755			
		5:KOMB B. MA	1.54E 3	-4.57E 3	31.059	1.163	0.208	31.901			
21020	13690	1:BEBAN MATI	9.752	-1.75E 3	0.015	-0.017	0.000	-50.341			
		2:BEBAN HIDL	1.545	-977.497	0.027	-0.038	-0.000	-18.205			
		3:BEBAN GEM	-1E 3	-1.29E 3	-34.151	0.590	0.244	-0.026			
		4:KOMBINASI	14.174	-3.66E 3	0.061	-0.082	0.000	-89.537			
		5:KOMB B. MA	-1.04E 3	-3.69E 3	-35.828	0.579	0.257	-61.291			
	13914	1:BEBAN MATI	-9.752	3.44E 3	-0.015	0.017	-0.000	12.200			
		2:BEBAN HIDL	-1.545	977.497	-0.027	0.038	-0.000	3.826			
		3:BEBAN GEM	1E 3	1.29E 3	34.151	-0.590	0.258	-18.974			
		4:KOMBINASI	-14.174	5.69E 3	-0.061	0.082	-0.001	20.762			
		5:KOMB B. MA	1.04E 3	5.38E 3	35.828	-0.579	0.270	-5.428			
21021	12757	1:BEBAN MATI	-1.499	6.83E 3	-0.517	0.361	0.004	80.460			
		2:BEBAN HIDL	-1.023	1.87E 3	-0.113	0.276	0.001	23.861			
		3:BEBAN GEM	-821.596	-1.74E 3	-13.577	-1.227	0.099	-44.707			
		4:KOMBINASI	-3.435	11.2E 3	-0.801	0.875	0.006	134.730			
		5:KOMB B. MA	-864.788	6.12E 3	-14.841	-0.762	0.109	47.835			
	13907	1:BEBAN MATI	1.499	-5.14E 3	0.517	-0.361	0.004	7.588			



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Job No 1	Sheet No 221	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	1.023	-1.87E 3	0.113	-0.276	0.001	3.640			
		3:BEBAN GEM	821.596	1.74E 3	13.577	1.227	0.100	19.090			
		4:KOMBINASI	3.435	-9.16E 3	0.801	-0.875	0.006	14.930			
		5:KOMB B. MA	864.788	-4.43E 3	14.841	0.762	0.110	29.816			
21022	13691	1:BEBAN MATI	46.152	-2.52E 3	-0.019	-0.670	0.001	-62.487			
		2:BEBAN HIDL	8.273	-762.866	-0.004	0.741	0.000	-15.439			
		3:BEBAN GEM	6.866	-1.34E 3	11.275	0.900	-0.173	-0.314			
		4:KOMBINASI	68.619	-4.24E 3	-0.028	0.382	0.002	-99.688			
		5:KOMB B. MA	58.325	-4.38E 3	11.817	0.720	-0.180	-72.080			
	13796	1:BEBAN MATI	-46.152	4.2E 3	0.019	0.670	-0.001	13.063			
		2:BEBAN HIDL	-8.273	762.866	0.004	-0.741	-0.000	4.217			
		3:BEBAN GEM	-6.866	1.34E 3	-11.275	-0.900	0.007	-19.358			
		4:KOMBINASI	-68.619	6.27E 3	0.028	-0.382	-0.001	22.424			
		5:KOMB B. MA	-58.325	6.07E 3	-11.817	-0.720	0.006	-4.733			
21023	12773	1:BEBAN MATI	32.723	2.53E 3	0.130	-7.467	-0.002	29.575			
		2:BEBAN HIDL	12.424	914.402	0.093	-3.942	-0.001	12.093			
		3:BEBAN GEM	-1.77E 3	-1.76E 3	-92.854	0.023	0.726	-46.601			
		4:KOMBINASI	59.146	4.5E 3	0.305	-15.267	-0.004	54.838			
		5:KOMB B. MA	-1.81E 3	1.24E 3	-97.311	-9.808	0.760	-12.100			
	14193	1:BEBAN MATI	-32.723	-2.08E 3	-0.130	7.467	-0.000	4.372			
		2:BEBAN HIDL	-12.424	-914.402	-0.093	3.942	-0.000	1.358			
		3:BEBAN GEM	1.77E 3	1.76E 3	92.854	-0.023	0.640	20.743			
		4:KOMBINASI	-59.146	-3.96E 3	-0.305	15.267	-0.001	7.420			
		5:KOMB B. MA	1.81E 3	-785.392	97.311	9.808	0.672	26.967			
21024	13692	1:BEBAN MATI	-0.758	-1.08E 3	0.449	0.256	-0.002	-29.151			
		2:BEBAN HIDL	0.128	-643.719	0.160	0.032	-0.001	-9.429			
		3:BEBAN GEM	-596.542	-1.95E 3	-30.312	0.585	0.188	0.874			
		4:KOMBINASI	-0.706	-2.32E 3	0.794	0.358	-0.004	-50.067			
		5:KOMB B. MA	-627.051	-3.51E 3	-31.283	0.889	0.195	-33.891			
	14523	1:BEBAN MATI	0.758	2.43E 3	-0.449	-0.256	-0.003	8.510			
		2:BEBAN HIDL	-0.128	643.719	-0.160	-0.032	-0.001	1.853			
		3:BEBAN GEM	596.542	1.95E 3	30.312	-0.585	0.169	-23.775			
		4:KOMBINASI	0.706	3.94E 3	-0.794	-0.358	-0.005	13.177			
		5:KOMB B. MA	627.051	4.86E 3	31.283	-0.889	0.174	-15.342			
21025	12730	1:BEBAN MATI	3.331	5.17E 3	0.688	-1.807	-0.004	50.978			
		2:BEBAN HIDL	1.020	1.29E 3	0.283	-0.606	-0.002	14.334			
		3:BEBAN GEM	-584.549	-2.38E 3	-32.433	-1.348	0.201	-51.566			
		4:KOMBINASI	5.630	8.26E 3	1.277	-3.137	-0.007	84.109			
		5:KOMB B. MA	-609.833	3.44E 3	-33.197	-3.586	0.207	5.435			
	14520	1:BEBAN MATI	-3.331	-3.82E 3	-0.688	1.807	-0.004	1.936			
		2:BEBAN HIDL	-1.020	-1.29E 3	-0.283	0.606	-0.002	0.788			
		3:BEBAN GEM	584.549	2.38E 3	32.433	1.348	0.180	23.517			
		4:KOMBINASI	-5.630	-6.64E 3	-1.277	3.137	-0.008	3.584			
		5:KOMB B. MA	609.833	-2.09E 3	33.197	3.586	0.184	27.102			
21026	13693	1:BEBAN MATI	7.942	-1.41E 3	0.059	0.911	-0.001	-44.392			
		2:BEBAN HIDL	1.907	-777.324	0.037	0.253	-0.000	-15.610			
		3:BEBAN GEM	-135.401	-1.32E 3	-25.733	0.285	0.193	-0.176			
		4:KOMBINASI	12.582	-2.94E 3	0.130	1.497	-0.001	-78.246			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

222

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-133.084	-3.27E 3	-26.938	1.361	0.202	-53.943			
	14388	1:BEAN MATI	-7.942	3.1E 3	-0.059	-0.911	-0.000	11.173			
		2:BEAN HIDL	-1.907	777.324	-0.037	-0.253	-0.000	4.176			
		3:BEAN GEM	135.401	1.32E 3	25.733	-0.285	0.185	-19.311			
		4:KOMBINASI	-12.582	4.97E 3	-0.130	-1.497	-0.001	20.089			
		5:KOMB B. MA	133.084	4.96E 3	26.938	-1.361	0.194	-6.598			
21027	12758	1:BEAN MATI	9.454	6.22E 3	0.532	-1.860	-0.004	69.473			
		2:BEAN HIDL	1.929	1.64E 3	0.212	-0.667	-0.002	21.424			
		3:BEAN GEM	-412.952	-1.68E 3	-20.730	-1.072	0.172	-44.677			
		4:KOMBINASI	14.431	10.1E 3	0.977	-3.300	-0.007	117.646			
		5:KOMB B. MA	-422.988	5.45E 3	-21.107	-3.386	0.176	35.416			
	14382	1:BEAN MATI	-9.454	-4.54E 3	-0.532	1.860	-0.004	9.682			
		2:BEAN HIDL	-1.929	-1.64E 3	-0.212	0.667	-0.002	2.765			
		3:BEAN GEM	412.952	1.68E 3	20.730	1.072	0.133	19.983			
		4:KOMBINASI	-14.431	-8.08E 3	-0.977	3.300	-0.008	16.042			
		5:KOMB B. MA	422.988	-3.76E 3	21.107	3.386	0.134	32.323			
21028	13694	1:BEAN MATI	0.731	-1.5E 3	-0.027	0.622	-0.000	-44.976			
		2:BEAN HIDL	-0.060	-822.543	0.013	0.197	-0.000	-15.525			
		3:BEAN GEM	72.341	-1.35E 3	-16.314	0.255	0.126	0.059			
		4:KOMBINASI	0.780	-3.11E 3	-0.011	1.061	-0.000	-78.811			
		5:KOMB B. MA	76.652	-3.41E 3	-17.148	1.008	0.132	-54.229			
	14376	1:BEAN MATI	-0.731	3.18E 3	0.027	-0.622	0.000	10.543			
		2:BEAN HIDL	0.060	822.543	-0.013	-0.197	-0.000	3.425			
		3:BEAN GEM	-72.341	1.35E 3	16.314	-0.255	0.114	-19.970			
		4:KOMBINASI	-0.780	5.14E 3	0.011	-1.061	0.000	18.132			
		5:KOMB B. MA	-76.652	5.1E 3	17.148	-1.008	0.120	-8.370			
21029	12759	1:BEAN MATI	-3.286	6.24E 3	0.431	-1.635	-0.003	68.466			
		2:BEAN HIDL	-1.406	1.6E 3	0.163	-0.435	-0.001	19.849			
		3:BEAN GEM	235.065	-1.68E 3	4.292	-0.963	-0.049	-44.930			
		4:KOMBINASI	-6.193	10E 3	0.778	-2.658	-0.005	113.918			
		5:KOMB B. MA	242.689	5.44E 3	5.035	-2.907	-0.055	33.199			
	14370	1:BEAN MATI	3.286	-4.55E 3	-0.431	1.635	-0.003	10.934			
		2:BEAN HIDL	1.406	-1.6E 3	-0.163	0.435	-0.001	3.654			
		3:BEAN GEM	-235.065	1.68E 3	-4.292	0.963	-0.014	20.285			
		4:KOMBINASI	6.193	-8.02E 3	-0.778	2.658	-0.006	18.967			
		5:KOMB B. MA	-242.689	-3.75E 3	-5.035	2.907	-0.019	34.425			
21030	13695	1:BEAN MATI	-10.685	-893.885	-0.015	1.744	0.000	-32.383			
		2:BEAN HIDL	-4.068	-477.068	0.008	1.213	-0.000	-8.040			
		3:BEAN GEM	-460.789	-1.38E 3	-15.678	-0.077	0.117	0.618			
		4:KOMBINASI	-19.331	-1.84E 3	-0.005	4.034	0.000	-51.723			
		5:KOMB B. MA	-496.955	-2.63E 3	-16.472	2.391	0.123	-36.557			
	14364	1:BEAN MATI	10.685	2.58E 3	0.015	-1.744	0.000	6.819			
		2:BEAN HIDL	4.068	477.068	-0.008	-1.213	-0.000	1.022			
		3:BEAN GEM	460.789	1.38E 3	15.678	0.077	0.114	-20.976			
		4:KOMBINASI	19.331	3.86E 3	0.005	-4.034	-0.000	9.818			
		5:KOMB B. MA	496.955	4.32E 3	16.472	-2.391	0.120	-14.593			
21031	12760	1:BEAN MATI	-8.554	4.7E 3	1.146	-5.105	-0.008	48.878			
		2:BEAN HIDL	-2.638	787.036	0.320	-2.752	-0.002	9.758			



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Job No

1

Sheet No

223

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-2.19E 3	-1.56E 3	-8.147	-0.463	0.192	-42.275			
		4:KOMBINASI	-14.486	6.9E 3	1.887	-10.530	-0.014	74.266			
		5:KOMB B. MA	-2.31E 3	3.53E 3	-7.217	-7.242	0.192	10.344			
	14358	1:BEBAN MATI	8.554	-3.02E 3	-1.146	5.105	-0.009	7.907			
		2:BEBAN HIDL	2.638	-787.036	-0.320	2.752	-0.002	1.819			
		3:BEBAN GEM	2.19E 3	1.56E 3	8.147	0.463	-0.072	19.267			
		4:KOMBINASI	14.486	-4.88E 3	-1.887	10.530	-0.014	12.400			
		5:KOMB B. MA	2.31E 3	-1.85E 3	7.217	7.242	-0.086	29.229			
21032	12782	1:BEBAN MATI	-43.809	2.44E 3	-0.012	-0.848	-0.001	14.254			
		2:BEBAN HIDL	-10.534	529.827	0.040	-0.250	-0.000	4.039			
		3:BEBAN GEM	-1.37E 3	-4.37E 3	-196.879	-2.168	1.017	-61.417			
		4:KOMBINASI	-69.425	3.77E 3	0.050	-1.418	-0.002	23.568			
		5:KOMB B. MA	-1.49E 3	-1.83E 3	-206.711	-3.275	1.066	-47.810			
	14267	1:BEBAN MATI	43.809	-1.31E 3	0.012	0.848	0.001	4.128			
		2:BEBAN HIDL	10.534	-529.827	-0.040	0.250	0.000	1.156			
		3:BEBAN GEM	1.37E 3	4.37E 3	196.879	2.168	0.914	18.586			
		4:KOMBINASI	69.425	-2.42E 3	-0.050	1.418	0.001	6.804			
		5:KOMB B. MA	1.49E 3	2.96E 3	206.711	3.275	0.961	24.337			
21033	13696	1:BEBAN MATI	18.384	-1.18E 3	0.384	-0.391	-0.002	-24.553			
		2:BEBAN HIDL	3.573	-580.105	0.127	-0.356	-0.001	-10.048			
		3:BEBAN GEM	99.369	-2.19E 3	-10.081	0.898	0.062	3.015			
		4:KOMBINASI	27.778	-2.35E 3	0.663	-1.038	-0.004	-45.540			
		5:KOMB B. MA	124.866	-3.83E 3	-10.126	0.339	0.063	-27.416			
	14452	1:BEBAN MATI	-18.384	1.54E 3	-0.384	0.391	-0.002	8.525			
		2:BEBAN HIDL	-3.573	580.105	-0.127	0.356	-0.001	3.221			
		3:BEBAN GEM	-99.369	2.19E 3	10.081	-0.898	0.056	-28.828			
		4:KOMBINASI	-27.778	2.78E 3	-0.663	1.038	-0.004	15.384			
		5:KOMB B. MA	-124.866	4.19E 3	10.126	-0.339	0.057	-19.812			
21034	12732	1:BEBAN MATI	16.680	3.34E 3	-1.149	0.637	0.007	35.723			
		2:BEBAN HIDL	4.386	1.23E 3	-0.227	0.410	0.001	13.522			
		3:BEBAN GEM	-450.431	-2.46E 3	-35.810	-1.624	0.223	-53.022			
		4:KOMBINASI	27.034	5.98E 3	-1.742	1.421	0.010	64.503			
		5:KOMB B. MA	-453.640	1.49E 3	-38.886	-0.822	0.242	-11.837			
	14445	1:BEBAN MATI	-16.680	-2.98E 3	1.149	-0.637	0.007	1.417			
		2:BEBAN HIDL	-4.386	-1.23E 3	0.227	-0.410	0.001	0.995			
		3:BEBAN GEM	450.431	2.46E 3	35.810	1.624	0.198	24.063			
		4:KOMBINASI	-27.034	-5.54E 3	1.742	-1.421	0.011	3.292			
		5:KOMB B. MA	453.640	-1.13E 3	38.886	0.822	0.216	27.280			
21035	13697	1:BEBAN MATI	6.513	-1.56E 3	-0.069	0.325	-0.000	-36.099			
		2:BEBAN HIDL	0.601	-679.231	0.125	0.028	-0.001	-15.008			
		3:BEBAN GEM	-1.558	-1.33E 3	-38.259	0.590	0.209	-0.166			
		4:KOMBINASI	8.777	-2.96E 3	0.118	0.435	-0.001	-67.332			
		5:KOMB B. MA	5.238	-3.37E 3	-40.165	0.961	0.219	-45.278			
	14514	1:BEBAN MATI	-6.513	1.86E 3	0.069	-0.325	0.001	19.327			
		2:BEBAN HIDL	-0.601	679.231	-0.125	-0.028	-0.001	8.347			
		3:BEBAN GEM	1.558	1.33E 3	38.259	-0.590	0.166	-12.898			
		4:KOMBINASI	-8.777	3.32E 3	-0.118	-0.435	0.000	36.548			
		5:KOMB B. MA	-5.238	3.67E 3	40.165	-0.961	0.175	10.793			



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Job No 1	Sheet No 224	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21036	12761	1:BEBAN MATI	11.885	4.23E 3	-1.380	1.426	0.007	50.984			
		2:BEBAN HIDL	2.225	1.64E 3	-0.103	0.908	0.001	21.216			
		3:BEBAN GEM	-486.471	-1.61E 3	-72.708	-1.755	0.376	-44.304			
		4:KOMBINASI	17.821	7.7E 3	-1.821	3.165	0.009	95.126			
		5:KOMB B. MA	-497.575	3.52E 3	-77.785	0.128	0.402	17.194			
14503		1:BEBAN MATI	-11.885	-3.93E 3	1.380	-1.426	0.006	-10.998			
		2:BEBAN HIDL	-2.225	-1.64E 3	0.103	-0.908	0.000	-5.105			
		3:BEBAN GEM	486.471	1.61E 3	72.708	1.755	0.337	28.496			
		4:KOMBINASI	-17.821	-7.34E 3	1.821	-3.165	0.008	-21.365			
		5:KOMB B. MA	497.575	-3.22E 3	77.785	-0.128	0.361	15.860			
21037	13698	1:BEBAN MATI	8.864	-1.63E 3	0.069	0.430	-0.001	-36.342			
		2:BEBAN HIDL	2.347	-736.883	0.202	0.019	-0.001	-14.982			
		3:BEBAN GEM	-384.724	-1.37E 3	-77.156	0.613	0.375	0.147			
		4:KOMBINASI	14.392	-3.13E 3	0.406	0.546	-0.003	-67.581			
		5:KOMB B. MA	-393.688	-3.51E 3	-80.823	1.085	0.392	-45.177			
14492		1:BEBAN MATI	-8.864	1.93E 3	-0.069	-0.430	0.000	18.903			
		2:BEBAN HIDL	-2.347	736.883	-0.202	-0.019	-0.001	7.755			
		3:BEBAN GEM	384.724	1.37E 3	77.156	-0.613	0.382	-13.556			
		4:KOMBINASI	-14.392	3.49E 3	-0.406	-0.546	-0.001	35.092			
		5:KOMB B. MA	393.688	3.81E 3	80.823	-1.085	0.401	9.323			
21038	12762	1:BEBAN MATI	21.712	4.19E 3	-1.757	0.995	0.008	48.641			
		2:BEBAN HIDL	6.883	1.6E 3	-0.159	0.683	0.001	19.576			
		3:BEBAN GEM	-1.33E 3	-1.62E 3	-74.292	-1.890	0.418	-44.796			
		4:KOMBINASI	37.067	7.58E 3	-2.363	2.287	0.011	89.691			
		5:KOMB B. MA	-1.37E 3	3.44E 3	-79.860	-0.579	0.448	13.350			
14481		1:BEBAN MATI	-21.712	-3.88E 3	1.757	-0.995	0.009	-9.072			
		2:BEBAN HIDL	-6.883	-1.6E 3	0.159	-0.683	0.001	-3.897			
		3:BEBAN GEM	1.33E 3	1.62E 3	74.292	1.890	0.311	28.916			
		4:KOMBINASI	-37.067	-7.22E 3	2.363	-2.287	0.012	-17.121			
		5:KOMB B. MA	1.37E 3	-3.14E 3	79.860	0.579	0.335	18.952			
21039	13699	1:BEBAN MATI	1.411	-658.934	0.209	-1.933	-0.002	-17.867			
		2:BEBAN HIDL	0.054	-331.474	0.052	-0.989	-0.000	-6.676			
		3:BEBAN GEM	-833.470	-1.45E 3	-1.664	1.069	-0.000	0.422			
		4:KOMBINASI	1.779	-1.32E 3	0.334	-3.903	-0.002	-32.122			
		5:KOMB B. MA	-873.700	-2.38E 3	-1.507	-1.405	-0.002	-21.429			
14470		1:BEBAN MATI	-1.411	959.261	-0.209	1.933	-0.000	9.932			
		2:BEBAN HIDL	-0.054	331.474	-0.052	0.989	-0.000	3.426			
		3:BEBAN GEM	833.470	1.45E 3	1.664	-1.069	0.017	-14.594			
		4:KOMBINASI	-1.779	1.68E 3	-0.334	3.903	-0.001	17.400			
		5:KOMB B. MA	873.700	2.68E 3	1.507	1.405	0.017	-3.336			
21040	12763	1:BEBAN MATI	-22.131	2.54E 3	-0.084	5.005	-0.001	33.542			
		2:BEBAN HIDL	-8.450	842.137	0.321	2.480	-0.002	12.079			
		3:BEBAN GEM	-173.166	-1.62E 3	-85.139	-1.747	0.438	-44.735			
		4:KOMBINASI	-40.078	4.39E 3	0.413	9.974	-0.004	59.577			
		5:KOMB B. MA	-209.026	1.35E 3	-89.287	4.659	0.458	-6.182			
14459		1:BEBAN MATI	22.131	-2.24E 3	0.084	-5.005	0.002	-10.132			
		2:BEBAN HIDL	8.450	-842.137	-0.321	-2.480	-0.001	-3.821			
		3:BEBAN GEM	173.166	1.62E 3	85.139	1.747	0.397	28.882			



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Job No

1

Sheet No

225

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	40.078	-4.03E 3	-0.413	-9.974	0.000	-18.272			
		5:KOMB B. MA	209.026	-1.04E 3	89.287	-4.659	0.418	17.901			
21041	13700	1:BEBAN MATI	29.316	-1.15E 3	0.587	-1.159	-0.003	-32.654			
		2:BEBAN HIDL	8.136	-526.226	0.259	-0.411	-0.001	-14.344			
		3:BEBAN GEM	99.732	-1.52E 3	-44.023	0.342	0.145	-3.535			
		4:KOMBINASI	48.196	-2.22E 3	1.120	-2.049	-0.005	-62.135			
		5:KOMB B. MA	138.916	-3.05E 3	-45.481	-1.047	0.149	-44.972			
	14427	1:BEBAN MATI	-29.316	1.37E 3	-0.587	1.159	-0.001	23.393			
		2:BEBAN HIDL	-8.136	526.226	-0.259	0.411	-0.001	10.474			
		3:BEBAN GEM	-99.732	1.52E 3	44.023	-0.342	0.179	-7.620			
		4:KOMBINASI	-48.196	2.49E 3	-1.120	2.049	-0.003	44.829			
		5:KOMB B. MA	-138.916	3.28E 3	45.481	1.047	0.185	21.676			
21042	13701	1:BEBAN MATI	30.157	-1.43E 3	0.170	-0.177	-0.001	-28.542			
		2:BEBAN HIDL	6.637	-716.362	0.056	-0.015	-0.000	-12.094			
		3:BEBAN GEM	96.057	-2.14E 3	-11.118	0.833	0.058	3.530			
		4:KOMBINASI	46.808	-2.87E 3	0.293	-0.236	-0.002	-53.601			
		5:KOMB B. MA	134.999	-4.11E 3	-11.470	0.689	0.060	-32.092			
	14260	1:BEBAN MATI	-30.157	1.79E 3	-0.170	0.177	-0.001	9.545			
		2:BEBAN HIDL	-6.637	716.362	-0.056	0.015	-0.000	3.664			
		3:BEBAN GEM	-96.057	2.14E 3	11.118	-0.833	0.073	-28.755			
		4:KOMBINASI	-46.808	3.3E 3	-0.293	0.236	-0.002	17.316			
		5:KOMB B. MA	-134.999	4.48E 3	11.470	-0.689	0.075	-18.450			
21043	12734	1:BEBAN MATI	25.020	3.69E 3	-0.502	0.208	0.003	40.080			
		2:BEBAN HIDL	6.383	1.42E 3	-0.200	0.043	0.001	15.749			
		3:BEBAN GEM	-352.860	-2.55E 3	-14.124	-1.523	0.086	-53.522			
		4:KOMBINASI	40.236	6.69E 3	-0.923	0.318	0.005	73.295			
		5:KOMB B. MA	-341.653	1.86E 3	-15.452	-1.366	0.093	-6.669			
	14252	1:BEBAN MATI	-25.020	-3.33E 3	0.502	-0.208	0.003	1.192			
		2:BEBAN HIDL	-6.383	-1.42E 3	0.200	-0.043	0.001	0.944			
		3:BEBAN GEM	352.860	2.55E 3	14.124	1.523	0.081	23.544			
		4:KOMBINASI	-40.236	-6.26E 3	0.923	-0.318	0.006	2.941			
		5:KOMB B. MA	341.653	-1.5E 3	15.452	1.366	0.089	26.480			
21044	13702	1:BEBAN MATI	13.864	-1.66E 3	0.115	-0.197	-0.001	-40.431			
		2:BEBAN HIDL	2.408	-745.409	0.065	-0.009	-0.000	-17.586			
		3:BEBAN GEM	-124.703	-1.29E 3	-25.292	0.534	0.133	-0.151			
		4:KOMBINASI	20.489	-3.19E 3	0.242	-0.252	-0.001	-76.655			
		5:KOMB B. MA	-115.630	-3.47E 3	-26.402	0.359	0.139	-51.141			
	14343	1:BEBAN MATI	-13.864	1.96E 3	-0.115	0.197	-0.001	22.653			
		2:BEBAN HIDL	-2.408	745.409	-0.065	0.009	-0.000	10.276			
		3:BEBAN GEM	124.703	1.29E 3	25.292	-0.534	0.115	-12.528			
		4:KOMBINASI	-20.489	3.55E 3	-0.242	0.252	-0.001	43.626			
		5:KOMB B. MA	115.630	3.77E 3	26.402	-0.359	0.120	15.665			
21045	12764	1:BEBAN MATI	15.656	4.87E 3	-0.844	0.307	0.004	58.060			
		2:BEBAN HIDL	3.409	1.99E 3	-0.324	0.006	0.002	25.266			
		3:BEBAN GEM	-599.557	-1.74E 3	-20.190	-1.521	0.115	-44.949			
		4:KOMBINASI	24.241	9.03E 3	-1.532	0.379	0.007	110.097			
		5:KOMB B. MA	-611.834	4.24E 3	-22.238	-1.286	0.126	26.023			
	14330	1:BEBAN MATI	-15.656	-4.57E 3	0.844	-0.307	0.004	-11.771			



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Job No 1	Sheet No 226	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enginering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-3.409	-1.99E 3	0.324	-0.006	0.002	-5.740			
		3:BEBAN GEM	599.557	1.74E 3	20.190	1.521	0.083	27.876			
		4:KOMBINASI	-24.241	-8.67E 3	1.532	-0.379	0.008	-23.309			
		5:KOMB B. MA	611.834	-3.94E 3	22.238	1.286	0.092	14.055			
21046	13703	1:BEBAN MATI	12.673	-1.68E 3	0.195	-0.199	-0.001	-39.637			
		2:BEBAN HIDL	2.760	-783.557	0.077	-0.014	-0.000	-16.915			
		3:BEBAN GEM	-349.642	-1.31E 3	-17.073	0.533	0.094	0.355			
		4:KOMBINASI	19.622	-3.27E 3	0.356	-0.261	-0.002	-74.629			
		5:KOMB B. MA	-352.796	-3.53E 3	-17.686	0.352	0.097	-49.414			
	14317	1:BEBAN MATI	-12.673	1.98E 3	-0.195	0.199	-0.001	21.676			
		2:BEBAN HIDL	-2.760	783.557	-0.077	0.014	-0.000	9.231			
		3:BEBAN GEM	349.642	1.31E 3	17.073	-0.533	0.074	-13.239			
		4:KOMBINASI	-19.622	3.63E 3	-0.356	0.261	-0.002	40.781			
		5:KOMB B. MA	352.796	3.83E 3	17.686	-0.352	0.076	13.314			
21047	12765	1:BEBAN MATI	12.160	4.88E 3	-0.455	0.261	0.002	58.811			
		2:BEBAN HIDL	3.056	1.96E 3	-0.196	-0.011	0.001	24.802			
		3:BEBAN GEM	-643.836	-1.76E 3	-8.774	-1.512	0.046	-45.155			
		4:KOMBINASI	19.481	8.98E 3	-0.860	0.294	0.004	110.256			
		5:KOMB B. MA	-662.035	4.2E 3	-9.785	-1.334	0.051	26.279			
	14304	1:BEBAN MATI	-12.160	-4.58E 3	0.455	-0.261	0.002	-12.459			
		2:BEBAN HIDL	-3.056	-1.96E 3	0.196	0.011	0.001	-5.609			
		3:BEBAN GEM	643.836	1.76E 3	8.774	1.512	0.040	27.863			
		4:KOMBINASI	-19.481	-8.62E 3	0.860	-0.294	0.004	-23.925			
		5:KOMB B. MA	662.035	-3.9E 3	9.785	1.334	0.044	13.432			
21048	13704	1:BEBAN MATI	16.697	-1.64E 3	0.414	-0.156	-0.002	-39.830			
		2:BEBAN HIDL	3.522	-794.945	0.125	-0.007	-0.001	-17.168			
		3:BEBAN GEM	-271.743	-1.31E 3	-17.683	0.531	0.089	0.430			
		4:KOMBINASI	25.670	-3.24E 3	0.696	-0.199	-0.004	-75.265			
		5:KOMB B. MA	-266.521	-3.49E 3	-18.078	0.397	0.091	-49.679			
	14291	1:BEBAN MATI	-16.697	1.94E 3	-0.414	0.156	-0.002	22.269			
		2:BEBAN HIDL	-3.522	794.945	-0.125	0.007	-0.001	9.372			
		3:BEBAN GEM	271.743	1.31E 3	17.683	-0.531	0.084	-13.285			
		4:KOMBINASI	-25.670	3.6E 3	-0.696	0.199	-0.003	41.719			
		5:KOMB B. MA	266.521	3.79E 3	18.078	-0.397	0.086	13.943			
21049	12766	1:BEBAN MATI	5.141	4.8E 3	-0.382	0.279	0.001	60.370			
		2:BEBAN HIDL	0.501	1.97E 3	-0.213	0.027	0.001	25.058			
		3:BEBAN GEM	-662.524	-1.77E 3	-7.763	-1.502	0.055	-45.008			
		4:KOMBINASI	6.971	8.9E 3	-0.799	0.377	0.003	112.537			
		5:KOMB B. MA	-690.208	4.12E 3	-8.661	-1.282	0.060	28.147			
	14278	1:BEBAN MATI	-5.141	-4.5E 3	0.382	-0.279	0.002	-14.782			
		2:BEBAN HIDL	-0.501	-1.97E 3	0.213	-0.027	0.001	-5.779			
		3:BEBAN GEM	662.524	1.77E 3	7.763	1.502	0.021	27.660			
		4:KOMBINASI	-6.971	-8.54E 3	0.799	-0.377	0.005	-26.985			
		5:KOMB B. MA	690.208	-3.82E 3	8.661	1.282	0.025	10.793			
21050	13705	1:BEBAN MATI	52.435	-1.75E 3	-0.063	-0.078	-0.000	-43.698			
		2:BEBAN HIDL	14.336	-764.100	-0.024	0.023	0.000	-18.789			
		3:BEBAN GEM	-167.046	-1.45E 3	-0.744	0.482	0.009	-2.025			
		4:KOMBINASI	85.860	-3.33E 3	-0.114	-0.057	0.000	-82.499			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 227	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-114.362	-3.73E 3	-0.859	0.443	0.009	-57.097			
	14219	1:BEBAN MATI	-52.435	1.98E 3	0.063	0.078	0.000	29.980			
		2:BEBAN HIDL	-14.336	764.100	0.024	-0.023	0.000	13.169			
		3:BEBAN GEM	167.046	1.45E 3	0.744	-0.482	-0.003	-8.637			
		4:KOMBINASI	-85.860	3.6E 3	0.114	0.057	0.001	57.047			
		5:KOMB B. MA	114.362	3.96E 3	0.859	-0.443	-0.003	28.813			
21051	12738	1:BEBAN MATI	18.320	4.81E 3	2.204	-3.729	-0.010	53.177			
		2:BEBAN HIDL	4.140	841.662	0.493	-2.357	-0.002	11.159			
		3:BEBAN GEM	-839.073	-1.65E 3	-10.944	-0.680	0.096	-45.256			
		4:KOMBINASI	28.608	7.12E 3	3.434	-8.246	-0.016	81.667			
		5:KOMB B. MA	-860.222	3.58E 3	-8.991	-5.858	0.089	12.354			
	14275	1:BEBAN MATI	-18.320	-3.68E 3	-2.204	3.729	-0.011	-11.540			
		2:BEBAN HIDL	-4.140	-841.662	-0.493	2.357	-0.003	-2.905			
		3:BEBAN GEM	839.073	1.65E 3	10.944	0.680	0.011	29.050			
		4:KOMBINASI	-28.608	-5.77E 3	-3.434	8.246	-0.018	-18.497			
		5:KOMB B. MA	860.222	-2.45E 3	8.991	5.858	-0.001	17.219			
21052	13653	1:BEBAN MATI	55.679	-736.350	0.199	1.311	-0.000	-33.696			
		2:BEBAN HIDL	12.650	-320.492	0.039	0.709	-0.000	-8.522			
		3:BEBAN GEM	-220.314	-1.6E 3	-5.671	0.029	0.030	-2.411			
		4:KOMBINASI	87.055	-1.4E 3	0.302	2.707	-0.001	-54.070			
		5:KOMB B. MA	-168.061	-2.61E 3	-5.731	1.766	0.032	-41.341			
	14216	1:BEBAN MATI	-55.679	1.58E 3	-0.199	-1.311	-0.001	25.176			
		2:BEBAN HIDL	-12.650	320.492	-0.039	-0.709	-0.000	6.165			
		3:BEBAN GEM	220.314	1.6E 3	5.671	-0.029	0.011	-9.345			
		4:KOMBINASI	-87.055	2.41E 3	-0.302	-2.707	-0.002	40.075			
		5:KOMB B. MA	168.061	3.45E 3	5.731	-1.766	0.011	19.062			
21053	12721	1:BEBAN MATI	30.488	2.41E 3	5.181	-0.682	-0.032	14.611			
		2:BEBAN HIDL	8.516	246.690	1.504	-0.512	-0.009	1.641			
		3:BEBAN GEM	-463.908	-1.16E 3	-19.249	3.432	0.148	-19.191			
		4:KOMBINASI	50.210	3.28E 3	8.624	-1.638	-0.054	20.159			
		5:KOMB B. MA	-451.506	1.33E 3	-14.128	2.614	0.117	-4.555			
	13771	1:BEBAN MATI	-30.488	-1.06E 3	-5.181	0.682	-0.029	5.763			
		2:BEBAN HIDL	-8.516	-246.690	-1.504	0.512	-0.008	1.262			
		3:BEBAN GEM	463.908	1.16E 3	19.249	-3.432	0.079	5.523			
		4:KOMBINASI	-50.210	-1.66E 3	-8.624	1.638	-0.047	8.934			
		5:KOMB B. MA	451.506	15.419	14.128	-2.614	0.049	12.319			
21054	12719	1:BEBAN MATI	15.718	3.52E 3	6.508	-3.811	-0.038	29.618			
		2:BEBAN HIDL	3.320	525.958	1.778	-2.308	-0.010	5.439			
		3:BEBAN GEM	-381.211	-559.887	-14.338	3.273	0.096	-13.825			
		4:KOMBINASI	24.174	5.06E 3	10.654	-8.266	-0.062	44.244			
		5:KOMB B. MA	-382.562	3.24E 3	-7.480	-1.759	0.057	18.366			
	14002	1:BEBAN MATI	-15.718	-2.17E 3	-6.508	3.811	-0.039	3.807			
		2:BEBAN HIDL	-3.320	-525.958	-1.778	2.308	-0.011	0.751			
		3:BEBAN GEM	381.211	559.887	14.338	-3.273	0.073	7.236			
		4:KOMBINASI	-24.174	-3.44E 3	-10.654	8.266	-0.063	5.769			
		5:KOMB B. MA	382.562	-1.89E 3	7.480	1.759	0.031	11.855			
21055	12766	1:BEBAN MATI	12.853	3.16E 3	-1.717	0.044	0.010	28.966			
		2:BEBAN HIDL	3.345	1.25E 3	-0.492	0.014	0.003	11.509			



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Job No

1

Sheet No

228

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	228.063	-708.033	-14.510	3.710	0.076	-14.457			
		4:KOMBINASI	20.776	5.78E 3	-2.847	0.074	0.016	53.174			
		5:KOMB B. MA	254.326	3.16E 3	-17.248	3.948	0.091	20.692			
	14232	1:BEBAN MATI	-12.853	-2.8E 3	1.717	-0.044	0.011	6.082			
		2:BEBAN HIDL	-3.345	-1.25E 3	0.492	-0.014	0.003	3.143			
		3:BEBAN GEM	-228.063	708.033	14.510	-3.710	0.095	6.124			
		4:KOMBINASI	-20.776	-5.35E 3	2.847	-0.074	0.018	12.328			
		5:KOMB B. MA	-254.326	-2.8E 3	17.248	-3.948	0.112	14.399			
21056	12763	1:BEBAN MATI	3.611	3.16E 3	-1.707	-0.253	0.009	28.768			
		2:BEBAN HIDL	-3.963	1.3E 3	-0.552	-0.144	0.003	12.223			
		3:BEBAN GEM	1.35E 3	-628.879	-0.311	3.790	-0.039	-13.204			
		4:KOMBINASI	-2.008	5.88E 3	-2.931	-0.534	0.016	54.078			
		5:KOMB B. MA	1.41E 3	3.29E 3	-2.365	3.641	-0.030	22.237			
	14438	1:BEBAN MATI	-3.611	-2.8E 3	1.707	0.253	0.011	6.350			
		2:BEBAN HIDL	3.963	-1.3E 3	0.552	0.144	0.003	3.109			
		3:BEBAN GEM	-1.35E 3	628.879	0.311	-3.790	0.043	5.804			
		4:KOMBINASI	2.008	-5.45E 3	2.931	0.534	0.018	12.596			
		5:KOMB B. MA	-1.41E 3	-2.93E 3	2.365	-3.641	0.058	14.310			
21057	12760	1:BEBAN MATI	15.400	1.12E 3	-1.036	3.368	0.009	16.970			
		2:BEBAN HIDL	0.916	384.519	-0.395	1.450	0.003	7.298			
		3:BEBAN GEM	1.64E 3	-921.958	68.160	2.338	-0.367	-18.160			
		4:KOMBINASI	19.946	1.96E 3	-1.876	6.362	0.016	32.041			
		5:KOMB B. MA	1.74E 3	386.950	70.295	6.694	-0.374	2.281			
	14273	1:BEBAN MATI	-15.400	-763.901	1.036	-3.368	0.003	-5.860			
		2:BEBAN HIDL	-0.916	-384.519	0.395	-1.450	0.001	-2.773			
		3:BEBAN GEM	-1.64E 3	921.958	-68.160	-2.338	-0.435	7.310			
		4:KOMBINASI	-19.946	-1.53E 3	1.876	-6.362	0.006	-11.469			
		5:KOMB B. MA	-1.74E 3	-26.557	-70.295	-6.694	-0.453	0.152			
21058	13706	1:BEBAN MATI	19.026	-2.05E 3	0.276	-1.035	-0.002	-43.935			
		2:BEBAN HIDL	4.236	-797.814	0.076	0.314	-0.001	-16.105			
		3:BEBAN GEM	943.603	-260.825	18.456	-1.483	-0.155	0.567			
		4:KOMBINASI	29.609	-3.74E 3	0.454	-0.740	-0.003	-78.490			
		5:KOMB B. MA	1.01E 3	-2.81E 3	19.701	-2.404	-0.166	-53.003			
	14355	1:BEBAN MATI	-19.026	2.5E 3	-0.276	1.035	-0.002	10.404			
		2:BEBAN HIDL	-4.236	797.814	-0.076	-0.314	-0.001	4.369			
		3:BEBAN GEM	-943.603	260.825	-18.456	1.483	-0.116	-4.404			
		4:KOMBINASI	-29.609	4.28E 3	-0.454	0.740	-0.003	19.475			
		5:KOMB B. MA	-1.01E 3	3.26E 3	-19.701	2.404	-0.124	8.401			
21059	12757	1:BEBAN MATI	12.761	4.92E 3	-0.508	-0.878	0.003	58.553			
		2:BEBAN HIDL	2.112	1.68E 3	-0.093	-0.897	0.001	21.510			
		3:BEBAN GEM	1.15E 3	-479.036	-5.162	4.528	0.005	-11.721			
		4:KOMBINASI	18.693	8.6E 3	-0.759	-2.489	0.005	104.680			
		5:KOMB B. MA	1.22E 3	5.43E 3	-5.984	3.338	0.009	59.152			
	14356	1:BEBAN MATI	-12.761	-4.47E 3	0.508	0.878	0.004	10.493			
		2:BEBAN HIDL	-2.112	-1.68E 3	0.093	0.897	0.001	3.253			
		3:BEBAN GEM	-1.15E 3	479.036	5.162	-4.528	0.071	4.674			
		4:KOMBINASI	-18.693	-8.06E 3	0.759	2.489	0.006	17.797			
		5:KOMB B. MA	-1.22E 3	-4.98E 3	5.984	-3.338	0.080	17.353			



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Job No 1	Sheet No 229	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21060	13707	1:BEBAN MATI	-4.585	-2.18E 3	0.351	-0.093	-0.002	-44.965			
		2:BEBAN HIDL	-2.263	-960.342	0.074	-0.162	-0.001	-18.314			
		3:BEBAN GEM	1.59E 3	-385.395	1.481	-2.322	-0.029	-0.458			
		4:KOMBINASI	-9.122	-4.16E 3	0.540	-0.371	-0.004	-83.261			
		5:KOMB B. MA	1.67E 3	-3.17E 3	1.950	-2.628	-0.033	-56.435			
13798	13798	1:BEBAN MATI	4.585	2.63E 3	-0.351	0.093	-0.003	9.522			
		2:BEBAN HIDL	2.263	960.342	-0.074	0.162	-0.001	4.187			
		3:BEBAN GEM	-1.59E 3	385.395	-1.481	2.322	0.007	-5.211			
		4:KOMBINASI	9.122	4.7E 3	-0.540	0.371	-0.004	18.126			
		5:KOMB B. MA	-1.67E 3	3.62E 3	-1.950	2.628	0.005	6.563			
21061	12754	1:BEBAN MATI	-6.755	5.04E 3	-1.194	0.283	0.008	62.550			
		2:BEBAN HIDL	-2.731	1.88E 3	-0.249	0.253	0.002	24.180			
		3:BEBAN GEM	1.26E 3	-434.821	-19.368	4.793	0.117	-11.609			
		4:KOMBINASI	-12.475	9.05E 3	-1.830	0.745	0.013	113.748			
		5:KOMB B. MA	1.31E 3	5.71E 3	-21.679	5.468	0.132	64.868			
13797	13797	1:BEBAN MATI	6.755	-4.59E 3	1.194	-0.283	0.009	8.225			
		2:BEBAN HIDL	2.731	-1.88E 3	0.249	-0.253	0.002	3.481			
		3:BEBAN GEM	-1.26E 3	434.821	19.368	-4.793	0.168	5.213			
		4:KOMBINASI	12.475	-8.51E 3	1.830	-0.745	0.014	15.439			
		5:KOMB B. MA	-1.31E 3	-5.26E 3	21.679	-5.468	0.187	15.787			
21062	13708	1:BEBAN MATI	13.418	-2.01E 3	-0.163	1.387	0.002	-44.519			
		2:BEBAN HIDL	2.402	-830.976	-0.047	0.647	0.000	-16.172			
		3:BEBAN GEM	717.382	-431.848	-19.777	-2.486	0.134	-0.462			
		4:KOMBINASI	19.945	-3.74E 3	-0.270	2.698	0.003	-79.298			
		5:KOMB B. MA	768.110	-2.96E 3	-20.957	-0.836	0.142	-54.708			
13952	13952	1:BEBAN MATI	-13.418	2.46E 3	0.163	-1.387	0.001	11.686			
		2:BEBAN HIDL	-2.402	830.976	0.047	-0.647	0.000	3.949			
		3:BEBAN GEM	-717.382	431.848	19.777	2.486	0.157	-5.890			
		4:KOMBINASI	-19.945	4.28E 3	0.270	-2.698	0.001	20.341			
		5:KOMB B. MA	-768.110	3.41E 3	20.957	0.836	0.166	7.871			
21063	12751	1:BEBAN MATI	29.601	4.62E 3	-0.205	-1.155	0.002	55.371			
		2:BEBAN HIDL	7.467	1.61E 3	-0.091	-1.113	0.001	19.959			
		3:BEBAN GEM	255.763	-344.042	-22.713	4.948	0.098	-12.044			
		4:KOMBINASI	47.469	8.12E 3	-0.392	-3.168	0.003	98.380			
		5:KOMB B. MA	302.632	5.23E 3	-24.108	3.373	0.105	54.700			
13951	13951	1:BEBAN MATI	-29.601	-4.17E 3	0.205	1.155	0.001	9.268			
		2:BEBAN HIDL	-7.467	-1.61E 3	0.091	1.113	0.001	3.749			
		3:BEBAN GEM	-255.763	344.042	22.713	-4.948	0.236	6.984			
		4:KOMBINASI	-47.469	-7.58E 3	0.392	3.168	0.003	17.119			
		5:KOMB B. MA	-302.632	-4.77E 3	24.108	-3.373	0.249	18.850			
21064	12748	1:BEBAN MATI	-21.867	935.745	-0.832	1.053	0.003	12.215			
		2:BEBAN HIDL	-8.170	190.078	-0.185	0.721	0.000	3.368			
		3:BEBAN GEM	1.93E 3	-833.496	-108.608	2.556	0.760	-13.891			
		4:KOMBINASI	-39.313	1.43E 3	-1.294	2.416	0.004	20.047			
		5:KOMB B. MA	2E 3	174.621	-114.981	4.169	0.801	-0.350			
13826	13826	1:BEBAN MATI	21.867	-575.352	0.832	-1.053	0.007	-3.324			
		2:BEBAN HIDL	8.170	-190.078	0.185	-0.721	0.002	-1.131			
		3:BEBAN GEM	-1.93E 3	833.496	108.608	-2.556	0.518	4.083			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 230	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	39.313	-994.547	1.294	-2.416	0.011	-5.798			
		5:KOMB B. MA	-2E 3	185.772	114.981	-4.169	0.552	0.285			
21065	12745	1:BEBAN MATI	-5.086	3E 3	-1.304	0.261	0.007	27.180			
		2:BEBAN HIDL	-4.393	1.24E 3	-0.377	0.138	0.002	11.798			
		3:BEBAN GEM	369.311	-656.190	-36.194	3.795	0.218	-13.961			
		4:KOMBINASI	-13.131	5.58E 3	-2.168	0.534	0.011	51.493			
		5:KOMB B. MA	380.055	3.05E 3	-39.534	4.329	0.237	19.600			
	14032	1:BEBAN MATI	5.086	-2.64E 3	1.304	-0.261	0.008	5.961			
		2:BEBAN HIDL	4.393	-1.24E 3	0.377	-0.138	0.002	2.822			
		3:BEBAN GEM	-369.311	656.190	36.194	-3.795	0.208	6.239			
		4:KOMBINASI	13.131	-5.15E 3	2.168	-0.534	0.014	11.669			
		5:KOMB B. MA	-380.055	-2.69E 3	39.534	-4.329	0.229	14.205			
21066	12765	1:BEBAN MATI	21.756	4.88E 3	-0.261	-0.027	0.002	41.702			
		2:BEBAN HIDL	5.719	1.26E 3	-0.047	0.009	0.000	11.666			
		3:BEBAN GEM	-45.405	-719.673	-9.011	3.612	0.046	-14.657			
		4:KOMBINASI	35.259	7.88E 3	-0.389	-0.018	0.002	68.709			
		5:KOMB B. MA	-22.487	4.89E 3	-9.751	3.771	0.050	33.312			
	14299	1:BEBAN MATI	-21.756	-3.53E 3	0.261	0.027	0.001	7.833			
		2:BEBAN HIDL	-5.719	-1.26E 3	0.047	-0.009	0.000	3.205			
		3:BEBAN GEM	45.405	719.673	9.011	-3.612	0.060	6.188			
		4:KOMBINASI	-35.259	-6.26E 3	0.389	0.018	0.002	14.527			
		5:KOMB B. MA	22.487	-3.54E 3	9.751	-3.771	0.064	16.253			
21067	12762	1:BEBAN MATI	34.349	4.81E 3	0.400	0.654	-0.003	41.198			
		2:BEBAN HIDL	5.830	1.31E 3	0.196	0.283	-0.001	12.429			
		3:BEBAN GEM	40.286	-628.293	-38.361	3.847	0.294	-13.840			
		4:KOMBINASI	50.547	7.87E 3	0.794	1.238	-0.006	69.324			
		5:KOMB B. MA	80.147	4.94E 3	-39.761	4.863	0.305	34.124			
	14477	1:BEBAN MATI	-34.349	-3.46E 3	-0.400	-0.654	-0.002	7.481			
		2:BEBAN HIDL	-5.830	-1.31E 3	-0.196	-0.283	-0.001	2.975			
		3:BEBAN GEM	-40.286	628.293	38.361	-3.847	0.157	6.446			
		4:KOMBINASI	-50.547	-6.25E 3	-0.794	-1.238	-0.004	13.738			
		5:KOMB B. MA	-80.147	-3.59E 3	39.761	-4.863	0.163	16.035			
21068	12759	1:BEBAN MATI	-19.607	2.34E 3	-0.307	-2.213	0.003	22.675			
		2:BEBAN HIDL	-8.390	279.327	-0.135	-0.965	0.001	6.140			
		3:BEBAN GEM	1.79E 3	-910.192	48.224	1.477	-0.467	-16.089			
		4:KOMBINASI	-36.952	3.26E 3	-0.584	-4.200	0.005	37.033			
		5:KOMB B. MA	1.85E 3	1.55E 3	50.248	-1.241	-0.487	9.465			
	14393	1:BEBAN MATI	19.607	-316.815	0.307	2.213	0.003	0.796			
		2:BEBAN HIDL	8.390	-279.327	0.135	0.965	0.001	-1.209			
		3:BEBAN GEM	-1.79E 3	910.192	-48.224	-1.477	-0.384	0.023			
		4:KOMBINASI	36.952	-827.100	0.584	4.200	0.005	-0.980			
		5:KOMB B. MA	-1.85E 3	471.290	-50.248	1.241	-0.400	0.094			
21069	13709	1:BEBAN MATI	4.955	-1.72E 3	-0.005	-0.355	0.000	-55.677			
		2:BEBAN HIDL	0.380	-912.835	-0.041	-0.287	0.000	-19.320			
		3:BEBAN GEM	1.12E 3	-350.028	36.869	-2.284	-0.264	-0.143			
		4:KOMBINASI	6.555	-3.52E 3	-0.072	-0.885	0.001	-97.725			
		5:KOMB B. MA	1.18E 3	-2.63E 3	38.682	-2.925	-0.277	-67.419			
	14367	1:BEBAN MATI	-4.955	3.4E 3	0.005	0.355	0.000	18.010			



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Job No 1	Sheet No 231	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-0.380	912.835	0.041	0.287	0.000	5.892			
		3:BEBAN GEM	-1.12E 3	350.028	-36.869	2.284	-0.278	-5.006			
		4:KOMBINASI	-6.555	5.55E 3	0.072	0.885	0.000	31.040			
		5:KOMB B. MA	-1.18E 3	4.32E 3	-38.682	2.925	-0.292	16.290			
21070	12756	1:BEBAN MATI	9.590	7.16E 3	-0.042	-0.144	0.000	81.855			
		2:BEBAN HIDL	1.954	1.93E 3	-0.030	0.039	0.000	24.861			
		3:BEBAN GEM	901.822	-485.238	32.233	4.622	-0.237	-12.593			
		4:KOMBINASI	14.634	11.7E 3	-0.098	-0.110	0.001	138.005			
		5:KOMB B. MA	957.675	7.81E 3	33.785	4.733	-0.249	83.549			
	14368	1:BEBAN MATI	-9.590	-5.47E 3	0.042	0.144	0.000	11.020			
		2:BEBAN HIDL	-1.954	-1.93E 3	0.030	-0.039	0.000	3.541			
		3:BEBAN GEM	-901.822	485.238	-32.233	-4.622	-0.237	5.455			
		4:KOMBINASI	-14.634	-9.65E 3	0.098	0.110	0.001	18.890			
		5:KOMB B. MA	-957.675	-6.12E 3	-33.785	-4.733	-0.248	18.873			
21071	13710	1:BEBAN MATI	-15.311	-1.81E 3	0.037	0.067	-0.000	-50.007			
		2:BEBAN HIDL	-5.126	-926.669	0.004	0.001	-0.000	-17.187			
		3:BEBAN GEM	1.7E 3	-358.264	27.394	-2.214	-0.281	0.044			
		4:KOMBINASI	-26.575	-3.66E 3	0.051	0.082	-0.001	-87.507			
		5:KOMB B. MA	1.77E 3	-2.75E 3	28.803	-2.257	-0.295	-60.273			
	13916	1:BEBAN MATI	15.311	3.5E 3	-0.037	-0.067	-0.000	10.924			
		2:BEBAN HIDL	5.126	926.669	-0.004	-0.001	-0.000	3.555			
		3:BEBAN GEM	-1.7E 3	358.264	-27.394	2.214	-0.122	-5.314			
		4:KOMBINASI	26.575	5.68E 3	-0.051	-0.082	-0.000	18.797			
		5:KOMB B. MA	-1.77E 3	4.43E 3	-28.803	2.257	-0.128	7.477			
21072	12753	1:BEBAN MATI	-20.075	6.88E 3	-0.108	-0.126	0.001	79.469			
		2:BEBAN HIDL	-6.554	1.82E 3	-0.015	0.005	0.000	23.955			
		3:BEBAN GEM	1.07E 3	-493.079	-46.535	4.620	0.356	-12.586			
		4:KOMBINASI	-34.576	11.2E 3	-0.153	-0.143	0.001	133.692			
		5:KOMB B. MA	1.1E 3	7.45E 3	-48.979	4.728	0.375	80.627			
	13915	1:BEBAN MATI	20.075	-5.19E 3	0.108	0.126	0.001	9.247			
		2:BEBAN HIDL	6.554	-1.82E 3	0.015	-0.005	0.000	2.848			
		3:BEBAN GEM	-1.07E 3	493.079	46.535	-4.620	0.328	5.333			
		4:KOMBINASI	34.576	-9.14E 3	0.153	0.143	0.001	15.652			
		5:KOMB B. MA	-1.1E 3	-5.76E 3	48.979	-4.728	0.346	16.555			
21073	13711	1:BEBAN MATI	4.790	-2.06E 3	-0.013	0.153	0.000	-55.490			
		2:BEBAN HIDL	0.469	-1.02E 3	0.021	0.028	-0.000	-19.250			
		3:BEBAN GEM	457.615	-362.331	-57.812	-2.226	0.434	0.025			
		4:KOMBINASI	6.498	-4.09E 3	0.018	0.229	-0.000	-97.388			
		5:KOMB B. MA	485.567	-3.05E 3	-60.703	-2.167	0.456	-67.013			
	13964	1:BEBAN MATI	-4.790	3.74E 3	0.013	-0.153	0.000	12.831			
		2:BEBAN HIDL	-0.469	1.02E 3	-0.021	-0.028	-0.000	4.299			
		3:BEBAN GEM	-457.615	362.331	57.812	2.226	0.417	-5.355			
		4:KOMBINASI	-6.498	6.12E 3	-0.018	-0.229	-0.000	22.276			
		5:KOMB B. MA	-485.567	4.73E 3	60.703	2.167	0.437	9.787			
21074	12750	1:BEBAN MATI	9.199	6.94E 3	0.047	0.454	-0.000	73.005			
		2:BEBAN HIDL	1.435	1.88E 3	0.071	0.383	-0.000	22.324			
		3:BEBAN GEM	902.272	-460.337	-44.504	4.914	0.309	-12.100			
		4:KOMBINASI	13.335	11.3E 3	0.170	1.158	-0.001	123.324			



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Job No 1	Sheet No 232	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	957.446	7.58E 3	-46.639	5.844	0.324	73.694			
	13963	1:BEBAN MATI	-9.199	-5.25E 3	-0.047	-0.454	-0.001	16.631			
		2:BEBAN HIDL	-1.435	-1.88E 3	-0.071	-0.383	-0.001	5.287			
		3:BEBAN GEM	-902.272	460.337	44.504	-4.914	0.346	5.329			
		4:KOMBINASI	-13.335	-9.3E 3	-0.170	-1.158	-0.002	28.417			
		5:KOMB B. MA	-957.446	-5.89E 3	46.639	-5.844	0.362	25.399			
21075	12747	1:BEBAN MATI	-13.051	2.47E 3	0.741	-2.060	-0.006	25.091			
		2:BEBAN HIDL	-5.040	179.964	0.231	-0.952	-0.002	4.349			
		3:BEBAN GEM	-571.962	-913.018	-71.331	1.567	0.619	-15.843			
		4:KOMBINASI	-23.725	3.25E 3	1.259	-3.994	-0.010	37.067			
		5:KOMB B. MA	-616.635	1.62E 3	-74.017	-0.985	0.642	11.065			
	13989	1:BEBAN MATI	13.051	-444.749	-0.741	2.060	-0.007	0.637			
		2:BEBAN HIDL	5.040	-179.964	-0.231	0.952	-0.002	-1.172			
		3:BEBAN GEM	571.962	913.018	71.331	-1.567	0.640	-0.273			
		4:KOMBINASI	23.725	-821.641	-1.259	3.994	-0.012	-1.110			
		5:KOMB B. MA	616.635	405.941	74.017	0.985	0.664	-0.353			
21076	12744	1:BEBAN MATI	4.693	4.66E 3	0.213	-0.201	-0.001	39.784			
		2:BEBAN HIDL	-0.988	1.25E 3	0.088	-0.096	-0.001	11.873			
		3:BEBAN GEM	-365.792	-653.798	-40.460	3.684	0.250	-14.041			
		4:KOMBINASI	4.050	7.59E 3	0.396	-0.395	-0.003	66.738			
		5:KOMB B. MA	-379.981	4.72E 3	-42.218	3.609	0.260	32.165			
	14071	1:BEBAN MATI	-4.693	-3.31E 3	-0.213	0.201	-0.001	7.141			
		2:BEBAN HIDL	0.988	-1.25E 3	-0.088	0.096	-0.000	2.805			
		3:BEBAN GEM	365.792	653.798	40.460	-3.684	0.227	6.347			
		4:KOMBINASI	-4.050	-5.97E 3	-0.396	0.395	-0.002	13.058			
		5:KOMB B. MA	379.981	-3.37E 3	42.218	-3.609	0.237	15.488			
21077	12764	1:BEBAN MATI	22.266	4.9E 3	0.100	0.026	-0.001	41.969			
		2:BEBAN HIDL	6.127	1.27E 3	0.010	-0.015	-0.000	11.784			
		3:BEBAN GEM	104.422	-723.559	0.099	3.603	-0.009	-14.774			
		4:KOMBINASI	36.522	7.91E 3	0.135	0.008	-0.001	69.218			
		5:KOMB B. MA	135.585	4.9E 3	0.210	3.800	-0.010	33.528			
	14325	1:BEBAN MATI	-22.266	-3.55E 3	-0.100	-0.026	-0.001	7.714			
		2:BEBAN HIDL	-6.127	-1.27E 3	-0.010	0.015	-0.000	3.141			
		3:BEBAN GEM	-104.422	723.559	-0.099	-3.603	0.008	6.259			
		4:KOMBINASI	-36.522	-6.29E 3	-0.135	-0.008	-0.001	14.283			
		5:KOMB B. MA	-135.585	-3.55E 3	-0.210	-3.800	0.008	16.170			
21078	12761	1:BEBAN MATI	20.185	4.71E 3	-0.119	0.056	0.001	40.576			
		2:BEBAN HIDL	2.017	1.28E 3	-0.107	-0.017	0.001	12.251			
		3:BEBAN GEM	550.202	-644.844	28.432	3.693	-0.180	-13.873			
		4:KOMBINASI	27.449	7.7E 3	-0.314	0.040	0.002	68.292			
		5:KOMB B. MA	599.107	4.8E 3	29.670	3.924	-0.188	33.359			
	14499	1:BEBAN MATI	-20.185	-3.36E 3	0.119	-0.056	0.001	6.942			
		2:BEBAN HIDL	-2.017	-1.28E 3	0.107	0.017	0.001	2.765			
		3:BEBAN GEM	-550.202	644.844	-28.432	-3.693	-0.155	6.285			
		4:KOMBINASI	-27.449	-6.08E 3	0.314	-0.040	0.002	12.754			
		5:KOMB B. MA	-599.107	-3.45E 3	-29.670	-3.924	-0.162	15.200			
21079	12758	1:BEBAN MATI	-14.790	2.89E 3	-0.058	-0.001	0.001	26.024			
		2:BEBAN HIDL	-5.515	552.293	-0.051	-0.005	0.000	7.686			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 233	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	577.121	-893.092	27.311	2.249	-0.250	-15.932			
		4:KOMBINASI	-26.571	4.35E 3	-0.151	-0.010	0.001	43.526			
		5:KOMB B. MA	587.878	2.28E 3	28.588	2.357	-0.261	13.907			
	14399	1:BEBAN MATI	14.790	-863.872	0.058	0.001	0.000	7.103			
		2:BEBAN HIDL	5.515	-552.293	0.051	0.005	0.000	2.063			
		3:BEBAN GEM	-577.121	893.092	-27.311	-2.249	-0.232	0.167			
		4:KOMBINASI	26.571	-1.92E 3	0.151	0.010	0.001	11.825			
		5:KOMB B. MA	-587.878	-257.502	-28.588	-2.357	-0.243	8.516			
21080	13712	1:BEBAN MATI	3.221	-1.71E 3	-0.140	-0.076	0.001	-54.926			
		2:BEBAN HIDL	0.389	-896.012	-0.058	0.019	0.000	-18.724			
		3:BEBAN GEM	929.968	-357.164	56.505	-2.242	-0.424	-0.187			
		4:KOMBINASI	4.487	-3.48E 3	-0.261	-0.060	0.002	-95.869			
		5:KOMB B. MA	979.920	-2.62E 3	59.156	-2.418	-0.444	-66.356			
	14379	1:BEBAN MATI	-3.221	3.4E 3	0.140	0.076	0.001	17.376			
		2:BEBAN HIDL	-0.389	896.012	0.058	-0.019	0.000	5.543			
		3:BEBAN GEM	-929.968	357.164	-56.505	2.242	-0.407	-5.067			
		4:KOMBINASI	-4.487	5.51E 3	0.261	0.060	0.002	29.721			
		5:KOMB B. MA	-979.920	4.31E 3	-59.156	2.418	-0.426	15.382			
21081	12755	1:BEBAN MATI	6.101	7.15E 3	0.244	0.117	-0.002	82.155			
		2:BEBAN HIDL	0.926	1.91E 3	0.053	-0.028	-0.000	24.835			
		3:BEBAN GEM	1.31E 3	-485.190	112.038	4.614	-0.882	-12.621			
		4:KOMBINASI	8.803	11.6E 3	0.378	0.096	-0.003	138.323			
		5:KOMB B. MA	1.38E 3	7.78E 3	117.916	4.945	-0.928	83.804			
	14380	1:BEBAN MATI	-6.101	-5.46E 3	-0.244	-0.117	-0.002	10.537			
		2:BEBAN HIDL	-0.926	-1.91E 3	-0.053	0.028	-0.000	3.235			
		3:BEBAN GEM	-1.31E 3	485.190	-112.038	-4.614	-0.766	5.484			
		4:KOMBINASI	-8.803	-9.6E 3	-0.378	-0.096	-0.003	17.819			
		5:KOMB B. MA	-1.38E 3	-6.09E 3	-117.916	-4.945	-0.807	18.235			
21082	13713	1:BEBAN MATI	-13.522	-1.83E 3	-0.093	-0.049	0.001	-50.354			
		2:BEBAN HIDL	-4.425	-933.389	-0.030	0.016	0.000	-17.309			
		3:BEBAN GEM	-2.21E 3	-367.382	114.364	-2.221	-0.761	-0.055			
		4:KOMBINASI	-23.306	-3.69E 3	-0.159	-0.033	0.001	-88.120			
		5:KOMB B. MA	-2.33E 3	-2.78E 3	119.972	-2.371	-0.798	-60.798			
	13930	1:BEBAN MATI	13.522	3.52E 3	0.093	0.049	0.001	10.960			
		2:BEBAN HIDL	4.425	933.389	0.030	-0.016	0.000	3.579			
		3:BEBAN GEM	2.21E 3	367.382	-114.364	2.221	-0.922	-5.349			
		4:KOMBINASI	23.306	5.72E 3	0.159	0.033	0.001	18.878			
		5:KOMB B. MA	2.33E 3	4.47E 3	-119.972	2.371	-0.967	7.490			
21083	12752	1:BEBAN MATI	-17.521	6.91E 3	0.342	0.097	-0.002	79.903			
		2:BEBAN HIDL	-5.511	1.83E 3	0.104	-0.031	-0.001	24.076			
		3:BEBAN GEM	-555.048	-490.231	-160.911	4.630	1.212	-12.628			
		4:KOMBINASI	-29.842	11.2E 3	0.577	0.067	-0.004	134.405			
		5:KOMB B. MA	-603.628	7.49E 3	-168.552	4.940	1.270	81.090			
	13929	1:BEBAN MATI	17.521	-5.22E 3	-0.342	-0.097	-0.003	9.266			
		2:BEBAN HIDL	5.511	-1.83E 3	-0.104	0.031	-0.001	2.866			
		3:BEBAN GEM	555.048	490.231	160.911	-4.630	1.155	5.416			
		4:KOMBINASI	29.842	-9.19E 3	-0.577	-0.067	-0.004	15.704			
		5:KOMB B. MA	603.628	-5.8E 3	168.552	-4.940	1.209	16.672			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 234	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21084	13714	1:BEBAN MATI	2.633	-2.04E 3	-0.012	-0.058	0.000	-54.777			
		2:BEBAN HIDL	0.055	-999.230	0.013	0.012	-0.000	-18.677			
		3:BEBAN GEM	-609.275	-364.054	-49.169	-2.226	0.360	0.079			
		4:KOMBINASI	3.247	-4.05E 3	0.006	-0.050	-0.000	-95.615			
		5:KOMB B. MA	-637.073	-3.02E 3	-51.632	-2.388	0.378	-65.900			
13976	13976	1:BEBAN MATI	-2.633	3.73E 3	0.012	0.058	0.000	12.326			
		2:BEBAN HIDL	-0.055	999.230	-0.013	-0.012	-0.000	3.978			
		3:BEBAN GEM	609.275	364.054	49.169	2.226	0.363	-5.435			
		4:KOMBINASI	-3.247	6.07E 3	-0.006	0.050	0.000	21.156			
		5:KOMB B. MA	637.073	4.71E 3	51.632	2.388	0.382	9.007			
21085	12749	1:BEBAN MATI	7.100	6.89E 3	0.280	0.153	-0.002	73.001			
		2:BEBAN HIDL	1.860	1.83E 3	0.092	-0.026	-0.001	22.030			
		3:BEBAN GEM	-539.236	-477.272	-49.187	4.743	0.359	-12.158			
		4:KOMBINASI	11.496	11.2E 3	0.482	0.142	-0.004	122.849			
		5:KOMB B. MA	-557.982	7.49E 3	-51.311	5.117	0.374	73.453			
13975	13975	1:BEBAN MATI	-7.100	-5.2E 3	-0.280	-0.153	-0.002	15.959			
		2:BEBAN HIDL	-1.860	-1.83E 3	-0.092	0.026	-0.001	4.923			
		3:BEBAN GEM	539.236	477.272	49.187	-4.743	0.365	5.137			
		4:KOMBINASI	-11.496	-9.18E 3	-0.482	-0.142	-0.004	27.027			
		5:KOMB B. MA	557.982	-5.8E 3	51.311	-5.117	0.380	24.307			
21086	12746	1:BEBAN MATI	-19.508	2.94E 3	0.143	0.038	-0.001	27.252			
		2:BEBAN HIDL	-6.222	456.669	0.065	-0.001	-0.001	5.930			
		3:BEBAN GEM	-238.318	-893.339	-30.476	2.359	0.271	-15.671			
		4:KOMBINASI	-33.364	4.26E 3	0.276	0.044	-0.003	42.190			
		5:KOMB B. MA	-273.475	2.27E 3	-31.817	2.514	0.283	14.355			
13995	13995	1:BEBAN MATI	19.508	-913.167	-0.143	-0.038	-0.001	6.745			
		2:BEBAN HIDL	6.222	-456.669	-0.065	0.001	-0.001	2.131			
		3:BEBAN GEM	238.318	893.339	30.476	-2.359	0.267	-0.098			
		4:KOMBINASI	33.364	-1.83E 3	-0.276	-0.044	-0.002	11.504			
		5:KOMB B. MA	273.475	-249.162	31.817	-2.514	0.279	7.921			
21087	12743	1:BEBAN MATI	-0.900	4.66E 3	0.321	0.051	-0.002	40.627			
		2:BEBAN HIDL	-3.080	1.25E 3	0.118	-0.013	-0.001	12.312			
		3:BEBAN GEM	-114.043	-657.553	-40.491	3.699	0.249	-14.164			
		4:KOMBINASI	-6.008	7.59E 3	0.574	0.039	-0.004	68.452			
		5:KOMB B. MA	-122.494	4.72E 3	-42.124	3.927	0.259	33.142			
14093	14093	1:BEBAN MATI	0.900	-3.31E 3	-0.321	-0.051	-0.002	6.249			
		2:BEBAN HIDL	3.080	-1.25E 3	-0.118	0.013	-0.001	2.399			
		3:BEBAN GEM	114.043	657.553	40.491	-3.699	0.227	6.426			
		4:KOMBINASI	6.008	-5.97E 3	-0.574	-0.039	-0.003	11.337			
		5:KOMB B. MA	122.494	-3.37E 3	42.124	-3.927	0.237	14.436			
21088	12734	1:BEBAN MATI	18.654	3.07E 3	0.406	0.902	-0.002	28.191			
		2:BEBAN HIDL	5.447	1.2E 3	0.138	0.379	-0.001	11.167			
		3:BEBAN GEM	-166.119	-813.054	-2.339	3.946	0.006	-15.635			
		4:KOMBINASI	31.100	5.61E 3	0.709	1.688	-0.004	51.696			
		5:KOMB B. MA	-152.503	2.94E 3	-1.967	5.272	0.003	18.474			
14250	14250	1:BEBAN MATI	-18.654	-2.71E 3	-0.406	-0.902	-0.003	5.859			
		2:BEBAN HIDL	-5.447	-1.2E 3	-0.138	-0.379	-0.001	2.950			
		3:BEBAN GEM	166.119	813.054	2.339	-3.946	0.022	6.067			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 235	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-31.100	-5.18E 3	-0.709	-1.688	-0.005	11.751			
		5:KOMB B. MA	152.503	-2.58E 3	1.967	-5.272	0.020	14.000			
21089	12732	1:BEBAN MATI	17.344	2.92E 3	0.238	0.967	-0.001	27.241			
		2:BEBAN HIDL	2.398	1.19E 3	0.051	0.521	-0.000	11.433			
		3:BEBAN GEM	-274.828	-726.481	21.913	4.029	-0.147	-14.631			
		4:KOMBINASI	24.650	5.41E 3	0.367	1.994	-0.002	50.981			
		5:KOMB B. MA	-269.786	2.87E 3	23.277	5.510	-0.156	18.738			
	14443	1:BEBAN MATI	-17.344	-2.56E 3	-0.238	-0.967	-0.002	4.978			
		2:BEBAN HIDL	-2.398	-1.19E 3	-0.051	-0.521	-0.000	2.598			
		3:BEBAN GEM	274.828	726.481	-21.913	-4.029	-0.111	6.082			
		4:KOMBINASI	-24.650	-4.98E 3	-0.367	-1.994	-0.002	10.130			
		5:KOMB B. MA	269.786	-2.51E 3	-23.277	-5.510	-0.118	12.923			
21090	12730	1:BEBAN MATI	-13.604	1.41E 3	-0.243	0.375	0.002	15.518			
		2:BEBAN HIDL	-4.982	501.859	-0.103	0.182	0.001	6.969			
		3:BEBAN GEM	-231.419	-942.358	26.065	2.469	-0.246	-16.566			
		4:KOMBINASI	-24.295	2.49E 3	-0.456	0.742	0.004	29.772			
		5:KOMB B. MA	-259.583	717.470	27.064	3.077	-0.256	2.305			
	14405	1:BEBAN MATI	13.604	-865.241	0.243	-0.375	0.002	4.527			
		2:BEBAN HIDL	4.982	-501.859	0.103	-0.182	0.001	1.890			
		3:BEBAN GEM	231.419	942.358	-26.065	-2.469	-0.214	-0.068			
		4:KOMBINASI	24.295	-1.84E 3	0.456	-0.742	0.004	8.456			
		5:KOMB B. MA	259.583	-176.880	-27.064	-3.077	-0.221	5.589			
21091	13715	1:BEBAN MATI	-1.239	-1.81E 3	-0.191	-0.569	0.002	-42.886			
		2:BEBAN HIDL	-0.601	-778.928	-0.085	-0.270	0.001	-16.521			
		3:BEBAN GEM	-398.490	-337.001	36.943	-2.163	-0.275	0.143			
		4:KOMBINASI	-2.449	-3.41E 3	-0.365	-1.114	0.003	-77.897			
		5:KOMB B. MA	-420.014	-2.63E 3	38.548	-3.002	-0.287	-52.648			
	14391	1:BEBAN MATI	1.239	2.26E 3	0.191	0.569	0.001	12.998			
		2:BEBAN HIDL	0.601	778.928	0.085	0.270	0.001	5.063			
		3:BEBAN GEM	398.490	337.001	-36.943	2.163	-0.268	-5.101			
		4:KOMBINASI	2.449	3.95E 3	0.365	1.114	0.002	23.698			
		5:KOMB B. MA	420.014	3.08E 3	-38.548	3.002	-0.280	10.680			
21092	12728	1:BEBAN MATI	2.738	4.72E 3	-0.509	1.162	0.004	58.449			
		2:BEBAN HIDL	0.454	1.7E 3	-0.202	0.473	0.001	22.103			
		3:BEBAN GEM	-998.659	-540.090	11.725	4.669	-0.109	-13.319			
		4:KOMBINASI	4.013	8.39E 3	-0.934	2.151	0.007	105.504			
		5:KOMB B. MA	-1.05E 3	5.17E 3	11.682	6.348	-0.110	57.726			
	14392	1:BEBAN MATI	-2.738	-4.27E 3	0.509	-1.162	0.004	7.670			
		2:BEBAN HIDL	-0.454	-1.7E 3	0.202	-0.473	0.002	2.926			
		3:BEBAN GEM	998.659	540.090	-11.725	-4.669	-0.064	5.374			
		4:KOMBINASI	-4.013	-7.85E 3	0.934	-2.151	0.007	13.885			
		5:KOMB B. MA	1.05E 3	-4.72E 3	-11.682	-6.348	-0.062	15.068			
21093	13716	1:BEBAN MATI	-14.883	-1.89E 3	0.065	-0.487	-0.000	-38.924			
		2:BEBAN HIDL	-4.588	-809.681	0.026	-0.239	-0.000	-15.174			
		3:BEBAN GEM	-1.38E 3	-346.640	10.838	-2.153	-0.119	0.306			
		4:KOMBINASI	-25.201	-3.56E 3	0.120	-0.967	-0.000	-70.987			
		5:KOMB B. MA	-1.46E 3	-2.74E 3	11.461	-2.891	-0.125	-47.707			
	13944	1:BEBAN MATI	14.883	2.34E 3	-0.065	0.487	-0.001	7.848			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 236	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	4.588	809.681	-0.026	0.239	-0.000	3.264			
		3:BEBAN GEM	1.38E 3	346.640	-10.838	2.153	-0.040	-5.405			
		4:KOMBINASI	25.201	4.1E 3	-0.120	0.967	-0.001	14.640			
		5:KOMB B. MA	1.46E 3	3.19E 3	-11.461	2.891	-0.043	4.131			
21094	12726	1:BEBAN MATI	-18.690	4.51E 3	-0.279	1.170	0.002	56.497			
		2:BEBAN HIDL	-5.651	1.63E 3	-0.114	0.479	0.001	21.353			
		3:BEBAN GEM	-1.35E 3	-546.250	-21.570	4.686	0.143	-13.328			
		4:KOMBINASI	-31.469	8.02E 3	-0.516	2.170	0.003	101.961			
		5:KOMB B. MA	-1.44E 3	4.92E 3	-22.996	6.378	0.153	55.314			
	13943	1:BEBAN MATI	18.690	-4.06E 3	0.279	-1.170	0.002	6.573			
		2:BEBAN HIDL	5.651	-1.63E 3	0.114	-0.479	0.001	2.590			
		3:BEBAN GEM	1.35E 3	546.250	21.570	-4.686	0.174	5.293			
		4:KOMBINASI	31.469	-7.48E 3	0.516	-2.170	0.004	12.033			
		5:KOMB B. MA	1.44E 3	-4.47E 3	22.996	-6.378	0.185	13.685			
21095	13717	1:BEBAN MATI	-1.318	-2.07E 3	0.255	-0.454	-0.002	-42.744			
		2:BEBAN HIDL	-0.702	-873.100	0.104	-0.226	-0.001	-16.474			
		3:BEBAN GEM	-855.177	-343.289	-16.574	-2.156	0.126	0.433			
		4:KOMBINASI	-2.705	-3.88E 3	0.472	-0.905	-0.003	-77.651			
		5:KOMB B. MA	-899.675	-2.95E 3	-17.086	-2.853	0.131	-52.173			
	13988	1:BEBAN MATI	1.318	2.52E 3	-0.255	0.454	-0.002	9.035			
		2:BEBAN HIDL	0.702	873.100	-0.104	0.226	-0.001	3.630			
		3:BEBAN GEM	855.177	343.289	16.574	2.156	0.117	-5.483			
		4:KOMBINASI	2.705	4.42E 3	-0.472	0.905	-0.004	16.651			
		5:KOMB B. MA	899.675	3.4E 3	17.086	2.853	0.121	5.456			
21096	12724	1:BEBAN MATI	2.165	4.56E 3	0.155	1.223	-0.001	51.723			
		2:BEBAN HIDL	0.721	1.64E 3	0.083	0.495	-0.001	19.634			
		3:BEBAN GEM	-662.910	-532.848	-39.844	4.779	0.287	-12.860			
		4:KOMBINASI	3.751	8.09E 3	0.319	2.259	-0.003	93.482			
		5:KOMB B. MA	-693.458	4.98E 3	-41.631	6.538	0.300	50.000			
	13987	1:BEBAN MATI	-2.165	-4.11E 3	-0.155	-1.223	-0.001	11.979			
		2:BEBAN HIDL	-0.721	-1.64E 3	-0.083	-0.495	-0.001	4.484			
		3:BEBAN GEM	662.910	532.848	39.844	-4.779	0.299	5.021			
		4:KOMBINASI	-3.751	-7.55E 3	-0.319	-2.259	-0.002	21.549			
		5:KOMB B. MA	693.458	-4.53E 3	41.631	-6.538	0.313	19.942			
21097	12722	1:BEBAN MATI	-18.817	1.5E 3	0.290	0.580	-0.002	17.576			
		2:BEBAN HIDL	-5.708	418.312	0.131	0.165	-0.001	5.415			
		3:BEBAN GEM	-523.116	-921.278	-25.070	2.495	0.215	-15.891			
		4:KOMBINASI	-31.713	2.47E 3	0.558	0.960	-0.005	29.755			
		5:KOMB B. MA	-571.514	786.824	-25.955	3.299	0.222	4.139			
	14001	1:BEBAN MATI	18.817	-962.589	-0.290	-0.580	-0.003	4.187			
		2:BEBAN HIDL	5.708	-418.312	-0.131	-0.165	-0.001	1.969			
		3:BEBAN GEM	523.116	921.278	25.070	-2.495	0.228	-0.372			
		4:KOMBINASI	31.713	-1.82E 3	-0.558	-0.960	-0.005	8.175			
		5:KOMB B. MA	571.514	-246.234	25.955	-3.299	0.236	4.978			
21098	12720	1:BEBAN MATI	-1.420	2.86E 3	0.492	0.856	-0.003	26.816			
		2:BEBAN HIDL	-2.921	1.18E 3	0.215	0.452	-0.001	11.584			
		3:BEBAN GEM	-322.936	-750.676	-41.496	4.049	0.252	-15.080			
		4:KOMBINASI	-6.378	5.32E 3	0.935	1.750	-0.005	50.713			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 237	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-342.255	2.78E 3	-42.950	5.378	0.261	17.932			
	14035	1:BEBAN MATI	1.420	-2.5E 3	-0.492	-0.856	-0.003	4.753			
		2:BEBAN HIDL	2.921	-1.18E 3	-0.215	-0.452	-0.001	2.270			
		3:BEBAN GEM	322.936	750.676	41.496	-4.049	0.237	6.246			
		4:KOMBINASI	6.378	-4.89E 3	-0.935	-1.750	-0.006	9.337			
		5:KOMB B. MA	342.255	-2.42E 3	42.950	-5.378	0.245	12.674			
21099	12775	1:BEBAN MATI	27.654	3.58E 3	-2.748	2.592	0.017	29.437			
		2:BEBAN HIDL	5.838	517.232	-0.612	1.472	0.004	4.972			
		3:BEBAN GEM	-223.344	-707.524	-12.831	3.215	0.076	-15.058			
		4:KOMBINASI	42.525	5.12E 3	-4.278	5.466	0.027	43.279			
		5:KOMB B. MA	-203.355	3.15E 3	-16.589	6.851	0.099	16.609			
	14263	1:BEBAN MATI	-27.654	-2.23E 3	2.748	-2.592	0.015	4.748			
		2:BEBAN HIDL	-5.838	-517.232	0.612	-1.472	0.003	1.115			
		3:BEBAN GEM	223.344	707.524	12.831	-3.215	0.075	6.732			
		4:KOMBINASI	-42.525	-3.5E 3	4.278	-5.466	0.024	7.481			
		5:KOMB B. MA	203.355	-1.8E 3	16.589	-6.851	0.096	12.485			
21100	12774	1:BEBAN MATI	28.545	3.46E 3	-2.251	2.491	0.015	28.772			
		2:BEBAN HIDL	7.166	507.832	-0.471	1.653	0.003	5.204			
		3:BEBAN GEM	-973.300	-656.549	-5.584	3.234	0.024	-14.626			
		4:KOMBINASI	45.720	4.97E 3	-3.455	5.635	0.024	42.854			
		5:KOMB B. MA	-989.120	3.08E 3	-8.397	6.878	0.043	16.538			
	14455	1:BEBAN MATI	-28.545	-2.11E 3	2.251	-2.491	0.011	4.032			
		2:BEBAN HIDL	-7.166	-507.832	0.471	-1.653	0.002	0.772			
		3:BEBAN GEM	973.300	656.549	5.584	-3.234	0.041	6.899			
		4:KOMBINASI	-45.720	-3.35E 3	3.455	-5.635	0.017	6.073			
		5:KOMB B. MA	989.120	-1.73E 3	8.397	-6.878	0.056	11.740			
21101	12773	1:BEBAN MATI	-34.962	2.27E 3	0.648	1.702	-0.006	20.080			
		2:BEBAN HIDL	-9.084	228.352	0.145	1.006	-0.001	4.706			
		3:BEBAN GEM	-2.57E 3	-816.350	60.455	0.908	-0.593	-14.813			
		4:KOMBINASI	-56.489	3.09E 3	1.009	3.652	-0.010	31.625			
		5:KOMB B. MA	-2.74E 3	1.55E 3	64.212	3.259	-0.630	7.349			
	14524	1:BEBAN MATI	34.962	-248.802	-0.648	-1.702	-0.005	2.190			
		2:BEBAN HIDL	9.084	-228.352	-0.145	-1.006	-0.001	-0.675			
		3:BEBAN GEM	2.57E 3	816.350	-60.455	-0.908	-0.474	0.403			
		4:KOMBINASI	56.489	-663.926	-1.009	-3.652	-0.008	1.548			
		5:KOMB B. MA	2.74E 3	471.354	-64.212	-3.259	-0.503	2.208			
21102	13662	1:BEBAN MATI	-2.500	-1.05E 3	-0.097	-0.189	0.001	-45.321			
		2:BEBAN HIDL	-0.275	-689.742	-0.047	-0.180	0.000	-16.641			
		3:BEBAN GEM	-1.52E 3	-399.816	27.280	-1.848	-0.194	-0.367			
		4:KOMBINASI	-3.440	-2.37E 3	-0.190	-0.516	0.001	-81.010			
		5:KOMB B. MA	-1.6E 3	-1.89E 3	28.519	-2.238	-0.203	-55.690			
	14190	1:BEBAN MATI	2.500	2.74E 3	0.097	0.189	0.001	17.414			
		2:BEBAN HIDL	0.275	689.742	0.047	0.180	0.000	6.495			
		3:BEBAN GEM	1.52E 3	399.816	-27.280	1.848	-0.207	-5.515			
		4:KOMBINASI	3.440	4.39E 3	0.190	0.516	0.002	31.289			
		5:KOMB B. MA	1.6E 3	3.57E 3	-28.519	2.238	-0.217	15.521			
21103	12772	1:BEBAN MATI	7.151	6.32E 3	1.249	-1.237	-0.008	70.524			
		2:BEBAN HIDL	2.522	1.77E 3	0.442	-0.879	-0.003	22.573			



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Job No

1

Sheet No

238

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.44E 3	-449.602	4.903	4.470	-0.057	-12.365			
		4:KOMBINASI	12.616	10.4E 3	2.206	-2.891	-0.015	120.746			
		5:KOMB B. MA	-1.51E 3	6.91E 3	6.663	2.929	-0.070	71.084			
	14181	1:BEBAN MATI	-7.151	-4.63E 3	-1.249	1.237	-0.010	9.957			
		2:BEBAN HIDL	-2.522	-1.77E 3	-0.442	0.879	-0.004	3.497			
		3:BEBAN GEM	1.44E 3	449.602	-4.903	-4.470	-0.015	5.752			
		4:KOMBINASI	-12.616	-8.39E 3	-2.206	2.891	-0.018	17.543			
		5:KOMB B. MA	1.51E 3	-5.22E 3	-6.663	-2.929	-0.028	18.094			
21104	13718	1:BEBAN MATI	-11.148	-1.18E 3	-0.190	-0.452	0.001	-40.380			
		2:BEBAN HIDL	-3.510	-731.193	-0.078	-0.366	0.000	-14.696			
		3:BEBAN GEM	-1.41E 3	-397.355	18.115	-1.790	-0.138	-0.447			
		4:KOMBINASI	-18.994	-2.58E 3	-0.353	-1.127	0.002	-71.969			
		5:KOMB B. MA	-1.49E 3	-2.03E 3	18.784	-2.550	-0.144	-49.667			
	14144	1:BEBAN MATI	11.148	2.86E 3	0.190	0.452	0.002	10.656			
		2:BEBAN HIDL	3.510	731.193	0.078	0.366	0.001	3.940			
		3:BEBAN GEM	1.41E 3	397.355	-18.115	1.790	-0.129	-5.398			
		4:KOMBINASI	18.994	4.61E 3	0.353	1.127	0.003	19.090			
		5:KOMB B. MA	1.49E 3	3.72E 3	-18.784	2.550	-0.133	7.352			
21105	12771	1:BEBAN MATI	-17.231	6.08E 3	1.321	-1.314	-0.009	68.609			
		2:BEBAN HIDL	-5.442	1.68E 3	0.485	-0.905	-0.003	21.831			
		3:BEBAN GEM	-1.44E 3	-443.144	-23.074	4.472	0.156	-12.232			
		4:KOMBINASI	-29.384	9.99E 3	2.361	-3.025	-0.016	117.261			
		5:KOMB B. MA	-1.54E 3	6.63E 3	-22.616	2.838	0.152	68.865			
	14143	1:BEBAN MATI	17.231	-4.4E 3	-1.321	1.314	-0.010	8.478			
		2:BEBAN HIDL	5.442	-1.68E 3	-0.485	0.905	-0.004	2.912			
		3:BEBAN GEM	1.44E 3	443.144	23.074	-4.472	0.184	5.713			
		4:KOMBINASI	29.384	-7.97E 3	-2.361	3.025	-0.019	14.833			
		5:KOMB B. MA	1.54E 3	-4.94E 3	22.616	-2.838	0.180	16.224			
21106	13660	1:BEBAN MATI	0.532	-1.39E 3	-0.135	-0.620	0.001	-45.032			
		2:BEBAN HIDL	0.553	-812.010	-0.051	-0.448	0.000	-16.506			
		3:BEBAN GEM	-1.37E 3	-390.730	-7.543	-1.791	0.061	-0.242			
		4:KOMBINASI	1.523	-2.96E 3	-0.244	-1.461	0.001	-80.448			
		5:KOMB B. MA	-1.43E 3	-2.28E 3	-8.086	-2.769	0.065	-55.190			
	14132	1:BEBAN MATI	-0.532	3.07E 3	0.135	0.620	0.001	12.234			
		2:BEBAN HIDL	-0.553	812.010	0.051	0.448	0.001	4.562			
		3:BEBAN GEM	1.37E 3	390.730	7.543	1.791	0.050	-5.505			
		4:KOMBINASI	-1.523	4.99E 3	0.244	1.461	0.002	21.979			
		5:KOMB B. MA	1.43E 3	3.97E 3	8.086	2.769	0.054	9.190			
21107	12770	1:BEBAN MATI	-3.850	6.22E 3	0.586	-2.143	-0.003	63.369			
		2:BEBAN HIDL	-0.538	1.76E 3	0.220	-1.405	-0.001	20.227			
		3:BEBAN GEM	-1.93E 3	-415.940	-29.312	4.632	0.215	-11.390			
		4:KOMBINASI	-5.481	10.3E 3	1.055	-4.820	-0.006	108.407			
		5:KOMB B. MA	-2.04E 3	6.84E 3	-30.060	1.877	0.221	63.546			
	14131	1:BEBAN MATI	3.850	-4.53E 3	-0.586	2.143	-0.005	15.691			
		2:BEBAN HIDL	0.538	-1.76E 3	-0.220	1.405	-0.002	5.667			
		3:BEBAN GEM	1.93E 3	415.940	29.312	-4.632	0.216	5.271			
		4:KOMBINASI	5.481	-8.25E 3	-1.055	4.820	-0.010	27.896			
		5:KOMB B. MA	2.04E 3	-5.15E 3	30.060	-1.877	0.221	24.626			



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Job No 1	Sheet No 239	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21108	12769	1:BEBAN MATI	-40.664	2.37E 3	-0.419	0.610	0.001	21.843			
		2:BEBAN HIDL	-12.161	164.985	-0.030	0.257	-0.000	3.436			
		3:BEBAN GEM	-1.47E 3	-1.07E 3	-17.454	2.993	0.122	-18.777			
		4:KOMBINASI	-68.253	3.11E 3	-0.551	1.143	0.001	31.709			
		5:KOMB B. MA	-1.59E 3	1.35E 3	-18.764	3.906	0.129	4.189			
14120		1:BEBAN MATI	40.664	-349.154	0.419	-0.610	0.006	2.198			
		2:BEBAN HIDL	12.161	-164.985	0.030	-0.257	0.001	-0.523			
		3:BEBAN GEM	1.47E 3	1.07E 3	17.454	-2.993	0.186	-0.136			
		4:KOMBINASI	68.253	-682.961	0.551	-1.143	0.009	1.800			
		5:KOMB B. MA	1.59E 3	676.874	18.764	-3.906	0.202	1.741			
21109	12768	1:BEBAN MATI	7.025	3.45E 3	-2.228	2.251	0.013	28.692			
		2:BEBAN HIDL	0.080	491.047	-0.433	1.516	0.002	4.980			
		3:BEBAN GEM	-436.490	-642.199	-10.732	3.280	0.066	-14.486			
		4:KOMBINASI	8.558	4.92E 3	-3.366	5.126	0.019	42.399			
		5:KOMB B. MA	-451.242	3.07E 3	-13.756	6.605	0.083	16.469			
14049		1:BEBAN MATI	-7.025	-2.1E 3	2.228	-2.251	0.013	3.951			
		2:BEBAN HIDL	-0.080	-491.047	0.433	-1.516	0.003	0.798			
		3:BEBAN GEM	436.490	642.199	10.732	-3.280	0.060	6.929			
		4:KOMBINASI	-8.558	-3.3E 3	3.366	-5.126	0.021	6.018			
		5:KOMB B. MA	451.242	-1.72E 3	13.756	-6.605	0.078	11.705			
21110	12778	1:BEBAN MATI	15.611	2.32E 3	-3.278	6.693	0.023	28.213			
		2:BEBAN HIDL	5.417	814.635	-1.184	3.630	0.008	11.090			
		3:BEBAN GEM	-1.13E 3	-497.905	3.432	3.135	-0.045	-13.264			
		4:KOMBINASI	27.400	4.09E 3	-5.828	13.839	0.041	51.599			
		5:KOMB B. MA	-1.16E 3	2.29E 3	-0.385	12.162	-0.019	20.940			
14164		1:BEBAN MATI	-15.611	-1.87E 3	3.278	-6.693	0.025	2.625			
		2:BEBAN HIDL	-5.417	-814.635	1.184	-3.630	0.009	0.893			
		3:BEBAN GEM	1.13E 3	497.905	-3.432	-3.135	-0.006	5.940			
		4:KOMBINASI	-27.400	-3.55E 3	5.828	-13.839	0.045	4.579			
		5:KOMB B. MA	1.16E 3	-1.84E 3	0.385	-12.162	0.025	9.397			
21111	13705	1:BEBAN MATI	0.511	1.3E 3	0.111	0.113	-0.001	13.000			
		2:BEBAN HIDL	-0.637	562.524	0.041	0.034	-0.000	5.656			
		3:BEBAN GEM	138.760	2.030	-2.033	-0.084	0.014	-0.423			
		4:KOMBINASI	-0.406	2.47E 3	0.198	0.191	-0.002	24.649			
		5:KOMB B. MA	145.827	1.64E 3	-2.000	0.045	0.014	15.949			
14214		1:BEBAN MATI	-0.511	-1.07E 3	-0.111	-0.113	-0.000	0.999			
		2:BEBAN HIDL	0.637	-562.524	-0.041	-0.034	-0.000	0.964			
		3:BEBAN GEM	-138.760	-2.030	2.033	0.084	0.010	0.447			
		4:KOMBINASI	0.406	-2.19E 3	-0.198	-0.191	-0.001	2.741			
		5:KOMB B. MA	-145.827	-1.41E 3	2.000	-0.045	0.010	2.047			
21112	13700	1:BEBAN MATI	-2.567	980.916	-0.158	0.107	0.001	5.654			
		2:BEBAN HIDL	-1.462	423.293	-0.040	0.005	0.000	2.860			
		3:BEBAN GEM	315.734	17.207	-5.225	-0.039	0.041	-0.198			
		4:KOMBINASI	-5.420	1.85E 3	-0.254	0.137	0.001	11.361			
		5:KOMB B. MA	328.076	1.25E 3	-5.668	0.070	0.044	7.162			
14423		1:BEBAN MATI	2.567	-750.265	0.158	-0.107	0.001	4.532			
		2:BEBAN HIDL	1.462	-423.293	0.040	-0.005	0.000	2.121			
		3:BEBAN GEM	-315.734	-17.207	5.225	0.039	0.020	0.401			



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Job No

1

Sheet No

240

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	5.420	-1.58E 3	0.254	-0.137	0.002	8.833			
		5:KOMB B. MA	-328.076	-1.02E 3	5.668	-0.070	0.023	6.226			
21113	12782	1:BEBAN MATI	-7.345	1.66E 3	-1.510	0.329	0.009	21.349			
		2:BEBAN HIDL	-1.337	635.280	-0.365	0.089	0.002	8.192			
		3:BEBAN GEM	833.683	-248.274	-37.685	3.214	0.253	-5.901			
		4:KOMBINASI	-10.953	3.01E 3	-2.396	0.537	0.014	38.725			
		5:KOMB B. MA	867.219	1.78E 3	-41.299	3.757	0.276	20.068			
	14244	1:BEBAN MATI	7.345	-1.43E 3	1.510	-0.329	0.009	-3.194			
		2:BEBAN HIDL	1.337	-635.280	0.365	-0.089	0.002	-0.716			
		3:BEBAN GEM	-833.683	248.274	37.685	-3.214	0.190	2.979			
		4:KOMBINASI	10.953	-2.73E 3	2.396	-0.537	0.014	-4.978			
		5:KOMB B. MA	-867.219	-1.55E 3	41.299	-3.757	0.210	-0.495			
21114	13663	1:BEBAN MATI	1.049	-509.997	0.209	-1.532	-0.001	-19.443			
		2:BEBAN HIDL	-2.106	-245.296	0.049	-0.052	-0.000	-3.733			
		3:BEBAN GEM	1.72E 3	-159.427	4.252	-0.645	-0.044	1.023			
		4:KOMBINASI	-2.111	-1E 3	0.329	-1.922	-0.002	-29.304			
		5:KOMB B. MA	1.81E 3	-824.573	4.703	-2.241	-0.047	-20.609			
	14349	1:BEBAN MATI	-1.049	2.04E 3	-0.209	1.532	-0.002	0.719			
		2:BEBAN HIDL	2.106	245.296	-0.049	0.052	-0.000	0.124			
		3:BEBAN GEM	-1.72E 3	159.427	-4.252	0.645	-0.019	-3.368			
		4:KOMBINASI	2.111	2.84E 3	-0.329	1.922	-0.003	1.062			
		5:KOMB B. MA	-1.81E 3	2.35E 3	-4.703	2.241	-0.022	-2.743			
21115	13691	1:BEBAN MATI	8.840	3.06E 3	0.763	2.668	-0.005	23.320			
		2:BEBAN HIDL	0.282	456.322	0.132	0.054	-0.001	6.059			
		3:BEBAN GEM	2.19E 3	-247.593	22.650	-0.919	-0.214	-3.466			
		4:KOMBINASI	11.059	4.41E 3	1.127	3.289	-0.007	37.678			
		5:KOMB B. MA	2.31E 3	3.08E 3	24.625	1.736	-0.230	23.317			
	14353	1:BEBAN MATI	-8.840	-1.54E 3	-0.763	-2.668	-0.006	10.512			
		2:BEBAN HIDL	-0.282	-456.322	-0.132	-0.054	-0.001	0.653			
		3:BEBAN GEM	-2.19E 3	247.593	-22.650	0.919	-0.119	-0.177			
		4:KOMBINASI	-11.059	-2.57E 3	-1.127	-3.289	-0.009	13.660			
		5:KOMB B. MA	-2.31E 3	-1.55E 3	-24.625	-1.736	-0.132	10.719			
21116	13719	1:BEBAN MATI	13.309	-308.659	0.102	-0.170	-0.001	-9.696			
		2:BEBAN HIDL	1.794	-175.714	0.022	0.005	-0.000	-5.612			
		3:BEBAN GEM	1.13E 3	-29.184	2.553	0.596	-0.016	0.051			
		4:KOMBINASI	18.841	-651.533	0.158	-0.197	-0.001	-20.615			
		5:KOMB B. MA	1.2E 3	-444.731	2.796	0.458	-0.018	-13.009			
	13791	1:BEBAN MATI	-13.309	596.974	-0.102	0.170	-0.001	3.035			
		2:BEBAN HIDL	-1.794	175.714	-0.022	-0.005	-0.000	3.028			
		3:BEBAN GEM	-1.13E 3	29.184	-2.553	-0.596	-0.021	-0.481			
		4:KOMBINASI	-18.841	997.511	-0.158	0.197	-0.001	8.486			
		5:KOMB B. MA	-1.2E 3	733.046	-2.796	-0.458	-0.023	4.347			
21117	13686	1:BEBAN MATI	10.517	1.41E 3	-0.123	0.429	0.000	16.771			
		2:BEBAN HIDL	1.149	542.002	-0.028	0.095	0.000	5.573			
		3:BEBAN GEM	1.38E 3	20.525	-7.457	-0.473	0.072	-0.407			
		4:KOMBINASI	14.459	2.56E 3	-0.193	0.667	0.000	29.041			
		5:KOMB B. MA	1.46E 3	1.76E 3	-7.971	-0.011	0.076	19.687			
	13790	1:BEBAN MATI	-10.517	-1.12E 3	0.123	-0.429	0.002	1.849			



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Job No 1	Sheet No 241	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-1.149	-542.002	0.028	-0.095	0.000	2.400			
		3:BEBAN GEM	-1.38E 3	-20.525	7.457	0.473	0.038	0.709			
		4:KOMBINASI	-14.459	-2.21E 3	0.193	-0.667	0.003	6.059			
		5:KOMB B. MA	-1.46E 3	-1.47E 3	7.971	0.011	0.041	4.034			
21118	13661	1:BEBAN MATI	3.836	196.792	-0.278	-0.168	0.002	-18.390			
		2:BEBAN HIDL	-0.786	-180.608	-0.055	0.149	0.000	-3.558			
		3:BEBAN GEM	1.77E 3	-27.475	-2.049	0.775	-0.007	0.436			
		4:KOMBINASI	3.346	-52.822	-0.421	0.037	0.003	-27.760			
		5:KOMB B. MA	1.86E 3	59.579	-2.462	0.735	-0.005	-20.066			
	13949	1:BEBAN MATI	-3.836	1.33E 3	0.278	0.168	0.002	10.062			
		2:BEBAN HIDL	0.786	180.608	0.055	-0.149	0.000	0.901			
		3:BEBAN GEM	-1.77E 3	27.475	2.049	-0.775	0.037	-0.840			
		4:KOMBINASI	-3.346	1.88E 3	0.421	-0.037	0.003	13.516			
		5:KOMB B. MA	-1.86E 3	1.47E 3	2.462	-0.735	0.041	9.720			
21119	12781	1:BEBAN MATI	-3.664	3.99E 3	-0.730	0.989	0.006	46.536			
		2:BEBAN HIDL	-4.636	554.340	-0.200	-0.353	0.002	8.353			
		3:BEBAN GEM	1.19E 3	-150.385	-19.952	2.266	0.106	-5.102			
		4:KOMBINASI	-11.815	5.67E 3	-1.196	0.622	0.009	69.209			
		5:KOMB B. MA	1.24E 3	4.16E 3	-21.799	3.156	0.118	46.191			
	13945	1:BEBAN MATI	3.664	-2.46E 3	0.730	-0.989	0.005	0.908			
		2:BEBAN HIDL	4.636	-554.340	0.200	0.353	0.001	-0.199			
		3:BEBAN GEM	-1.19E 3	150.385	19.952	-2.266	0.188	2.890			
		4:KOMBINASI	11.815	-3.84E 3	1.196	-0.622	0.008	0.771			
		5:KOMB B. MA	-1.24E 3	-2.64E 3	21.799	-3.156	0.203	3.823			
21120	13677	1:BEBAN MATI	-4.681	573.985	0.475	-0.034	-0.003	3.769			
		2:BEBAN HIDL	-1.758	257.911	0.130	0.013	-0.001	2.020			
		3:BEBAN GEM	132.438	-132.761	-6.959	-0.696	0.058	-1.334			
		4:KOMBINASI	-8.430	1.1E 3	0.778	-0.021	-0.005	7.755			
		5:KOMB B. MA	133.325	589.333	-6.754	-0.757	0.058	3.580			
	13781	1:BEBAN MATI	4.681	-343.333	-0.475	0.034	-0.003	1.629			
		2:BEBAN HIDL	1.758	-257.911	-0.130	-0.013	-0.001	1.015			
		3:BEBAN GEM	-132.438	132.761	6.959	0.696	0.024	-0.228			
		4:KOMBINASI	8.430	-824.658	-0.778	0.021	-0.004	3.578			
		5:KOMB B. MA	-133.325	-358.682	6.754	0.757	0.022	1.998			
21121	13672	1:BEBAN MATI	-0.026	1.27E 3	0.102	0.138	-0.001	12.820			
		2:BEBAN HIDL	-0.830	535.840	0.021	0.036	-0.000	5.705			
		3:BEBAN GEM	113.794	23.030	0.085	-0.091	0.003	-0.413			
		4:KOMBINASI	-1.359	2.38E 3	0.156	0.224	-0.001	24.512			
		5:KOMB B. MA	118.959	1.61E 3	0.204	0.064	0.002	15.810			
	14017	1:BEBAN MATI	0.026	-1.04E 3	-0.102	-0.138	-0.000	0.756			
		2:BEBAN HIDL	0.830	-535.840	-0.021	-0.036	-0.000	0.601			
		3:BEBAN GEM	-113.794	-23.030	-0.085	0.091	-0.004	0.684			
		4:KOMBINASI	1.359	-2.1E 3	-0.156	-0.224	-0.001	1.868			
		5:KOMB B. MA	-118.959	-1.38E 3	-0.204	-0.064	-0.004	1.834			
21122	13703	1:BEBAN MATI	4.215	1.36E 3	-0.056	0.003	0.000	13.004			
		2:BEBAN HIDL	0.551	581.809	-0.022	0.002	0.000	5.686			
		3:BEBAN GEM	118.759	-4.151	7.165	-0.099	-0.042	-0.482			
		4:KOMBINASI	5.940	2.56E 3	-0.102	0.007	0.001	24.702			



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Job No 1	Sheet No 242	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	129.243	1.7E 3	7.455	-0.100	-0.044	15.909			
	14312	1:BEBAN MATI	-4.215	-1.13E 3	0.056	-0.003	0.000	1.605			
		2:BEBAN HIDL	-0.551	-581.809	0.022	-0.002	0.000	1.161			
		3:BEBAN GEM	-118.759	4.151	-7.165	0.099	-0.042	0.433			
		4:KOMBINASI	-5.940	-2.28E 3	0.102	-0.007	0.001	3.783			
		5:KOMB B. MA	-129.243	-1.47E 3	-7.455	0.100	-0.044	2.756			
21123	13698	1:BEBAN MATI	1.773	1.23E 3	-0.147	0.031	0.001	11.136			
		2:BEBAN HIDL	-1.094	500.021	-0.064	0.017	0.000	4.424			
		3:BEBAN GEM	571.273	0.675	23.127	-0.138	-0.133	-0.591			
		4:KOMBINASI	0.378	2.28E 3	-0.278	0.064	0.001	20.442			
		5:KOMB B. MA	600.953	1.53E 3	24.099	-0.104	-0.139	13.170			
	14488	1:BEBAN MATI	-1.773	-1E 3	0.147	-0.031	0.001	1.989			
		2:BEBAN HIDL	1.094	-500.021	0.064	-0.017	0.000	1.460			
		3:BEBAN GEM	-571.273	-0.675	-23.127	0.138	-0.139	0.598			
		4:KOMBINASI	-0.378	-2E 3	0.278	-0.064	0.002	4.723			
		5:KOMB B. MA	-600.953	-1.3E 3	-24.099	0.104	-0.144	3.494			
21124	13694	1:BEBAN MATI	1.741	570.971	-0.091	0.001	0.001	8.244			
		2:BEBAN HIDL	-0.415	255.152	-0.039	-0.002	0.000	4.345			
		3:BEBAN GEM	427.280	-9.736	14.681	0.128	-0.134	-0.379			
		4:KOMBINASI	1.426	1.09E 3	-0.171	-0.003	0.002	16.844			
		5:KOMB B. MA	450.136	713.840	15.301	0.134	-0.140	10.452			
	14396	1:BEBAN MATI	-1.741	-224.994	0.091	-0.001	0.001	-1.219			
		2:BEBAN HIDL	0.415	-255.152	0.039	0.002	0.000	0.159			
		3:BEBAN GEM	-427.280	9.736	-14.681	-0.128	-0.125	0.207			
		4:KOMBINASI	-1.426	-678.236	0.171	0.003	0.001	-1.207			
		5:KOMB B. MA	-450.136	-367.862	-15.301	-0.134	-0.130	-0.905			
21125	13720	1:BEBAN MATI	-0.556	-165.171	-0.037	-0.018	0.000	-11.630			
		2:BEBAN HIDL	-0.819	-121.941	-0.021	-0.010	0.000	-4.680			
		3:BEBAN GEM	572.915	-44.686	18.171	0.582	-0.136	0.064			
		4:KOMBINASI	-1.977	-393.312	-0.078	-0.039	0.001	-21.444			
		5:KOMB B. MA	600.514	-285.256	19.029	0.586	-0.142	-14.371			
	14373	1:BEBAN MATI	0.556	453.486	0.037	0.018	0.000	7.080			
		2:BEBAN HIDL	0.819	121.941	0.021	0.010	0.000	2.886			
		3:BEBAN GEM	-572.915	44.686	-18.171	-0.582	-0.132	-0.722			
		4:KOMBINASI	1.977	739.289	0.078	0.039	0.001	13.114			
		5:KOMB B. MA	-600.514	573.571	-19.029	-0.586	-0.138	8.054			
21126	13689	1:BEBAN MATI	-2.545	1.39E 3	-0.007	-0.007	0.000	16.102			
		2:BEBAN HIDL	-1.268	548.404	-0.009	-0.003	0.000	6.881			
		3:BEBAN GEM	729.972	19.276	37.707	-0.446	-0.285	-0.541			
		4:KOMBINASI	-5.083	2.54E 3	-0.023	-0.013	0.000	30.332			
		5:KOMB B. MA	763.164	1.73E 3	39.579	-0.477	-0.299	19.663			
	14374	1:BEBAN MATI	2.545	-1.1E 3	0.007	0.007	0.000	2.153			
		2:BEBAN HIDL	1.268	-548.404	0.009	0.003	0.000	1.186			
		3:BEBAN GEM	-729.972	-19.276	-37.707	0.446	-0.270	0.824			
		4:KOMBINASI	5.083	-2.19E 3	0.023	0.013	0.000	4.481			
		5:KOMB B. MA	-763.164	-1.45E 3	-39.579	0.477	-0.283	3.730			
21127	13721	1:BEBAN MATI	-4.674	-319.992	-0.004	0.004	0.000	-9.476			
		2:BEBAN HIDL	-1.816	-171.609	-0.003	0.000	0.000	-4.039			



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Job No

1

Sheet No

243

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.55E 3	-42.937	113.954	0.573	-0.924	0.129			
		4:KOMBINASI	-8.514	-658.564	-0.010	0.005	0.000	-17.833			
		5:KOMB B. MA	1.63E 3	-468.040	119.645	0.605	-0.970	-11.764			
	13923	1:BEBAN MATI	4.674	608.306	0.004	-0.004	0.000	2.648			
		2:BEBAN HIDL	1.816	171.609	0.003	-0.000	0.000	1.514			
		3:BEBAN GEM	-1.55E 3	42.937	-113.954	-0.573	-0.752	-0.760			
		4:KOMBINASI	8.514	1E 3	0.010	-0.005	0.000	5.601			
		5:KOMB B. MA	-1.63E 3	756.355	-119.645	-0.605	-0.790	2.759			
21128	13684	1:BEBAN MATI	-3.702	1.32E 3	0.010	-0.002	-0.000	16.008			
		2:BEBAN HIDL	-1.563	530.106	0.007	-0.000	-0.000	6.852			
		3:BEBAN GEM	-1.07E 3	18.399	-111.818	-0.448	0.848	-0.513			
		4:KOMBINASI	-6.944	2.44E 3	0.023	-0.004	-0.000	30.172			
		5:KOMB B. MA	-1.13E 3	1.66E 3	-117.394	-0.473	0.890	19.580			
	13922	1:BEBAN MATI	3.702	-1.04E 3	-0.010	0.002	-0.000	1.352			
		2:BEBAN HIDL	1.563	-530.106	-0.007	0.000	-0.000	0.946			
		3:BEBAN GEM	1.07E 3	-18.399	111.818	0.448	0.797	0.783			
		4:KOMBINASI	6.944	-2.09E 3	-0.023	0.004	-0.000	3.135			
		5:KOMB B. MA	1.13E 3	-1.37E 3	117.394	0.473	0.837	2.742			
21129	13722	1:BEBAN MATI	-1.644	-399.158	0.014	0.017	-0.000	-11.522			
		2:BEBAN HIDL	-1.050	-195.231	0.012	0.008	-0.000	-4.650			
		3:BEBAN GEM	-482.247	-39.945	-37.565	0.572	0.264	0.233			
		4:KOMBINASI	-3.652	-791.359	0.035	0.033	-0.000	-21.266			
		5:KOMB B. MA	-508.633	-558.239	-39.423	0.622	0.277	-14.067			
	13970	1:BEBAN MATI	1.644	687.473	-0.014	-0.017	-0.000	3.529			
		2:BEBAN HIDL	1.050	195.231	-0.012	-0.008	-0.000	1.778			
		3:BEBAN GEM	482.247	39.945	37.565	-0.572	0.288	-0.820			
		4:KOMBINASI	3.652	1.14E 3	-0.035	-0.033	-0.000	7.081			
		5:KOMB B. MA	508.633	846.553	39.423	-0.622	0.303	3.735			
21130	13680	1:BEBAN MATI	0.705	1.18E 3	0.068	0.023	-0.000	9.187			
		2:BEBAN HIDL	-0.532	484.000	0.033	0.014	-0.000	4.718			
		3:BEBAN GEM	-316.248	5.395	-25.841	-0.509	0.186	-0.623			
		4:KOMBINASI	-0.006	2.19E 3	0.134	0.050	-0.001	18.573			
		5:KOMB B. MA	-331.675	1.47E 3	-27.045	-0.503	0.195	11.363			
	13969	1:BEBAN MATI	-0.705	-889.155	-0.068	-0.023	-0.001	6.013			
		2:BEBAN HIDL	0.532	-484.000	-0.033	-0.014	-0.000	2.402			
		3:BEBAN GEM	316.248	-5.395	25.841	0.509	0.194	0.703			
		4:KOMBINASI	0.006	-1.84E 3	-0.134	-0.050	-0.001	11.058			
		5:KOMB B. MA	331.675	-1.19E 3	27.045	0.503	0.203	8.192			
21131	13675	1:BEBAN MATI	1.719	723.177	0.098	0.001	-0.001	10.982			
		2:BEBAN HIDL	-0.787	236.602	0.042	-0.001	-0.000	3.958			
		3:BEBAN GEM	-43.819	-11.917	-18.927	0.091	0.171	-0.307			
		4:KOMBINASI	0.804	1.25E 3	0.185	-0.001	-0.002	19.511			
		5:KOMB B. MA	-44.762	852.626	-19.750	0.096	0.178	13.034			
	13992	1:BEBAN MATI	-1.719	-377.200	-0.098	-0.001	-0.001	-1.270			
		2:BEBAN HIDL	0.787	-236.602	-0.042	0.001	-0.000	0.218			
		3:BEBAN GEM	43.819	11.917	18.927	-0.091	0.163	0.097			
		4:KOMBINASI	-0.804	-831.203	-0.185	0.001	-0.002	-1.175			
		5:KOMB B. MA	44.762	-506.648	19.750	-0.096	0.170	-1.037			



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Job No 1	Sheet No 244	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21132	13670	1:BEBAN MATI	4.513	1.26E 3	0.072	-0.009	-0.000	12.734			
		2:BEBAN HIDL	0.481	538.382	0.030	-0.004	-0.000	5.691			
		3:BEBAN GEM	-48.774	9.398	-11.308	-0.106	0.072	-0.442			
		4:KOMBINASI	6.186	2.38E 3	0.134	-0.017	-0.001	24.386			
		5:KOMB B. MA	-46.411	1.6E 3	-11.783	-0.123	0.075	15.684			
14082		1:BEBAN MATI	-4.513	-1.03E 3	-0.072	0.009	-0.000	0.768			
		2:BEBAN HIDL	-0.481	-538.382	-0.030	0.004	-0.000	0.645			
		3:BEBAN GEM	48.774	-9.398	11.308	0.106	0.061	0.553			
		4:KOMBINASI	-6.186	-2.1E 3	-0.134	0.017	-0.001	1.954			
		5:KOMB B. MA	46.411	-1.36E 3	11.783	0.123	0.063	1.736			
21133	13702	1:BEBAN MATI	2.793	1.34E 3	-0.037	0.029	0.000	12.902			
		2:BEBAN HIDL	0.265	583.590	-0.021	-0.009	0.000	5.685			
		3:BEBAN GEM	60.994	-2.424	12.891	-0.106	-0.077	-0.472			
		4:KOMBINASI	3.776	2.54E 3	-0.078	0.021	0.000	24.578			
		5:KOMB B. MA	66.996	1.69E 3	13.485	-0.087	-0.080	15.817			
14338		1:BEBAN MATI	-2.793	-1.11E 3	0.037	-0.029	0.000	1.522			
		2:BEBAN HIDL	-0.265	-583.590	0.021	0.009	0.000	1.183			
		3:BEBAN GEM	-60.994	2.424	-12.891	0.106	-0.075	0.444			
		4:KOMBINASI	-3.776	-2.27E 3	0.078	-0.021	0.000	3.719			
		5:KOMB B. MA	-66.996	-1.46E 3	-13.485	0.087	-0.078	2.698			
21134	13697	1:BEBAN MATI	1.190	1.22E 3	-0.090	0.065	0.001	11.110			
		2:BEBAN HIDL	-0.766	502.719	-0.054	-0.012	0.000	4.467			
		3:BEBAN GEM	195.690	3.258	29.682	-0.138	-0.180	-0.574			
		4:KOMBINASI	0.203	2.27E 3	-0.195	0.058	0.001	20.480			
		5:KOMB B. MA	206.205	1.52E 3	31.043	-0.088	-0.188	13.188			
14510		1:BEBAN MATI	-1.190	-988.193	0.090	-0.065	0.001	1.876			
		2:BEBAN HIDL	0.766	-502.719	0.054	0.012	0.000	1.449			
		3:BEBAN GEM	-195.690	-3.258	-29.682	0.138	-0.170	0.612			
		4:KOMBINASI	-0.203	-1.99E 3	0.195	-0.058	0.001	4.569			
		5:KOMB B. MA	-206.205	-1.29E 3	-31.043	0.088	-0.178	3.388			
21135	13693	1:BEBAN MATI	-0.382	565.757	-0.057	-0.065	0.000	7.684			
		2:BEBAN HIDL	-0.705	258.200	-0.030	-0.012	0.000	4.379			
		3:BEBAN GEM	199.981	-10.703	16.929	0.120	-0.153	-0.365			
		4:KOMBINASI	-1.587	1.09E 3	-0.117	-0.098	0.001	16.227			
		5:KOMB B. MA	209.174	709.439	17.700	0.053	-0.160	9.928			
14402		1:BEBAN MATI	0.382	-219.780	0.057	0.065	0.001	-0.751			
		2:BEBAN HIDL	0.705	-258.200	0.030	0.012	0.000	0.179			
		3:BEBAN GEM	-199.981	10.703	-16.929	-0.120	-0.146	0.176			
		4:KOMBINASI	1.587	-676.855	0.117	0.098	0.001	-0.615			
		5:KOMB B. MA	-209.174	-363.461	-17.700	-0.053	-0.153	-0.458			
21136	13723	1:BEBAN MATI	-1.893	-113.363	-0.068	-0.186	0.001	-10.477			
		2:BEBAN HIDL	-0.997	-127.996	-0.033	-0.012	0.000	-4.775			
		3:BEBAN GEM	190.472	-43.589	25.641	0.572	-0.194	0.078			
		4:KOMBINASI	-3.867	-340.829	-0.134	-0.242	0.001	-20.212			
		5:KOMB B. MA	197.504	-235.929	26.836	0.408	-0.203	-13.260			
14385		1:BEBAN MATI	1.893	401.678	0.068	0.186	0.000	6.689			
		2:BEBAN HIDL	0.997	127.996	0.033	0.012	0.000	2.892			
		3:BEBAN GEM	-190.472	43.589	-25.641	-0.572	-0.184	-0.719			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

245

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	3.867	686.807	0.134	0.242	0.001	12.654			
		5:KOMB B. MA	-197.504	524.244	-26.836	-0.408	-0.192	7.669			
21137	13688	1:BEBAN MATI	-4.310	1.31E 3	-0.053	0.166	0.000	15.059			
		2:BEBAN HIDL	-1.637	553.495	-0.023	0.003	0.000	6.970			
		3:BEBAN GEM	-132.339	17.512	23.798	-0.438	-0.170	-0.584			
		4:KOMBINASI	-7.791	2.46E 3	-0.101	0.204	0.001	29.222			
		5:KOMB B. MA	-144.248	1.66E 3	24.921	-0.292	-0.178	18.628			
	14386	1:BEBAN MATI	4.310	-1.02E 3	0.053	-0.166	0.000	2.130			
		2:BEBAN HIDL	1.637	-553.495	0.023	-0.003	0.000	1.172			
		3:BEBAN GEM	132.339	-17.512	-23.798	0.438	-0.180	0.841			
		4:KOMBINASI	7.791	-2.11E 3	0.101	-0.204	0.001	4.431			
		5:KOMB B. MA	144.248	-1.37E 3	-24.921	0.292	-0.189	3.717			
21138	13724	1:BEBAN MATI	-4.940	-256.889	-0.012	-0.161	0.000	-8.519			
		2:BEBAN HIDL	-1.747	-176.609	-0.005	-0.008	0.000	-4.125			
		3:BEBAN GEM	-963.560	-41.196	6.692	0.565	-0.087	0.165			
		4:KOMBINASI	-8.723	-590.841	-0.022	-0.207	0.000	-16.822			
		5:KOMB B. MA	-1.02E 3	-406.110	7.011	0.427	-0.091	-10.821			
	13937	1:BEBAN MATI	4.940	545.204	0.012	0.161	0.000	2.619			
		2:BEBAN HIDL	1.747	176.609	0.005	0.008	0.000	1.527			
		3:BEBAN GEM	963.560	41.196	-6.692	-0.565	-0.011	-0.771			
		4:KOMBINASI	8.723	936.818	0.022	0.207	0.000	5.586			
		5:KOMB B. MA	1.02E 3	694.424	-7.011	-0.427	-0.012	2.726			
21139	13683	1:BEBAN MATI	-5.052	1.26E 3	0.026	0.159	-0.000	14.975			
		2:BEBAN HIDL	-1.821	535.620	0.010	0.003	-0.000	6.939			
		3:BEBAN GEM	-718.609	15.895	-15.725	-0.441	0.119	-0.561			
		4:KOMBINASI	-8.977	2.37E 3	0.048	0.196	-0.000	29.072			
		5:KOMB B. MA	-760.684	1.6E 3	-16.479	-0.302	0.125	18.549			
	13936	1:BEBAN MATI	5.052	-969.970	-0.026	-0.159	-0.000	1.414			
		2:BEBAN HIDL	1.821	-535.620	-0.010	-0.003	-0.000	0.940			
		3:BEBAN GEM	718.609	-15.895	15.725	0.441	0.112	0.795			
		4:KOMBINASI	8.977	-2.02E 3	-0.048	-0.196	-0.000	3.201			
		5:KOMB B. MA	760.684	-1.31E 3	16.479	0.302	0.117	2.813			
21140	13725	1:BEBAN MATI	-2.992	-329.360	0.057	-0.163	-0.000	-10.366			
		2:BEBAN HIDL	-1.271	-200.938	0.026	-0.008	-0.000	-4.737			
		3:BEBAN GEM	-306.222	-38.693	-18.031	0.564	0.132	0.253			
		4:KOMBINASI	-5.624	-716.733	0.111	-0.208	-0.001	-20.018			
		5:KOMB B. MA	-325.287	-490.551	-18.860	0.425	0.138	-12.943			
	13982	1:BEBAN MATI	2.992	617.674	-0.057	0.163	-0.000	3.401			
		2:BEBAN HIDL	1.271	200.938	-0.026	0.008	-0.000	1.781			
		3:BEBAN GEM	306.222	38.693	18.031	-0.564	0.134	-0.822			
		4:KOMBINASI	5.624	1.06E 3	-0.111	0.208	-0.001	6.930			
		5:KOMB B. MA	325.287	778.865	18.860	-0.425	0.140	3.606			
21141	13679	1:BEBAN MATI	-1.519	1.12E 3	0.075	0.234	-0.001	8.664			
		2:BEBAN HIDL	-0.930	489.083	0.037	0.013	-0.000	4.824			
		3:BEBAN GEM	-219.230	5.035	-16.219	-0.496	0.120	-0.640			
		4:KOMBINASI	-3.310	2.13E 3	0.149	0.301	-0.001	18.114			
		5:KOMB B. MA	-232.269	1.42E 3	-16.933	-0.279	0.126	10.886			
	13981	1:BEBAN MATI	1.519	-830.627	-0.075	-0.234	-0.001	5.675			



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Job No

1

Sheet No

246

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	0.930	-489.083	-0.037	-0.013	-0.000	2.371			
		3:BEBAN GEM	219.230	-5.035	16.219	0.496	0.118	0.714			
		4:KOMBINASI	3.310	-1.78E 3	-0.149	-0.301	-0.001	10.603			
		5:KOMB B. MA	232.269	-1.13E 3	16.933	0.279	0.123	7.847			
21142	13674	1:BEBAN MATI	0.560	740.688	0.058	-0.015	-0.001	10.861			
		2:BEBAN HIDL	-0.672	237.574	0.031	0.000	-0.000	3.957			
		3:BEBAN GEM	-160.843	-11.512	-10.972	0.077	0.098	-0.267			
		4:KOMBINASI	-0.403	1.27E 3	0.118	-0.018	-0.001	19.364			
		5:KOMB B. MA	-168.728	871.146	-11.444	0.066	0.102	12.955			
	13998	1:BEBAN MATI	-0.560	-394.711	-0.058	0.015	-0.000	-0.840			
		2:BEBAN HIDL	0.672	-237.574	-0.031	-0.000	-0.000	0.237			
		3:BEBAN GEM	160.843	11.512	10.972	-0.077	0.096	0.063			
		4:KOMBINASI	0.403	-853.772	-0.118	0.018	-0.001	-0.629			
		5:KOMB B. MA	168.728	-525.168	11.444	-0.066	0.100	-0.631			
21143	13669	1:BEBAN MATI	2.843	1.25E 3	0.055	0.040	-0.000	12.607			
		2:BEBAN HIDL	0.154	539.733	0.033	-0.011	-0.000	5.687			
		3:BEBAN GEM	-51.001	11.505	-12.644	-0.114	0.081	-0.435			
		4:KOMBINASI	3.657	2.36E 3	0.120	0.031	-0.001	24.228			
		5:KOMB B. MA	-50.616	1.59E 3	-13.200	-0.086	0.085	15.563			
	14104	1:BEBAN MATI	-2.843	-1.02E 3	-0.055	-0.040	-0.000	0.743			
		2:BEBAN HIDL	-0.154	-539.733	-0.033	0.011	-0.000	0.665			
		3:BEBAN GEM	51.001	-11.505	12.644	0.114	0.068	0.570			
		4:KOMBINASI	-3.657	-2.09E 3	-0.120	-0.031	-0.001	1.955			
		5:KOMB B. MA	50.616	-1.36E 3	13.200	0.086	0.071	1.741			
21144	13701	1:BEBAN MATI	3.629	1.23E 3	-0.105	-0.173	0.001	11.918			
		2:BEBAN HIDL	0.358	511.271	-0.039	-0.046	0.000	5.211			
		3:BEBAN GEM	-122.164	-11.715	5.854	-0.110	-0.033	-0.883			
		4:KOMBINASI	4.927	2.3E 3	-0.188	-0.281	0.001	22.640			
		5:KOMB B. MA	-124.429	1.53E 3	6.019	-0.316	-0.034	14.118			
	14255	1:BEBAN MATI	-3.629	-1E 3	0.105	0.173	0.000	1.228			
		2:BEBAN HIDL	-0.358	-511.271	0.039	0.046	0.000	0.805			
		3:BEBAN GEM	122.164	11.715	-5.854	0.110	-0.036	0.745			
		4:KOMBINASI	-4.927	-2.02E 3	0.188	0.281	0.001	2.763			
		5:KOMB B. MA	124.429	-1.3E 3	-6.019	0.316	-0.037	2.493			
21145	13696	1:BEBAN MATI	-1.796	1.09E 3	-0.028	-0.154	0.000	9.601			
		2:BEBAN HIDL	-1.020	429.670	-0.022	-0.009	0.000	3.878			
		3:BEBAN GEM	-399.460	6.443	19.582	-0.140	-0.121	-0.673			
		4:KOMBINASI	-3.787	1.99E 3	-0.068	-0.198	0.001	17.726			
		5:KOMB B. MA	-421.841	1.35E 3	20.520	-0.306	-0.127	11.221			
	14448	1:BEBAN MATI	1.796	-858.527	0.028	0.154	0.000	1.859			
		2:BEBAN HIDL	1.020	-429.670	0.022	0.009	0.000	1.179			
		3:BEBAN GEM	399.460	-6.443	-19.582	0.140	-0.109	0.749			
		4:KOMBINASI	3.787	-1.72E 3	0.068	0.198	0.000	4.117			
		5:KOMB B. MA	421.841	-1.12E 3	-20.520	0.306	-0.115	3.353			
21146	13692	1:BEBAN MATI	-2.296	604.757	-0.040	0.053	0.000	8.034			
		2:BEBAN HIDL	-0.978	243.955	-0.027	0.030	0.000	3.897			
		3:BEBAN GEM	-463.139	-39.399	13.815	0.087	-0.131	-1.039			
		4:KOMBINASI	-4.320	1.12E 3	-0.091	0.111	0.001	15.875			



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Job No 1	Sheet No 247	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-489.178	709.761	14.450	0.163	-0.138	9.281			
	14521	1:BEBAN MATI	2.296	-258.779	0.040	-0.053	0.000	-0.413			
		2:BEBAN HIDL	0.978	-243.955	0.027	-0.030	0.000	0.410			
		3:BEBAN GEM	463.139	39.399	-13.815	-0.087	-0.112	0.344			
		4:KOMBINASI	4.320	-700.863	0.091	-0.111	0.001	0.161			
		5:KOMB B. MA	489.178	-363.783	-14.450	-0.163	-0.117	0.194			
21147	13726	1:BEBAN MATI	-5.061	-136.756	-0.109	0.205	0.001	-10.431			
		2:BEBAN HIDL	-1.664	-100.948	-0.044	0.038	0.000	-4.160			
		3:BEBAN GEM	-629.823	-44.288	11.241	0.578	-0.088	0.245			
		4:KOMBINASI	-8.736	-325.623	-0.200	0.306	0.002	-19.173			
		5:KOMB B. MA	-667.374	-243.827	11.668	0.834	-0.091	-12.669			
	14528	1:BEBAN MATI	5.061	425.071	0.109	-0.205	0.001	6.298			
		2:BEBAN HIDL	1.664	100.948	0.044	-0.038	0.000	2.675			
		3:BEBAN GEM	629.823	44.288	-11.241	-0.578	-0.078	-0.897			
		4:KOMBINASI	8.736	671.601	0.200	-0.306	0.001	11.838			
		5:KOMB B. MA	667.374	532.142	-11.668	-0.834	-0.081	6.962			
21148	13687	1:BEBAN MATI	-3.815	1.3E 3	-0.033	-0.166	0.000	15.365			
		2:BEBAN HIDL	-1.082	503.214	-0.014	-0.002	0.000	6.388			
		3:BEBAN GEM	-819.676	15.715	8.512	-0.486	-0.069	-0.940			
		4:KOMBINASI	-6.309	2.36E 3	-0.063	-0.203	0.000	28.659			
		5:KOMB B. MA	-865.124	1.62E 3	8.896	-0.677	-0.072	18.211			
	14529	1:BEBAN MATI	3.815	-1.01E 3	0.033	0.166	0.000	1.626			
		2:BEBAN HIDL	1.082	-503.214	0.014	0.002	0.000	1.015			
		3:BEBAN GEM	819.676	-15.715	-8.512	0.486	-0.056	1.171			
		4:KOMBINASI	6.309	-2.02E 3	0.063	0.203	0.000	3.575			
		5:KOMB B. MA	865.124	-1.33E 3	-8.896	0.677	-0.059	3.465			
21149	13727	1:BEBAN MATI	-6.794	-272.951	-0.021	0.146	0.000	-9.018			
		2:BEBAN HIDL	-2.142	-147.073	-0.008	0.009	0.000	-3.684			
		3:BEBAN GEM	-939.271	-48.304	4.134	0.579	-0.041	0.339			
		4:KOMBINASI	-11.580	-562.858	-0.038	0.190	0.000	-16.716			
		5:KOMB B. MA	-994.313	-411.914	4.315	0.760	-0.043	-10.873			
	14138	1:BEBAN MATI	6.794	561.265	0.021	-0.146	0.000	2.882			
		2:BEBAN HIDL	2.142	147.073	0.008	-0.009	0.000	1.521			
		3:BEBAN GEM	939.271	48.304	-4.134	-0.579	-0.020	-1.049			
		4:KOMBINASI	11.580	908.836	0.038	-0.190	0.000	5.892			
		5:KOMB B. MA	994.313	700.228	-4.315	-0.760	-0.021	2.693			
21150	13682	1:BEBAN MATI	-4.632	1.26E 3	0.054	-0.171	-0.000	15.263			
		2:BEBAN HIDL	-1.355	488.893	0.020	-0.005	-0.000	6.349			
		3:BEBAN GEM	-905.020	13.725	-4.307	-0.491	0.030	-0.932			
		4:KOMBINASI	-7.726	2.29E 3	0.096	-0.214	-0.001	28.475			
		5:KOMB B. MA	-955.716	1.57E 3	-4.457	-0.690	0.031	18.094			
	14137	1:BEBAN MATI	4.632	-969.256	-0.054	0.171	-0.000	1.115			
		2:BEBAN HIDL	1.355	-488.893	-0.020	0.005	-0.000	0.843			
		3:BEBAN GEM	905.020	-13.725	4.307	0.491	0.033	1.134			
		4:KOMBINASI	7.726	-1.95E 3	-0.096	0.214	-0.001	2.686			
		5:KOMB B. MA	955.716	-1.28E 3	4.457	0.690	0.034	2.811			
21151	13728	1:BEBAN MATI	-4.938	-326.555	0.064	0.125	-0.000	-10.398			
		2:BEBAN HIDL	-1.530	-165.279	0.026	-0.002	-0.000	-4.153			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-781.795	-45.474	-6.034	0.580	0.042	0.431			
		4:KOMBINASI	-8.373	-656.313	0.117	0.147	-0.001	-19.123			
		5:KOMB B. MA	-826.740	-473.470	-6.257	0.733	0.043	-12.437			
	14126	1:BEBAN MATI	4.938	614.870	-0.064	-0.125	-0.001	3.474			
		2:BEBAN HIDL	1.530	165.279	-0.026	0.002	-0.000	1.722			
		3:BEBAN GEM	781.795	45.474	6.034	-0.580	0.047	-1.100			
		4:KOMBINASI	8.373	1E 3	-0.117	-0.147	-0.001	6.924			
		5:KOMB B. MA	826.740	761.785	6.257	-0.733	0.049	3.352			
21152	13678	1:BEBAN MATI	-3.786	1.1E 3	0.126	-0.266	-0.001	9.290			
		2:BEBAN HIDL	-1.350	438.446	0.054	-0.044	-0.000	4.348			
		3:BEBAN GEM	-602.332	-1.628	-10.663	-0.527	0.076	-1.111			
		4:KOMBINASI	-6.704	2.03E 3	0.237	-0.389	-0.002	18.105			
		5:KOMB B. MA	-637.045	1.36E 3	-11.037	-0.845	0.078	10.732			
	14125	1:BEBAN MATI	3.786	-814.765	-0.126	0.266	-0.001	4.816			
		2:BEBAN HIDL	1.350	-438.446	-0.054	0.044	-0.000	2.102			
		3:BEBAN GEM	602.332	1.628	10.663	0.527	0.081	1.087			
		4:KOMBINASI	6.704	-1.68E 3	-0.237	0.389	-0.002	9.141			
		5:KOMB B. MA	637.045	-1.08E 3	11.037	0.845	0.084	7.218			
21153	13673	1:BEBAN MATI	-2.789	648.515	0.000	-0.077	-0.000	8.716			
		2:BEBAN HIDL	-1.150	209.839	0.017	-0.049	-0.000	3.208			
		3:BEBAN GEM	-525.453	-9.326	-10.513	0.043	0.093	-0.318			
		4:KOMBINASI	-5.187	1.11E 3	0.027	-0.171	-0.000	15.592			
		5:KOMB B. MA	-555.205	764.626	-11.029	-0.062	0.098	10.307			
	14117	1:BEBAN MATI	2.789	-302.538	-0.000	0.077	0.000	-0.322			
		2:BEBAN HIDL	1.150	-209.839	-0.017	0.049	-0.000	0.496			
		3:BEBAN GEM	525.453	9.326	10.513	-0.043	0.092	0.154			
		4:KOMBINASI	5.187	-698.787	-0.027	0.171	-0.000	0.407			
		5:KOMB B. MA	555.205	-418.649	11.029	0.062	0.097	0.137			
21154	13668	1:BEBAN MATI	3.023	1.18E 3	0.003	-0.175	0.000	11.684			
		2:BEBAN HIDL	0.157	485.241	0.022	-0.033	-0.000	5.180			
		3:BEBAN GEM	-229.948	6.158	-6.861	-0.120	0.045	-0.771			
		4:KOMBINASI	3.879	2.19E 3	0.039	-0.263	-0.000	22.309			
		5:KOMB B. MA	-238.329	1.47E 3	-7.187	-0.321	0.048	13.983			
	14042	1:BEBAN MATI	-3.023	-946.278	-0.003	0.175	-0.000	0.809			
		2:BEBAN HIDL	-0.157	-485.241	-0.022	0.033	-0.000	0.531			
		3:BEBAN GEM	229.948	-6.158	6.861	0.120	0.035	0.843			
		4:KOMBINASI	-3.879	-1.91E 3	-0.039	0.263	-0.000	1.819			
		5:KOMB B. MA	238.329	-1.24E 3	7.187	0.321	0.037	2.013			
21155	13728	1:BEBAN MATI	11.506	-132.370	-0.112	0.065	0.001	-4.217			
		2:BEBAN HIDL	3.608	-149.199	-0.049	0.034	0.000	-1.552			
		3:BEBAN GEM	319.392	-192.203	13.946	-0.175	-0.086	0.350			
		4:KOMBINASI	19.580	-397.563	-0.213	0.132	0.001	-7.545			
		5:KOMB B. MA	349.032	-423.703	14.501	-0.098	-0.089	-4.781			
	14128	1:BEBAN MATI	-11.506	363.021	0.112	-0.065	0.001	1.303			
		2:BEBAN HIDL	-3.608	149.199	0.049	-0.034	0.000	-0.204			
		3:BEBAN GEM	-319.392	192.203	-13.946	0.175	-0.078	-2.612			
		4:KOMBINASI	-19.580	674.344	0.213	-0.132	0.001	1.237			
		5:KOMB B. MA	-349.032	654.354	-14.501	0.098	-0.081	-1.562			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 249	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21156	13717	1:BEBAN MATI	8.222	1.2E 3	-0.096	-0.048	0.001	15.470			
		2:BEBAN HIDL	2.459	408.986	-0.037	-0.016	0.000	5.337			
		3:BEBAN GEM	343.765	56.336	13.694	0.111	-0.087	-1.641			
		4:KOMBINASI	13.801	2.1E 3	-0.174	-0.083	0.001	27.103			
		5:KOMB B. MA	370.651	1.51E 3	14.260	0.059	-0.091	16.949			
	14122	1:BEBAN MATI	-8.222	-972.653	0.096	0.048	0.001	-2.666			
		2:BEBAN HIDL	-2.459	-408.986	0.037	0.016	0.000	-0.524			
		3:BEBAN GEM	-343.765	-56.336	-13.694	-0.111	-0.074	2.304			
		4:KOMBINASI	-13.801	-1.82E 3	0.174	0.083	0.001	-4.039			
		5:KOMB B. MA	-370.651	-1.28E 3	-14.260	-0.059	-0.077	-0.562			
21157	13725	1:BEBAN MATI	7.220	-357.909	-0.056	-0.032	0.000	-11.731			
		2:BEBAN HIDL	2.028	-147.693	-0.024	-0.012	0.000	-4.592			
		3:BEBAN GEM	319.696	-153.358	7.811	-0.154	-0.059	0.270			
		4:KOMBINASI	11.910	-665.799	-0.106	-0.058	0.001	-21.425			
		5:KOMB B. MA	344.118	-607.551	8.131	-0.202	-0.061	-14.203			
	13985	1:BEBAN MATI	-7.220	646.224	0.056	0.032	0.000	4.346			
		2:BEBAN HIDL	-2.028	147.693	0.024	0.012	0.000	2.420			
		3:BEBAN GEM	-319.696	153.358	-7.811	0.154	-0.056	-2.526			
		4:KOMBINASI	-11.910	1.01E 3	0.106	0.058	0.001	9.087			
		5:KOMB B. MA	-344.118	895.865	-8.131	0.202	-0.058	3.146			
21158	13714	1:BEBAN MATI	5.021	1.37E 3	-0.049	-0.003	0.000	15.468			
		2:BEBAN HIDL	1.263	548.117	-0.027	0.002	0.000	6.955			
		3:BEBAN GEM	336.537	70.947	4.939	0.118	-0.040	-1.844			
		4:KOMBINASI	8.047	2.52E 3	-0.102	-0.000	0.001	29.691			
		5:KOMB B. MA	359.144	1.77E 3	5.121	0.122	-0.042	17.706			
	13979	1:BEBAN MATI	-5.021	-1.08E 3	0.049	0.003	0.000	2.535			
		2:BEBAN HIDL	-1.263	-548.117	0.027	-0.002	0.000	1.107			
		3:BEBAN GEM	-336.537	-70.947	-4.939	-0.118	-0.032	2.887			
		4:KOMBINASI	-8.047	-2.17E 3	0.102	0.000	0.001	4.814			
		5:KOMB B. MA	-359.144	-1.48E 3	-5.121	-0.122	-0.033	6.231			
21159	13722	1:BEBAN MATI	3.999	-330.524	0.004	-0.038	-0.000	-10.163			
		2:BEBAN HIDL	0.859	-180.155	-0.009	-0.013	0.000	-4.243			
		3:BEBAN GEM	306.631	-157.124	1.373	-0.151	-0.006	0.430			
		4:KOMBINASI	6.174	-684.877	-0.010	-0.066	0.000	-18.985			
		5:KOMB B. MA	326.477	-603.597	1.440	-0.204	-0.007	-12.257			
	13973	1:BEBAN MATI	-3.999	618.839	-0.004	0.038	-0.000	3.181			
		2:BEBAN HIDL	-0.859	180.155	0.009	0.013	0.000	1.593			
		3:BEBAN GEM	-306.631	157.124	-1.373	0.151	-0.014	-2.742			
		4:KOMBINASI	-6.174	1.03E 3	0.010	0.066	0.000	6.365			
		5:KOMB B. MA	-326.477	891.912	-1.440	0.204	-0.014	1.258			
21160	13711	1:BEBAN MATI	1.726	1.33E 3	0.041	-0.072	-0.000	15.485			
		2:BEBAN HIDL	0.079	545.476	-0.000	-0.044	-0.000	7.030			
		3:BEBAN GEM	-35.679	68.422	16.347	0.109	-0.126	-1.813			
		4:KOMBINASI	2.197	2.47E 3	0.049	-0.156	-0.000	29.831			
		5:KOMB B. MA	-35.690	1.73E 3	17.205	0.016	-0.132	17.799			
	13967	1:BEBAN MATI	-1.726	-1.04E 3	-0.041	0.072	-0.000	1.963			
		2:BEBAN HIDL	-0.079	-545.476	0.000	0.044	0.000	0.994			
		3:BEBAN GEM	35.679	-68.422	-16.347	-0.109	-0.115	2.820			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 250	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-2.197	-2.12E 3	-0.049	0.156	-0.000	3.946			
		5:KOMB B. MA	35.690	-1.44E 3	-17.205	-0.016	-0.121	5.521			
21161	13729	1:BEBAN MATI	1.727	-385.007	0.022	-0.094	-0.000	-11.655			
		2:BEBAN HIDL	-0.153	-212.141	-0.009	-0.047	0.000	-4.861			
		3:BEBAN GEM	-221.171	-151.931	28.933	-0.137	-0.217	0.620			
		4:KOMBINASI	1.828	-801.435	0.012	-0.187	-0.000	-21.763			
		5:KOMB B. MA	-230.595	-671.820	30.396	-0.266	-0.228	-13.921			
	13961	1:BEBAN MATI	-1.727	673.322	-0.022	0.094	-0.000	3.871			
		2:BEBAN HIDL	0.153	212.141	0.009	0.047	0.000	1.740			
		3:BEBAN GEM	221.171	151.931	-28.933	0.137	-0.208	-2.855			
		4:KOMBINASI	-1.828	1.15E 3	-0.012	0.187	-0.000	7.430			
		5:KOMB B. MA	230.595	960.134	-30.396	0.266	-0.219	1.918			
21162	13708	1:BEBAN MATI	-1.056	1.5E 3	0.028	-0.271	-0.000	17.962			
		2:BEBAN HIDL	-0.884	487.460	-0.000	-0.026	0.000	4.956			
		3:BEBAN GEM	-110.942	55.384	20.781	0.231	-0.161	-1.666			
		4:KOMBINASI	-2.683	2.59E 3	0.033	-0.368	-0.000	29.483			
		5:KOMB B. MA	-118.076	1.85E 3	21.847	-0.045	-0.169	19.186			
	13955	1:BEBAN MATI	1.056	-1.22E 3	-0.028	0.271	-0.000	2.047			
		2:BEBAN HIDL	0.884	-487.460	0.000	0.026	-0.000	2.215			
		3:BEBAN GEM	110.942	-55.384	-20.781	-0.231	-0.145	2.480			
		4:KOMBINASI	2.683	-2.24E 3	-0.033	0.368	-0.000	6.000			
		5:KOMB B. MA	118.076	-1.57E 3	-21.847	0.045	-0.152	5.980			
21163	13726	1:BEBAN MATI	11.506	-132.370	0.112	-0.065	-0.001	-4.217			
		2:BEBAN HIDL	3.608	-149.199	0.049	-0.034	-0.000	-1.552			
		3:BEBAN GEM	304.595	-185.954	-18.307	-0.176	0.112	0.383			
		4:KOMBINASI	19.580	-397.563	0.213	-0.132	-0.001	-7.545			
		5:KOMB B. MA	333.495	-417.141	-19.081	-0.271	0.117	-4.747			
	14531	1:BEBAN MATI	-11.506	363.021	-0.112	0.065	-0.001	1.303			
		2:BEBAN HIDL	-3.608	149.199	-0.049	0.034	-0.000	-0.204			
		3:BEBAN GEM	-304.595	185.954	18.307	0.176	0.103	-2.571			
		4:KOMBINASI	-19.580	674.344	-0.213	0.132	-0.001	1.237			
		5:KOMB B. MA	-333.495	647.793	19.081	0.271	0.107	-1.519			
21164	13715	1:BEBAN MATI	8.222	1.2E 3	0.096	0.048	-0.001	15.470			
		2:BEBAN HIDL	2.459	408.985	0.037	0.016	-0.000	5.337			
		3:BEBAN GEM	314.452	51.106	-21.264	0.117	0.132	-1.701			
		4:KOMBINASI	13.801	2.1E 3	0.174	0.083	-0.001	27.103			
		5:KOMB B. MA	339.872	1.5E 3	-22.210	0.180	0.138	16.886			
	14526	1:BEBAN MATI	-8.222	-972.653	-0.096	-0.048	-0.001	-2.666			
		2:BEBAN HIDL	-2.459	-408.985	-0.037	-0.016	-0.000	-0.524			
		3:BEBAN GEM	-314.452	-51.106	21.264	-0.117	0.118	2.302			
		4:KOMBINASI	-13.801	-1.82E 3	-0.174	-0.083	-0.001	-4.039			
		5:KOMB B. MA	-339.872	-1.27E 3	22.210	-0.180	0.123	-0.564			
21165	13723	1:BEBAN MATI	7.220	-357.909	0.056	0.032	-0.000	-11.731			
		2:BEBAN HIDL	2.028	-147.692	0.024	0.012	-0.000	-4.592			
		3:BEBAN GEM	217.778	-147.747	-14.392	-0.161	0.106	0.347			
		4:KOMBINASI	11.910	-665.799	0.106	0.058	-0.001	-21.425			
		5:KOMB B. MA	237.105	-601.659	-15.041	-0.130	0.111	-14.122			
	14389	1:BEBAN MATI	-7.220	646.224	-0.056	-0.032	-0.000	4.346			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 251	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-2.028	147.692	-0.024	-0.012	-0.000	2.420			
		3:BEBAN GEM	-217.778	147.747	14.392	0.161	0.106	-2.520			
		4:KOMBINASI	-11.910	1.01E 3	-0.106	-0.058	-0.001	9.087			
		5:KOMB B. MA	-237.105	889.973	15.041	0.130	0.111	3.151			
21166	13712	1:BEBAN MATI	5.021	1.37E 3	0.049	0.003	-0.000	15.468			
		2:BEBAN HIDL	1.263	548.116	0.027	-0.002	-0.000	6.955			
		3:BEBAN GEM	-4.660	64.839	-9.772	0.121	0.082	-1.919			
		4:KOMBINASI	8.047	2.52E 3	0.102	0.000	-0.001	29.691			
		5:KOMB B. MA	0.886	1.76E 3	-10.195	0.129	0.085	17.626			
	14383	1:BEBAN MATI	-5.021	-1.08E 3	-0.049	-0.003	-0.000	2.535			
		2:BEBAN HIDL	-1.263	-548.116	-0.027	0.002	-0.000	1.107			
		3:BEBAN GEM	4.660	-64.839	9.772	-0.121	0.062	2.873			
		4:KOMBINASI	-8.047	-2.17E 3	-0.102	-0.000	-0.001	4.814			
		5:KOMB B. MA	-0.886	-1.48E 3	10.195	-0.129	0.065	6.216			
21167	13720	1:BEBAN MATI	3.999	-330.524	-0.004	0.038	0.000	-10.163			
		2:BEBAN HIDL	0.859	-180.154	0.009	0.013	-0.000	-4.243			
		3:BEBAN GEM	-149.300	-151.328	-2.757	-0.161	0.028	0.504			
		4:KOMBINASI	6.174	-684.877	0.010	0.066	-0.000	-18.985			
		5:KOMB B. MA	-152.251	-597.512	-2.893	-0.123	0.029	-12.179			
	14377	1:BEBAN MATI	-3.999	618.839	0.004	-0.038	0.000	3.181			
		2:BEBAN HIDL	-0.859	180.154	-0.009	-0.013	-0.000	1.593			
		3:BEBAN GEM	149.300	151.328	2.757	0.161	0.013	-2.730			
		4:KOMBINASI	-6.174	1.03E 3	-0.010	-0.066	-0.000	6.365			
		5:KOMB B. MA	152.251	885.826	2.893	0.123	0.013	1.270			
21168	13709	1:BEBAN MATI	1.726	1.33E 3	-0.041	0.072	0.000	15.485			
		2:BEBAN HIDL	0.079	545.475	0.000	0.044	0.000	7.030			
		3:BEBAN GEM	-244.784	62.286	-10.367	0.127	0.076	-1.895			
		4:KOMBINASI	2.197	2.47E 3	-0.049	0.156	0.000	29.831			
		5:KOMB B. MA	-255.250	1.72E 3	-10.926	0.232	0.080	17.714			
	14371	1:BEBAN MATI	-1.726	-1.04E 3	0.041	-0.072	0.000	1.963			
		2:BEBAN HIDL	-0.079	-545.475	-0.000	-0.044	-0.000	0.994			
		3:BEBAN GEM	244.784	-62.286	10.367	-0.127	0.077	2.811			
		4:KOMBINASI	-2.197	-2.12E 3	0.049	-0.156	0.000	3.946			
		5:KOMB B. MA	255.250	-1.43E 3	10.926	-0.232	0.081	5.511			
21169	13730	1:BEBAN MATI	1.727	-385.007	-0.022	0.094	0.000	-11.655			
		2:BEBAN HIDL	-0.153	-212.141	0.009	0.047	-0.000	-4.861			
		3:BEBAN GEM	-201.758	-146.074	-18.815	-0.165	0.144	0.714			
		4:KOMBINASI	1.828	-801.435	-0.012	0.187	0.000	-21.763			
		5:KOMB B. MA	-210.210	-665.669	-19.773	-0.052	0.152	-13.822			
	14365	1:BEBAN MATI	-1.727	673.322	0.022	-0.094	0.000	3.871			
		2:BEBAN HIDL	0.153	212.141	-0.009	-0.047	-0.000	1.740			
		3:BEBAN GEM	201.758	146.074	18.815	0.165	0.133	-2.863			
		4:KOMBINASI	-1.828	1.15E 3	0.012	-0.187	0.000	7.430			
		5:KOMB B. MA	210.210	953.984	19.773	0.052	0.139	1.910			
21170	13706	1:BEBAN MATI	-1.056	1.5E 3	-0.028	0.271	0.000	17.962			
		2:BEBAN HIDL	-0.884	487.459	0.000	0.026	-0.000	4.956			
		3:BEBAN GEM	-119.937	12.279	-11.925	0.009	0.092	-2.710			
		4:KOMBINASI	-2.683	2.59E 3	-0.033	0.368	0.000	29.483			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 252	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-127.521	1.81E 3	-12.549	0.297	0.096	18.090			
	14359	1:BEAN MATI	1.056	-1.22E 3	0.028	-0.271	0.000	2.047			
		2:BEAN HIDL	0.884	-487.459	-0.000	-0.026	0.000	2.215			
		3:BEAN GEM	119.937	-12.279	11.925	-0.009	0.084	2.890			
		4:KOMBINASI	2.683	-2.24E 3	0.033	-0.368	0.000	6.000			
		5:KOMB B. MA	127.521	-1.52E 3	12.549	-0.297	0.088	6.410			
21171	13658	1:BEAN MATI	21.189	-430.810	0.297	-1.622	-0.002	-21.336			
		2:BEAN HIDL	3.422	-286.652	0.043	-1.206	-0.000	-5.246			
		3:BEAN GEM	320.087	-2.4E 3	2.542	1.471	-0.002	3.052			
		4:KOMBINASI	30.903	-975.616	0.425	-3.877	-0.003	-33.996			
		5:KOMB B. MA	359.334	-3.13E 3	2.992	-0.801	-0.004	-21.279			
	13811	1:BEAN MATI	-21.189	1.78E 3	-0.297	1.622	-0.002	8.321			
		2:BEAN HIDL	-3.422	286.652	-0.043	1.206	-0.000	1.872			
		3:BEAN GEM	-320.087	2.4E 3	-2.542	-1.471	-0.028	-31.320			
		4:KOMBINASI	-30.903	2.6E 3	-0.425	3.877	-0.002	12.980			
		5:KOMB B. MA	-359.334	4.48E 3	-2.992	0.801	-0.031	-23.443			
21172	12718	1:BEAN MATI	28.307	3.91E 3	-2.201	2.647	0.014	36.191			
		2:BEAN HIDL	5.905	618.026	-0.512	1.482	0.003	7.002			
		3:BEAN GEM	-93.107	-2.55E 3	17.609	-1.941	-0.130	-55.962			
		4:KOMBINASI	43.417	5.68E 3	-3.462	5.547	0.022	54.632			
		5:KOMB B. MA	-65.912	1.6E 3	15.981	1.497	-0.121	-18.369			
	13801	1:BEAN MATI	-28.307	-2.56E 3	2.201	-2.647	0.012	1.847			
		2:BEAN HIDL	-5.905	-618.026	0.512	-1.482	0.003	0.271			
		3:BEAN GEM	93.107	2.55E 3	-17.609	1.941	-0.077	25.910			
		4:KOMBINASI	-43.417	-4.06E 3	3.462	-5.547	0.019	2.650			
		5:KOMB B. MA	65.912	-246.549	-15.981	-1.497	-0.067	29.216			
21173	13656	1:BEAN MATI	8.289	-595.247	-0.005	-1.595	-0.000	-31.487			
		2:BEAN HIDL	1.047	-310.022	-0.002	-0.911	-0.000	-7.985			
		3:BEAN GEM	482.829	-1.48E 3	0.972	1.185	0.001	-0.324			
		4:KOMBINASI	11.622	-1.21E 3	-0.010	-3.371	-0.001	-50.561			
		5:KOMB B. MA	515.888	-2.34E 3	1.014	-0.897	0.000	-36.618			
	13894	1:BEAN MATI	-8.289	1.72E 3	0.005	1.595	0.001	20.132			
		2:BEAN HIDL	-1.047	310.022	0.002	0.911	0.000	4.945			
		3:BEAN GEM	-482.829	1.48E 3	-0.972	-1.185	-0.010	-14.230			
		4:KOMBINASI	-11.622	2.56E 3	0.010	3.371	0.001	32.070			
		5:KOMB B. MA	-515.888	3.46E 3	-1.014	0.897	-0.010	8.158			
21174	12741	1:BEAN MATI	22.493	4.91E 3	-3.063	3.700	0.016	52.924			
		2:BEAN HIDL	4.446	864.189	-0.641	2.370	0.003	11.435			
		3:BEAN GEM	-86.433	-1.64E 3	18.923	-2.165	-0.127	-46.472			
		4:KOMBINASI	34.106	7.27E 3	-4.701	8.233	0.025	81.805			
		5:KOMB B. MA	-65.593	3.7E 3	16.422	2.849	-0.115	10.990			
	13881	1:BEAN MATI	-22.493	-3.78E 3	3.063	-3.700	0.014	-10.334			
		2:BEAN HIDL	-4.446	-864.189	0.641	-2.370	0.003	-2.961			
		3:BEAN GEM	86.433	1.64E 3	-18.923	2.165	-0.058	30.343			
		4:KOMBINASI	-34.106	-5.92E 3	4.701	-8.233	0.021	-17.137			
		5:KOMB B. MA	65.593	-2.57E 3	-16.422	-2.849	-0.046	19.750			
21175	13654	1:BEAN MATI	8.588	-641.439	0.052	-1.214	-0.001	-30.649			
		2:BEAN HIDL	1.754	-328.895	0.011	-0.885	-0.000	-7.620			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 253	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	344.211	-1.5E 3	1.684	1.181	-0.002	0.144			
		4:KOMBINASI	13.112	-1.3E 3	0.080	-2.872	-0.001	-48.972			
		5:KOMB B. MA	371.062	-2.42E 3	1.827	-0.505	-0.004	-35.071			
	13868	1:BEBAN MATI	-8.588	1.77E 3	-0.052	1.214	0.000	18.841			
		2:BEBAN HIDL	-1.754	328.895	-0.011	0.885	0.000	4.395			
		3:BEBAN GEM	-344.211	1.5E 3	-1.684	-1.181	-0.014	-14.897			
		4:KOMBINASI	-13.112	2.65E 3	-0.080	2.872	0.000	29.641			
		5:KOMB B. MA	-371.062	3.54E 3	-1.827	0.505	-0.014	5.836			
21176	12739	1:BEBAN MATI	21.548	4.86E 3	-2.885	3.881	0.015	52.657			
		2:BEBAN HIDL	4.905	841.662	-0.617	2.350	0.003	11.123			
		3:BEBAN GEM	-251.485	-1.67E 3	20.329	-2.153	-0.132	-46.668			
		4:KOMBINASI	33.706	7.18E 3	-4.449	8.418	0.023	80.985			
		5:KOMB B. MA	-239.568	3.61E 3	18.091	3.031	-0.122	10.329			
	13855	1:BEBAN MATI	-21.548	-3.73E 3	2.885	-3.881	0.013	-10.530			
		2:BEBAN HIDL	-4.905	-841.662	0.617	-2.350	0.003	-2.869			
		3:BEBAN GEM	251.485	1.67E 3	-20.329	2.153	-0.067	30.322			
		4:KOMBINASI	-33.706	-5.83E 3	4.449	-8.418	0.020	-17.226			
		5:KOMB B. MA	239.568	-2.49E 3	-18.091	-3.031	-0.056	19.587			
21177	13659	1:BEBAN MATI	21.189	-430.811	-0.297	1.622	0.002	-21.336			
		2:BEBAN HIDL	3.422	-286.652	-0.043	1.206	0.000	-5.246			
		3:BEBAN GEM	228.239	-2.32E 3	-2.678	0.376	0.005	2.831			
		4:KOMBINASI	30.903	-975.617	-0.425	3.877	0.003	-33.996			
		5:KOMB B. MA	262.894	-3.03E 3	-3.135	2.741	0.008	-21.511			
	14257	1:BEBAN MATI	-21.189	1.78E 3	0.297	-1.622	0.002	8.321			
		2:BEBAN HIDL	-3.422	286.652	0.043	-1.206	0.000	1.872			
		3:BEBAN GEM	-228.239	2.32E 3	2.678	-0.376	0.026	-30.088			
		4:KOMBINASI	-30.903	2.6E 3	0.425	-3.877	0.002	12.980			
		5:KOMB B. MA	-262.894	4.39E 3	3.135	-2.741	0.029	-22.148			
21178	12736	1:BEBAN MATI	28.307	3.91E 3	2.201	-2.647	-0.014	36.191			
		2:BEBAN HIDL	5.905	618.026	0.512	-1.482	-0.003	7.002			
		3:BEBAN GEM	-222.027	-2.5E 3	-8.355	-0.941	0.072	-54.461			
		4:KOMBINASI	43.417	5.68E 3	3.462	-5.547	-0.022	54.632			
		5:KOMB B. MA	-201.278	1.65E 3	-6.264	-4.524	0.060	-16.792			
	14247	1:BEBAN MATI	-28.307	-2.56E 3	-2.201	2.647	-0.012	1.847			
		2:BEBAN HIDL	-5.905	-618.026	-0.512	1.482	-0.003	0.271			
		3:BEBAN GEM	222.027	2.5E 3	8.355	0.941	0.026	25.043			
		4:KOMBINASI	-43.417	-4.06E 3	-3.462	5.547	-0.019	2.650			
		5:KOMB B. MA	201.278	-303.083	6.264	4.524	0.013	28.304			
21179	13657	1:BEBAN MATI	8.289	-595.248	0.005	1.595	0.000	-31.487			
		2:BEBAN HIDL	1.047	-310.022	0.002	0.911	0.000	-7.985			
		3:BEBAN GEM	115.235	-1.43E 3	-2.163	0.112	0.013	-0.554			
		4:KOMBINASI	11.622	-1.21E 3	0.010	3.371	0.001	-50.561			
		5:KOMB B. MA	129.913	-2.28E 3	-2.264	2.259	0.014	-36.860			
	14340	1:BEBAN MATI	-8.289	1.72E 3	-0.005	-1.595	-0.001	20.132			
		2:BEBAN HIDL	-1.047	310.022	-0.002	-0.911	-0.000	4.945			
		3:BEBAN GEM	-115.235	1.43E 3	2.163	-0.112	0.008	-13.445			
		4:KOMBINASI	-11.622	2.56E 3	-0.010	-3.371	-0.001	32.070			
		5:KOMB B. MA	-129.913	3.41E 3	2.264	-2.259	0.008	8.982			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

254

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21180	12742	1:BEBAN MATI	22.493	4.91E 3	3.063	-3.700	-0.016	52.924			
		2:BEBAN HIDL	4.446	864.189	0.641	-2.370	-0.003	11.435			
		3:BEBAN GEM	-531.929	-1.63E 3	-8.802	-0.728	0.077	-45.127			
		4:KOMBINASI	34.106	7.27E 3	4.701	-8.233	-0.025	81.805			
		5:KOMB B. MA	-533.364	3.72E 3	-5.794	-5.887	0.063	12.402			
14327		1:BEBAN MATI	-22.493	-3.78E 3	-3.063	3.700	-0.014	-10.334			
		2:BEBAN HIDL	-4.446	-864.189	-0.641	2.370	-0.003	-2.961			
		3:BEBAN GEM	531.929	1.63E 3	8.802	0.728	0.009	29.176			
		4:KOMBINASI	-34.106	-5.92E 3	-4.701	8.233	-0.021	-17.137			
		5:KOMB B. MA	533.364	-2.59E 3	5.794	5.887	-0.006	18.525			
21181	13655	1:BEBAN MATI	8.588	-641.439	-0.052	1.214	0.001	-30.649			
		2:BEBAN HIDL	1.754	-328.895	-0.011	0.885	0.000	-7.620			
		3:BEBAN GEM	-221.328	-1.45E 3	-3.905	0.101	0.025	-0.090			
		4:KOMBINASI	13.112	-1.3E 3	-0.080	2.872	0.001	-48.972			
		5:KOMB B. MA	-222.754	-2.36E 3	-4.159	1.851	0.027	-35.316			
14314		1:BEBAN MATI	-8.588	1.77E 3	0.052	-1.214	-0.000	18.841			
		2:BEBAN HIDL	-1.754	328.895	0.011	-0.885	-0.000	4.395			
		3:BEBAN GEM	221.328	1.45E 3	3.905	-0.101	0.013	-14.116			
		4:KOMBINASI	-13.112	2.65E 3	0.080	-2.872	-0.000	29.641			
		5:KOMB B. MA	222.754	3.49E 3	4.159	-1.851	0.014	6.657			
21182	12740	1:BEBAN MATI	21.548	4.86E 3	2.885	-3.881	-0.015	52.657			
		2:BEBAN HIDL	4.905	841.662	0.617	-2.350	-0.003	11.123			
		3:BEBAN GEM	-676.249	-1.65E 3	-9.431	-0.710	0.075	-45.348			
		4:KOMBINASI	33.706	7.18E 3	4.449	-8.418	-0.023	80.985			
		5:KOMB B. MA	-685.570	3.63E 3	-6.648	-6.037	0.062	11.715			
14301		1:BEBAN MATI	-21.548	-3.73E 3	-2.885	3.881	-0.013	-10.530			
		2:BEBAN HIDL	-4.905	-841.662	-0.617	2.350	-0.003	-2.869			
		3:BEBAN GEM	676.249	1.65E 3	9.431	0.710	0.017	29.175			
		4:KOMBINASI	-33.706	-5.83E 3	-4.449	8.418	-0.020	-17.226			
		5:KOMB B. MA	685.570	-2.51E 3	6.648	6.037	0.003	18.383			
21183	13704	1:BEBAN MATI	1.589	1.33E 3	-0.162	-0.058	0.001	12.762			
		2:BEBAN HIDL	0.021	576.533	-0.050	-0.003	0.000	5.570			
		3:BEBAN GEM	56.664	-4.542	7.709	-0.102	-0.046	-0.474			
		4:KOMBINASI	1.940	2.52E 3	-0.274	-0.073	0.002	24.226			
		5:KOMB B. MA	61.098	1.67E 3	7.902	-0.166	-0.047	15.607			
14286		1:BEBAN MATI	-1.589	-1.1E 3	0.162	0.058	0.001	1.525			
		2:BEBAN HIDL	-0.021	-576.533	0.050	0.003	0.000	1.215			
		3:BEBAN GEM	-56.664	4.542	-7.709	0.102	-0.045	0.420			
		4:KOMBINASI	-1.940	-2.24E 3	0.274	0.073	0.001	3.774			
		5:KOMB B. MA	-61.098	-1.44E 3	-7.902	0.166	-0.046	2.695			
21184	13699	1:BEBAN MATI	-0.292	947.629	-0.121	-0.080	0.001	3.018			
		2:BEBAN HIDL	-0.143	401.735	-0.036	0.004	0.000	1.331			
		3:BEBAN GEM	42.159	-4.327	3.849	-0.208	-0.033	-0.845			
		4:KOMBINASI	-0.580	1.78E 3	-0.202	-0.089	0.002	5.752			
		5:KOMB B. MA	43.888	1.18E 3	3.899	-0.295	-0.033	2.930			
14466		1:BEBAN MATI	0.292	-716.977	0.121	0.080	0.000	6.777			
		2:BEBAN HIDL	0.143	-401.735	0.036	-0.004	0.000	3.396			
		3:BEBAN GEM	-42.159	4.327	-3.849	0.208	-0.012	0.794			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 255	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	0.580	-1.5E 3	0.202	0.089	0.001	13.566			
		5:KOMB B. MA	-43.888	-953.474	-3.899	0.295	-0.013	9.648			
21185	13730	1:BEBAN MATI	0.213	17.759	0.038	0.178	-0.000	-11.459			
		2:BEBAN HIDL	-0.118	-55.671	0.003	0.006	-0.000	-5.637			
		3:BEBAN GEM	159.707	-62.029	10.651	0.577	-0.080	-0.135			
		4:KOMBINASI	0.067	-67.763	0.051	0.223	-0.000	-22.769			
		5:KOMB B. MA	167.834	-80.775	11.223	0.787	-0.084	-14.982			
	14361	1:BEBAN MATI	-0.213	270.556	-0.038	-0.178	-0.000	9.599			
		2:BEBAN HIDL	0.118	55.671	-0.003	-0.006	-0.000	4.818			
		3:BEBAN GEM	-159.707	62.029	-10.651	-0.577	-0.077	-0.778			
		4:KOMBINASI	-0.067	413.741	-0.051	-0.223	-0.000	19.228			
		5:KOMB B. MA	-167.834	369.090	-11.223	-0.787	-0.081	11.673			
21186	13690	1:BEBAN MATI	-0.662	1.33E 3	0.034	-0.242	-0.000	15.002			
		2:BEBAN HIDL	-0.636	577.883	0.002	-0.020	-0.000	7.078			
		3:BEBAN GEM	531.511	25.036	11.489	-0.414	-0.089	-0.495			
		4:KOMBINASI	-1.812	2.53E 3	0.043	-0.323	-0.000	29.327			
		5:KOMB B. MA	557.043	1.71E 3	12.098	-0.689	-0.094	18.729			
	14362	1:BEBAN MATI	0.662	-1.05E 3	-0.034	0.242	-0.000	2.513			
		2:BEBAN HIDL	0.636	-577.883	-0.002	0.020	-0.000	1.423			
		3:BEBAN GEM	-531.511	-25.036	-11.489	0.414	-0.080	0.864			
		4:KOMBINASI	1.812	-2.18E 3	-0.043	0.323	-0.000	5.292			
		5:KOMB B. MA	-557.043	-1.42E 3	-12.098	0.689	-0.084	4.273			
21187	13731	1:BEBAN MATI	-3.842	-247.568	0.031	0.127	-0.000	-8.391			
		2:BEBAN HIDL	-1.461	-173.230	0.006	-0.007	-0.000	-4.024			
		3:BEBAN GEM	860.211	-40.311	2.342	0.573	-0.033	0.212			
		4:KOMBINASI	-6.949	-574.250	0.047	0.140	-0.001	-16.507			
		5:KOMB B. MA	898.503	-393.833	2.493	0.724	-0.035	-10.583			
	13909	1:BEBAN MATI	3.842	535.883	-0.031	-0.127	-0.000	2.629			
		2:BEBAN HIDL	1.461	173.230	-0.006	0.007	-0.000	1.475			
		3:BEBAN GEM	-860.211	40.311	-2.342	-0.573	-0.001	-0.805			
		4:KOMBINASI	6.949	920.227	-0.047	-0.140	-0.000	5.515			
		5:KOMB B. MA	-898.503	682.147	-2.493	-0.724	-0.002	2.669			
21188	13685	1:BEBAN MATI	-2.236	1.25E 3	-0.056	-0.113	0.000	14.817			
		2:BEBAN HIDL	-1.074	534.678	-0.010	0.020	0.000	6.950			
		3:BEBAN GEM	696.477	16.527	-10.890	-0.456	0.078	-0.480			
		4:KOMBINASI	-4.401	2.36E 3	-0.084	-0.103	0.001	28.902			
		5:KOMB B. MA	728.421	1.59E 3	-11.497	-0.580	0.083	18.483			
	13908	1:BEBAN MATI	2.236	-963.345	0.056	0.113	0.000	1.474			
		2:BEBAN HIDL	1.074	-534.678	0.010	-0.020	0.000	0.915			
		3:BEBAN GEM	-696.477	-16.527	10.890	0.456	0.082	0.724			
		4:KOMBINASI	4.401	-2.01E 3	0.084	0.103	0.001	3.232			
		5:KOMB B. MA	-728.421	-1.3E 3	11.497	0.580	0.086	2.783			
21189	13729	1:BEBAN MATI	0.125	-365.482	-0.028	0.233	0.000	-11.313			
		2:BEBAN HIDL	-0.333	-236.481	-0.000	0.020	-0.000	-5.555			
		3:BEBAN GEM	279.524	-47.737	-18.500	0.536	0.134	0.082			
		4:KOMBINASI	-0.383	-816.948	-0.033	0.312	0.000	-22.463			
		5:KOMB B. MA	293.426	-557.495	-19.452	0.808	0.141	-14.559			
	13958	1:BEBAN MATI	-0.125	653.796	0.028	-0.233	0.000	3.816			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

256

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	0.333	236.481	0.000	-0.020	0.000		2.076		
		3:BEBAN GEM	-279.524	47.737	18.500	-0.536	0.138		-0.784		
		4:KOMBINASI	0.383	1.16E 3	0.033	-0.312	0.000		7.901		
		5:KOMB B. MA	-293.426	845.809	19.452	-0.808	0.145		4.238		
21190	13681	1:BEBAN MATI	0.737	950.508	-0.062	-0.273	0.000		3.195		
		2:BEBAN HIDL	0.162	391.546	-0.009	-0.014	0.000		1.465		
		3:BEBAN GEM	68.015	5.059	-16.428	-0.556	0.156		-0.951		
		4:KOMBINASI	1.143	1.77E 3	-0.089	-0.350	0.001		6.178		
		5:KOMB B. MA	72.250	1.19E 3	-17.317	-0.865	0.165		3.075		
	13957	1:BEBAN MATI	-0.737	-662.193	0.062	0.273	0.000		8.666		
		2:BEBAN HIDL	-0.162	-391.546	0.009	0.014	0.000		4.295		
		3:BEBAN GEM	-68.015	-5.059	16.428	0.556	0.085		1.026		
		4:KOMBINASI	-1.143	-1.42E 3	0.089	0.350	0.001		17.271		
		5:KOMB B. MA	-72.250	-902.433	17.317	0.865	0.090		12.320		
21191	13671	1:BEBAN MATI	1.554	1.33E 3	0.187	-0.065	-0.001		12.509		
		2:BEBAN HIDL	-0.037	572.073	0.057	-0.001	-0.000		5.558		
		3:BEBAN GEM	17.115	3.141	-15.664	-0.110	0.100		-0.492		
		4:KOMBINASI	1.806	2.52E 3	0.316	-0.079	-0.002		23.905		
		5:KOMB B. MA	19.503	1.68E 3	-16.226	-0.180	0.104		15.328		
	14060	1:BEBAN MATI	-1.554	-1.1E 3	-0.187	0.065	-0.001		1.842		
		2:BEBAN HIDL	0.037	-572.073	-0.057	0.001	-0.000		1.174		
		3:BEBAN GEM	-17.115	-3.141	15.664	0.110	0.084		0.529		
		4:KOMBINASI	-1.806	-2.24E 3	-0.316	0.079	-0.002		4.088		
		5:KOMB B. MA	-19.503	-1.45E 3	16.226	0.180	0.087		3.102		
21192	12733	1:BEBAN MATI	36.884	3.58E 3	6.793	-4.169	-0.040		29.842		
		2:BEBAN HIDL	9.734	529.588	1.894	-2.149	-0.011		5.166		
		3:BEBAN GEM	-140.154	-659.687	-16.476	3.147	0.107		-14.762		
		4:KOMBINASI	59.835	5.15E 3	11.181	-8.441	-0.067		44.076		
		5:KOMB B. MA	-104.438	3.21E 3	-9.370	-2.154	0.066		17.442		
	14199	1:BEBAN MATI	-36.884	-2.23E 3	-6.793	4.169	-0.039		4.365		
		2:BEBAN HIDL	-9.734	-529.588	-1.894	2.149	-0.011		1.066		
		3:BEBAN GEM	140.154	659.687	16.476	-3.147	0.086		6.999		
		4:KOMBINASI	-59.835	-3.53E 3	-11.181	8.441	-0.065		6.944		
		5:KOMB B. MA	104.438	-1.86E 3	9.370	2.154	0.045		12.353		
21193	12731	1:BEBAN MATI	13.876	3.49E 3	4.366	-4.529	-0.025		27.834		
		2:BEBAN HIDL	2.475	529.593	1.230	-2.615	-0.007		5.108		
		3:BEBAN GEM	-386.188	-596.806	-17.977	3.207	0.135		-14.303		
		4:KOMBINASI	20.611	5.03E 3	7.206	-9.618	-0.042		41.573		
		5:KOMB B. MA	-390.137	3.18E 3	-13.772	-2.731	0.112		15.881		
	14410	1:BEBAN MATI	-13.876	-2.14E 3	-4.366	4.529	-0.026		5.245		
		2:BEBAN HIDL	-2.475	-529.593	-1.230	2.615	-0.007		1.125		
		3:BEBAN GEM	386.188	596.806	17.977	-3.207	0.076		7.280		
		4:KOMBINASI	-20.611	-3.41E 3	-7.206	9.618	-0.043		8.094		
		5:KOMB B. MA	390.137	-1.83E 3	13.772	2.731	0.050		13.563		
21194	12729	1:BEBAN MATI	-2.715	2.44E 3	-1.000	-2.202	0.006		15.820		
		2:BEBAN HIDL	-2.716	310.657	-0.342	-1.383	0.002		3.137		
		3:BEBAN GEM	-92.817	-939.743	-12.805	2.366	0.037		-16.907		
		4:KOMBINASI	-7.604	3.43E 3	-1.747	-4.855	0.011		24.003		



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-101.802	1.64E 3	-14.651	-0.548	0.046	-0.050			
	14236	1:BEBAN MATI	2.715	-1.09E 3	1.000	2.202	0.005	4.948			
		2:BEBAN HIDL	2.716	-310.657	0.342	1.383	0.002	0.519			
		3:BEBAN GEM	92.817	939.743	12.805	-2.366	0.114	5.848			
		4:KOMBINASI	7.604	-1.8E 3	1.747	4.855	0.009	6.767			
		5:KOMB B. MA	101.802	-289.234	14.651	0.548	0.126	11.400			
21195	12779	1:BEBAN MATI	59.150	2.47E 3	-3.984	6.692	0.030	29.356			
		2:BEBAN HIDL	18.375	886.207	-1.416	3.617	0.011	11.721			
		3:BEBAN GEM	-899.968	-538.772	-8.921	3.098	0.043	-13.949			
		4:KOMBINASI	100.380	4.38E 3	-7.046	13.817	0.053	53.981			
		5:KOMB B. MA	-874.791	2.44E 3	-14.201	12.114	0.082	21.742			
	14178	1:BEBAN MATI	-59.150	-2.02E 3	3.984	-6.692	0.029	3.687			
		2:BEBAN HIDL	-18.375	-886.207	1.416	-3.617	0.010	1.315			
		3:BEBAN GEM	899.968	538.772	8.921	-3.098	0.088	6.024			
		4:KOMBINASI	-100.380	-3.84E 3	7.046	-13.817	0.051	6.528			
		5:KOMB B. MA	874.791	-1.99E 3	14.201	-12.114	0.127	10.801			
21196	13727	1:BEBAN MATI	13.480	-96.894	0.000	-0.000	-0.000	-3.614			
		2:BEBAN HIDL	4.202	-136.182	0.000	-0.000	-0.000	-1.327			
		3:BEBAN GEM	939.848	-186.615	-1.979	-0.181	0.012	0.382			
		4:KOMBINASI	22.899	-334.164	0.000	-0.000	-0.000	-6.460			
		5:KOMB B. MA	1E 3	-374.550	-2.078	-0.190	0.012	-4.010			
	14140	1:BEBAN MATI	-13.480	327.546	-0.000	0.000	-0.000	1.117			
		2:BEBAN HIDL	-4.202	136.182	-0.000	0.000	-0.000	-0.276			
		3:BEBAN GEM	-939.848	186.615	1.979	0.181	0.011	-2.578			
		4:KOMBINASI	-22.899	610.946	-0.000	0.000	-0.000	0.899			
		5:KOMB B. MA	-1E 3	605.201	2.078	0.190	0.012	-1.755			
21197	13716	1:BEBAN MATI	11.592	1.16E 3	0.000	0.000	-0.000	14.994			
		2:BEBAN HIDL	3.395	392.720	0.000	0.000	-0.000	5.189			
		3:BEBAN GEM	1.4E 3	52.639	-4.355	0.119	0.026	-1.666			
		4:KOMBINASI	19.342	2.02E 3	0.000	0.000	-0.000	26.295			
		5:KOMB B. MA	1.49E 3	1.45E 3	-4.573	0.125	0.027	16.358			
	14134	1:BEBAN MATI	-11.592	-926.068	-0.000	-0.000	-0.000	-2.739			
		2:BEBAN HIDL	-3.395	-392.720	-0.000	-0.000	-0.000	-0.567			
		3:BEBAN GEM	-1.4E 3	-52.639	4.355	-0.119	0.025	2.285			
		4:KOMBINASI	-19.342	-1.74E 3	-0.000	-0.000	-0.000	-4.194			
		5:KOMB B. MA	-1.49E 3	-1.22E 3	4.573	-0.125	0.027	-0.680			
21198	13724	1:BEBAN MATI	9.273	-331.422	0.000	-0.000	-0.000	-11.334			
		2:BEBAN HIDL	2.611	-138.995	0.000	-0.000	-0.000	-4.462			
		3:BEBAN GEM	2.36E 3	-149.863	-7.707	-0.164	0.058	0.305			
		4:KOMBINASI	15.306	-620.098	0.000	-0.000	-0.000	-20.740			
		5:KOMB B. MA	2.49E 3	-572.175	-8.093	-0.172	0.061	-13.691			
	13940	1:BEBAN MATI	-9.273	619.737	-0.000	0.000	-0.000	4.338			
		2:BEBAN HIDL	-2.611	138.995	-0.000	0.000	-0.000	2.417			
		3:BEBAN GEM	-2.36E 3	149.863	7.707	0.164	0.055	-2.509			
		4:KOMBINASI	-15.306	966.075	-0.000	0.000	-0.000	9.074			
		5:KOMB B. MA	-2.49E 3	860.490	8.093	0.172	0.058	3.154			
21199	13713	1:BEBAN MATI	8.853	1.34E 3	0.000	0.000	-0.000	15.069			
		2:BEBAN HIDL	2.380	539.758	0.000	0.000	-0.000	6.813			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	5.53E 3	67.281	-45.165	0.126	0.378	-1.877			
		4:KOMBINASI	14.432	2.48E 3	0.000	0.000	-0.000	28.984			
		5:KOMB B. MA	5.81E 3	1.74E 3	-47.423	0.132	0.397	17.187			
	13933	1:BEBAN MATI	-8.853	-1.06E 3	-0.000	-0.000	-0.000	2.575			
		2:BEBAN HIDL	-2.380	-539.758	-0.000	-0.000	-0.000	1.127			
		3:BEBAN GEM	-5.53E 3	-67.281	45.165	-0.126	0.286	2.866			
		4:KOMBINASI	-14.432	-2.13E 3	-0.000	-0.000	-0.000	4.893			
		5:KOMB B. MA	-5.81E 3	-1.45E 3	47.423	-0.132	0.300	6.261			
21200	13721	1:BEBAN MATI	7.176	-302.363	0.000	-0.000	-0.000	-9.647			
		2:BEBAN HIDL	1.702	-170.680	0.000	-0.000	-0.000	-4.064			
		3:BEBAN GEM	-11.9E 3	-152.949	141.938	-0.162	-1.099	0.475			
		4:KOMBINASI	11.335	-635.923	0.000	-0.000	-0.000	-18.079			
		5:KOMB B. MA	-12.4E 3	-565.367	149.035	-0.171	-1.154	-11.587			
	13926	1:BEBAN MATI	-7.176	590.677	-0.000	0.000	-0.000	3.079			
		2:BEBAN HIDL	-1.702	170.680	-0.000	0.000	-0.000	1.553			
		3:BEBAN GEM	11.9E 3	152.949	-141.938	0.162	-0.989	-2.725			
		4:KOMBINASI	-11.335	981.901	-0.000	0.000	-0.000	6.180			
		5:KOMB B. MA	12.4E 3	853.681	-149.035	0.171	-1.038	1.150			
21201	13710	1:BEBAN MATI	8.699	1.29E 3	-0.000	0.000	0.000	14.990			
		2:BEBAN HIDL	1.859	527.758	-0.000	0.000	0.000	6.762			
		3:BEBAN GEM	-3.14E 3	61.477	16.812	0.124	-0.114	-1.907			
		4:KOMBINASI	13.413	2.4E 3	-0.000	0.000	0.000	28.808			
		5:KOMB B. MA	-3.29E 3	1.68E 3	17.653	0.131	-0.120	17.045			
	13919	1:BEBAN MATI	-8.699	-1.01E 3	0.000	-0.000	0.000	1.926			
		2:BEBAN HIDL	-1.859	-527.758	0.000	-0.000	0.000	1.001			
		3:BEBAN GEM	3.14E 3	-61.477	-16.812	-0.124	-0.133	2.811			
		4:KOMBINASI	-13.413	-2.05E 3	0.000	-0.000	0.000	3.913			
		5:KOMB B. MA	3.29E 3	-1.39E 3	-17.653	-0.131	-0.140	5.478			
21202	13731	1:BEBAN MATI	10.593	-309.263	-0.000	-0.000	0.000	-10.181			
		2:BEBAN HIDL	1.954	-171.103	-0.000	-0.000	0.000	-4.118			
		3:BEBAN GEM	-1.43E 3	-148.747	5.282	-0.160	-0.038	0.548			
		4:KOMBINASI	15.838	-644.879	-0.000	-0.000	0.000	-18.806			
		5:KOMB B. MA	-1.49E 3	-568.108	5.546	-0.168	-0.040	-12.076			
	13912	1:BEBAN MATI	-10.593	597.577	0.000	0.000	0.000	3.511			
		2:BEBAN HIDL	-1.954	171.103	0.000	0.000	0.000	1.602			
		3:BEBAN GEM	1.43E 3	148.747	-5.282	0.160	-0.040	-2.736			
		4:KOMBINASI	-15.838	990.857	0.000	0.000	0.000	6.775			
		5:KOMB B. MA	1.49E 3	856.423	-5.546	0.168	-0.042	1.599			
21203	13707	1:BEBAN MATI	16.895	1.48E 3	-0.000	0.000	0.000	19.050			
		2:BEBAN HIDL	3.155	534.234	-0.000	0.000	0.000	6.796			
		3:BEBAN GEM	-760.815	74.826	2.624	0.126	-0.021	-1.475			
		4:KOMBINASI	25.321	2.63E 3	-0.000	0.000	0.000	33.734			
		5:KOMB B. MA	-780.068	1.88E 3	2.755	0.133	-0.022	21.579			
	13905	1:BEBAN MATI	-16.895	-1.19E 3	0.000	-0.000	0.000	0.568			
		2:BEBAN HIDL	-3.155	-534.234	0.000	-0.000	0.000	1.062			
		3:BEBAN GEM	760.815	-74.826	-2.624	-0.126	-0.018	2.576			
		4:KOMBINASI	-25.321	-2.28E 3	0.000	-0.000	0.000	2.382			
		5:KOMB B. MA	780.068	-1.59E 3	-2.755	-0.133	-0.019	3.911			



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Job No 1	Sheet No 259	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21204	13719	1:BEBAN MATI	18.849	-535.683	-0.000	-0.000	0.000	-13.629			
		2:BEBAN HIDL	3.771	-228.086	-0.000	-0.000	0.000	-5.420			
		3:BEBAN GEM	-554.208	-207.835	1.220	-0.161	-0.009	-0.527			
		4:KOMBINASI	28.652	-1.01E 3	-0.000	-0.000	0.000	-25.027			
		5:KOMB B. MA	-560.807	-890.761	1.282	-0.169	-0.009	-17.434			
	13794	1:BEBAN MATI	-18.849	823.998	0.000	0.000	0.000	3.629			
		2:BEBAN HIDL	-3.771	228.086	0.000	0.000	0.000	2.065			
		3:BEBAN GEM	554.208	207.835	-1.220	0.161	-0.009	-2.530			
		4:KOMBINASI	-28.652	1.35E 3	0.000	0.000	0.000	7.658			
		5:KOMB B. MA	560.807	1.18E 3	-1.282	0.169	-0.010	2.211			
21205	13732	1:BEBAN MATI	8.939	1.59E 3	0.761	-1.748	-0.004	-8.612			
		2:BEBAN HIDL	1.019	218.828	0.150	-1.298	-0.001	-2.044			
		3:BEBAN GEM	-22.250	-614.987	-1.592	0.849	0.008	-7.937			
		4:KOMBINASI	12.358	2.26E 3	1.153	-4.175	-0.006	-13.605			
		5:KOMB B. MA	-13.812	1.08E 3	-0.821	-1.636	0.004	-18.172			
	13735	1:BEBAN MATI	-8.939	-243.690	-0.761	1.748	-0.005	19.425			
		2:BEBAN HIDL	-1.019	-218.828	-0.150	1.298	-0.001	4.620			
		3:BEBAN GEM	22.250	614.987	1.592	-0.849	0.011	0.700			
		4:KOMBINASI	-12.358	-642.553	-1.153	4.175	-0.008	30.702			
		5:KOMB B. MA	13.812	270.749	0.821	1.636	0.006	22.932			
21206	13734	1:BEBAN MATI	77.991	3.66E 3	-0.996	3.304	0.004	11.853			
		2:BEBAN HIDL	16.868	749.438	-0.246	2.417	0.001	2.901			
		3:BEBAN GEM	-233.427	-1.69E 3	3.831	-1.103	-0.016	-39.785			
		4:KOMBINASI	120.578	5.59E 3	-1.589	7.832	0.006	18.866			
		5:KOMB B. MA	-156.987	2.34E 3	2.879	3.596	-0.013	-28.180			
	13741	1:BEBAN MATI	-77.991	-2.82E 3	0.996	-3.304	0.004	11.980			
		2:BEBAN HIDL	-16.868	-749.438	0.246	-2.417	0.001	2.611			
		3:BEBAN GEM	233.427	1.69E 3	-3.831	1.103	-0.012	27.386			
		4:KOMBINASI	-120.578	-4.58E 3	1.589	-7.832	0.006	18.554			
		5:KOMB B. MA	156.987	-1.5E 3	-2.879	-3.596	-0.008	42.302			
21207	13735	1:BEBAN MATI	11.277	-467.422	-1.094	1.495	0.006	-19.427			
		2:BEBAN HIDL	2.300	-245.725	-0.310	0.646	0.002	-4.674			
		3:BEBAN GEM	-37.994	-608.214	1.751	-1.099	-0.008	-0.553			
		4:KOMBINASI	17.212	-954.066	-1.809	2.826	0.010	-30.791			
		5:KOMB B. MA	-27.237	-1.25E 3	0.558	0.728	-0.002	-22.813			
	13737	1:BEBAN MATI	-11.277	1.82E 3	1.094	-1.495	0.007	5.981			
		2:BEBAN HIDL	-2.300	245.725	0.310	-0.646	0.002	1.783			
		3:BEBAN GEM	37.994	608.214	-1.751	1.099	-0.012	-6.604			
		4:KOMBINASI	-17.212	2.57E 3	1.809	-2.826	0.012	10.029			
		5:KOMB B. MA	27.237	2.6E 3	-0.558	-0.728	-0.005	0.116			
21208	13737	1:BEBAN MATI	36.883	-2.23E 3	-6.793	4.169	0.039	-4.365			
		2:BEBAN HIDL	9.734	-529.587	-1.894	2.149	0.011	-1.066			
		3:BEBAN GEM	-76.491	-718.572	10.758	-2.872	-0.064	6.225			
		4:KOMBINASI	59.835	-3.53E 3	-11.181	8.441	0.065	-6.944			
		5:KOMB B. MA	-37.592	-3.3E 3	3.366	2.443	-0.021	1.532			
	12719	1:BEBAN MATI	-36.883	3.58E 3	6.793	-4.169	0.040	-29.842			
		2:BEBAN HIDL	-9.734	529.587	1.894	-2.149	0.011	-5.166			
		3:BEBAN GEM	76.491	718.572	-10.758	2.872	-0.062	-14.681			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

260

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-59.835	5.15E 3	11.181	-8.441	0.067	-44.076			
		5:KOMB B. MA	37.592	4.65E 3	-3.366	-2.443	-0.018	-48.357			
21209	13739	1:BEBAN MATI	89.111	3.85E 3	0.321	-0.236	-0.001	13.677			
		2:BEBAN HIDL	24.591	1.67E 3	0.077	0.039	-0.000	6.494			
		3:BEBAN GEM	-152.309	-1.62E 3	-2.050	-1.076	0.011	-38.164			
		4:KOMBINASI	146.278	7.29E 3	0.509	-0.220	-0.001	26.802			
		5:KOMB B. MA	-56.059	3.15E 3	-1.785	-1.342	0.010	-22.499			
	13744	1:BEBAN MATI	-89.111	-3.63E 3	-0.321	0.236	-0.002	13.824			
		2:BEBAN HIDL	-24.591	-1.67E 3	-0.077	-0.039	-0.000	5.755			
		3:BEBAN GEM	152.309	1.62E 3	2.050	1.076	0.004	26.219			
		4:KOMBINASI	-146.278	-7.02E 3	-0.509	0.220	-0.002	25.797			
		5:KOMB B. MA	56.059	-2.92E 3	1.785	1.342	0.003	44.807			
21210	13741	1:BEBAN MATI	64.682	2.41E 3	-0.782	1.952	0.003	-13.019			
		2:BEBAN HIDL	14.164	479.844	-0.195	1.585	0.001	-3.017			
		3:BEBAN GEM	-198.930	-1.65E 3	3.077	-0.410	-0.014	-26.832			
		4:KOMBINASI	100.282	3.65E 3	-1.251	4.879	0.004	-20.451			
		5:KOMB B. MA	-135.696	964.418	2.331	2.473	-0.011	-43.004			
	13746	1:BEBAN MATI	-64.682	-1.56E 3	0.782	-1.952	0.003	27.610			
		2:BEBAN HIDL	-14.164	-479.844	0.195	-1.585	0.001	6.547			
		3:BEBAN GEM	198.930	1.65E 3	-3.077	0.410	-0.009	14.720			
		4:KOMBINASI	-100.282	-2.64E 3	1.251	-4.879	0.005	43.606			
		5:KOMB B. MA	135.696	-120.423	-2.331	-2.473	-0.006	46.993			
21211	13744	1:BEBAN MATI	68.783	2.57E 3	0.263	-0.206	-0.001	-14.990			
		2:BEBAN HIDL	18.947	1.08E 3	0.062	0.024	-0.000	-6.164			
		3:BEBAN GEM	-123.550	-1.5E 3	-2.403	-0.758	0.009	-25.606			
		4:KOMBINASI	112.854	4.81E 3	0.415	-0.209	-0.001	-27.852			
		5:KOMB B. MA	-49.576	1.64E 3	-2.223	-0.988	0.008	-45.576			
	13749	1:BEBAN MATI	-68.783	-2.34E 3	-0.263	0.206	-0.001	33.062			
		2:BEBAN HIDL	-18.947	-1.08E 3	-0.062	-0.024	-0.000	14.103			
		3:BEBAN GEM	123.550	1.5E 3	2.403	0.758	0.009	14.559			
		4:KOMBINASI	-112.854	-4.54E 3	-0.415	0.209	-0.002	62.239			
		5:KOMB B. MA	49.576	-1.42E 3	2.223	0.988	0.008	56.811			
21212	13746	1:BEBAN MATI	57.814	1.17E 3	-0.357	0.999	0.001	-28.330			
		2:BEBAN HIDL	12.886	224.668	-0.082	0.886	0.000	-6.856			
		3:BEBAN GEM	-176.007	-1.63E 3	1.874	0.001	-0.012	-14.238			
		4:KOMBINASI	89.995	1.77E 3	-0.559	2.616	0.002	-44.965			
		5:KOMB B. MA	-119.262	-398.385	1.562	1.531	-0.011	-47.394			
	13652	1:BEBAN MATI	-57.814	-330.627	0.357	-0.999	0.002	33.866			
		2:BEBAN HIDL	-12.886	-224.668	0.082	-0.886	0.000	8.508			
		3:BEBAN GEM	176.007	1.63E 3	-1.874	-0.001	-0.002	2.276			
		4:KOMBINASI	-89.995	-756.221	0.559	-2.616	0.003	54.252			
		5:KOMB B. MA	119.262	1.24E 3	-1.562	-1.531	-0.000	41.360			
21213	13749	1:BEBAN MATI	58.012	1.43E 3	0.211	-0.138	-0.001	-34.254			
		2:BEBAN HIDL	15.918	585.522	0.062	0.018	-0.000	-14.561			
		3:BEBAN GEM	-110.312	-1.47E 3	-2.421	-0.485	0.005	-13.828			
		4:KOMBINASI	95.083	2.65E 3	0.353	-0.136	-0.001	-64.402			
		5:KOMB B. MA	-48.265	240.502	-2.293	-0.636	0.005	-57.510			
	13672	1:BEBAN MATI	-58.012	-1.2E 3	-0.211	0.138	-0.001	43.931			



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Job No 1	Sheet No 261	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-15.918	-585.522	-0.062	-0.018	-0.000	18.868			
		3:BEBAN GEM	110.312	1.47E 3	2.421	0.485	0.012	3.047			
		4:KOMBINASI	-95.083	-2.38E 3	-0.353	0.136	-0.002	82.905			
		5:KOMB B. MA	48.265	-15.256	2.293	0.636	0.012	58.450			
21214	13750	1:BEBAN MATI	2.804	357.062	-0.004	0.089	0.000	-8.523			
		2:BEBAN HIDL	0.444	140.626	-0.010	-0.005	0.000	-4.259			
		3:BEBAN GEM	40.250	-51.885	0.140	-0.164	-0.001	-1.081			
		4:KOMBINASI	4.076	653.476	-0.021	0.098	0.000	-17.042			
		5:KOMB B. MA	45.333	386.958	0.137	-0.087	-0.001	-12.214			
	13751	1:BEBAN MATI	-2.804	-126.410	0.004	-0.089	-0.000	11.368			
		2:BEBAN HIDL	-0.444	-140.626	0.010	0.005	0.000	5.914			
		3:BEBAN GEM	-40.250	51.885	-0.140	0.164	-0.001	0.471			
		4:KOMBINASI	-4.076	-376.694	0.021	-0.098	-0.000	23.103			
		5:KOMB B. MA	-45.333	-156.307	-0.137	0.087	-0.001	15.410			
21215	13751	1:BEBAN MATI	3.317	-568.415	-0.028	-0.084	0.000	-11.178			
		2:BEBAN HIDL	0.297	-323.406	-0.017	-0.033	0.000	-5.837			
		3:BEBAN GEM	61.907	-60.632	0.366	0.138	-0.002	-0.395			
		4:KOMBINASI	4.455	-1.2E 3	-0.061	-0.154	0.001	-22.753			
		5:KOMB B. MA	68.498	-826.122	0.346	0.041	-0.002	-15.096			
	13752	1:BEBAN MATI	-3.317	799.067	0.028	0.084	0.000	3.132			
		2:BEBAN HIDL	-0.297	323.406	0.017	0.033	0.000	2.031			
		3:BEBAN GEM	-61.907	60.632	-0.366	-0.138	-0.002	-0.318			
		4:KOMBINASI	-4.455	1.48E 3	0.061	0.154	0.000	7.008			
		5:KOMB B. MA	-68.498	1.06E 3	-0.346	-0.041	-0.002	4.017			
21216	13752	1:BEBAN MATI	0.511	-1.07E 3	-0.111	-0.113	0.000	-0.999			
		2:BEBAN HIDL	-0.637	-562.523	-0.041	-0.034	0.000	-0.964			
		3:BEBAN GEM	85.670	-9.796	0.670	0.086	-0.001	0.439			
		4:KOMBINASI	-0.406	-2.19E 3	-0.198	-0.191	0.001	-2.741			
		5:KOMB B. MA	90.082	-1.42E 3	0.568	-0.043	-0.001	-1.117			
	13672	1:BEBAN MATI	-0.511	1.3E 3	0.111	0.113	0.001	-13.000			
		2:BEBAN HIDL	0.637	562.523	0.041	0.034	0.000	-5.656			
		3:BEBAN GEM	-85.670	9.796	-0.670	-0.086	-0.006	-0.554			
		4:KOMBINASI	0.406	2.47E 3	0.198	0.191	0.002	-24.649			
		5:KOMB B. MA	-90.082	1.65E 3	-0.568	0.043	-0.006	-16.975			
21217	13754	1:BEBAN MATI	57.404	-1.95E 3	0.170	-2.126	-0.001	-24.415			
		2:BEBAN HIDL	13.245	-563.420	0.049	-1.347	-0.000	-5.871			
		3:BEBAN GEM	-89.707	-1.67E 3	3.703	1.189	-0.017	10.230			
		4:KOMBINASI	90.077	-3.24E 3	0.283	-4.707	-0.002	-38.692			
		5:KOMB B. MA	-28.841	-4.04E 3	4.087	-1.686	-0.019	-17.196			
	13759	1:BEBAN MATI	-57.404	2.79E 3	-0.170	2.126	-0.000	6.975			
		2:BEBAN HIDL	-13.245	563.420	-0.049	1.347	-0.000	1.727			
		3:BEBAN GEM	89.707	1.67E 3	-3.703	-1.189	-0.010	-22.500			
		4:KOMBINASI	-90.077	4.25E 3	-0.283	4.707	-0.000	11.134			
		5:KOMB B. MA	28.841	4.88E 3	-4.087	1.686	-0.011	-15.614			
21218	13757	1:BEBAN MATI	50.890	-2.86E 3	-0.044	0.139	0.000	-28.789			
		2:BEBAN HIDL	13.911	-1.24E 3	-0.012	-0.027	0.000	-12.670			
		3:BEBAN GEM	-73.635	-1.54E 3	5.468	0.738	-0.026	9.330			
		4:KOMBINASI	83.325	-5.41E 3	-0.071	0.124	0.001	-54.819			



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Job No 1	Sheet No 262	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-18.080	-5.21E 3	5.690	0.898	-0.027	-26.594			
	13762	1:BEBAN MATI	-50.890	3.08E 3	0.044	-0.139	-0.000	6.951			
		2:BEBAN HIDL	-13.911	1.24E 3	0.012	0.027	-0.000	3.568			
		3:BEBAN GEM	73.635	1.54E 3	-5.468	-0.738	-0.014	-20.633			
		4:KOMBINASI	-83.325	5.68E 3	0.071	-0.124	-0.000	14.049			
		5:KOMB B. MA	18.080	5.44E 3	-5.690	-0.898	-0.015	-12.573			
21219	13759	1:BEBAN MATI	63.236	-3.12E 3	0.372	-3.061	-0.002	-5.849			
		2:BEBAN HIDL	14.782	-792.556	0.101	-2.029	-0.001	-1.293			
		3:BEBAN GEM	-5.308	-1.73E 3	5.202	0.979	-0.018	22.565			
		4:KOMBINASI	99.534	-5.01E 3	0.608	-6.919	-0.004	-9.088			
		5:KOMB B. MA	66.531	-5.42E 3	5.895	-3.251	-0.022	17.069			
	13764	1:BEBAN MATI	-63.236	3.97E 3	-0.372	3.061	-0.000	-20.219			
		2:BEBAN HIDL	-14.782	792.556	-0.101	2.029	-0.000	-4.536			
		3:BEBAN GEM	5.308	1.73E 3	-5.202	-0.979	-0.020	-35.325			
		4:KOMBINASI	-99.534	6.03E 3	-0.608	6.919	-0.000	-31.521			
		5:KOMB B. MA	-66.531	6.26E 3	-5.895	3.251	-0.021	-60.032			
21220	13762	1:BEBAN MATI	52.621	-3.97E 3	-0.190	0.150	0.001	-5.623			
		2:BEBAN HIDL	14.407	-1.75E 3	-0.062	-0.039	0.000	-3.015			
		3:BEBAN GEM	-12.322	-1.69E 3	8.785	1.030	-0.039	21.267			
		4:KOMBINASI	86.196	-7.56E 3	-0.327	0.118	0.002	-11.571			
		5:KOMB B. MA	48.327	-6.79E 3	8.997	1.208	-0.040	14.899			
	13767	1:BEBAN MATI	-52.621	4.2E 3	0.190	-0.150	0.000	-24.412			
		2:BEBAN HIDL	-14.407	1.75E 3	0.062	0.039	0.000	-9.851			
		3:BEBAN GEM	12.322	1.69E 3	-8.785	-1.030	-0.025	-33.692			
		4:KOMBINASI	-86.196	7.83E 3	0.327	-0.118	0.001	-45.056			
		5:KOMB B. MA	-48.327	7.02E 3	-8.997	-1.208	-0.026	-65.699			
21221	13764	1:BEBAN MATI	79.423	-4.19E 3	5.576	-4.025	-0.015	21.625			
		2:BEBAN HIDL	18.748	-919.980	1.329	-2.498	-0.003	5.093			
		3:BEBAN GEM	135.024	-1.89E 3	11.099	0.537	-0.012	35.345			
		4:KOMBINASI	125.303	-6.49E 3	8.817	-8.826	-0.023	34.099			
		5:KOMB B. MA	232.446	-6.72E 3	18.026	-4.959	-0.030	61.794			
	12737	1:BEBAN MATI	-79.423	5.03E 3	-5.576	4.025	-0.026	-55.511			
		2:BEBAN HIDL	-18.748	919.980	-1.329	2.498	-0.006	-11.859			
		3:BEBAN GEM	-135.024	1.89E 3	-11.099	-0.537	-0.069	-49.250			
		4:KOMBINASI	-125.303	7.51E 3	-8.817	8.826	-0.042	-85.588			
		5:KOMB B. MA	-232.446	7.57E 3	-18.026	4.959	-0.103	-114.339			
21222	13767	1:BEBAN MATI	59.728	-5E 3	-1.054	0.145	0.004	25.762			
		2:BEBAN HIDL	16.431	-2.17E 3	-0.429	-0.051	0.002	10.427			
		3:BEBAN GEM	124.079	-2.06E 3	5.990	1.568	-0.030	34.068			
		4:KOMBINASI	97.963	-9.48E 3	-1.951	0.091	0.007	47.597			
		5:KOMB B. MA	199.870	-8.47E 3	4.978	1.760	-0.027	67.789			
	12745	1:BEBAN MATI	-59.728	5.23E 3	1.054	-0.145	0.004	-63.401			
		2:BEBAN HIDL	-16.431	2.17E 3	0.429	0.051	0.002	-26.406			
		3:BEBAN GEM	-124.079	2.06E 3	-5.990	-1.568	-0.014	-49.202			
		4:KOMBINASI	-97.963	9.75E 3	1.951	-0.091	0.007	-118.331			
		5:KOMB B. MA	-199.870	8.69E 3	-4.978	-1.760	-0.010	-130.907			
21223	13768	1:BEBAN MATI	20.108	1.13E 3	-0.257	0.049	0.002	-10.363			
		2:BEBAN HIDL	4.567	477.368	-0.057	0.019	0.000	-4.141			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 263	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	95.933	-562.858	-9.634	1.234	0.065	-7.764			
		4:KOMBINASI	31.437	2.12E 3	-0.400	0.089	0.003	-19.062			
		5:KOMB B. MA	123.578	826.119	-10.407	1.356	0.070	-21.001			
	13769	1:BEBAN MATI	-20.108	-770.306	0.257	-0.049	0.001	21.549			
		2:BEBAN HIDL	-4.567	-477.368	0.057	-0.019	0.000	9.759			
		3:BEBAN GEM	-95.933	562.858	9.634	-1.234	0.049	1.140			
		4:KOMBINASI	-31.437	-1.69E 3	0.400	-0.089	0.002	41.473			
		5:KOMB B. MA	-123.578	-465.726	10.407	-1.356	0.053	28.602			
21224	13769	1:BEBAN MATI	13.613	-1E 3	0.485	-0.041	-0.002	-21.471			
		2:BEBAN HIDL	3.069	-491.878	0.142	-0.012	-0.001	-9.729			
		3:BEBAN GEM	222.588	-582.770	-0.808	-1.092	0.012	-0.869			
		4:KOMBINASI	21.246	-1.99E 3	0.810	-0.068	-0.004	-41.331			
		5:KOMB B. MA	249.172	-1.91E 3	-0.278	-1.195	0.010	-28.221			
	13770	1:BEBAN MATI	-13.613	1.36E 3	-0.485	0.041	-0.003	7.582			
		2:BEBAN HIDL	-3.069	491.878	-0.142	0.012	-0.001	3.940			
		3:BEBAN GEM	-222.588	582.770	0.808	1.092	-0.002	-5.989			
		4:KOMBINASI	-21.246	2.42E 3	-0.810	0.068	-0.005	15.403			
		5:KOMB B. MA	-249.172	2.27E 3	0.278	1.195	-0.006	3.658			
21225	13770	1:BEBAN MATI	12.853	-2.8E 3	1.717	-0.044	-0.011	-6.082			
		2:BEBAN HIDL	3.345	-1.25E 3	0.492	-0.014	-0.003	-3.143			
		3:BEBAN GEM	401.648	-713.938	10.805	-3.765	-0.074	6.090			
		4:KOMBINASI	20.776	-5.35E 3	2.847	-0.074	-0.018	-12.328			
		5:KOMB B. MA	436.590	-4.29E 3	13.357	-4.005	-0.091	-1.574			
	12745	1:BEBAN MATI	-12.853	3.16E 3	-1.717	0.044	-0.010	-28.966			
		2:BEBAN HIDL	-3.345	1.25E 3	-0.492	0.014	-0.003	-11.509			
		3:BEBAN GEM	-401.648	713.938	-10.805	3.765	-0.053	-14.492			
		4:KOMBINASI	-20.776	5.78E 3	-2.847	0.074	-0.016	-53.174			
		5:KOMB B. MA	-436.590	4.66E 3	-13.357	4.005	-0.067	-51.088			
21226	13771	1:BEBAN MATI	8.928	638.255	0.907	1.049	-0.006	-6.217			
		2:BEBAN HIDL	1.565	-42.589	0.269	0.588	-0.002	-1.521			
		3:BEBAN GEM	-115.783	-1.13E 3	2.154	0.563	-0.009	-4.943			
		4:KOMBINASI	13.218	697.764	1.519	2.200	-0.010	-9.894			
		5:KOMB B. MA	-111.705	-568.895	3.330	1.993	-0.017	-12.319			
	13774	1:BEBAN MATI	-8.928	712.137	-0.907	-1.049	-0.005	5.782			
		2:BEBAN HIDL	-1.565	42.589	-0.269	-0.588	-0.001	1.020			
		3:BEBAN GEM	115.783	1.13E 3	-2.154	-0.563	-0.016	-8.300			
		4:KOMBINASI	-13.218	922.708	-1.519	-2.200	-0.008	8.570			
		5:KOMB B. MA	111.705	1.92E 3	-3.330	-1.993	-0.023	-2.322			
21227	13773	1:BEBAN MATI	57.207	2.7E 3	-0.600	-3.363	0.002	1.854			
		2:BEBAN HIDL	16.080	1.18E 3	-0.406	-1.654	0.001	1.246			
		3:BEBAN GEM	42.333	-1.77E 3	-9.705	-0.863	-0.009	-33.890			
		4:KOMBINASI	94.377	5.13E 3	-1.369	-6.683	0.005	4.218			
		5:KOMB B. MA	111.305	1.54E 3	-11.034	-5.262	-0.006	-32.983			
	14012	1:BEBAN MATI	-57.207	-2.55E 3	0.600	3.363	0.001	11.013			
		2:BEBAN HIDL	-16.080	-1.18E 3	0.406	1.654	0.001	4.535			
		3:BEBAN GEM	-42.333	1.77E 3	9.705	0.863	0.057	25.191			
		4:KOMBINASI	-94.377	-4.95E 3	1.369	6.683	0.002	20.472			
		5:KOMB B. MA	-111.305	-1.39E 3	11.034	5.262	0.060	40.185			



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Job No 1	Sheet No 264	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21228	13774	1:BEBAN MATI	-2.715	-1.09E 3	1.000	2.202	-0.005	-4.948			
		2:BEBAN HIDL	-2.716	-310.657	0.342	1.383	-0.002	-0.519			
		3:BEBAN GEM	145.877	-1.02E 3	6.256	-2.706	-0.114	8.594			
		4:KOMBINASI	-7.604	-1.8E 3	1.747	4.855	-0.009	-6.767			
		5:KOMB B. MA	148.826	-2.34E 3	7.774	0.190	-0.126	3.765			
12723		1:BEBAN MATI	2.715	2.44E 3	-1.000	-2.202	-0.006	-15.820			
		2:BEBAN HIDL	2.716	310.657	-0.342	-1.383	-0.002	-3.137			
		3:BEBAN GEM	-145.877	1.02E 3	-6.256	2.706	0.040	-20.544			
		4:KOMBINASI	7.604	3.43E 3	-1.747	-4.855	-0.011	-24.003			
		5:KOMB B. MA	-148.826	3.69E 3	-7.774	-0.190	0.034	-39.274			
21229	13776	1:BEBAN MATI	-2.229	940.068	0.419	1.244	-0.001	-3.474			
		2:BEBAN HIDL	-0.424	97.334	0.095	0.019	-0.000	-0.534			
		3:BEBAN GEM	-817.875	-4.59E 3	3.598	-0.355	0.005	-29.247			
		4:KOMBINASI	-3.353	1.28E 3	0.655	1.524	-0.002	-5.023			
		5:KOMB B. MA	-861.252	-3.82E 3	4.254	0.883	0.004	-34.504			
	13780		1:BEBAN MATI	2.229	185.260	-0.419	-1.244	-0.003	7.175		
			2:BEBAN HIDL	0.424	-97.334	-0.095	-0.019	-0.001	1.488		
			3:BEBAN GEM	817.875	4.59E 3	-3.598	0.355	-0.040	-15.793		
			4:KOMBINASI	3.353	66.577	-0.655	-1.524	-0.004	10.992		
			5:KOMB B. MA	861.252	4.95E 3	-4.254	-0.883	-0.046	-8.514		
21230	13778	1:BEBAN MATI	38.292	1.55E 3	-1.653	-2.540	0.003	-21.525			
		2:BEBAN HIDL	10.481	678.394	-0.956	-1.334	0.002	-9.204			
		3:BEBAN GEM	249.427	-1.57E 3	31.475	-0.224	-0.104	-16.102			
		4:KOMBINASI	62.720	2.95E 3	-3.513	-5.182	0.006	-40.557			
		5:KOMB B. MA	306.480	312.179	30.822	-3.575	-0.105	-43.955			
	14016		1:BEBAN MATI	-38.292	-1.48E 3	1.653	2.540	0.001	25.239		
			2:BEBAN HIDL	-10.481	-678.394	0.956	1.334	0.001	10.868		
			3:BEBAN GEM	-249.427	1.57E 3	-31.475	0.224	0.027	12.256		
			4:KOMBINASI	-62.720	-2.86E 3	3.513	5.182	0.002	47.674		
			5:KOMB B. MA	-306.480	-237.097	-30.822	3.575	0.030	44.628		
21231	13780	1:BEBAN MATI	11.618	-619.432	1.831	3.561	-0.007	-6.459			
		2:BEBAN HIDL	4.115	-184.095	0.281	1.213	-0.001	-1.228			
		3:BEBAN GEM	-997.432	-4.88E 3	42.500	1.720	-0.048	16.512			
		4:KOMBINASI	20.526	-1.04E 3	2.647	6.214	-0.011	-9.717			
		5:KOMB B. MA	-1.03E 3	-5.85E 3	46.625	6.095	-0.059	10.141			
	12781		1:BEBAN MATI	-11.618	1.74E 3	-1.831	-3.561	-0.011	-5.133		
			2:BEBAN HIDL	-4.115	184.095	-0.281	-1.213	-0.001	-0.577		
			3:BEBAN GEM	997.432	4.88E 3	-42.500	-1.720	-0.369	-64.335		
			4:KOMBINASI	-20.526	2.39E 3	-2.647	-6.214	-0.015	-7.083		
			5:KOMB B. MA	1.03E 3	6.98E 3	-46.625	-6.095	-0.399	-73.031		
21232	13781	1:BEBAN MATI	-4.620	-257.251	0.721	-0.126	-0.004	-2.346			
		2:BEBAN HIDL	-1.294	-129.788	0.184	-0.023	-0.001	-1.481			
		3:BEBAN GEM	249.510	-213.812	2.008	-1.513	0.007	0.492			
		4:KOMBINASI	-7.615	-516.362	1.160	-0.187	-0.006	-5.185			
		5:KOMB B. MA	256.589	-559.626	2.940	-1.728	0.003	-2.718			
	13782		1:BEBAN MATI	4.620	487.902	-0.721	0.126	-0.005	-2.039		
			2:BEBAN HIDL	1.294	129.788	-0.184	0.023	-0.001	-0.046		
			3:BEBAN GEM	-249.510	213.812	-2.008	1.513	-0.031	-3.008		



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 265	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	7.615	793.144	-1.160	0.187	-0.007	-2.520			
		5:KOMB B. MA	-256.589	790.278	-2.940	1.728	-0.037	-5.225			
21233	13782	1:BEBAN MATI	-7.345	-1.43E 3	1.510	-0.329	-0.009	3.194			
		2:BEBAN HIDL	-1.337	-635.280	0.365	-0.089	-0.002	0.716			
		3:BEBAN GEM	540.376	-330.316	27.066	-3.170	-0.132	3.100			
		4:KOMBINASI	-10.953	-2.73E 3	2.396	-0.537	-0.014	4.978			
		5:KOMB B. MA	559.247	-2.16E 3	30.148	-3.711	-0.148	6.879			
	12781	1:BEBAN MATI	7.345	1.66E 3	-1.510	0.329	-0.009	-21.349			
		2:BEBAN HIDL	1.337	635.280	-0.365	0.089	-0.002	-8.192			
		3:BEBAN GEM	-540.376	330.316	-27.066	3.170	-0.187	-6.988			
		4:KOMBINASI	10.953	3.01E 3	-2.396	0.537	-0.014	-38.725			
		5:KOMB B. MA	-559.247	2.39E 3	-30.148	3.711	-0.207	-33.601			
21234	13783	1:BEBAN MATI	75.475	2.48E 3	0.771	-1.689	-0.007	-13.606			
		2:BEBAN HIDL	16.692	417.792	0.146	-1.248	-0.001	-3.429			
		3:BEBAN GEM	16.653	-428.185	7.969	2.375	-0.067	-6.246			
		4:KOMBINASI	117.277	3.64E 3	1.159	-4.023	-0.010	-21.814			
		5:KOMB B. MA	102.976	2.28E 3	9.226	0.056	-0.078	-22.222			
	13666	1:BEBAN MATI	-75.475	-787.254	-0.771	1.689	-0.005	37.602			
		2:BEBAN HIDL	-16.692	-417.792	-0.146	1.248	-0.001	9.575			
		3:BEBAN GEM	-16.653	428.185	-7.969	-2.375	-0.050	-0.052			
		4:KOMBINASI	-117.277	-1.61E 3	-1.159	4.023	-0.007	60.442			
		5:KOMB B. MA	-102.976	-588.335	-9.226	-0.056	-0.058	43.292			
21235	13785	1:BEBAN MATI	72.311	4.47E 3	0.197	-3.948	-0.000	-14.505			
		2:BEBAN HIDL	12.663	876.800	-0.004	-0.280	0.000	-2.945			
		3:BEBAN GEM	142.685	-1.58E 3	67.040	-0.338	-0.544	-25.191			
		4:KOMBINASI	107.034	6.77E 3	0.231	-5.185	0.000	-22.118			
		5:KOMB B. MA	229.728	3.33E 3	70.587	-4.470	-0.571	-42.722			
	13686	1:BEBAN MATI	-72.311	-2.78E 3	-0.197	3.948	-0.003	67.836			
		2:BEBAN HIDL	-12.663	-876.800	0.004	0.280	-0.000	15.843			
		3:BEBAN GEM	-142.685	1.58E 3	-67.040	0.338	-0.442	1.908			
		4:KOMBINASI	-107.034	-4.74E 3	-0.231	5.185	-0.004	106.752			
		5:KOMB B. MA	-229.728	-1.65E 3	-70.587	4.470	-0.467	79.345			
21236	13786	1:BEBAN MATI	9.348	320.853	0.000	0.000	-0.000	-11.057			
		2:BEBAN HIDL	1.953	50.436	-0.000	-0.000	0.000	-4.734			
		3:BEBAN GEM	-338.267	-207.262	1.136	0.191	-0.008	-4.604			
		4:KOMBINASI	14.342	465.720	0.000	0.000	-0.000	-20.844			
		5:KOMB B. MA	-344.660	133.489	1.192	0.200	-0.008	-18.732			
	13719	1:BEBAN MATI	-9.348	-32.538	-0.000	-0.000	-0.000	13.657			
		2:BEBAN HIDL	-1.953	-50.436	0.000	0.000	0.000	5.476			
		3:BEBAN GEM	338.267	207.262	-1.136	-0.191	-0.009	1.555			
		4:KOMBINASI	-14.342	-119.743	-0.000	-0.000	-0.000	25.150			
		5:KOMB B. MA	344.660	154.826	-1.192	-0.200	-0.009	18.575			
21237	13787	1:BEBAN MATI	114.019	-3.21E 3	-4.024	4.750	0.028	-11.980			
		2:BEBAN HIDL	24.593	-845.525	-0.837	2.596	0.006	-2.577			
		3:BEBAN GEM	131.679	-591.391	-18.195	-4.439	0.119	6.755			
		4:KOMBINASI	176.171	-5.21E 3	-6.168	9.853	0.043	-18.500			
		5:KOMB B. MA	267.037	-4.34E 3	-23.631	1.646	0.157	-6.434			
	12727	1:BEBAN MATI	-114.019	4.9E 3	4.024	-4.750	0.031	-47.718			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 266	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-24.593	845.525	0.837	-2.596	0.007	-9.861			
		3:BEBAN GEM	-131.679	591.391	18.195	4.439	0.148	-15.454			
		4:KOMBINASI	-176.171	7.24E 3	6.168	-9.853	0.048	-73.038			
		5:KOMB B. MA	-267.037	6.03E 3	23.631	-1.646	0.191	-69.861			
21238	13789	1:BEBAN MATI	72.311	4.47E 3	-0.197	3.948	0.000	-14.505			
		2:BEBAN HIDL	12.663	876.800	0.004	0.280	-0.000	-2.945			
		3:BEBAN GEM	-36.567	-1.79E 3	-59.990	-2.091	0.504	-25.757			
		4:KOMBINASI	107.034	6.77E 3	-0.231	5.185	-0.000	-22.118			
		5:KOMB B. MA	41.514	3.11E 3	-63.184	1.920	0.529	-43.316			
	13691	1:BEBAN MATI	-72.311	-2.78E 3	0.197	-3.948	0.003	67.836			
		2:BEBAN HIDL	-12.663	-876.800	-0.004	-0.280	0.000	15.843			
		3:BEBAN GEM	36.567	1.79E 3	59.990	2.091	0.379	-0.633			
		4:KOMBINASI	-107.034	-4.74E 3	0.231	-5.185	0.004	106.752			
		5:KOMB B. MA	-41.514	-1.42E 3	63.184	-1.920	0.401	76.677			
21239	13790	1:BEBAN MATI	13.309	596.973	-0.102	0.170	0.001	-3.035			
		2:BEBAN HIDL	1.794	175.714	-0.022	-0.005	0.000	-3.028			
		3:BEBAN GEM	1.14E 3	-32.842	-2.681	-0.607	0.022	-0.715			
		4:KOMBINASI	18.841	997.511	-0.158	0.197	0.001	-8.486			
		5:KOMB B. MA	1.21E 3	667.917	-2.931	-0.469	0.024	-5.603			
	13719	1:BEBAN MATI	-13.309	-308.659	0.102	-0.170	0.001	9.696			
		2:BEBAN HIDL	-1.794	-175.714	0.022	0.005	0.000	5.612			
		3:BEBAN GEM	-1.14E 3	32.842	2.681	0.607	0.017	0.232			
		4:KOMBINASI	-18.841	-651.533	0.158	-0.197	0.001	20.615			
		5:KOMB B. MA	-1.21E 3	-379.603	2.931	0.469	0.019	13.307			
21240	13791	1:BEBAN MATI	10.517	-1.12E 3	0.123	-0.429	-0.002	-1.849			
		2:BEBAN HIDL	1.149	-542.003	0.028	-0.095	-0.000	-2.400			
		3:BEBAN GEM	1.36E 3	76.962	7.847	0.542	-0.039	0.563			
		4:KOMBINASI	14.459	-2.21E 3	0.193	-0.667	-0.003	-6.059			
		5:KOMB B. MA	1.44E 3	-1.37E 3	8.380	0.083	-0.042	-2.698			
	13691	1:BEBAN MATI	-10.517	1.41E 3	-0.123	0.429	-0.000	-16.771			
		2:BEBAN HIDL	-1.149	542.003	-0.028	0.095	-0.000	-5.573			
		3:BEBAN GEM	-1.36E 3	-76.962	-7.847	-0.542	-0.077	0.569			
		4:KOMBINASI	-14.459	2.56E 3	-0.193	0.667	-0.000	-29.041			
		5:KOMB B. MA	-1.44E 3	1.65E 3	-8.380	-0.083	-0.081	-19.517			
21241	13793	1:BEBAN MATI	46.590	-5.57E 3	-0.151	-0.044	0.001	-10.799			
		2:BEBAN HIDL	8.656	-1.61E 3	-0.047	-0.953	0.000	-3.629			
		3:BEBAN GEM	27.669	-1.91E 3	10.225	1.257	-0.069	19.296			
		4:KOMBINASI	69.759	-9.25E 3	-0.256	-1.577	0.002	-18.765			
		5:KOMB B. MA	80.837	-8.54E 3	10.558	0.705	-0.071	7.284			
	12754	1:BEBAN MATI	-46.590	7.26E 3	0.151	0.044	0.001	-83.542			
		2:BEBAN HIDL	-8.656	1.61E 3	0.047	0.953	0.000	-19.985			
		3:BEBAN GEM	-27.669	1.91E 3	-10.225	-1.257	-0.081	-47.368			
		4:KOMBINASI	-69.759	11.3E 3	0.256	1.577	0.002	-132.227			
		5:KOMB B. MA	-80.837	10.2E 3	-10.558	-0.705	-0.084	-145.269			
21242	13794	1:BEBAN MATI	19.191	-1.29E 3	-0.000	-0.000	0.000	-1.968			
		2:BEBAN HIDL	3.723	-568.990	-0.000	-0.000	0.000	-1.390			
		3:BEBAN GEM	-656.112	18.543	1.325	-0.132	-0.011	2.691			
		4:KOMBINASI	28.986	-2.46E 3	-0.000	-0.000	0.000	-4.586			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 267	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-667.493	-1.61E 3	1.392	-0.138	-0.011	0.023			
	13707	1:BEBAN MATI	-19.191	1.58E 3	0.000	0.000	0.000	-19.136			
		2:BEBAN HIDL	-3.723	568.990	0.000	0.000	0.000	-6.980			
		3:BEBAN GEM	656.112	-18.543	-1.325	0.132	-0.009	-2.418			
		4:KOMBINASI	-28.986	2.8E 3	0.000	0.000	0.000	-34.130			
		5:KOMB B. MA	667.493	1.9E 3	-1.392	0.138	-0.009	-25.862			
21243	13796	1:BEBAN MATI	46.590	-5.57E 3	0.151	0.044	-0.001	-10.799			
		2:BEBAN HIDL	8.656	-1.61E 3	0.047	0.953	-0.000	-3.629			
		3:BEBAN GEM	-58.811	-1.82E 3	-9.517	1.593	0.061	19.596			
		4:KOMBINASI	69.759	-9.25E 3	0.256	1.577	-0.002	-18.765			
		5:KOMB B. MA	-9.967	-8.44E 3	-9.814	2.288	0.062	7.599			
	12757	1:BEBAN MATI	-46.590	7.26E 3	-0.151	-0.044	-0.001	-83.542			
		2:BEBAN HIDL	-8.656	1.61E 3	-0.047	-0.953	-0.000	-19.985			
		3:BEBAN GEM	58.811	1.82E 3	9.517	-1.593	0.079	-46.348			
		4:KOMBINASI	-69.759	11.3E 3	-0.256	-1.577	-0.002	-132.226			
		5:KOMB B. MA	9.967	10.1E 3	9.814	-2.288	0.082	-144.199			
21244	13797	1:BEBAN MATI	-4.585	2.63E 3	-0.351	0.093	0.003	-9.522			
		2:BEBAN HIDL	-2.263	960.341	-0.074	0.162	0.001	-4.187			
		3:BEBAN GEM	1.52E 3	-323.301	-7.815	2.311	0.038	-5.177			
		4:KOMBINASI	-9.122	4.7E 3	-0.540	0.371	0.004	-18.126			
		5:KOMB B. MA	1.59E 3	2.87E 3	-8.601	2.617	0.043	-17.470			
	13707	1:BEBAN MATI	4.585	-2.18E 3	0.351	-0.093	0.002	44.965			
		2:BEBAN HIDL	2.263	-960.341	0.074	-0.162	0.001	18.314			
		3:BEBAN GEM	-1.52E 3	323.301	7.815	-2.311	0.077	0.421			
		4:KOMBINASI	9.122	-4.16E 3	0.540	-0.371	0.004	83.261			
		5:KOMB B. MA	-1.59E 3	-2.42E 3	8.601	-2.617	0.083	56.396			
21245	13798	1:BEBAN MATI	-6.755	-4.59E 3	1.194	-0.283	-0.009	-8.225			
		2:BEBAN HIDL	-2.731	-1.88E 3	0.249	-0.253	-0.002	-3.481			
		3:BEBAN GEM	1.51E 3	-533.228	11.551	-4.823	-0.110	5.277			
		4:KOMBINASI	-12.475	-8.51E 3	1.830	-0.745	-0.014	-15.439			
		5:KOMB B. MA	1.58E 3	-6.27E 3	13.471	-5.499	-0.126	-4.773			
	12757	1:BEBAN MATI	6.755	5.04E 3	-1.194	0.283	-0.008	-62.550			
		2:BEBAN HIDL	2.731	1.88E 3	-0.249	0.253	-0.002	-24.180			
		3:BEBAN GEM	-1.51E 3	533.228	-11.551	4.823	-0.060	-13.120			
		4:KOMBINASI	12.475	9.05E 3	-1.830	0.745	-0.013	-113.748			
		5:KOMB B. MA	-1.58E 3	6.72E 3	-13.471	5.499	-0.072	-90.835			
21246	13799	1:BEBAN MATI	21.653	1.07E 3	0.072	0.430	-0.000	-9.868			
		2:BEBAN HIDL	5.070	443.361	0.025	0.302	-0.000	-3.903			
		3:BEBAN GEM	-105.990	-597.421	-9.792	1.233	0.062	-7.764			
		4:KOMBINASI	34.096	2E 3	0.127	1.000	-0.001	-18.086			
		5:KOMB B. MA	-86.594	713.535	-10.195	1.906	0.064	-20.362			
	13802	1:BEBAN MATI	-21.653	-714.417	-0.072	-0.430	-0.000	20.395			
		2:BEBAN HIDL	-5.070	-443.361	-0.025	-0.302	-0.000	9.121			
		3:BEBAN GEM	105.990	597.421	9.792	-1.233	0.054	0.734			
		4:KOMBINASI	-34.096	-1.57E 3	-0.127	-1.000	-0.001	39.068			
		5:KOMB B. MA	86.594	-353.142	10.195	-1.906	0.056	26.638			
21247	13801	1:BEBAN MATI	19.611	2.19E 3	-0.216	1.780	0.001	-3.212			
		2:BEBAN HIDL	3.572	376.108	-0.061	0.886	0.000	-0.838			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	164.836	-2.39E 3	5.437	-0.360	-0.025	-25.257			
		4:KOMBINASI	29.249	3.23E 3	-0.356	3.553	0.002	-5.195			
		5:KOMB B. MA	194.832	-85.594	5.457	1.934	-0.025	-30.235			
	13658	1:BEBAN MATI	-19.611	-842.726	0.216	-1.780	0.001	21.075			
		2:BEBAN HIDL	-3.572	-376.108	0.061	-0.886	0.000	5.264			
		3:BEBAN GEM	-164.836	2.39E 3	-5.437	0.360	-0.039	-2.811			
		4:KOMBINASI	-29.249	-1.61E 3	0.356	-3.553	0.002	33.712			
		5:KOMB B. MA	-194.832	1.44E 3	-5.457	-1.934	-0.040	21.282			
21248	13802	1:BEBAN MATI	17.209	-945.036	-0.082	-0.318	0.000	-20.308			
		2:BEBAN HIDL	4.356	-464.184	-0.022	-0.081	0.000	-9.071			
		3:BEBAN GEM	-97.212	-584.318	-3.165	-1.112	0.024	-0.473			
		4:KOMBINASI	27.620	-1.88E 3	-0.134	-0.512	0.001	-38.884			
		5:KOMB B. MA	-82.250	-1.84E 3	-3.419	-1.535	0.025	-26.247			
	13804	1:BEBAN MATI	-17.209	1.31E 3	0.082	0.318	0.001	7.067			
		2:BEBAN HIDL	-4.356	464.184	0.022	0.081	0.000	3.609			
		3:BEBAN GEM	97.212	584.318	3.165	1.112	0.014	-6.404			
		4:KOMBINASI	-27.620	2.31E 3	0.134	0.512	0.001	14.254			
		5:KOMB B. MA	82.250	2.2E 3	3.419	1.535	0.015	2.508			
21249	13804	1:BEBAN MATI	18.654	-2.71E 3	-0.406	-0.902	0.003	-5.859			
		2:BEBAN HIDL	5.447	-1.2E 3	-0.138	-0.379	0.001	-2.950			
		3:BEBAN GEM	-74.542	-657.043	10.152	-3.980	-0.065	6.532			
		4:KOMBINASI	31.100	-5.18E 3	-0.709	-1.688	0.005	-11.751			
		5:KOMB B. MA	-56.347	-4.12E 3	10.170	-5.308	-0.065	-0.770			
	12720	1:BEBAN MATI	-18.654	3.07E 3	0.406	0.902	0.002	-28.191			
		2:BEBAN HIDL	-5.447	1.2E 3	0.138	0.379	0.001	-11.167			
		3:BEBAN GEM	74.542	657.043	-10.152	3.980	-0.054	-14.264			
		4:KOMBINASI	-31.100	5.61E 3	0.709	1.688	0.004	-51.696			
		5:KOMB B. MA	56.347	4.48E 3	-10.170	5.308	-0.054	-49.869			
21250	13806	1:BEBAN MATI	24.545	2.33E 3	0.062	-0.152	-0.000	-2.738			
		2:BEBAN HIDL	5.709	877.779	0.021	-0.039	-0.000	-1.614			
		3:BEBAN GEM	-21.832	-2.2E 3	11.000	-0.798	-0.057	-23.393			
		4:KOMBINASI	38.588	4.2E 3	0.109	-0.244	-0.001	-5.868			
		5:KOMB B. MA	5.047	547.622	11.625	-1.013	-0.060	-28.269			
	13668	1:BEBAN MATI	-24.545	-1.97E 3	-0.062	0.152	-0.000	28.070			
		2:BEBAN HIDL	-5.709	-877.779	-0.021	0.039	-0.000	11.944			
		3:BEBAN GEM	21.832	2.2E 3	-11.000	0.798	-0.072	-2.518			
		4:KOMBINASI	-38.588	-3.77E 3	-0.109	0.244	-0.000	52.795			
		5:KOMB B. MA	-5.047	-187.229	-11.625	1.013	-0.076	32.593			
21251	13807	1:BEBAN MATI	3.657	331.147	0.035	-0.114	-0.000	-6.823			
		2:BEBAN HIDL	0.684	101.696	0.012	0.021	-0.000	-3.309			
		3:BEBAN GEM	-68.123	-97.474	-1.739	-0.269	0.008	-1.441			
		4:KOMBINASI	5.483	560.090	0.061	-0.103	-0.000	-13.482			
		5:KOMB B. MA	-67.462	289.817	-1.783	-0.384	0.008	-10.322			
	13808	1:BEBAN MATI	-3.657	-100.496	-0.035	0.114	-0.000	9.363			
		2:BEBAN HIDL	-0.684	-101.696	-0.012	-0.021	-0.000	4.506			
		3:BEBAN GEM	68.123	97.474	1.739	0.269	0.013	0.294			
		4:KOMBINASI	-5.483	-283.308	-0.061	0.103	-0.000	18.445			
		5:KOMB B. MA	67.462	-59.165	1.783	0.384	0.013	12.375			



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Job No 1	Sheet No 269	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21252	13808	1:BEBAN MATI	4.966	-443.286	0.064	0.127	-0.000	-9.243			
		2:BEBAN HIDL	0.755	-250.352	0.027	0.044	-0.000	-4.481			
		3:BEBAN GEM	-119.656	-84.573	-2.590	0.242	0.014	-0.278			
		4:KOMBINASI	7.167	-932.507	0.120	0.223	-0.001	-18.262			
		5:KOMB B. MA	-120.219	-682.299	-2.639	0.408	0.014	-12.223			
13809	13809	1:BEBAN MATI	-4.966	673.937	-0.064	-0.127	-0.000	2.669			
		2:BEBAN HIDL	-0.755	250.352	-0.027	-0.044	-0.000	1.535			
		3:BEBAN GEM	119.656	84.573	2.590	-0.242	0.017	-0.717			
		4:KOMBINASI	-7.167	1.21E 3	-0.120	-0.223	-0.001	5.659			
		5:KOMB B. MA	120.219	912.950	2.639	-0.408	0.017	2.837			
21253	13809	1:BEBAN MATI	3.629	-1E 3	0.105	0.173	-0.000	-1.228			
		2:BEBAN HIDL	0.358	-511.271	0.039	0.046	-0.000	-0.805			
		3:BEBAN GEM	-167.673	7.747	-2.954	0.106	0.020	0.747			
		4:KOMBINASI	4.927	-2.02E 3	0.188	0.281	-0.001	-2.763			
		5:KOMB B. MA	-172.213	-1.3E 3	-2.974	0.312	0.020	-0.928			
13668	13668	1:BEBAN MATI	-3.629	1.23E 3	-0.105	-0.173	-0.001	-11.918			
		2:BEBAN HIDL	-0.358	511.271	-0.039	-0.046	-0.000	-5.211			
		3:BEBAN GEM	167.673	-7.747	2.954	-0.106	0.015	-0.655			
		4:KOMBINASI	-4.927	2.3E 3	-0.188	-0.281	-0.001	-22.640			
		5:KOMB B. MA	172.213	1.53E 3	2.974	-0.312	0.015	-15.733			
21254	13811	1:BEBAN MATI	33.030	-2.32E 3	1.367	-3.230	-0.008	-7.273			
		2:BEBAN HIDL	5.097	-587.465	0.203	-1.955	-0.001	-1.311			
		3:BEBAN GEM	460.735	-2.52E 3	13.123	1.157	-0.027	31.347			
		4:KOMBINASI	47.790	-3.73E 3	1.966	-7.003	-0.011	-10.825			
		5:KOMB B. MA	519.860	-5.33E 3	15.269	-3.188	-0.036	24.855			
12767	12767	1:BEBAN MATI	-33.030	3.67E 3	-1.367	3.230	-0.008	-28.012			
		2:BEBAN HIDL	-5.097	587.465	-0.203	1.955	-0.001	-5.602			
		3:BEBAN GEM	-460.735	2.52E 3	-13.123	-1.157	-0.128	-61.050			
		4:KOMBINASI	-47.790	5.35E 3	-1.966	7.003	-0.012	-42.578			
		5:KOMB B. MA	-519.860	6.68E 3	-15.269	3.188	-0.143	-95.476			
21255	13814	1:BEBAN MATI	46.758	-3.14E 3	-0.410	0.264	0.003	-8.693			
		2:BEBAN HIDL	10.010	-1.37E 3	-0.120	0.021	0.001	-3.182			
		3:BEBAN GEM	310.307	-2.52E 3	0.474	1.658	0.014	29.921			
		4:KOMBINASI	72.126	-5.95E 3	-0.684	0.350	0.005	-15.524			
		5:KOMB B. MA	378.587	-6.6E 3	0.016	2.018	0.019	20.814			
12768	12768	1:BEBAN MATI	-46.758	3.5E 3	0.410	-0.264	0.002	-30.346			
		2:BEBAN HIDL	-10.010	1.37E 3	0.120	-0.021	0.001	-12.898			
		3:BEBAN GEM	-310.307	2.52E 3	-0.474	-1.658	-0.020	-59.531			
		4:KOMBINASI	-72.126	6.38E 3	0.684	-0.350	0.003	-57.051			
		5:KOMB B. MA	-378.587	6.96E 3	-0.016	-2.018	-0.019	-100.592			
21256	13815	1:BEBAN MATI	16.455	1.55E 3	-0.200	0.980	0.001	-8.256			
		2:BEBAN HIDL	2.331	192.542	-0.025	0.857	0.000	-1.875			
		3:BEBAN GEM	-187.874	-670.871	1.531	1.313	-0.015	-9.247			
		4:KOMBINASI	23.476	2.17E 3	-0.280	2.547	0.001	-12.908			
		5:KOMB B. MA	-179.414	960.440	1.392	2.873	-0.014	-19.091			
13816	13816	1:BEBAN MATI	-16.455	-198.936	0.200	-0.980	0.001	18.543			
		2:BEBAN HIDL	-2.331	-192.542	0.025	-0.857	0.000	4.141			
		3:BEBAN GEM	187.874	670.871	-1.531	-1.313	-0.003	1.353			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-23.476	-546.791	0.280	-2.547	0.002	28.877			
		5:KOMB B. MA	179.414	389.953	-1.392	-2.873	-0.002	22.448			
21257	13816	1:BEBAN MATI	16.265	-402.163	0.284	-0.917	-0.002	-18.516			
		2:BEBAN HIDL	2.843	-214.789	0.070	-0.470	-0.000	-4.157			
		3:BEBAN GEM	-151.831	-670.368	4.273	-0.772	-0.025	-1.262			
		4:KOMBINASI	24.067	-826.259	0.452	-1.852	-0.003	-28.870			
		5:KOMB B. MA	-141.452	-1.23E 3	4.812	-2.009	-0.028	-22.335			
	13817	1:BEBAN MATI	-16.265	1.75E 3	-0.284	0.917	-0.002	5.838			
		2:BEBAN HIDL	-2.843	214.789	-0.070	0.470	-0.000	1.629			
		3:BEBAN GEM	151.831	670.368	-4.273	0.772	-0.026	-6.627			
		4:KOMBINASI	-24.067	2.45E 3	-0.452	1.852	-0.002	9.612			
		5:KOMB B. MA	141.452	2.59E 3	-4.812	2.009	-0.029	-0.143			
21258	13817	1:BEBAN MATI	27.654	-2.23E 3	2.748	-2.592	-0.015	-4.748			
		2:BEBAN HIDL	5.838	-517.231	0.612	-1.472	-0.003	-1.115			
		3:BEBAN GEM	-64.602	-746.614	21.157	-3.639	-0.107	7.204			
		4:KOMBINASI	42.525	-3.5E 3	4.278	-5.466	-0.024	-7.481			
		5:KOMB B. MA	-36.675	-3.32E 3	25.330	-7.296	-0.129	2.148			
	12768	1:BEBAN MATI	-27.654	3.58E 3	-2.748	2.592	-0.017	-29.437			
		2:BEBAN HIDL	-5.838	517.231	-0.612	1.472	-0.004	-4.972			
		3:BEBAN GEM	64.602	746.614	-21.157	3.639	-0.142	-15.991			
		4:KOMBINASI	-42.525	5.12E 3	-4.278	5.466	-0.027	-43.279			
		5:KOMB B. MA	36.675	4.67E 3	-25.330	7.296	-0.169	-49.210			
21259	13819	1:BEBAN MATI	22.988	-2.23E 3	-1.513	1.391	0.004	-18.218			
		2:BEBAN HIDL	6.660	-982.008	-0.880	0.456	0.002	-8.382			
		3:BEBAN GEM	568.856	-1.46E 3	125.716	0.922	-0.333	13.799			
		4:KOMBINASI	38.241	-4.25E 3	-3.223	2.400	0.009	-35.273			
		5:KOMB B. MA	624.283	-4.35E 3	129.961	2.633	-0.344	-8.759			
	14027	1:BEBAN MATI	-22.988	2.38E 3	1.513	-1.391	0.003	6.919			
		2:BEBAN HIDL	-6.660	982.008	0.880	-0.456	0.002	3.567			
		3:BEBAN GEM	-568.856	1.46E 3	-125.716	-0.922	-0.283	-20.951			
		4:KOMBINASI	-38.241	4.43E 3	3.223	-2.400	0.007	14.010			
		5:KOMB B. MA	-624.283	4.5E 3	-129.961	-2.633	-0.293	-12.939			
21260	13821	1:BEBAN MATI	-22.539	761.064	-4.602	4.227	0.011	-4.172			
		2:BEBAN HIDL	-5.317	215.832	-0.072	1.798	0.001	-1.188			
		3:BEBAN GEM	-2.5E 3	-4.04E 3	-533.564	-1.359	1.102	-17.662			
		4:KOMBINASI	-35.554	1.26E 3	-5.637	7.948	0.015	-6.908			
		5:KOMB B. MA	-2.65E 3	-3.35E 3	-564.887	3.879	1.169	-23.430			
	13947	1:BEBAN MATI	22.539	-198.400	4.602	-4.227	0.011	6.525			
		2:BEBAN HIDL	5.317	-215.832	0.072	-1.798	-0.000	2.246			
		3:BEBAN GEM	2.5E 3	4.04E 3	533.564	1.359	1.514	-2.130			
		4:KOMBINASI	35.554	-583.410	5.637	-7.948	0.013	11.424			
		5:KOMB B. MA	2.65E 3	3.91E 3	564.887	-3.879	1.601	5.636			
21261	13823	1:BEBAN MATI	19.267	-3.45E 3	-5.648	0.925	0.010	8.394			
		2:BEBAN HIDL	6.033	-1.5E 3	-2.762	0.313	0.004	2.976			
		3:BEBAN GEM	922.361	-1.67E 3	437.155	0.918	-0.712	28.917			
		4:KOMBINASI	32.774	-6.55E 3	-11.196	1.612	0.019	14.834			
		5:KOMB B. MA	991.367	-6.1E 3	451.708	2.077	-0.734	40.542			
	14031	1:BEBAN MATI	-19.267	3.53E 3	5.648	-0.925	0.004	-16.949			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-6.033	1.5E 3	2.762	-0.313	0.002	-6.660			
		3:BEBAN GEM	-922.361	1.67E 3	-437.155	-0.918	-0.360	-33.005			
		4:KOMBINASI	-32.774	6.64E 3	11.196	-1.612	0.008	-30.994			
		5:KOMB B. MA	-991.367	6.18E 3	-451.708	-2.077	-0.373	-55.600			
21262	13825	1:BEBAN MATI	-7.044	-1.58E 3	-0.314	0.740	0.004	-2.074			
		2:BEBAN HIDL	-0.402	-460.439	0.200	0.862	-0.000	-1.192			
		3:BEBAN GEM	-1.92E 3	-4.06E 3	-57.665	0.184	0.388	22.832			
		4:KOMBINASI	-9.096	-2.64E 3	-0.058	2.268	0.004	-4.395			
		5:KOMB B. MA	-2.02E 3	-6.13E 3	-60.743	1.451	0.411	21.185			
	12751	1:BEBAN MATI	7.044	2.71E 3	0.314	-0.740	-0.000	-18.981			
		2:BEBAN HIDL	0.402	460.439	-0.200	-0.862	-0.001	-3.324			
		3:BEBAN GEM	1.92E 3	4.06E 3	57.665	-0.184	0.177	-62.681			
		4:KOMBINASI	9.096	3.99E 3	0.058	-2.268	-0.003	-28.095			
		5:KOMB B. MA	2.02E 3	7.25E 3	60.743	-1.451	0.185	-86.790			
21263	13826	1:BEBAN MATI	-4.152	26.625	-0.120	-1.625	0.001	2.999			
		2:BEBAN HIDL	-3.854	-116.414	-0.016	-0.562	0.000	0.873			
		3:BEBAN GEM	1.35E 3	-732.518	-35.282	0.882	0.235	-4.331			
		4:KOMBINASI	-11.150	-154.313	-0.169	-2.849	0.001	4.994			
		5:KOMB B. MA	1.41E 3	-812.367	-37.175	-1.036	0.247	-1.025			
	13827	1:BEBAN MATI	4.152	333.768	0.120	1.625	0.001	-4.806			
		2:BEBAN HIDL	3.854	116.414	0.016	0.562	0.000	-2.243			
		3:BEBAN GEM	-1.35E 3	732.518	35.282	-0.882	0.181	-4.290			
		4:KOMBINASI	11.150	586.784	0.169	2.849	0.001	-9.355			
		5:KOMB B. MA	-1.41E 3	1.17E 3	37.175	1.036	0.190	-10.655			
21264	13827	1:BEBAN MATI	15.400	-763.902	1.036	-3.368	-0.003	5.860			
		2:BEBAN HIDL	0.916	-384.519	0.395	-1.450	-0.001	2.773			
		3:BEBAN GEM	753.611	-853.271	-116.520	-1.895	0.680	4.243			
		4:KOMBINASI	19.946	-1.53E 3	1.876	-6.362	-0.006	11.469			
		5:KOMB B. MA	807.241	-1.89E 3	-121.073	-6.228	0.710	11.979			
	12751	1:BEBAN MATI	-15.400	1.12E 3	-1.036	3.368	-0.009	-16.970			
		2:BEBAN HIDL	-0.916	384.519	-0.395	1.450	-0.003	-7.298			
		3:BEBAN GEM	-753.611	853.271	116.520	1.895	0.692	-14.284			
		4:KOMBINASI	-19.946	1.96E 3	-1.876	6.362	-0.016	-32.041			
		5:KOMB B. MA	-807.241	2.25E 3	121.073	6.228	0.715	-36.347			
21265	13829	1:BEBAN MATI	16.805	3.37E 3	-0.036	2.635	-0.000	9.982			
		2:BEBAN HIDL	3.930	638.805	-0.001	1.713	-0.000	2.195			
		3:BEBAN GEM	-474.100	-1.52E 3	1.693	-0.752	-0.018	-29.715			
		4:KOMBINASI	26.454	5.06E 3	-0.045	5.903	-0.001	15.491			
		5:KOMB B. MA	-478.643	2.15E 3	1.741	2.874	-0.019	-19.901			
	13834	1:BEBAN MATI	-16.805	-2.24E 3	0.036	-2.635	0.001	17.523			
		2:BEBAN HIDL	-3.930	-638.805	0.001	-1.713	0.000	4.069			
		3:BEBAN GEM	474.100	1.52E 3	-1.693	0.752	0.001	14.785			
		4:KOMBINASI	-26.454	-3.71E 3	0.045	-5.903	0.001	27.538			
		5:KOMB B. MA	478.643	-1.03E 3	-1.741	-2.874	0.002	35.489			
21266	13832	1:BEBAN MATI	13.694	3.5E 3	-0.092	-0.241	0.001	13.081			
		2:BEBAN HIDL	2.840	1.42E 3	0.002	-0.020	0.000	4.975			
		3:BEBAN GEM	-378.943	-1.43E 3	22.616	-0.897	-0.118	-27.840			
		4:KOMBINASI	20.976	6.47E 3	-0.106	-0.321	0.001	23.657			



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Job No 1	Sheet No 272	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-382.493	2.85E 3	23.657	-1.195	-0.123	-13.167			
	13837	1:BEBAN MATI	-13.694	-3.2E 3	0.092	0.241	0.000	19.769			
		2:BEBAN HIDL	-2.840	-1.42E 3	-0.002	0.020	-0.000	8.940			
		3:BEBAN GEM	378.943	1.43E 3	-22.616	0.897	-0.104	13.834			
		4:KOMBINASI	-20.976	-6.11E 3	0.106	0.321	0.000	38.027			
		5:KOMB B. MA	382.493	-2.55E 3	-23.657	1.195	-0.109	39.659			
21267	13834	1:BEBAN MATI	17.223	1.78E 3	0.167	1.588	-0.001	-18.404			
		2:BEBAN HIDL	4.075	329.323	0.047	0.895	-0.000	-4.407			
		3:BEBAN GEM	-237.257	-1.48E 3	1.643	-0.066	-0.006	-14.328			
		4:KOMBINASI	27.188	2.66E 3	0.275	3.337	-0.002	-29.135			
		5:KOMB B. MA	-229.451	419.226	1.920	2.055	-0.008	-36.092			
	13664	1:BEBAN MATI	-17.223	-650.174	-0.167	-1.588	-0.000	30.297			
		2:BEBAN HIDL	-4.075	-329.323	-0.047	-0.895	-0.000	7.636			
		3:BEBAN GEM	237.257	1.48E 3	-1.643	0.066	-0.010	-0.184			
		4:KOMBINASI	-27.188	-1.31E 3	-0.275	-3.337	-0.001	48.575			
		5:KOMB B. MA	229.451	706.102	-1.920	-2.055	-0.011	34.686			
21268	13837	1:BEBAN MATI	16.699	2.08E 3	-0.291	-0.154	0.001	-20.816			
		2:BEBAN HIDL	3.583	799.770	-0.073	-0.011	0.000	-9.322			
		3:BEBAN GEM	-237.570	-1.34E 3	26.952	-0.518	-0.123	-13.268			
		4:KOMBINASI	25.771	3.77E 3	-0.466	-0.202	0.002	-39.894			
		5:KOMB B. MA	-230.600	1.16E 3	27.965	-0.705	-0.128	-40.340			
	13671	1:BEBAN MATI	-16.699	-1.78E 3	0.291	0.154	0.001	39.731			
		2:BEBAN HIDL	-3.583	-799.770	0.073	0.011	0.000	17.165			
		3:BEBAN GEM	237.570	1.34E 3	-26.952	0.518	-0.141	0.163			
		4:KOMBINASI	-25.771	-3.41E 3	0.466	0.202	0.002	75.140			
		5:KOMB B. MA	230.600	-855.387	-27.965	0.705	-0.146	50.201			
21269	13838	1:BEBAN MATI	-1.105	346.819	0.070	-0.091	-0.001	-8.498			
		2:BEBAN HIDL	-0.431	133.940	0.023	-0.000	-0.000	-4.279			
		3:BEBAN GEM	7.181	-55.703	-7.501	-0.181	0.045	-1.053			
		4:KOMBINASI	-2.016	630.488	0.121	-0.109	-0.001	-17.045			
		5:KOMB B. MA	6.176	368.695	-7.792	-0.281	0.047	-12.172			
	13839	1:BEBAN MATI	1.105	-116.168	-0.070	0.091	-0.000	11.223			
		2:BEBAN HIDL	0.431	-133.940	-0.023	0.000	-0.000	5.856			
		3:BEBAN GEM	-7.181	55.703	7.501	0.181	0.043	0.398			
		4:KOMBINASI	2.016	-353.706	-0.121	0.109	-0.001	22.836			
		5:KOMB B. MA	-6.176	-138.044	7.792	0.281	0.045	15.154			
21270	13839	1:BEBAN MATI	0.158	-547.783	0.094	0.030	-0.001	-11.078			
		2:BEBAN HIDL	-0.241	-315.811	0.031	0.002	-0.000	-5.810			
		3:BEBAN GEM	8.318	-55.166	-9.743	0.155	0.056	-0.316			
		4:KOMBINASI	-0.197	-1.16E 3	0.162	0.039	-0.001	-22.589			
		5:KOMB B. MA	8.747	-795.194	-10.118	0.193	0.058	-14.895			
	13840	1:BEBAN MATI	-0.158	778.434	-0.094	-0.030	-0.000	3.275			
		2:BEBAN HIDL	0.241	315.811	-0.031	-0.002	-0.000	2.093			
		3:BEBAN GEM	-8.318	55.166	9.743	-0.155	0.059	-0.333			
		4:KOMBINASI	0.197	1.44E 3	-0.162	-0.039	-0.001	7.279			
		5:KOMB B. MA	-8.747	1.03E 3	10.118	-0.193	0.061	4.180			
21271	13840	1:BEBAN MATI	1.589	-1.1E 3	0.162	0.058	-0.001	-1.525			
		2:BEBAN HIDL	0.021	-576.533	0.050	0.003	-0.000	-1.215			



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Job No 1	Sheet No 273	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	12.379	-2.914	-12.888	0.101	0.073	0.419			
		4:KOMBINASI	1.940	-2.24E 3	0.274	0.073	-0.001	-3.774			
		5:KOMB B. MA	14.599	-1.45E 3	-13.340	0.165	0.076	-1.814			
	13671	1:BEBAN MATI	-1.589	1.33E 3	-0.162	-0.058	-0.001	-12.762			
		2:BEBAN HIDL	-0.021	576.533	-0.050	-0.003	-0.000	-5.570			
		3:BEBAN GEM	-12.379	2.914	12.888	-0.101	0.078	-0.453			
		4:KOMBINASI	-1.940	2.52E 3	-0.274	-0.073	-0.002	-24.226			
		5:KOMB B. MA	-14.599	1.68E 3	13.340	-0.165	0.081	-16.580			
21272	13842	1:BEBAN MATI	19.142	-2.2E 3	0.333	-2.123	-0.002	-18.215			
		2:BEBAN HIDL	4.218	-637.886	0.075	-1.713	-0.000	-4.086			
		3:BEBAN GEM	217.969	-1.53E 3	1.092	1.140	0.003	14.966			
		4:KOMBINASI	29.720	-3.66E 3	0.520	-5.288	-0.003	-28.395			
		5:KOMB B. MA	250.540	-4.19E 3	1.525	-1.953	0.001	-4.952			
	13847	1:BEBAN MATI	-19.142	3.33E 3	-0.333	2.123	-0.001	-8.892			
		2:BEBAN HIDL	-4.218	637.886	-0.075	1.713	-0.000	-2.170			
		3:BEBAN GEM	-217.969	1.53E 3	-1.092	-1.140	-0.014	-29.951			
		4:KOMBINASI	-29.720	5.01E 3	-0.520	5.288	-0.002	-14.143			
		5:KOMB B. MA	-250.540	5.31E 3	-1.525	1.953	-0.016	-41.643			
21273	13845	1:BEBAN MATI	15.450	-3.08E 3	-0.494	0.238	0.002	-21.179			
		2:BEBAN HIDL	3.137	-1.41E 3	-0.161	0.016	0.001	-8.991			
		3:BEBAN GEM	19.107	-1.43E 3	23.067	0.914	-0.105	14.040			
		4:KOMBINASI	23.559	-5.95E 3	-0.851	0.311	0.004	-39.800			
		5:KOMB B. MA	37.394	-5.43E 3	23.630	1.207	-0.108	-11.832			
	13850	1:BEBAN MATI	-15.450	3.38E 3	0.494	-0.238	0.002	-10.457			
		2:BEBAN HIDL	-3.137	1.41E 3	0.161	-0.016	0.001	-4.884			
		3:BEBAN GEM	-19.107	1.43E 3	-23.067	-0.914	-0.121	-28.100			
		4:KOMBINASI	-23.559	6.32E 3	0.851	-0.311	0.004	-20.363			
		5:KOMB B. MA	-37.394	5.73E 3	-23.630	-1.207	-0.124	-42.892			
21274	13847	1:BEBAN MATI	26.616	-3.72E 3	3.031	-3.708	-0.014	10.308			
		2:BEBAN HIDL	5.552	-843.341	0.631	-2.367	-0.003	2.877			
		3:BEBAN GEM	486.654	-1.68E 3	10.597	0.698	-0.010	29.878			
		4:KOMBINASI	40.822	-5.82E 3	4.647	-8.237	-0.021	16.972			
		5:KOMB B. MA	540.933	-6E 3	14.537	-4.395	-0.026	43.406			
	12739	1:BEBAN MATI	-26.616	4.85E 3	-3.031	3.708	-0.016	-52.329			
		2:BEBAN HIDL	-5.552	843.341	-0.631	2.367	-0.003	-11.147			
		3:BEBAN GEM	-486.654	1.68E 3	-10.597	-0.698	-0.093	-46.398			
		4:KOMBINASI	-40.822	7.17E 3	-4.647	8.237	-0.025	-80.631			
		5:KOMB B. MA	-540.933	7.12E 3	-14.537	4.395	-0.116	-107.736			
21275	13850	1:BEBAN MATI	14.285	-4.55E 3	-1.135	0.276	0.005	11.958			
		2:BEBAN HIDL	2.691	-1.97E 3	-0.403	0.025	0.002	5.681			
		3:BEBAN GEM	201.178	-1.79E 3	23.521	1.518	-0.093	28.372			
		4:KOMBINASI	21.447	-8.61E 3	-2.007	0.370	0.010	23.440			
		5:KOMB B. MA	227.136	-7.61E 3	23.320	1.884	-0.091	45.157			
	12744	1:BEBAN MATI	-14.285	4.85E 3	1.135	-0.276	0.006	-58.057			
		2:BEBAN HIDL	-2.691	1.97E 3	0.403	-0.025	0.002	-24.969			
		3:BEBAN GEM	-201.178	1.79E 3	-23.521	-1.518	-0.138	-45.881			
		4:KOMBINASI	-21.447	8.97E 3	2.007	-0.370	0.010	-109.618			
		5:KOMB B. MA	-227.136	7.91E 3	-23.320	-1.884	-0.138	-121.214			



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Job No

1

Sheet No

274

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21276	13851	1:BEBAN MATI	23.958	1.95E 3	0.081	-0.022	-0.001	-13.163			
		2:BEBAN HIDL	5.197	478.111	0.026	0.009	-0.000	-4.160			
		3:BEBAN GEM	-90.371	-581.993	-11.631	1.185	0.079	-7.864			
		4:KOMBINASI	37.065	3.11E 3	0.139	-0.012	-0.001	-22.451			
		5:KOMB B. MA	-67.814	1.63E 3	-12.115	1.228	0.082	-23.916			
	13852	1:BEBAN MATI	-23.958	-602.879	-0.081	0.022	-0.000	28.203			
		2:BEBAN HIDL	-5.197	-478.111	-0.026	-0.009	-0.000	9.786			
		3:BEBAN GEM	90.371	581.993	11.631	-1.185	0.058	1.015			
		4:KOMBINASI	-37.065	-1.49E 3	-0.139	0.012	-0.001	49.502			
		5:KOMB B. MA	67.814	-278.653	12.115	-1.228	0.061	35.141			
21277	13852	1:BEBAN MATI	19.533	-906.481	0.137	0.004	-0.001	-28.089			
		2:BEBAN HIDL	4.543	-492.860	0.032	0.004	-0.000	-9.735			
		3:BEBAN GEM	-98.907	-580.558	-5.916	-1.059	0.041	-0.762			
		4:KOMBINASI	30.707	-1.88E 3	0.214	0.011	-0.001	-49.283			
		5:KOMB B. MA	-81.594	-1.81E 3	-6.056	-1.105	0.043	-34.730			
	13853	1:BEBAN MATI	-19.533	2.26E 3	-0.137	-0.004	-0.001	9.476			
		2:BEBAN HIDL	-4.543	492.860	-0.032	-0.004	-0.000	3.935			
		3:BEBAN GEM	98.907	580.558	5.916	1.059	0.028	-6.070			
		4:KOMBINASI	-30.707	3.5E 3	-0.214	-0.011	-0.001	17.667			
		5:KOMB B. MA	81.594	3.16E 3	6.056	1.105	0.029	5.464			
21278	13853	1:BEBAN MATI	21.756	-3.53E 3	0.261	0.027	-0.001	-7.833			
		2:BEBAN HIDL	5.719	-1.26E 3	0.047	-0.009	-0.000	-3.205			
		3:BEBAN GEM	-96.273	-717.336	1.945	-3.675	-0.022	6.186			
		4:KOMBINASI	35.258	-6.26E 3	0.389	0.018	-0.002	-14.527			
		5:KOMB B. MA	-75.899	-5.05E 3	2.332	-3.837	-0.024	-3.260			
	12744	1:BEBAN MATI	-21.756	4.88E 3	-0.261	-0.027	-0.002	-41.702			
		2:BEBAN HIDL	-5.719	1.26E 3	-0.047	0.009	-0.000	-11.666			
		3:BEBAN GEM	96.273	717.336	-1.945	3.675	-0.001	-14.628			
		4:KOMBINASI	-35.258	7.88E 3	-0.389	-0.018	-0.002	-68.709			
		5:KOMB B. MA	75.899	6.4E 3	-2.332	3.837	-0.003	-64.061			
21279	13855	1:BEBAN MATI	12.648	3.34E 3	-0.236	2.320	0.001	9.077			
		2:BEBAN HIDL	2.883	636.477	-0.054	1.699	0.000	2.164			
		3:BEBAN GEM	10.574	-1.52E 3	2.912	-0.760	-0.011	-29.844			
		4:KOMBINASI	19.791	5.03E 3	-0.369	5.502	0.001	14.355			
		5:KOMB B. MA	25.481	2.12E 3	2.789	2.541	-0.011	-20.960			
	13860	1:BEBAN MATI	-12.648	-2.22E 3	0.236	-2.320	0.002	18.163			
		2:BEBAN HIDL	-2.883	-636.477	0.054	-1.699	0.000	4.078			
		3:BEBAN GEM	-10.574	1.52E 3	-2.912	0.760	-0.018	14.900			
		4:KOMBINASI	-19.791	-3.68E 3	0.369	-5.502	0.003	28.320			
		5:KOMB B. MA	-25.481	-997.003	-2.789	-2.541	-0.016	36.255			
21280	13858	1:BEBAN MATI	12.583	3.39E 3	-0.045	-0.275	0.000	10.987			
		2:BEBAN HIDL	2.952	1.4E 3	-0.006	-0.006	0.000	4.834			
		3:BEBAN GEM	-239.504	-1.43E 3	19.166	-0.895	-0.090	-28.035			
		4:KOMBINASI	19.824	6.3E 3	-0.063	-0.340	0.000	20.919			
		5:KOMB B. MA	-237.125	2.73E 3	20.076	-1.218	-0.094	-15.549			
	13863	1:BEBAN MATI	-12.583	-3.09E 3	0.045	0.275	0.000	20.751			
	2:BEBAN HIDL	-2.952	-1.4E 3	0.006	0.006	0.000	8.888				
	3:BEBAN GEM	239.504	1.43E 3	-19.166	0.895	-0.098	14.050				



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 275	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-19.824	-5.94E 3	0.063	0.340	0.000	39.122			
		5:KOMB B. MA	237.125	-2.43E 3	-20.076	1.218	-0.103	40.837			
21281	13860	1:BEBAN MATI	9.526	1.75E 3	-0.063	1.212	-0.000	-19.011			
		2:BEBAN HIDL	2.109	327.278	-0.015	0.882	-0.000	-4.412			
		3:BEBAN GEM	193.764	-1.48E 3	4.062	-0.076	-0.010	-14.439			
		4:KOMBINASI	14.806	2.62E 3	-0.099	2.866	-0.000	-29.872			
		5:KOMB B. MA	214.244	389.753	4.193	1.661	-0.011	-36.818			
	13654	1:BEBAN MATI	-9.526	-624.461	0.063	-1.212	0.001	30.652			
		2:BEBAN HIDL	-2.109	-327.278	0.015	-0.882	0.000	7.621			
		3:BEBAN GEM	-193.764	1.48E 3	-4.062	0.076	-0.030	-0.098			
		4:KOMBINASI	-14.806	-1.27E 3	0.099	-2.866	0.001	48.977			
		5:KOMB B. MA	-214.244	735.576	-4.193	-1.661	-0.030	35.123			
21282	13863	1:BEBAN MATI	12.972	1.97E 3	-0.149	-0.175	0.001	-21.814			
		2:BEBAN HIDL	2.922	781.565	-0.047	-0.001	0.000	-9.250			
		3:BEBAN GEM	-155.705	-1.34E 3	17.474	-0.518	-0.075	-13.484			
		4:KOMBINASI	20.241	3.61E 3	-0.254	-0.212	0.001	-40.977			
		5:KOMB B. MA	-148.766	1.03E 3	18.171	-0.720	-0.078	-41.522			
	13670	1:BEBAN MATI	-12.972	-1.67E 3	0.149	0.175	0.001	39.639			
		2:BEBAN HIDL	-2.922	-781.565	0.047	0.001	0.000	16.915			
		3:BEBAN GEM	155.705	1.34E 3	-17.474	0.518	-0.096	0.370			
		4:KOMBINASI	-20.241	-3.25E 3	0.254	0.212	0.001	74.631			
		5:KOMB B. MA	148.766	-732.337	-18.171	0.720	-0.100	50.176			
21283	13864	1:BEBAN MATI	1.022	352.713	0.026	0.001	-0.000	-8.829			
		2:BEBAN HIDL	0.101	132.310	0.010	0.000	-0.000	-4.287			
		3:BEBAN GEM	-33.252	-56.586	-3.801	-0.179	0.024	-1.066			
		4:KOMBINASI	1.389	634.953	0.047	0.001	-0.000	-17.454			
		5:KOMB B. MA	-33.832	372.684	-3.959	-0.188	0.025	-12.521			
	13865	1:BEBAN MATI	-1.022	-122.062	-0.026	-0.001	-0.000	11.622			
		2:BEBAN HIDL	-0.101	-132.310	-0.010	-0.000	-0.000	5.844			
		3:BEBAN GEM	33.252	56.586	3.801	0.179	0.021	0.401			
		4:KOMBINASI	-1.389	-358.171	-0.047	-0.001	-0.000	23.297			
		5:KOMB B. MA	33.832	-142.033	3.959	0.188	0.022	15.549			
21284	13865	1:BEBAN MATI	2.732	-570.215	0.034	-0.000	-0.000	-11.470			
		2:BEBAN HIDL	0.356	-318.966	0.014	-0.001	-0.000	-5.795			
		3:BEBAN GEM	-44.444	-57.295	-5.319	0.153	0.031	-0.317			
		4:KOMBINASI	3.848	-1.19E 3	0.062	-0.002	-0.000	-23.036			
		5:KOMB B. MA	-43.721	-821.754	-5.543	0.159	0.032	-15.280			
	13866	1:BEBAN MATI	-2.732	800.866	-0.034	0.000	-0.000	3.402			
		2:BEBAN HIDL	-0.356	318.966	-0.014	0.001	-0.000	2.042			
		3:BEBAN GEM	44.444	57.295	5.319	-0.153	0.032	-0.357			
		4:KOMBINASI	-3.848	1.47E 3	-0.062	0.002	-0.000	7.350			
		5:KOMB B. MA	43.721	1.05E 3	5.543	-0.159	0.033	4.253			
21285	13866	1:BEBAN MATI	4.215	-1.13E 3	0.056	-0.003	-0.000	-1.605			
		2:BEBAN HIDL	0.551	-581.809	0.022	-0.002	-0.000	-1.161			
		3:BEBAN GEM	-52.122	-4.760	-7.814	0.098	0.046	0.446			
		4:KOMBINASI	5.940	-2.28E 3	0.102	-0.007	-0.001	-3.783			
		5:KOMB B. MA	-50.182	-1.48E 3	-8.136	0.099	0.048	-1.833			
	13670	1:BEBAN MATI	-4.215	1.36E 3	-0.056	0.003	-0.000	-13.004			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 276	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-0.551	581.809	-0.022	0.002	-0.000	-5.686			
		3:BEBAN GEM	52.122	4.760	7.814	-0.098	0.046	-0.502			
		4:KOMBINASI	-5.940	2.56E 3	-0.102	0.007	-0.001	-24.702			
		5:KOMB B. MA	50.182	1.71E 3	8.136	-0.099	0.048	-16.942			
21286	13868	1:BEBAN MATI	9.805	-2.23E 3	0.242	-2.323	-0.002	-17.990			
		2:BEBAN HIDL	1.800	-637.969	0.055	-1.700	-0.000	-4.060			
		3:BEBAN GEM	492.169	-1.53E 3	1.947	1.148	-0.000	14.909			
		4:KOMBINASI	14.647	-3.7E 3	0.379	-5.508	-0.003	-28.084			
		5:KOMB B. MA	527.663	-4.22E 3	2.319	-2.137	-0.002	-4.772			
	13873	1:BEBAN MATI	-9.805	3.36E 3	-0.242	2.323	-0.001	-9.417			
		2:BEBAN HIDL	-1.800	637.969	-0.055	1.700	-0.000	-2.196			
		3:BEBAN GEM	-492.169	1.53E 3	-1.947	-1.148	-0.019	-29.917			
		4:KOMBINASI	-14.647	5.05E 3	-0.379	5.508	-0.001	-14.814			
		5:KOMB B. MA	-527.663	5.35E 3	-2.319	2.137	-0.021	-42.148			
21287	13871	1:BEBAN MATI	11.505	-3.1E 3	-0.308	0.300	0.001	-20.600			
		2:BEBAN HIDL	2.398	-1.4E 3	-0.120	0.021	0.001	-8.863			
		3:BEBAN GEM	22.430	-1.44E 3	11.705	0.908	-0.052	13.935			
		4:KOMBINASI	17.644	-5.96E 3	-0.562	0.394	0.003	-38.901			
		5:KOMB B. MA	36.496	-5.46E 3	11.910	1.267	-0.053	-11.286			
	13876	1:BEBAN MATI	-11.505	3.4E 3	0.308	-0.300	0.002	-11.260			
		2:BEBAN HIDL	-2.398	1.4E 3	0.120	-0.021	0.001	-4.867			
		3:BEBAN GEM	-22.430	1.44E 3	-11.705	-0.908	-0.063	-28.097			
		4:KOMBINASI	-17.644	6.32E 3	0.562	-0.394	0.003	-21.300			
		5:KOMB B. MA	-36.496	5.76E 3	-11.910	-1.267	-0.064	-43.683			
21288	13873	1:BEBAN MATI	16.653	-3.75E 3	2.875	-3.886	-0.013	10.873			
		2:BEBAN HIDL	3.006	-842.583	0.602	-2.349	-0.003	2.902			
		3:BEBAN GEM	686.555	-1.69E 3	9.750	0.713	-0.012	29.842			
		4:KOMBINASI	24.793	-5.85E 3	4.412	-8.423	-0.020	17.691			
		5:KOMB B. MA	739.340	-6.03E 3	13.473	-4.547	-0.027	43.949			
	12741	1:BEBAN MATI	-16.653	4.88E 3	-2.875	3.886	-0.015	-53.165			
		2:BEBAN HIDL	-3.006	842.583	-0.602	2.349	-0.003	-11.165			
		3:BEBAN GEM	-686.555	1.69E 3	-9.750	-0.713	-0.084	-46.382			
		4:KOMBINASI	-24.793	7.2E 3	-4.412	8.423	-0.023	-81.662			
		5:KOMB B. MA	-739.340	7.15E 3	-13.473	4.547	-0.105	-108.566			
21289	13876	1:BEBAN MATI	9.597	-4.58E 3	-1.030	0.287	0.005	12.749			
		2:BEBAN HIDL	1.823	-1.95E 3	-0.419	0.007	0.002	5.650			
		3:BEBAN GEM	196.614	-1.8E 3	11.470	1.518	-0.042	28.372			
		4:KOMBINASI	14.434	-8.63E 3	-1.907	0.355	0.009	24.340			
		5:KOMB B. MA	217.136	-7.64E 3	10.762	1.885	-0.037	45.930			
	12743	1:BEBAN MATI	-9.597	4.88E 3	1.030	-0.287	0.005	-59.177			
		2:BEBAN HIDL	-1.823	1.95E 3	0.419	-0.007	0.002	-24.810			
		3:BEBAN GEM	-196.614	1.8E 3	-11.470	-1.518	-0.071	-45.986			
		4:KOMBINASI	-14.434	8.99E 3	1.907	-0.355	0.009	-110.709			
		5:KOMB B. MA	-217.136	7.94E 3	-10.762	-1.885	-0.068	-122.348			
21290	13877	1:BEBAN MATI	24.634	1.95E 3	0.049	0.034	-0.000	-13.188			
		2:BEBAN HIDL	5.405	476.130	0.021	-0.012	-0.000	-4.161			
		3:BEBAN GEM	-49.776	-588.079	-9.608	1.184	0.065	-7.958			
		4:KOMBINASI	38.209	3.1E 3	0.093	0.022	-0.001	-22.483			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 277	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-24.388	1.62E 3	-10.026	1.270	0.067	-24.041			
	13878	1:BEBAN MATI	-24.634	-598.900	-0.049	-0.034	-0.000	28.181			
		2:BEBAN HIDL	-5.405	-476.130	-0.021	0.012	-0.000	9.764			
		3:BEBAN GEM	49.776	588.079	9.608	-1.184	0.049	1.038			
		4:KOMBINASI	-38.209	-1.48E 3	-0.093	-0.022	-0.000	49.440			
		5:KOMB B. MA	24.388	-267.095	10.026	-1.270	0.051	35.129			
21291	13878	1:BEBAN MATI	19.956	-914.456	-0.007	0.007	-0.000	-28.066			
		2:BEBAN HIDL	4.751	-496.142	0.009	-0.001	-0.000	-9.711			
		3:BEBAN GEM	-3.027	-587.870	-4.005	-1.054	0.031	-0.782			
		4:KOMBINASI	31.549	-1.89E 3	0.005	0.006	-0.000	-49.217			
		5:KOMB B. MA	19.628	-1.83E 3	-4.207	-1.101	0.032	-34.714			
	13879	1:BEBAN MATI	-19.956	2.26E 3	0.007	-0.007	0.000	9.359			
		2:BEBAN HIDL	-4.751	496.142	-0.009	0.001	-0.000	3.873			
		3:BEBAN GEM	3.027	587.870	4.005	1.054	0.016	-6.136			
		4:KOMBINASI	-31.549	3.51E 3	-0.005	-0.006	0.000	17.427			
		5:KOMB B. MA	-19.628	3.18E 3	4.207	1.101	0.017	5.239			
21292	13879	1:BEBAN MATI	22.266	-3.55E 3	-0.100	-0.026	0.001	-7.714			
		2:BEBAN HIDL	6.127	-1.27E 3	-0.010	0.015	0.000	-3.141			
		3:BEBAN GEM	67.392	-728.099	4.577	-3.662	-0.033	6.253			
		4:KOMBINASI	36.522	-6.29E 3	-0.135	-0.008	0.001	-14.283			
		5:KOMB B. MA	96.703	-5.07E 3	4.700	-3.862	-0.034	-3.033			
	12743	1:BEBAN MATI	-22.266	4.9E 3	0.100	0.026	0.001	-41.969			
		2:BEBAN HIDL	-6.127	1.27E 3	0.010	-0.015	0.000	-11.784			
		3:BEBAN GEM	-67.392	728.099	-4.577	3.662	-0.021	-14.821			
		4:KOMBINASI	-36.522	7.91E 3	0.135	0.008	0.001	-69.218			
		5:KOMB B. MA	-96.703	6.42E 3	-4.700	3.862	-0.021	-64.602			
21293	13881	1:BEBAN MATI	12.856	3.39E 3	-0.288	2.120	0.001	8.907			
		2:BEBAN HIDL	2.314	658.741	-0.063	1.716	0.000	2.249			
		3:BEBAN GEM	151.594	-1.5E 3	1.933	-0.767	-0.008	-29.866			
		4:KOMBINASI	19.128	5.12E 3	-0.447	5.290	0.001	14.287			
		5:KOMB B. MA	173.418	2.2E 3	1.704	2.345	-0.008	-21.103			
	13886	1:BEBAN MATI	-12.856	-2.26E 3	0.288	-2.120	0.002	18.776			
		2:BEBAN HIDL	-2.314	-658.741	0.063	-1.716	0.000	4.211			
		3:BEBAN GEM	-151.594	1.5E 3	-1.933	0.767	-0.011	15.139			
		4:KOMBINASI	-19.128	-3.77E 3	0.447	-5.290	0.003	29.268			
		5:KOMB B. MA	-173.418	-1.08E 3	-1.704	-2.345	-0.009	37.198			
21294	13884	1:BEBAN MATI	14.759	3.39E 3	0.152	-0.316	-0.001	10.275			
		2:BEBAN HIDL	3.008	1.44E 3	0.046	-0.020	-0.000	4.945			
		3:BEBAN GEM	-180.294	-1.4E 3	16.451	-0.909	-0.079	-28.044			
		4:KOMBINASI	22.524	6.37E 3	0.256	-0.410	-0.001	20.242			
		5:KOMB B. MA	-172.745	2.78E 3	17.453	-1.282	-0.084	-16.204			
	13889	1:BEBAN MATI	-14.759	-3.09E 3	-0.152	0.316	-0.001	21.515			
		2:BEBAN HIDL	-3.008	-1.44E 3	-0.046	0.020	-0.000	9.131			
		3:BEBAN GEM	180.294	1.4E 3	-16.451	0.909	-0.082	14.292			
		4:KOMBINASI	-22.524	-6.01E 3	-0.256	0.410	-0.001	40.428			
		5:KOMB B. MA	172.745	-2.48E 3	-17.453	1.282	-0.087	42.000			
21295	13886	1:BEBAN MATI	9.549	1.79E 3	-0.101	0.984	-0.000	-19.597			
		2:BEBAN HIDL	1.504	349.098	-0.024	0.897	0.000	-4.552			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	326.798	-1.46E 3	3.449	-0.078	-0.008	-14.680			
		4:KOMBINASI	13.866	2.71E 3	-0.160	2.616	-0.000	-30.800			
		5:KOMB B. MA	353.590	467.225	3.506	1.440	-0.009	-37.742			
	13656	1:BEBAN MATI	-9.549	-665.684	0.101	-0.984	0.001	31.643			
		2:BEBAN HIDL	-1.504	-349.098	0.024	-0.897	0.000	7.976			
		3:BEBAN GEM	-326.798	1.46E 3	-3.449	0.078	-0.026	0.360			
		4:KOMBINASI	-13.866	-1.36E 3	0.160	-2.616	0.002	50.732			
		5:KOMB B. MA	-353.590	658.102	-3.506	-1.440	-0.026	36.806			
21296	13889	1:BEBAN MATI	14.509	1.97E 3	-0.007	-0.208	0.000	-22.594			
		2:BEBAN HIDL	2.769	820.177	-0.016	-0.009	0.000	-9.512			
		3:BEBAN GEM	-57.464	-1.31E 3	17.302	-0.525	-0.073	-13.735			
		4:KOMBINASI	21.841	3.68E 3	-0.034	-0.264	0.000	-42.332			
		5:KOMB B. MA	-44.167	1.09E 3	18.150	-0.765	-0.077	-42.723			
	13669	1:BEBAN MATI	-14.509	-1.67E 3	0.007	0.208	0.000	40.461			
		2:BEBAN HIDL	-2.769	-820.177	0.016	0.009	0.000	17.556			
		3:BEBAN GEM	57.464	1.31E 3	-17.302	0.525	-0.096	0.861			
		4:KOMBINASI	-21.841	-3.32E 3	0.034	0.264	0.000	76.641			
		5:KOMB B. MA	44.167	-785.381	-18.150	0.765	-0.101	51.898			
21297	13890	1:BEBAN MATI	0.479	350.290	0.018	0.078	-0.000	-8.563			
		2:BEBAN HIDL	-0.014	135.006	0.010	-0.006	-0.000	-4.295			
		3:BEBAN GEM	-29.478	-56.113	-4.845	-0.182	0.029	-1.090			
		4:KOMBINASI	0.552	636.357	0.037	0.084	-0.000	-17.147			
		5:KOMB B. MA	-30.482	372.375	-5.064	-0.117	0.030	-12.284			
	13891	1:BEBAN MATI	-0.479	-119.638	-0.018	-0.078	-0.000	11.328			
		2:BEBAN HIDL	0.014	-135.006	-0.010	0.006	-0.000	5.883			
		3:BEBAN GEM	29.478	56.113	4.845	0.182	0.028	0.430			
		4:KOMBINASI	-0.552	-359.575	-0.037	-0.084	-0.000	23.007			
		5:KOMB B. MA	30.482	-141.724	5.064	0.117	0.029	15.309			
21298	13891	1:BEBAN MATI	1.732	-555.220	0.029	-0.010	-0.000	-11.180			
		2:BEBAN HIDL	0.141	-320.244	0.015	0.005	-0.000	-5.837			
		3:BEBAN GEM	-35.086	-59.316	-6.560	0.157	0.038	-0.346			
		4:KOMBINASI	2.304	-1.18E 3	0.059	-0.004	-0.000	-22.756			
		5:KOMB B. MA	-35.024	-809.649	-6.850	0.158	0.039	-15.046			
	13892	1:BEBAN MATI	-1.732	785.872	-0.029	0.010	-0.000	3.290			
		2:BEBAN HIDL	-0.141	320.244	-0.015	-0.005	-0.000	2.068			
		3:BEBAN GEM	35.086	59.316	6.560	-0.157	0.040	-0.352			
		4:KOMBINASI	-2.304	1.46E 3	-0.059	0.004	-0.000	7.257			
		5:KOMB B. MA	35.024	1.04E 3	6.850	-0.158	0.041	4.161			
21299	13892	1:BEBAN MATI	2.793	-1.11E 3	0.037	-0.029	-0.000	-1.522			
		2:BEBAN HIDL	0.265	-583.590	0.021	0.009	-0.000	-1.183			
		3:BEBAN GEM	-43.238	-6.579	-8.756	0.105	0.052	0.446			
		4:KOMBINASI	3.776	-2.27E 3	0.078	-0.021	-0.000	-3.719			
		5:KOMB B. MA	-42.448	-1.47E 3	-9.144	0.086	0.054	-1.764			
	13669	1:BEBAN MATI	-2.793	1.34E 3	-0.037	0.029	-0.000	-12.902			
		2:BEBAN HIDL	-0.265	583.590	-0.021	-0.009	-0.000	-5.685			
		3:BEBAN GEM	43.238	6.579	8.756	-0.105	0.051	-0.523			
		4:KOMBINASI	-3.776	2.54E 3	-0.078	0.021	-0.000	-24.578			
		5:KOMB B. MA	42.448	1.7E 3	9.144	-0.086	0.054	-16.862			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21300	13894	1:BEBAN MATI	8.548	-2.2E 3	0.170	-2.693	-0.001	-19.264			
		2:BEBAN HIDL	0.813	-625.317	0.037	-1.760	-0.000	-4.611			
		3:BEBAN GEM	646.232	-1.51E 3	1.841	1.144	0.003	14.232			
		4:KOMBINASI	11.559	-3.64E 3	0.263	-6.047	-0.002	-30.494			
		5:KOMB B. MA	687.580	-4.16E 3	2.125	-2.547	0.001	-7.087			
13899	13899	1:BEBAN MATI	-8.548	3.32E 3	-0.170	2.693	-0.000	-7.804			
		2:BEBAN HIDL	-0.813	625.317	-0.037	1.760	-0.000	-1.522			
		3:BEBAN GEM	-646.232	1.51E 3	-1.841	-1.144	-0.021	-29.070			
		4:KOMBINASI	-11.559	4.99E 3	-0.263	6.047	-0.000	-11.800			
		5:KOMB B. MA	-687.580	5.29E 3	-2.125	2.547	-0.022	-39.240			
21301	13897	1:BEBAN MATI	12.251	-3.09E 3	-0.246	0.312	0.001	-21.684			
		2:BEBAN HIDL	1.749	-1.37E 3	-0.115	0.015	0.001	-9.930			
		3:BEBAN GEM	191.694	-1.43E 3	11.877	0.921	-0.052	13.199			
		4:KOMBINASI	17.499	-5.9E 3	-0.478	0.399	0.002	-41.909			
		5:KOMB B. MA	214.579	-5.41E 3	12.156	1.288	-0.053	-13.783			
13902	13902	1:BEBAN MATI	-12.251	3.39E 3	0.246	-0.312	0.001	-10.085			
		2:BEBAN HIDL	-1.749	1.37E 3	0.115	-0.015	0.001	-3.493			
		3:BEBAN GEM	-191.694	1.43E 3	-11.877	-0.921	-0.064	-27.212			
		4:KOMBINASI	-17.499	6.26E 3	0.478	-0.399	0.002	-17.691			
		5:KOMB B. MA	-214.579	5.71E 3	-12.156	-1.288	-0.066	-40.754			
21302	13899	1:BEBAN MATI	12.996	-3.68E 3	2.345	-3.933	-0.011	9.332			
		2:BEBAN HIDL	1.388	-848.767	0.492	-2.476	-0.002	2.222			
		3:BEBAN GEM	866.294	-1.68E 3	12.005	0.682	-0.013	28.982			
		4:KOMBINASI	17.816	-5.78E 3	3.602	-8.681	-0.017	14.753			
		5:KOMB B. MA	923.437	-5.95E 3	15.246	-4.703	-0.027	41.096			
12718	12718	1:BEBAN MATI	-12.996	4.81E 3	-2.345	3.933	-0.012	-50.947			
		2:BEBAN HIDL	-1.388	848.767	-0.492	2.476	-0.002	-10.545			
		3:BEBAN GEM	-866.294	1.68E 3	-12.005	-0.682	-0.104	-45.462			
		4:KOMBINASI	-17.816	7.13E 3	-3.602	8.681	-0.018	-78.008			
		5:KOMB B. MA	-923.437	7.08E 3	-15.246	4.703	-0.123	-105.009			
21303	13902	1:BEBAN MATI	9.130	-4.48E 3	-0.892	0.308	0.004	11.647			
		2:BEBAN HIDL	0.510	-1.96E 3	-0.397	-0.005	0.002	4.231			
		3:BEBAN GEM	405.156	-1.8E 3	10.140	1.533	-0.034	27.459			
		4:KOMBINASI	11.772	-8.5E 3	-1.707	0.361	0.008	20.747			
		5:KOMB B. MA	434.849	-7.54E 3	9.516	1.914	-0.030	43.019			
12720	12720	1:BEBAN MATI	-9.130	4.78E 3	0.892	-0.308	0.004	-57.012			
		2:BEBAN HIDL	-0.510	1.96E 3	0.397	0.005	0.002	-23.423			
		3:BEBAN GEM	-405.156	1.8E 3	-10.140	-1.533	-0.065	-45.153			
		4:KOMBINASI	-11.772	8.86E 3	1.707	-0.361	0.008	-105.891			
		5:KOMB B. MA	-434.849	7.84E 3	-9.516	-1.914	-0.063	-118.476			
21304	13904	1:BEBAN MATI	6.868	3.6E 3	0.273	-0.313	-0.002	-9.599			
		2:BEBAN HIDL	0.785	944.522	0.051	-0.180	-0.000	-4.332			
		3:BEBAN GEM	-921.113	-1.29E 3	37.906	-0.595	-0.275	-18.852			
		4:KOMBINASI	9.497	5.83E 3	0.408	-0.664	-0.003	-18.449			
		5:KOMB B. MA	-959.830	2.81E 3	40.105	-1.046	-0.291	-31.993			
13685	13685	1:BEBAN MATI	-6.868	-1.91E 3	-0.273	0.313	-0.002	50.092			
		2:BEBAN HIDL	-0.785	-944.522	-0.051	0.180	-0.000	18.226			
		3:BEBAN GEM	921.113	1.29E 3	-37.906	0.595	-0.283	-0.151			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 280	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-9.497	-3.8E 3	-0.408	0.664	-0.003	89.272			
		5:KOMB B. MA	959.830	-1.12E 3	-40.105	1.046	-0.299	60.870			
21305	13905	1:BEBAN MATI	13.578	699.872	-0.000	0.000	0.000	-2.099			
		2:BEBAN HIDL	2.452	170.721	-0.000	0.000	0.000	-1.605			
		3:BEBAN GEM	-997.020	-143.265	3.322	0.161	-0.024	-2.495			
		4:KOMBINASI	20.217	1.11E 3	-0.000	0.000	0.000	-5.086			
		5:KOMB B. MA	-1.03E 3	651.876	3.488	0.169	-0.025	-5.682			
	13731	1:BEBAN MATI	-13.578	-411.557	0.000	-0.000	0.000	10.274			
		2:BEBAN HIDL	-2.452	-170.721	0.000	-0.000	0.000	4.116			
		3:BEBAN GEM	997.020	143.265	-3.322	-0.161	-0.025	0.388			
		4:KOMBINASI	-20.217	-767.022	0.000	-0.000	0.000	18.914			
		5:KOMB B. MA	1.03E 3	-363.561	-3.488	-0.169	-0.026	13.150			
21306	13907	1:BEBAN MATI	6.868	3.6E 3	-0.273	0.313	0.002	-9.599			
		2:BEBAN HIDL	0.785	944.520	-0.051	0.180	0.000	-4.332			
		3:BEBAN GEM	-872.106	-1.29E 3	-20.615	-0.618	0.146	-18.906			
		4:KOMBINASI	9.497	5.83E 3	-0.408	0.664	0.003	-18.449			
		5:KOMB B. MA	-908.373	2.81E 3	-21.949	-0.227	0.156	-32.049			
	13690	1:BEBAN MATI	-6.868	-1.91E 3	0.273	-0.313	0.002	50.092			
		2:BEBAN HIDL	-0.785	-944.520	0.051	-0.180	0.000	18.226			
		3:BEBAN GEM	872.106	1.29E 3	20.615	0.618	0.157	-0.046			
		4:KOMBINASI	-9.497	-3.8E 3	0.408	-0.664	0.003	89.272			
		5:KOMB B. MA	908.373	-1.12E 3	21.949	0.227	0.167	60.980			
21307	13908	1:BEBAN MATI	-3.842	535.882	-0.031	-0.127	0.000	-2.629			
		2:BEBAN HIDL	-1.461	173.230	-0.006	0.007	0.000	-1.475			
		3:BEBAN GEM	853.001	-43.745	-6.289	-0.577	0.030	-0.693			
		4:KOMBINASI	-6.949	920.227	-0.047	-0.140	0.000	-5.515			
		5:KOMB B. MA	890.932	593.888	-6.638	-0.728	0.031	-4.242			
	13731	1:BEBAN MATI	3.842	-247.568	0.031	0.127	0.000	8.391			
		2:BEBAN HIDL	1.461	-173.230	0.006	-0.007	0.000	4.024			
		3:BEBAN GEM	-853.001	43.745	6.289	0.577	0.063	0.050			
		4:KOMBINASI	6.949	-574.250	0.047	0.140	0.001	16.507			
		5:KOMB B. MA	-890.932	-305.574	6.638	0.728	0.067	10.857			
21308	13909	1:BEBAN MATI	-2.236	-963.345	0.056	0.113	-0.000	-1.474			
		2:BEBAN HIDL	-1.074	-534.678	0.010	-0.020	-0.000	-0.915			
		3:BEBAN GEM	727.833	19.502	5.826	0.450	-0.046	0.821			
		4:KOMBINASI	-4.401	-2.01E 3	0.084	0.103	-0.001	-3.232			
		5:KOMB B. MA	761.344	-1.26E 3	6.179	0.574	-0.049	-1.160			
	13690	1:BEBAN MATI	2.236	1.25E 3	-0.056	-0.113	-0.000	-14.817			
		2:BEBAN HIDL	1.074	534.678	-0.010	0.020	-0.000	-6.950			
		3:BEBAN GEM	-727.833	-19.502	-5.826	-0.450	-0.040	-0.534			
		4:KOMBINASI	4.401	2.36E 3	-0.084	-0.103	-0.001	-28.902			
		5:KOMB B. MA	-761.344	1.55E 3	-6.179	-0.574	-0.042	-19.549			
21309	13911	1:BEBAN MATI	11.119	-5.17E 3	-0.459	0.160	0.004	-10.511			
		2:BEBAN HIDL	2.035	-1.89E 3	-0.154	0.101	0.001	-3.086			
		3:BEBAN GEM	-1.17E 3	-1.74E 3	66.280	1.330	-0.460	19.247			
		4:KOMBINASI	16.599	-9.22E 3	-0.798	0.352	0.006	-17.551			
		5:KOMB B. MA	-1.22E 3	-8.13E 3	69.042	1.616	-0.478	7.846			
	12753	1:BEBAN MATI	-11.119	6.86E 3	0.459	-0.160	0.003	-77.919			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 281	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-2.035	1.89E 3	0.154	-0.101	0.001	-24.700			
		3:BEBAN GEM	1.17E 3	1.74E 3	-66.280	-1.330	-0.515	-44.905			
		4:KOMBINASI	-16.599	11.2E 3	0.798	-0.352	0.006	-133.022			
		5:KOMB B. MA	1.22E 3	9.82E 3	-69.042	-1.616	-0.537	-139.889			
21310	13912	1:BEBAN MATI	9.799	-1.02E 3	-0.000	-0.000	0.000	-2.271			
		2:BEBAN HIDL	1.971	-529.975	-0.000	-0.000	0.000	-1.035			
		3:BEBAN GEM	-2.05E 3	65.646	8.085	-0.126	-0.058	2.819			
		4:KOMBINASI	14.912	-2.07E 3	-0.000	-0.000	0.000	-4.381			
		5:KOMB B. MA	-2.14E 3	-1.27E 3	8.489	-0.133	-0.061	0.068			
	13710	1:BEBAN MATI	-9.799	1.31E 3	0.000	0.000	0.000	-14.883			
		2:BEBAN HIDL	-1.971	529.975	0.000	0.000	0.000	-6.761			
		3:BEBAN GEM	2.05E 3	-65.646	-8.085	0.126	-0.061	-1.854			
		4:KOMBINASI	-14.912	2.42E 3	0.000	0.000	0.000	-28.677			
		5:KOMB B. MA	2.14E 3	1.56E 3	-8.489	0.133	-0.064	-20.886			
21311	13914	1:BEBAN MATI	11.119	-5.17E 3	0.459	-0.160	-0.004	-10.511			
		2:BEBAN HIDL	2.035	-1.89E 3	0.154	-0.101	-0.001	-3.086			
		3:BEBAN GEM	-1.03E 3	-1.74E 3	-39.584	1.267	0.273	19.171			
		4:KOMBINASI	16.599	-9.22E 3	0.798	-0.352	-0.006	-17.551			
		5:KOMB B. MA	-1.07E 3	-8.13E 3	-41.012	1.111	0.282	7.767			
	12756	1:BEBAN MATI	-11.119	6.86E 3	-0.459	0.160	-0.003	-77.919			
		2:BEBAN HIDL	-2.035	1.89E 3	-0.154	0.101	-0.001	-24.700			
		3:BEBAN GEM	1.03E 3	1.74E 3	39.584	-1.267	0.309	-44.826			
		4:KOMBINASI	-16.599	11.2E 3	-0.798	0.352	-0.006	-133.022			
		5:KOMB B. MA	1.07E 3	9.82E 3	41.012	-1.111	0.321	-139.806			
21312	13915	1:BEBAN MATI	-15.311	3.5E 3	-0.037	-0.067	0.000	-10.924			
		2:BEBAN HIDL	-5.126	926.669	-0.004	-0.001	0.000	-3.555			
		3:BEBAN GEM	1.61E 3	-363.553	-18.958	2.225	0.051	-5.278			
		4:KOMBINASI	-26.575	5.68E 3	-0.051	-0.082	0.000	-18.797			
		5:KOMB B. MA	1.68E 3	3.68E 3	-19.945	2.268	0.054	-18.599			
	13710	1:BEBAN MATI	15.311	-1.81E 3	0.037	0.067	0.000	50.007			
		2:BEBAN HIDL	5.126	-926.669	0.004	0.001	0.000	17.187			
		3:BEBAN GEM	-1.61E 3	363.553	18.958	-2.225	0.228	-0.070			
		4:KOMBINASI	26.575	-3.66E 3	0.051	0.082	0.001	87.507			
		5:KOMB B. MA	-1.68E 3	-1.99E 3	19.945	-2.268	0.239	60.246			
21313	13916	1:BEBAN MATI	-20.075	-5.19E 3	0.108	0.126	-0.001	-9.247			
		2:BEBAN HIDL	-6.554	-1.82E 3	0.015	-0.005	-0.000	-2.848			
		3:BEBAN GEM	1.38E 3	-484.420	47.319	-4.606	-0.347	5.368			
		4:KOMBINASI	-34.576	-9.14E 3	0.153	0.143	-0.001	-15.652			
		5:KOMB B. MA	1.42E 3	-6.79E 3	49.802	-4.713	-0.365	-5.319			
	12756	1:BEBAN MATI	20.075	6.88E 3	-0.108	-0.126	-0.001	-79.469			
		2:BEBAN HIDL	6.554	1.82E 3	-0.015	0.005	-0.000	-23.955			
		3:BEBAN GEM	-1.38E 3	484.420	-47.319	4.606	-0.349	-12.494			
		4:KOMBINASI	34.576	11.2E 3	-0.153	-0.143	-0.001	-133.692			
		5:KOMB B. MA	-1.42E 3	8.48E 3	-49.802	4.713	-0.367	-106.962			
21314	13918	1:BEBAN MATI	7.391	3.56E 3	0.222	-0.081	-0.002	-11.765			
		2:BEBAN HIDL	1.519	940.181	0.049	-0.023	-0.000	-3.607			
		3:BEBAN GEM	-416.329	-1.29E 3	8.473	-0.620	-0.137	-18.960			
		4:KOMBINASI	11.299	5.77E 3	0.346	-0.134	-0.003	-19.888			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 282	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-428.843	2.76E 3	9.149	-0.746	-0.146	-33.837			
	13684	1:BEBAN MATI	-7.391	-1.87E 3	-0.222	0.081	-0.001	51.666			
		2:BEBAN HIDL	-1.519	-940.181	-0.049	0.023	-0.000	17.437			
		3:BEBAN GEM	416.329	1.29E 3	-8.473	0.620	0.013	-0.072			
		4:KOMBINASI	-11.299	-3.75E 3	-0.346	0.134	-0.002	89.898			
		5:KOMB B. MA	428.843	-1.07E 3	-9.149	0.746	0.012	62.053			
21315	13919	1:BEBAN MATI	7.217	584.165	-0.000	0.000	0.000	-3.181			
		2:BEBAN HIDL	1.590	169.798	0.000	0.000	-0.000	-1.567			
		3:BEBAN GEM	-5.37E 3	-153.531	49.237	0.161	-0.310	-2.721			
		4:KOMBINASI	11.203	972.674	-0.000	0.000	0.000	-6.324			
		5:KOMB B. MA	-5.63E 3	524.836	51.699	0.169	-0.325	-6.979			
	13721	1:BEBAN MATI	-7.217	-295.850	0.000	-0.000	0.000	9.654			
		2:BEBAN HIDL	-1.590	-169.798	-0.000	-0.000	-0.000	4.064			
		3:BEBAN GEM	5.37E 3	153.531	-49.237	-0.161	-0.414	0.463			
		4:KOMBINASI	-11.203	-626.697	0.000	-0.000	0.000	18.087			
		5:KOMB B. MA	5.63E 3	-236.521	-51.699	-0.169	-0.435	12.578			
21316	13921	1:BEBAN MATI	7.391	3.56E 3	-0.222	0.081	0.002	-11.765			
		2:BEBAN HIDL	1.519	940.180	-0.049	0.023	0.000	-3.607			
		3:BEBAN GEM	-911.173	-1.29E 3	19.551	-0.625	-0.123	-18.908			
		4:KOMBINASI	11.299	5.77E 3	-0.346	0.134	0.003	-19.888			
		5:KOMB B. MA	-948.429	2.77E 3	20.277	-0.561	-0.127	-33.782			
	13689	1:BEBAN MATI	-7.391	-1.87E 3	0.222	-0.081	0.001	51.666			
		2:BEBAN HIDL	-1.519	-940.180	0.049	-0.023	0.000	17.437			
		3:BEBAN GEM	911.173	1.29E 3	-19.551	0.625	-0.165	-0.045			
		4:KOMBINASI	-11.299	-3.75E 3	0.346	-0.134	0.002	89.898			
		5:KOMB B. MA	948.429	-1.08E 3	-20.277	0.561	-0.172	62.080			
21317	13922	1:BEBAN MATI	-4.674	608.306	0.004	-0.004	-0.000	-2.648			
		2:BEBAN HIDL	-1.816	171.609	0.003	-0.000	-0.000	-1.514			
		3:BEBAN GEM	1.89E 3	-42.404	-49.334	-0.574	0.412	-0.759			
		4:KOMBINASI	-8.514	1E 3	0.010	-0.005	-0.000	-5.601			
		5:KOMB B. MA	1.98E 3	666.747	-51.795	-0.607	0.433	-4.354			
	13721	1:BEBAN MATI	4.674	-319.991	-0.004	0.004	-0.000	9.476			
		2:BEBAN HIDL	1.816	-171.609	-0.003	0.000	-0.000	4.039			
		3:BEBAN GEM	-1.89E 3	42.404	49.334	0.574	0.313	0.135			
		4:KOMBINASI	8.514	-658.564	-0.010	0.005	-0.000	17.833			
		5:KOMB B. MA	-1.98E 3	-378.433	51.795	0.607	0.329	12.042			
21318	13923	1:BEBAN MATI	-3.702	-1.04E 3	-0.010	0.002	0.000	-1.352			
		2:BEBAN HIDL	-1.563	-530.106	-0.007	0.000	0.000	-0.946			
		3:BEBAN GEM	490.470	17.817	73.005	0.444	-0.529	0.786			
		4:KOMBINASI	-6.944	-2.09E 3	-0.023	0.004	0.000	-3.135			
		5:KOMB B. MA	510.353	-1.34E 3	76.641	0.469	-0.555	-1.094			
	13689	1:BEBAN MATI	3.702	1.32E 3	0.010	-0.002	0.000	-16.008			
		2:BEBAN HIDL	1.563	530.106	0.007	-0.000	0.000	-6.852			
		3:BEBAN GEM	-490.470	-17.817	-73.005	-0.444	-0.545	-0.524			
		4:KOMBINASI	6.944	2.44E 3	0.023	-0.004	0.000	-30.172			
		5:KOMB B. MA	-510.353	1.62E 3	-76.641	-0.469	-0.573	-20.669			
21319	13925	1:BEBAN MATI	3.768	-5.3E 3	-0.459	0.167	0.004	-9.888			
		2:BEBAN HIDL	0.783	-1.84E 3	-0.137	0.054	0.001	-2.924			



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Job No

1

Sheet No

283

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.12E 3	-1.75E 3	-50.898	1.311	0.476	19.194			
		4:KOMBINASI	5.774	-9.31E 3	-0.770	0.287	0.006	-16.545			
		5:KOMB B. MA	1.18E 3	-8.24E 3	-53.984	1.576	0.503	8.511			
	12752	1:BEBAN MATI	-3.768	6.99E 3	0.459	-0.167	0.003	-80.553			
		2:BEBAN HIDL	-0.783	1.84E 3	0.137	-0.054	0.001	-24.151			
		3:BEBAN GEM	-1.12E 3	1.75E 3	50.898	-1.311	0.273	-44.903			
		4:KOMBINASI	-5.774	11.3E 3	0.770	-0.287	0.005	-135.305			
		5:KOMB B. MA	-1.18E 3	9.93E 3	53.984	-1.576	0.291	-142.192			
21320	13926	1:BEBAN MATI	8.254	-1.01E 3	0.000	-0.000	-0.000	-1.818			
		2:BEBAN HIDL	2.109	-528.995	0.000	-0.000	-0.000	-0.988			
		3:BEBAN GEM	12.1E 3	62.591	-138.900	-0.128	0.968	2.815			
		4:KOMBINASI	13.280	-2.06E 3	0.000	-0.000	-0.000	-3.763			
		5:KOMB B. MA	12.7E 3	-1.26E 3	-145.845	-0.134	1.017	0.545			
	13713	1:BEBAN MATI	-8.254	1.3E 3	-0.000	0.000	-0.000	-15.164			
		2:BEBAN HIDL	-2.109	528.995	-0.000	0.000	-0.000	-6.793			
		3:BEBAN GEM	-12.1E 3	-62.591	138.900	0.128	1.075	-1.894			
		4:KOMBINASI	-13.280	2.4E 3	-0.000	0.000	-0.000	-29.067			
		5:KOMB B. MA	-12.7E 3	1.55E 3	145.845	0.134	1.129	-21.229			
21321	13928	1:BEBAN MATI	3.768	-5.3E 3	0.459	-0.167	-0.004	-9.888			
		2:BEBAN HIDL	0.783	-1.84E 3	0.137	-0.054	-0.001	-2.924			
		3:BEBAN GEM	178.150	-1.74E 3	42.409	1.309	-0.331	19.131			
		4:KOMBINASI	5.774	-9.31E 3	0.770	-0.287	-0.006	-16.545			
		5:KOMB B. MA	191.295	-8.24E 3	45.071	1.175	-0.352	8.445			
	12755	1:BEBAN MATI	-3.768	6.99E 3	-0.459	0.167	-0.003	-80.553			
		2:BEBAN HIDL	-0.783	1.84E 3	-0.137	0.054	-0.001	-24.151			
		3:BEBAN GEM	-178.150	1.74E 3	-42.409	-1.309	-0.292	-44.795			
		4:KOMBINASI	-5.774	11.3E 3	-0.770	0.287	-0.005	-135.305			
		5:KOMB B. MA	-191.295	9.93E 3	-45.071	-1.175	-0.311	-142.079			
21322	13929	1:BEBAN MATI	-13.522	3.52E 3	0.093	0.049	-0.001	-10.960			
		2:BEBAN HIDL	-4.425	933.389	0.030	-0.016	-0.000	-3.579			
		3:BEBAN GEM	-1.9E 3	-362.525	-249.481	2.232	1.611	-5.362			
		4:KOMBINASI	-23.306	5.72E 3	0.159	0.033	-0.001	-18.878			
		5:KOMB B. MA	-2.01E 3	3.7E 3	-261.845	2.382	1.690	-18.737			
	13713	1:BEBAN MATI	13.522	-1.83E 3	-0.093	-0.049	-0.001	50.354			
		2:BEBAN HIDL	4.425	-933.389	-0.030	0.016	-0.000	17.309			
		3:BEBAN GEM	1.9E 3	362.525	249.481	-2.232	2.059	0.029			
		4:KOMBINASI	23.306	-3.69E 3	-0.159	-0.033	-0.001	88.120			
		5:KOMB B. MA	2.01E 3	-2.01E 3	261.845	-2.382	2.161	60.771			
21323	13930	1:BEBAN MATI	-17.521	-5.22E 3	-0.342	-0.097	0.003	-9.266			
		2:BEBAN HIDL	-5.511	-1.83E 3	-0.104	0.031	0.001	-2.866			
		3:BEBAN GEM	1.79E 3	-497.690	251.227	-4.614	-1.796	5.407			
		4:KOMBINASI	-29.842	-9.19E 3	-0.577	-0.067	0.004	-15.704			
		5:KOMB B. MA	1.86E 3	-6.84E 3	263.384	-4.923	-1.883	-5.308			
	12755	1:BEBAN MATI	17.521	6.91E 3	0.342	0.097	0.002	-79.903			
		2:BEBAN HIDL	5.511	1.83E 3	0.104	-0.031	0.001	-24.076			
		3:BEBAN GEM	-1.79E 3	497.690	-251.227	4.614	-1.899	-12.728			
		4:KOMBINASI	29.842	11.2E 3	0.577	0.067	0.004	-134.405			
		5:KOMB B. MA	-1.86E 3	8.53E 3	-263.384	4.923	-1.992	-107.713			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

284

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21324	13932	1:BEBAN MATI	17.291	3.5E 3	0.086	-0.063	-0.001	-12.664			
		2:BEBAN HIDL	4.968	973.006	0.012	-0.025	-0.000	-3.858			
		3:BEBAN GEM	1.51E 3	-1.28E 3	27.667	-0.629	-0.195	-19.085			
		4:KOMBINASI	28.697	5.75E 3	0.123	-0.116	-0.001	-21.369			
		5:KOMB B. MA	1.61E 3	2.73E 3	29.144	-0.739	-0.206	-35.018			
13683		1:BEBAN MATI	-17.291	-1.81E 3	-0.086	0.063	-0.000	51.680			
		2:BEBAN HIDL	-4.968	-973.006	-0.012	0.025	-0.000	18.171			
		3:BEBAN GEM	-1.51E 3	1.28E 3	-27.667	0.629	-0.212	0.232			
		4:KOMBINASI	-28.697	-3.73E 3	-0.123	0.116	-0.001	91.089			
		5:KOMB B. MA	-1.61E 3	-1.05E 3	-29.144	0.739	-0.223	62.826			
21325	13933	1:BEBAN MATI	8.728	641.495	0.000	0.000	-0.000	-3.848			
		2:BEBAN HIDL	2.428	185.743	0.000	0.000	-0.000	-1.705			
		3:BEBAN GEM	3.41E 3	-146.933	-15.078	0.163	0.120	-2.781			
		4:KOMBINASI	14.358	1.07E 3	0.000	0.000	-0.000	-7.346			
		5:KOMB B. MA	3.59E 3	598.661	-15.832	0.171	0.126	-7.792			
13724		1:BEBAN MATI	-8.728	-353.181	-0.000	-0.000	-0.000	11.164			
		2:BEBAN HIDL	-2.428	-185.743	-0.000	-0.000	-0.000	4.437			
		3:BEBAN GEM	-3.41E 3	146.933	15.078	-0.163	0.102	0.620			
		4:KOMBINASI	-14.358	-721.006	-0.000	-0.000	-0.000	20.497			
		5:KOMB B. MA	-3.59E 3	-310.347	15.832	-0.171	0.107	14.478			
21326	13935	1:BEBAN MATI	17.291	3.5E 3	-0.086	0.063	0.001	-12.664			
		2:BEBAN HIDL	4.968	973.005	-0.012	0.025	0.000	-3.858			
		3:BEBAN GEM	1.57E 3	-1.28E 3	-73.601	-0.630	0.520	-19.029			
		4:KOMBINASI	28.697	5.75E 3	-0.123	0.116	0.001	-21.369			
		5:KOMB B. MA	1.67E 3	2.74E 3	-77.374	-0.583	0.547	-34.959			
13688		1:BEBAN MATI	-17.291	-1.81E 3	0.086	-0.063	0.000	51.680			
		2:BEBAN HIDL	-4.968	-973.005	0.012	-0.025	0.000	18.171			
		3:BEBAN GEM	-1.57E 3	1.28E 3	73.601	0.630	0.562	0.259			
		4:KOMBINASI	-28.697	-3.73E 3	0.123	-0.116	0.001	91.089			
		5:KOMB B. MA	-1.67E 3	-1.05E 3	77.374	0.583	0.591	62.854			
21327	13936	1:BEBAN MATI	-4.940	545.204	0.012	0.161	-0.000	-2.619			
		2:BEBAN HIDL	-1.747	176.609	0.005	0.008	-0.000	-1.527			
		3:BEBAN GEM	-1.01E 3	-45.179	-10.344	-0.567	0.042	-0.767			
		4:KOMBINASI	-8.723	936.818	0.022	0.207	-0.000	-5.586			
		5:KOMB B. MA	-1.06E 3	603.731	-10.847	-0.428	0.044	-4.340			
13724		1:BEBAN MATI	4.940	-256.889	-0.012	-0.161	-0.000	8.519			
		2:BEBAN HIDL	1.747	-176.609	-0.005	-0.008	-0.000	4.125			
		3:BEBAN GEM	1.01E 3	45.179	10.344	0.567	0.110	0.102			
		4:KOMBINASI	8.723	-590.841	-0.022	-0.207	-0.000	16.822			
		5:KOMB B. MA	1.06E 3	-315.417	10.847	0.428	0.116	11.101			
21328	13937	1:BEBAN MATI	-5.052	-969.970	-0.026	-0.159	0.000	-1.414			
		2:BEBAN HIDL	-1.821	-535.621	-0.010	-0.003	0.000	-0.940			
		3:BEBAN GEM	-571.202	20.521	15.584	0.438	-0.105	0.793			
		4:KOMBINASI	-8.977	-2.02E 3	-0.048	-0.196	0.000	-3.201			
		5:KOMB B. MA	-605.907	-1.27E 3	16.331	0.299	-0.110	-1.146			
13688		1:BEBAN MATI	5.052	1.26E 3	0.026	0.159	0.000	-14.975			
		2:BEBAN HIDL	1.821	535.621	0.010	0.003	0.000	-6.939			
		3:BEBAN GEM	571.202	-20.521	-15.584	-0.438	-0.124	-0.491			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 285	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	8.977	2.37E 3	0.048	0.196	0.000	-29.072			
		5:KOMB B. MA	605.907	1.56E 3	-16.331	-0.299	-0.130	-19.653			
21329	13939	1:BEBAN MATI	22.494	-5.11E 3	-0.471	0.146	0.004	-10.203			
		2:BEBAN HIDL	7.267	-1.85E 3	-0.143	0.051	0.001	-3.933			
		3:BEBAN GEM	1.9E 3	-1.73E 3	29.324	1.323	-0.223	18.627			
		4:KOMBINASI	38.620	-9.08E 3	-0.795	0.257	0.006	-18.536			
		5:KOMB B. MA	2.02E 3	-8.03E 3	30.233	1.566	-0.230	6.996			
	12726	1:BEBAN MATI	-22.494	6.79E 3	0.471	-0.146	0.003	-77.312			
		2:BEBAN HIDL	-7.267	1.85E 3	0.143	-0.051	0.001	-23.220			
		3:BEBAN GEM	-1.9E 3	1.73E 3	-29.324	-1.323	-0.208	-44.065			
		4:KOMBINASI	-38.620	11.1E 3	0.795	-0.257	0.006	-129.927			
		5:KOMB B. MA	-2.02E 3	9.72E 3	-30.233	-1.566	-0.215	-137.512			
21330	13940	1:BEBAN MATI	10.584	-1.11E 3	0.000	-0.000	-0.000	-2.880			
		2:BEBAN HIDL	3.031	-494.709	0.000	0.000	-0.000	-1.881			
		3:BEBAN GEM	1.78E 3	56.234	-5.280	-0.127	0.039	2.583			
		4:KOMBINASI	17.551	-2.12E 3	0.000	0.000	-0.000	-6.466			
		5:KOMB B. MA	1.88E 3	-1.35E 3	-5.543	-0.134	0.040	-1.297			
	13716	1:BEBAN MATI	-10.584	1.4E 3	-0.000	0.000	-0.000	-15.565			
		2:BEBAN HIDL	-3.031	494.709	-0.000	-0.000	-0.000	-5.396			
		3:BEBAN GEM	-1.78E 3	-56.234	5.280	0.127	0.039	-1.756			
		4:KOMBINASI	-17.551	2.47E 3	-0.000	-0.000	-0.000	-27.311			
		5:KOMB B. MA	-1.88E 3	1.64E 3	5.543	0.134	0.041	-20.646			
21331	13942	1:BEBAN MATI	22.494	-5.11E 3	0.471	-0.146	-0.004	-10.203			
		2:BEBAN HIDL	7.267	-1.85E 3	0.143	-0.051	-0.001	-3.933			
		3:BEBAN GEM	1.98E 3	-1.73E 3	-56.363	1.322	0.422	18.565			
		4:KOMBINASI	38.620	-9.08E 3	0.795	-0.257	-0.006	-18.536			
		5:KOMB B. MA	2.1E 3	-8.03E 3	-58.624	1.211	0.439	6.931			
	12728	1:BEBAN MATI	-22.494	6.79E 3	-0.471	0.146	-0.003	-77.312			
		2:BEBAN HIDL	-7.267	1.85E 3	-0.143	0.051	-0.001	-23.220			
		3:BEBAN GEM	-1.98E 3	1.73E 3	56.363	-1.322	0.407	-43.959			
		4:KOMBINASI	-38.620	11.1E 3	-0.795	0.257	-0.006	-129.927			
		5:KOMB B. MA	-2.1E 3	9.71E 3	58.624	-1.211	0.423	-137.401			
21332	13943	1:BEBAN MATI	-14.883	2.34E 3	-0.065	0.487	0.001	-7.848			
		2:BEBAN HIDL	-4.588	809.681	-0.026	0.239	0.000	-3.264			
		3:BEBAN GEM	-1.44E 3	-386.664	-8.942	2.148	0.029	-5.358			
		4:KOMBINASI	-25.201	4.1E 3	-0.120	0.967	0.001	-14.640			
		5:KOMB B. MA	-1.53E 3	2.42E 3	-9.470	2.886	0.031	-15.433			
	13716	1:BEBAN MATI	14.883	-1.89E 3	0.065	-0.487	0.000	38.924			
		2:BEBAN HIDL	4.588	-809.681	0.026	-0.239	0.000	15.174			
		3:BEBAN GEM	1.44E 3	386.664	8.942	-2.148	0.103	-0.329			
		4:KOMBINASI	25.201	-3.56E 3	0.120	-0.967	0.000	70.987			
		5:KOMB B. MA	1.53E 3	-1.97E 3	9.470	-2.886	0.108	47.682			
21333	13944	1:BEBAN MATI	-18.690	-4.06E 3	0.279	-1.170	-0.002	-6.573			
		2:BEBAN HIDL	-5.651	-1.63E 3	0.114	-0.479	-0.001	-2.590			
		3:BEBAN GEM	-1.14E 3	-460.305	26.291	-4.657	-0.205	5.570			
		4:KOMBINASI	-31.469	-7.48E 3	0.516	-2.170	-0.004	-12.033			
		5:KOMB B. MA	-1.22E 3	-5.52E 3	27.953	-6.346	-0.218	-2.279			
	12728	1:BEBAN MATI	18.690	4.51E 3	-0.279	1.170	-0.002	-56.497			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

286

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	5.651	1.63E 3	-0.114	0.479	-0.001	-21.353			
		3:BEBAN GEM	1.14E 3	460.305	-26.291	4.657	-0.182	-12.341			
		4:KOMBINASI	31.469	8.02E 3	-0.516	2.170	-0.003	-101.961			
		5:KOMB B. MA	1.22E 3	5.97E 3	-27.953	6.346	-0.194	-82.266			
21334	13945	1:BEBAN MATI	1.049	2.04E 3	-0.209	1.532	0.002	-0.719			
		2:BEBAN HIDL	-2.106	245.297	-0.049	0.052	0.000	-0.124			
		3:BEBAN GEM	1.52E 3	-98.615	-6.999	0.765	0.042	-2.053			
		4:KOMBINASI	-2.111	2.84E 3	-0.329	1.922	0.003	-1.062			
		5:KOMB B. MA	1.6E 3	2.08E 3	-7.587	2.367	0.046	-2.949			
	13661	1:BEBAN MATI	-1.049	-510.000	0.209	-1.532	0.001	19.443			
		2:BEBAN HIDL	2.106	-245.297	0.049	-0.052	0.000	3.733			
		3:BEBAN GEM	-1.52E 3	98.615	6.999	-0.765	0.061	0.602			
		4:KOMBINASI	2.111	-1E 3	0.329	-1.922	0.002	29.305			
		5:KOMB B. MA	-1.6E 3	-553.632	7.587	-2.367	0.065	22.316			
21335	13947	1:BEBAN MATI	-18.270	-557.240	5.446	-1.895	-0.016	-6.448			
		2:BEBAN HIDL	-3.403	-197.842	0.647	-0.344	-0.002	-2.374			
		3:BEBAN GEM	-851.357	-4.02E 3	550.196	-0.472	-1.424	2.532			
		4:KOMBINASI	-27.369	-985.236	7.571	-2.825	-0.023	-11.536			
		5:KOMB B. MA	-914.237	-4.9E 3	583.540	-2.598	-1.513	-5.214			
	13825	1:BEBAN MATI	18.270	1.12E 3	-5.446	1.895	-0.011	2.336			
		2:BEBAN HIDL	3.403	197.842	-0.647	0.344	-0.001	1.404			
		3:BEBAN GEM	851.357	4.02E 3	-550.196	0.472	-1.274	-22.245			
		4:KOMBINASI	27.369	1.66E 3	-7.571	2.825	-0.014	5.050			
		5:KOMB B. MA	914.237	5.46E 3	-583.540	2.598	-1.348	-20.179			
21336	13948	1:BEBAN MATI	-2.238	-833.495	-0.052	-1.261	0.001	3.400			
		2:BEBAN HIDL	-0.851	-344.749	-0.006	-0.219	0.000	-0.744			
		3:BEBAN GEM	-111.397	4.036	7.126	0.045	-0.054	1.901			
		4:KOMBINASI	-4.047	-1.55E 3	-0.071	-1.863	0.001	2.890			
		5:KOMB B. MA	-119.715	-1.04E 3	7.427	-1.345	-0.056	4.949			
	13708	1:BEBAN MATI	2.238	1.12E 3	0.052	1.261	0.000	-17.781			
		2:BEBAN HIDL	0.851	344.749	0.006	0.219	0.000	-4.328			
		3:BEBAN GEM	111.397	-4.036	-7.126	-0.045	-0.051	-1.841			
		4:KOMBINASI	4.047	1.9E 3	0.071	1.863	0.000	-28.261			
		5:KOMB B. MA	119.715	1.32E 3	-7.427	1.345	-0.053	-22.311			
21337	13949	1:BEBAN MATI	8.840	-1.54E 3	-0.763	-2.668	0.006	-10.512			
		2:BEBAN HIDL	0.282	-456.323	-0.132	-0.054	0.001	-0.653			
		3:BEBAN GEM	2.18E 3	86.920	-24.893	0.475	0.133	1.624			
		4:KOMBINASI	11.059	-2.57E 3	-1.127	-3.289	0.009	-13.660			
		5:KOMB B. MA	2.29E 3	-1.72E 3	-26.979	-2.202	0.146	-9.199			
	13686	1:BEBAN MATI	-8.840	3.06E 3	0.763	2.668	0.005	-23.320			
		2:BEBAN HIDL	-0.282	456.323	0.132	0.054	0.001	-6.059			
		3:BEBAN GEM	-2.18E 3	-86.920	24.893	-0.475	0.233	-0.345			
		4:KOMBINASI	-11.059	4.41E 3	1.127	3.289	0.007	-37.679			
		5:KOMB B. MA	-2.29E 3	3.25E 3	26.979	2.202	0.251	-27.318			
21338	13951	1:BEBAN MATI	19.026	2.5E 3	-0.276	1.035	0.002	-10.404			
		2:BEBAN HIDL	4.236	797.817	-0.077	-0.314	0.001	-4.369			
		3:BEBAN GEM	437.456	-404.807	-29.634	1.652	0.198	-6.496			
		4:KOMBINASI	29.609	4.28E 3	-0.454	0.740	0.003	-19.475			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	480.896	2.56E 3	-31.438	2.582	0.210	-19.846			
	13708	1:BEBAN MATI	-19.026	-2.05E 3	0.276	-1.035	0.002	43.935			
		2:BEBAN HIDL	-4.236	-797.817	0.077	0.314	0.001	16.105			
		3:BEBAN GEM	-437.456	404.807	29.634	-1.652	0.238	0.541			
		4:KOMBINASI	-29.609	-3.74E 3	0.454	-0.740	0.003	78.490			
		5:KOMB B. MA	-480.896	-2.11E 3	31.438	-2.582	0.252	54.166			
21339	13952	1:BEBAN MATI	12.761	-4.47E 3	0.508	0.878	-0.004	-10.493			
		2:BEBAN HIDL	2.112	-1.68E 3	0.093	0.897	-0.001	-3.253			
		3:BEBAN GEM	1.07E 3	-564.678	-5.117	-4.839	-0.000	5.977			
		4:KOMBINASI	18.693	-8.06E 3	0.759	2.489	-0.006	-17.797			
		5:KOMB B. MA	1.14E 3	-6.07E 3	-4.809	-3.665	-0.005	-6.170			
	12754	1:BEBAN MATI	-12.761	4.92E 3	-0.508	-0.878	-0.003	-58.553			
		2:BEBAN HIDL	-2.112	1.68E 3	-0.093	-0.897	-0.001	-21.510			
		3:BEBAN GEM	-1.07E 3	564.678	5.117	4.839	0.076	-14.283			
		4:KOMBINASI	-18.693	8.6E 3	-0.759	-2.489	-0.005	-104.680			
		5:KOMB B. MA	-1.14E 3	6.52E 3	4.809	3.665	0.076	-86.457			
21340	13954	1:BEBAN MATI	-11.352	2.35E 3	-0.284	2.631	0.002	-9.918			
		2:BEBAN HIDL	-3.600	362.522	-0.078	1.358	0.001	-2.698			
		3:BEBAN GEM	-1.35E 3	-1.39E 3	8.801	0.099	-0.104	-19.273			
		4:KOMBINASI	-19.382	3.4E 3	-0.465	5.330	0.004	-16.218			
		5:KOMB B. MA	-1.43E 3	1.11E 3	8.910	3.550	-0.106	-31.773			
	13681	1:BEBAN MATI	11.352	-662.872	0.284	-2.631	0.002	32.084			
		2:BEBAN HIDL	3.600	-362.522	0.078	-1.358	0.001	8.030			
		3:BEBAN GEM	1.35E 3	1.39E 3	-8.801	-0.099	-0.026	-1.142			
		4:KOMBINASI	19.382	-1.38E 3	0.465	-5.330	0.003	51.349			
		5:KOMB B. MA	1.43E 3	576.835	-8.910	-3.550	-0.025	35.703			
21341	13955	1:BEBAN MATI	1.165	697.651	0.043	-0.032	-0.000	-3.717			
		2:BEBAN HIDL	-0.371	140.143	-0.002	0.017	-0.000	-2.836			
		3:BEBAN GEM	-144.701	-144.559	25.806	0.208	-0.193	-2.425			
		4:KOMBINASI	0.805	1.06E 3	0.049	-0.011	-0.000	-8.997			
		5:KOMB B. MA	-150.994	629.950	27.138	0.196	-0.203	-7.964			
	13729	1:BEBAN MATI	-1.165	-409.337	-0.043	0.032	-0.000	11.859			
		2:BEBAN HIDL	0.371	-140.143	0.002	-0.017	0.000	4.897			
		3:BEBAN GEM	144.701	144.559	-25.806	-0.208	-0.186	0.299			
		4:KOMBINASI	-0.805	-715.434	-0.049	0.011	-0.000	22.066			
		5:KOMB B. MA	150.994	-341.636	-27.138	-0.196	-0.196	15.110			
21342	13957	1:BEBAN MATI	0.213	270.557	-0.038	-0.178	0.000	-9.599			
		2:BEBAN HIDL	-0.118	55.671	-0.003	-0.006	0.000	-4.818			
		3:BEBAN GEM	131.412	-54.068	-16.000	-0.584	0.116	-0.994			
		4:KOMBINASI	0.067	413.743	-0.051	-0.223	0.000	-19.228			
		5:KOMB B. MA	138.125	247.189	-16.840	-0.795	0.122	-13.534			
	13729	1:BEBAN MATI	-0.213	17.757	0.038	0.178	0.000	11.459			
		2:BEBAN HIDL	0.118	-55.671	0.003	0.006	0.000	5.637			
		3:BEBAN GEM	-131.412	54.068	16.000	0.584	0.119	0.199			
		4:KOMBINASI	-0.067	-67.766	0.051	0.223	0.000	22.769			
		5:KOMB B. MA	-138.125	41.126	16.840	0.795	0.125	15.050			
21343	13958	1:BEBAN MATI	-0.662	-1.05E 3	-0.034	0.242	0.000	-2.513			
		2:BEBAN HIDL	-0.636	-577.885	-0.002	0.020	0.000	-1.423			



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Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	474.160	14.864	-18.205	0.416	0.126	0.806			
		4:KOMBINASI	-1.812	-2.18E 3	-0.043	0.323	0.000	-5.292			
		5:KOMB B. MA	496.825	-1.38E 3	-19.150	0.691	0.133	-2.521			
	13685	1:BEBAN MATI	0.662	1.33E 3	0.034	-0.242	0.000	-15.002			
		2:BEBAN HIDL	0.636	577.885	0.002	-0.020	0.000	-7.078			
		3:BEBAN GEM	-474.160	-14.864	18.205	-0.416	0.141	-0.587			
		4:KOMBINASI	1.812	2.53E 3	0.043	-0.323	0.000	-29.327			
		5:KOMB B. MA	-496.825	1.67E 3	19.150	-0.691	0.149	-19.865			
21344	13960	1:BEBAN MATI	-8.862	-3.32E 3	0.290	-4.939	-0.002	-5.044			
		2:BEBAN HIDL	-4.818	-887.430	0.017	-2.588	-0.000	-0.132			
		3:BEBAN GEM	1.61E 3	-1.6E 3	71.670	0.325	-0.429	21.410			
		4:KOMBINASI	-18.343	-5.41E 3	0.376	-10.068	-0.003	-6.263			
		5:KOMB B. MA	1.68E 3	-5.54E 3	75.554	-6.151	-0.453	17.358			
	12750	1:BEBAN MATI	8.862	5.01E 3	-0.290	4.939	-0.002	-56.249			
		2:BEBAN HIDL	4.818	887.430	-0.017	2.588	-0.000	-12.922			
		3:BEBAN GEM	-1.61E 3	1.6E 3	-71.670	-0.325	-0.625	-45.019			
		4:KOMBINASI	18.343	7.43E 3	-0.376	10.068	-0.002	-88.174			
		5:KOMB B. MA	-1.68E 3	7.23E 3	-75.554	6.151	-0.658	-111.272			
21345	13961	1:BEBAN MATI	1.319	-1.08E 3	0.038	-0.082	-0.000	-2.442			
		2:BEBAN HIDL	-0.155	-560.657	-0.004	-0.052	0.000	-1.062			
		3:BEBAN GEM	-192.835	64.151	25.944	-0.119	-0.185	2.961			
		4:KOMBINASI	1.334	-2.19E 3	0.038	-0.182	-0.000	-4.629			
		5:KOMB B. MA	-201.251	-1.35E 3	27.276	-0.239	-0.195	0.030			
	13711	1:BEBAN MATI	-1.319	1.37E 3	-0.038	0.082	-0.000	-15.577			
		2:BEBAN HIDL	0.155	560.657	0.004	0.052	0.000	-7.186			
		3:BEBAN GEM	192.835	-64.151	-25.944	0.119	-0.196	-2.017			
		4:KOMBINASI	-1.334	2.54E 3	-0.038	0.182	-0.000	-30.189			
		5:KOMB B. MA	201.251	1.64E 3	-27.276	0.239	-0.206	-22.007			
21346	13963	1:BEBAN MATI	4.955	3.4E 3	0.005	0.355	-0.000	-18.010			
		2:BEBAN HIDL	0.380	912.838	0.041	0.287	-0.000	-5.892			
		3:BEBAN GEM	580.607	-357.619	-50.839	2.311	0.374	-5.228			
		4:KOMBINASI	6.555	5.55E 3	0.072	0.885	-0.000	-31.040			
		5:KOMB B. MA	614.821	3.58E 3	-53.351	2.954	0.393	-27.035			
	13711	1:BEBAN MATI	-4.955	-1.72E 3	-0.005	-0.355	-0.000	55.677			
		2:BEBAN HIDL	-0.380	-912.838	-0.041	-0.287	-0.000	19.320			
		3:BEBAN GEM	-580.607	357.619	50.839	-2.311	0.374	-0.033			
		4:KOMBINASI	-6.555	-3.52E 3	-0.072	-0.885	-0.001	97.725			
		5:KOMB B. MA	-614.821	-1.89E 3	53.351	-2.954	0.392	67.235			
21347	13964	1:BEBAN MATI	9.590	-5.47E 3	0.042	0.144	-0.000	-11.020			
		2:BEBAN HIDL	1.954	-1.93E 3	0.030	-0.039	-0.000	-3.541			
		3:BEBAN GEM	690.784	-489.251	-44.483	-4.639	0.328	5.405			
		4:KOMBINASI	14.634	-9.65E 3	0.098	0.110	-0.001	-18.891			
		5:KOMB B. MA	736.086	-7.14E 3	-46.647	-4.751	0.344	-7.470			
	12753	1:BEBAN MATI	-9.590	7.16E 3	-0.042	-0.144	-0.000	-81.855			
		2:BEBAN HIDL	-1.954	1.93E 3	-0.030	0.039	-0.000	-24.861			
		3:BEBAN GEM	-690.784	489.251	44.483	4.639	0.326	-12.602			
		4:KOMBINASI	-14.634	11.7E 3	-0.098	-0.110	-0.001	-138.005			
		5:KOMB B. MA	-736.086	8.83E 3	46.647	4.751	0.342	-110.004			



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Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21348	13966	1:BEBAN MATI	-1.795	3.07E 3	-0.065	0.486	0.001	-12.312			
		2:BEBAN HIDL	-0.911	767.702	-0.048	0.109	0.000	-4.268			
		3:BEBAN GEM	757.211	-1.37E 3	11.780	-0.239	-0.074	-20.538			
		4:KOMBINASI	-3.611	4.91E 3	-0.155	0.757	0.001	-21.603			
		5:KOMB B. MA	792.730	2.09E 3	12.276	0.300	-0.077	-36.438			
	13680	1:BEBAN MATI	1.795	-1.38E 3	0.065	-0.486	0.000	45.060			
		2:BEBAN HIDL	0.911	-767.702	0.048	-0.109	0.000	15.561			
		3:BEBAN GEM	-757.211	1.37E 3	-11.780	0.239	-0.099	0.373			
		4:KOMBINASI	3.611	-2.89E 3	0.155	-0.757	0.001	78.969			
		5:KOMB B. MA	-792.730	-403.429	-12.276	-0.300	-0.104	54.788			
21349	13967	1:BEBAN MATI	3.034	612.116	0.038	-0.008	-0.000	-3.288			
		2:BEBAN HIDL	0.533	181.345	-0.000	-0.012	-0.000	-1.576			
		3:BEBAN GEM	176.999	-150.512	7.334	0.154	-0.050	-2.732			
		4:KOMBINASI	4.493	1.02E 3	0.045	-0.030	-0.000	-6.468			
		5:KOMB B. MA	189.202	562.885	7.739	0.146	-0.053	-7.102			
	13722	1:BEBAN MATI	-3.034	-323.801	-0.038	0.008	-0.000	10.171			
		2:BEBAN HIDL	-0.533	-181.345	0.000	0.012	0.000	4.244			
		3:BEBAN GEM	-176.999	150.512	-7.334	-0.154	-0.058	0.518			
		4:KOMBINASI	-4.493	-678.714	-0.045	0.030	-0.000	18.996			
		5:KOMB B. MA	-189.202	-274.571	-7.739	-0.146	-0.061	13.262			
21350	13969	1:BEBAN MATI	-0.556	453.487	0.037	0.018	-0.000	-7.080			
		2:BEBAN HIDL	-0.819	121.942	0.021	0.010	-0.000	-2.886			
		3:BEBAN GEM	-362.282	-45.090	-26.812	-0.586	0.191	-0.684			
		4:KOMBINASI	-1.977	739.292	0.078	0.039	-0.001	-13.114			
		5:KOMB B. MA	-381.444	479.308	-28.103	-0.591	0.200	-9.530			
	13722	1:BEBAN MATI	0.556	-165.173	-0.037	-0.018	-0.000	11.630			
		2:BEBAN HIDL	0.819	-121.942	-0.021	-0.010	-0.000	4.680			
		3:BEBAN GEM	362.282	45.090	26.812	0.586	0.203	0.021			
		4:KOMBINASI	1.977	-393.314	-0.078	-0.039	-0.001	21.444			
		5:KOMB B. MA	381.444	-190.993	28.103	0.591	0.213	14.460			
21351	13970	1:BEBAN MATI	-2.545	-1.1E 3	0.007	0.007	-0.000	-2.153			
		2:BEBAN HIDL	-1.268	-548.407	0.009	0.003	-0.000	-1.186			
		3:BEBAN GEM	-687.547	19.958	-60.400	0.444	0.419	0.844			
		4:KOMBINASI	-5.083	-2.19E 3	0.023	0.013	-0.000	-4.481			
		5:KOMB B. MA	-725.231	-1.4E 3	-63.407	0.475	0.439	-1.978			
	13684	1:BEBAN MATI	2.545	1.39E 3	-0.007	-0.007	-0.000	-16.102			
		2:BEBAN HIDL	1.268	548.407	-0.009	-0.003	-0.000	-6.881			
		3:BEBAN GEM	687.547	-19.958	60.400	-0.444	0.470	-0.550			
		4:KOMBINASI	5.083	2.54E 3	-0.023	-0.013	-0.000	-30.332			
		5:KOMB B. MA	725.231	1.69E 3	63.407	-0.475	0.493	-20.809			
21352	13972	1:BEBAN MATI	1.901	-4.62E 3	0.280	-2.098	-0.002	-9.066			
		2:BEBAN HIDL	0.463	-1.63E 3	0.076	-0.662	-0.001	-2.782			
		3:BEBAN GEM	618.989	-1.72E 3	19.290	1.088	-0.129	20.122			
		4:KOMBINASI	3.022	-8.16E 3	0.458	-3.578	-0.004	-15.330			
		5:KOMB B. MA	652.117	-7.41E 3	20.580	-1.354	-0.138	10.393			
	12749	1:BEBAN MATI	-1.901	6.31E 3	-0.280	2.098	-0.002	-71.285			
		2:BEBAN HIDL	-0.463	1.63E 3	-0.076	0.662	-0.000	-21.266			
		3:BEBAN GEM	-618.989	1.72E 3	-19.290	-1.088	-0.155	-45.491			



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Job No 1	Sheet No 290	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-3.022	10.2E 3	-0.458	3.578	-0.003	-119.568			
		5:KOMB B. MA	-652.117	9.1E 3	-20.580	1.354	-0.165	-131.810			
21353	13973	1:BEBAN MATI	4.139	-1.04E 3	-0.019	-0.003	0.000	-1.826			
		2:BEBAN HIDL	0.939	-539.226	-0.017	0.001	0.000	-0.997			
		3:BEBAN GEM	336.272	59.944	3.183	-0.121	-0.012	2.839			
		4:KOMBINASI	6.469	-2.11E 3	-0.050	-0.003	0.000	-3.786			
		5:KOMB B. MA	357.788	-1.3E 3	3.313	-0.130	-0.013	0.557			
	13714	1:BEBAN MATI	-4.139	1.33E 3	0.019	0.003	0.000	-15.584			
		2:BEBAN HIDL	-0.939	539.226	0.017	-0.001	0.000	-6.935			
		3:BEBAN GEM	-336.272	-59.944	-3.183	0.121	-0.035	-1.958			
		4:KOMBINASI	-6.469	2.46E 3	0.050	0.003	0.000	-29.797			
		5:KOMB B. MA	-357.788	1.59E 3	-3.313	0.130	-0.036	-21.800			
21354	13975	1:BEBAN MATI	3.221	3.4E 3	0.140	0.076	-0.001	-17.376			
		2:BEBAN HIDL	0.389	896.014	0.058	-0.019	-0.000	-5.543			
		3:BEBAN GEM	-566.237	-352.836	-43.106	2.266	0.314	-5.091			
		4:KOMBINASI	4.487	5.51E 3	0.261	0.060	-0.002	-29.721			
		5:KOMB B. MA	-591.095	3.56E 3	-45.087	2.444	0.329	-26.048			
	13714	1:BEBAN MATI	-3.221	-1.71E 3	-0.140	-0.076	-0.001	54.926			
		2:BEBAN HIDL	-0.389	-896.014	-0.058	0.019	-0.000	18.724			
		3:BEBAN GEM	566.237	352.836	43.106	-2.266	0.320	-0.099			
		4:KOMBINASI	-4.487	-3.48E 3	-0.261	-0.060	-0.002	95.869			
		5:KOMB B. MA	591.095	-1.88E 3	45.087	-2.444	0.334	66.056			
21355	13976	1:BEBAN MATI	6.101	-5.46E 3	-0.244	-0.117	0.002	-10.537			
		2:BEBAN HIDL	0.926	-1.91E 3	-0.053	0.028	0.000	-3.235			
		3:BEBAN GEM	-670.904	-493.600	-65.188	-4.628	0.466	5.489			
		4:KOMBINASI	8.803	-9.6E 3	-0.378	-0.096	0.003	-17.819			
		5:KOMB B. MA	-697.792	-7.12E 3	-68.723	-4.960	0.492	-6.714			
	12752	1:BEBAN MATI	-6.101	7.15E 3	0.244	0.117	0.002	-82.155			
		2:BEBAN HIDL	-0.926	1.91E 3	0.053	-0.028	0.000	-24.835			
		3:BEBAN GEM	670.904	493.600	65.188	4.628	0.493	-12.750			
		4:KOMBINASI	-8.803	11.6E 3	0.378	0.096	0.003	-138.323			
		5:KOMB B. MA	697.792	8.81E 3	68.723	4.960	0.519	-110.444			
21356	13978	1:BEBAN MATI	8.053	3.11E 3	-0.237	0.318	0.002	-11.177			
		2:BEBAN HIDL	1.794	827.373	-0.103	0.176	0.001	-3.412			
		3:BEBAN GEM	74.634	-1.34E 3	20.659	-0.281	-0.153	-20.211			
		4:KOMBINASI	12.534	5.05E 3	-0.449	0.664	0.004	-18.871			
		5:KOMB B. MA	87.495	2.2E 3	21.393	0.129	-0.158	-34.446			
	13679	1:BEBAN MATI	-8.053	-1.42E 3	0.237	-0.318	0.002	44.455			
		2:BEBAN HIDL	-1.794	-827.373	0.103	-0.176	0.001	15.582			
		3:BEBAN GEM	-74.634	1.34E 3	-20.659	0.281	-0.151	0.513			
		4:KOMBINASI	-12.534	-3.03E 3	0.449	-0.664	0.003	78.278			
		5:KOMB B. MA	-87.495	-508.677	-21.393	-0.129	-0.156	54.344			
21357	13979	1:BEBAN MATI	6.448	665.526	-0.052	0.022	0.000	-3.880			
		2:BEBAN HIDL	1.761	193.980	-0.026	0.009	0.000	-1.713			
		3:BEBAN GEM	330.734	-145.577	5.998	0.159	-0.044	-2.805			
		4:KOMBINASI	10.556	1.11E 3	-0.104	0.041	0.001	-7.398			
		5:KOMB B. MA	354.775	629.058	6.231	0.195	-0.046	-7.854			
	13725	1:BEBAN MATI	-6.448	-377.212	0.052	-0.022	0.000	11.550			



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Job No 1	Sheet No 291	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-1.761	-193.980	0.026	-0.009	0.000	4.567			
		3:BEBAN GEM	-330.734	145.577	-5.998	-0.159	-0.044	0.664			
		4:KOMBINASI	-10.556	-763.022	0.104	-0.041	0.001	21.166			
		5:KOMB B. MA	-354.775	-340.744	-6.231	-0.195	-0.046	14.987			
21358	13981	1:BEBAN MATI	-1.893	401.679	0.068	0.186	-0.000	-6.689			
		2:BEBAN HIDL	-0.997	127.997	0.033	0.012	-0.000	-2.892			
		3:BEBAN GEM	-253.881	-46.826	-16.344	-0.577	0.117	-0.694			
		4:KOMBINASI	-3.867	686.810	0.134	0.242	-0.001	-12.654			
		5:KOMB B. MA	-269.066	429.310	-17.073	-0.413	0.122	-9.153			
	13725	1:BEBAN MATI	1.893	-113.365	-0.068	-0.186	-0.001	10.477			
		2:BEBAN HIDL	0.997	-127.997	-0.033	-0.012	-0.000	4.775			
		3:BEBAN GEM	253.881	46.826	16.344	0.577	0.124	0.005			
		4:KOMBINASI	3.867	-340.832	-0.134	-0.242	-0.001	20.212			
		5:KOMB B. MA	269.066	-140.996	17.073	0.413	0.129	13.347			
21359	13982	1:BEBAN MATI	-4.310	-1.02E 3	0.053	-0.166	-0.000	-2.130			
		2:BEBAN HIDL	-1.637	-553.497	0.023	-0.003	-0.000	-1.172			
		3:BEBAN GEM	-429.147	22.385	-17.686	0.438	0.134	0.843			
		4:KOMBINASI	-7.791	-2.11E 3	0.101	-0.204	-0.001	-4.431			
		5:KOMB B. MA	-455.897	-1.33E 3	-18.503	0.292	0.140	-1.948			
	13683	1:BEBAN MATI	4.310	1.31E 3	-0.053	0.166	-0.000	-15.059			
		2:BEBAN HIDL	1.637	553.497	-0.023	0.003	-0.000	-6.970			
		3:BEBAN GEM	429.147	-22.385	17.686	-0.438	0.126	-0.513			
		4:KOMBINASI	7.791	2.46E 3	-0.101	0.204	-0.001	-29.222			
		5:KOMB B. MA	455.897	1.62E 3	18.503	-0.292	0.132	-19.780			
21360	13984	1:BEBAN MATI	8.618	-4.44E 3	0.166	-2.095	-0.001	-9.459			
		2:BEBAN HIDL	2.173	-1.61E 3	0.048	-0.717	-0.000	-3.583			
		3:BEBAN GEM	219.516	-1.7E 3	17.206	1.121	-0.121	19.440			
		4:KOMBINASI	13.819	-7.9E 3	0.277	-3.660	-0.002	-17.084			
		5:KOMB B. MA	240.414	-7.19E 3	18.261	-1.348	-0.128	8.803			
	12724	1:BEBAN MATI	-8.618	6.12E 3	-0.166	2.095	-0.001	-68.207			
		2:BEBAN HIDL	-2.173	1.61E 3	-0.048	0.717	-0.000	-20.074			
		3:BEBAN GEM	-219.516	1.7E 3	-17.206	-1.121	-0.132	-44.445			
		4:KOMBINASI	-13.819	9.92E 3	-0.277	3.660	-0.002	-113.967			
		5:KOMB B. MA	-240.414	8.87E 3	-18.261	1.348	-0.140	-126.919			
21361	13985	1:BEBAN MATI	7.354	-1.14E 3	-0.058	-0.014	0.000	-2.790			
		2:BEBAN HIDL	2.120	-503.187	-0.023	-0.007	0.000	-1.853			
		3:BEBAN GEM	336.911	54.217	10.595	-0.122	-0.077	2.606			
		4:KOMBINASI	12.217	-2.17E 3	-0.107	-0.027	0.001	-6.312			
		5:KOMB B. MA	362.383	-1.38E 3	11.053	-0.146	-0.081	-1.165			
	13717	1:BEBAN MATI	-7.354	1.43E 3	0.058	0.014	0.000	-16.054			
		2:BEBAN HIDL	-2.120	503.187	0.023	0.007	0.000	-5.549			
		3:BEBAN GEM	-336.911	-54.217	-10.595	0.122	-0.079	-1.808			
		4:KOMBINASI	-12.217	2.52E 3	0.107	0.027	0.001	-28.144			
		5:KOMB B. MA	-362.383	1.67E 3	-11.053	0.146	-0.082	-21.283			
21362	13987	1:BEBAN MATI	-1.239	2.26E 3	0.191	0.569	-0.001	-12.998			
		2:BEBAN HIDL	-0.601	778.930	0.085	0.270	-0.001	-5.063			
		3:BEBAN GEM	-726.606	-377.083	-26.238	2.179	0.191	-5.099			
		4:KOMBINASI	-2.449	3.95E 3	0.365	1.114	-0.002	-23.698			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-764.535	2.33E 3	-27.308	3.018	0.199	-21.389			
	13717	1:BEBAN MATI	1.239	-1.81E 3	-0.191	-0.569	-0.002	42.886			
		2:BEBAN HIDL	0.601	-778.930	-0.085	-0.270	-0.001	16.521			
		3:BEBAN GEM	726.606	377.083	26.238	-2.179	0.195	-0.448			
		4:KOMBINASI	2.449	-3.41E 3	-0.365	-1.114	-0.003	77.897			
		5:KOMB B. MA	764.535	-1.88E 3	27.308	-3.018	0.203	52.329			
21363	13988	1:BEBAN MATI	2.738	-4.27E 3	0.509	-1.162	-0.004	-7.670			
		2:BEBAN HIDL	0.454	-1.7E 3	0.202	-0.473	-0.002	-2.926			
		3:BEBAN GEM	-1.01E 3	-455.993	-3.964	-4.671	0.014	5.645			
		4:KOMBINASI	4.013	-7.85E 3	0.934	-2.151	-0.007	-13.885			
		5:KOMB B. MA	-1.05E 3	-5.77E 3	-3.532	-6.350	0.010	-3.498			
	12726	1:BEBAN MATI	-2.738	4.72E 3	-0.509	1.162	-0.004	-58.449			
		2:BEBAN HIDL	-0.454	1.7E 3	-0.202	0.473	-0.001	-22.103			
		3:BEBAN GEM	1.01E 3	455.993	3.964	4.671	0.044	-12.353			
		4:KOMBINASI	-4.013	8.39E 3	-0.934	2.151	-0.007	-105.504			
		5:KOMB B. MA	1.05E 3	6.22E 3	3.532	6.350	0.042	-84.681			
21364	13989	1:BEBAN MATI	-19.607	-316.816	0.307	2.213	-0.003	-0.796			
		2:BEBAN HIDL	-8.390	-279.327	0.135	0.965	-0.001	1.209			
		3:BEBAN GEM	1.11E 3	-919.593	-68.928	-1.530	0.586	0.267			
		4:KOMBINASI	-36.953	-827.102	0.584	4.200	-0.005	0.980			
		5:KOMB B. MA	1.14E 3	-1.45E 3	-71.987	1.185	0.612	0.210			
	12750	1:BEBAN MATI	19.607	2.34E 3	-0.307	-2.213	-0.003	-22.675			
		2:BEBAN HIDL	8.390	279.327	-0.135	-0.965	-0.001	-6.140			
		3:BEBAN GEM	-1.11E 3	919.593	68.928	1.530	0.631	-16.500			
		4:KOMBINASI	36.953	3.26E 3	-0.584	-4.200	-0.005	-37.033			
		5:KOMB B. MA	-1.14E 3	3.48E 3	71.987	-1.185	0.659	-43.683			
21365	13991	1:BEBAN MATI	10.679	2.45E 3	1.655	-1.628	-0.005	-8.269			
		2:BEBAN HIDL	2.762	965.974	-0.550	-0.937	0.001	-3.420			
		3:BEBAN GEM	-229.253	-1.43E 3	-2.210	-0.361	0.041	-21.097			
		4:KOMBINASI	17.234	4.48E 3	1.106	-3.452	-0.004	-15.395			
		5:KOMB B. MA	-228.379	1.53E 3	-0.996	-2.568	0.038	-32.473			
	14081	1:BEBAN MATI	-10.679	-2.3E 3	-1.655	1.628	-0.003	19.894			
		2:BEBAN HIDL	-2.762	-965.974	0.550	0.937	0.001	8.156			
		3:BEBAN GEM	229.253	1.43E 3	2.210	0.361	-0.030	14.110			
		4:KOMBINASI	-17.234	-4.3E 3	-1.106	3.452	-0.001	36.923			
		5:KOMB B. MA	228.379	-1.38E 3	0.996	2.568	-0.033	39.603			
21366	13992	1:BEBAN MATI	1.741	-224.995	0.091	-0.001	-0.001	1.219			
		2:BEBAN HIDL	-0.415	-255.153	0.039	0.002	-0.000	-0.159			
		3:BEBAN GEM	-196.623	-10.652	-19.660	-0.134	0.168	0.123			
		4:KOMBINASI	1.426	-678.239	0.171	0.003	-0.001	1.207			
		5:KOMB B. MA	-204.961	-389.271	-20.530	-0.140	0.175	1.252			
	13680	1:BEBAN MATI	-1.741	570.973	-0.091	0.001	-0.001	-8.244			
		2:BEBAN HIDL	0.415	255.153	-0.039	-0.002	-0.000	-4.345			
		3:BEBAN GEM	196.623	10.652	19.660	0.134	0.179	-0.311			
		4:KOMBINASI	-1.426	1.09E 3	-0.171	-0.003	-0.002	-16.844			
		5:KOMB B. MA	204.961	735.249	20.530	0.140	0.187	-11.177			
21367	13994	1:BEBAN MATI	1.970	-3.31E 3	-0.685	-1.190	0.004	-5.701			
		2:BEBAN HIDL	-0.012	-1.4E 3	-1.041	-0.108	0.003	-2.361			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	563.159	-1.52E 3	0.934	0.426	0.016	21.078			
		4:KOMBINASI	2.345	-6.21E 3	-2.488	-1.600	0.010	-10.619			
		5:KOMB B. MA	593.279	-5.75E 3	-0.329	-0.807	0.022	15.015			
	14092	1:BEBAN MATI	-1.970	3.46E 3	0.685	1.190	-0.000	-10.912			
		2:BEBAN HIDL	0.012	1.4E 3	1.041	0.108	0.002	-4.488			
		3:BEBAN GEM	-563.159	1.52E 3	-0.934	-0.426	-0.020	-28.552			
		4:KOMBINASI	-2.345	6.39E 3	2.488	1.600	0.003	-20.275			
		5:KOMB B. MA	-593.279	5.9E 3	0.329	0.807	-0.020	-43.584			
21368	13995	1:BEBAN MATI	-14.790	-863.873	0.058	0.001	-0.000	-7.103			
		2:BEBAN HIDL	-5.515	-552.293	0.051	0.005	-0.000	-2.063			
		3:BEBAN GEM	-268.315	-900.119	-22.283	-2.262	0.190	0.123			
		4:KOMBINASI	-26.571	-1.92E 3	0.151	0.010	-0.001	-11.825			
		5:KOMB B. MA	-299.830	-2.14E 3	-23.309	-2.370	0.199	-8.211			
	12749	1:BEBAN MATI	14.790	2.89E 3	-0.058	-0.001	-0.001	-26.024			
		2:BEBAN HIDL	5.515	552.293	-0.051	-0.005	-0.000	-7.686			
		3:BEBAN GEM	268.315	900.119	22.283	2.262	0.203	-16.012			
		4:KOMBINASI	26.571	4.35E 3	-0.151	-0.010	-0.001	-43.526			
		5:KOMB B. MA	299.830	4.17E 3	23.309	2.370	0.213	-47.448			
21369	13997	1:BEBAN MATI	7.826	2.54E 3	1.096	-1.701	-0.004	-6.640			
		2:BEBAN HIDL	0.402	1.03E 3	-0.496	-1.030	0.001	-2.444			
		3:BEBAN GEM	382.414	-1.39E 3	-16.639	-0.306	0.042	-20.911			
		4:KOMBINASI	10.034	4.69E 3	0.522	-3.690	-0.003	-11.879			
		5:KOMB B. MA	409.602	1.69E 3	-16.672	-2.640	0.041	-30.063			
	14103	1:BEBAN MATI	-7.826	-2.39E 3	-1.096	1.701	-0.002	18.714			
		2:BEBAN HIDL	-0.402	-1.03E 3	0.496	1.030	0.001	7.491			
		3:BEBAN GEM	-382.414	1.39E 3	16.639	0.306	0.040	14.085			
		4:KOMBINASI	-10.034	-4.51E 3	-0.522	3.690	0.000	34.442			
		5:KOMB B. MA	-409.602	-1.54E 3	16.672	2.640	0.041	37.998			
21370	13998	1:BEBAN MATI	-0.382	-219.781	0.057	0.065	-0.001	0.751			
		2:BEBAN HIDL	-0.705	-258.200	0.030	0.012	-0.000	-0.179			
		3:BEBAN GEM	-176.412	-9.578	-11.258	-0.124	0.097	0.156			
		4:KOMBINASI	-1.587	-676.857	0.117	0.098	-0.001	0.615			
		5:KOMB B. MA	-186.038	-384.758	-11.746	-0.058	0.102	0.807			
	13679	1:BEBAN MATI	0.382	565.759	-0.057	-0.065	-0.000	-7.684			
		2:BEBAN HIDL	0.705	258.200	-0.030	-0.012	-0.000	-4.379			
		3:BEBAN GEM	176.412	9.578	11.258	0.124	0.101	-0.325			
		4:KOMBINASI	1.587	1.09E 3	-0.117	-0.098	-0.001	-16.227			
		5:KOMB B. MA	186.038	730.736	11.746	0.058	0.106	-10.653			
21371	14000	1:BEBAN MATI	0.664	-3.23E 3	-0.181	-0.863	0.002	-6.350			
		2:BEBAN HIDL	-1.749	-1.35E 3	-0.628	-0.109	0.002	-3.251			
		3:BEBAN GEM	696.929	-1.5E 3	-122.376	0.445	0.351	20.212			
		4:KOMBINASI	-2.001	-6.05E 3	-1.221	-1.209	0.005	-12.821			
		5:KOMB B. MA	731.390	-5.62E 3	-129.052	-0.460	0.372	12.922			
	14114	1:BEBAN MATI	-0.664	3.38E 3	0.181	0.863	-0.001	-9.879			
		2:BEBAN HIDL	1.749	1.35E 3	0.628	0.109	0.001	-3.381			
		3:BEBAN GEM	-696.929	1.5E 3	122.376	-0.445	0.249	-27.573			
		4:KOMBINASI	2.001	6.23E 3	1.221	1.209	0.001	-17.265			
		5:KOMB B. MA	-731.390	5.77E 3	129.052	0.460	0.261	-40.860			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 294	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21372	14001	1:BEBAN MATI	-13.604	-865.241	0.243	-0.375	-0.002	-4.527			
		2:BEBAN HIDL	-4.982	-501.859	0.103	-0.182	-0.001	-1.890			
		3:BEBAN GEM	-426.093	-866.181	-14.811	-2.492	0.118	0.348			
		4:KOMBINASI	-24.296	-1.84E 3	0.456	-0.742	-0.004	-8.456			
		5:KOMB B. MA	-463.991	-2.08E 3	-15.247	-3.101	0.121	-5.295			
12724		1:BEBAN MATI	13.604	1.41E 3	-0.243	0.375	-0.002	-15.518			
		2:BEBAN HIDL	4.982	501.859	-0.103	0.182	-0.001	-6.969			
		3:BEBAN GEM	426.093	866.181	14.811	2.492	0.143	-15.638			
		4:KOMBINASI	24.296	2.49E 3	-0.456	0.742	-0.004	-29.772			
		5:KOMB B. MA	463.991	2.62E 3	15.247	3.101	0.148	-36.119			
21373	14002	1:BEBAN MATI	-0.922	1.76E 3	1.084	-1.216	-0.007	-5.332			
		2:BEBAN HIDL	-1.179	245.652	0.297	-0.828	-0.002	-1.497			
		3:BEBAN GEM	-339.037	-547.940	-3.479	0.848	0.033	-6.744			
		4:KOMBINASI	-2.993	2.5E 3	1.777	-2.784	-0.012	-8.794			
		5:KOMB B. MA	-357.618	1.33E 3	-2.390	-0.822	0.026	-13.312			
	14004	1:BEBAN MATI	0.922	-408.458	-1.084	1.216	-0.006	18.085			
		2:BEBAN HIDL	1.179	-245.652	-0.297	0.828	-0.002	4.388			
		3:BEBAN GEM	339.037	547.940	3.479	-0.848	0.008	0.296			
		4:KOMBINASI	2.993	-883.192	-1.777	2.784	-0.009	28.722			
		5:KOMB B. MA	357.618	19.488	2.390	0.822	0.002	21.028			
21374	14004	1:BEBAN MATI	-0.339	-287.044	-0.698	1.832	0.004	-18.045			
		2:BEBAN HIDL	-1.131	-212.896	-0.197	1.094	0.001	-4.369			
		3:BEBAN GEM	-330.527	-542.593	0.224	-1.057	0.014	-0.170			
		4:KOMBINASI	-2.216	-685.087	-1.153	3.948	0.006	-28.645			
		5:KOMB B. MA	-348.071	-984.504	-0.581	1.379	0.020	-20.845			
	14006	1:BEBAN MATI	0.339	1.64E 3	0.698	-1.832	0.004	6.722			
		2:BEBAN HIDL	1.131	212.896	0.197	-1.094	0.001	1.864			
		3:BEBAN GEM	330.527	542.593	-0.224	1.057	-0.017	-6.215			
		4:KOMBINASI	2.216	2.31E 3	1.153	-3.948	0.007	11.048			
		5:KOMB B. MA	348.071	2.33E 3	0.581	-1.379	-0.013	1.314			
21375	14006	1:BEBAN MATI	13.876	-2.14E 3	-4.366	4.529	0.026	-5.245			
		2:BEBAN HIDL	2.475	-529.594	-1.230	2.615	0.007	-1.125			
		3:BEBAN GEM	-308.561	-654.840	10.671	-2.852	-0.048	5.830			
		4:KOMBINASI	20.611	-3.41E 3	-7.206	9.618	0.043	-8.094			
		5:KOMB B. MA	-308.629	-3.14E 3	6.101	3.103	-0.020	0.201			
	12721	1:BEBAN MATI	-13.876	3.49E 3	4.366	-4.529	0.025	-27.834			
		2:BEBAN HIDL	-2.475	529.594	1.230	-2.615	0.007	-5.108			
		3:BEBAN GEM	308.561	654.840	-10.671	2.852	-0.078	-13.536			
		4:KOMBINASI	-20.611	5.03E 3	7.206	-9.618	0.042	-41.573			
		5:KOMB B. MA	308.629	4.49E 3	-6.101	-3.103	-0.052	-45.111			
21376	14008	1:BEBAN MATI	75.276	3.36E 3	1.920	-1.120	-0.004	10.153			
		2:BEBAN HIDL	21.828	1.47E 3	0.915	-0.663	-0.002	4.973			
		3:BEBAN GEM	-265.229	-1.94E 3	117.764	-2.594	-0.054	-39.263			
		4:KOMBINASI	125.256	6.4E 3	3.768	-2.405	-0.007	20.141			
		5:KOMB B. MA	-190.118	2.21E 3	126.122	-4.242	-0.062	-28.090			
	13773	1:BEBAN MATI	-75.276	-3.29E 3	-1.920	1.120	-0.001	-1.996			
		2:BEBAN HIDL	-21.828	-1.47E 3	-0.915	0.663	-0.001	-1.359			
		3:BEBAN GEM	265.229	1.94E 3	-117.764	2.594	-0.235	34.508			



Software licensed to Snow Panther [LZ0]

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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-125.256	-6.31E 3	-3.768	2.405	-0.002	-4.569			
		5:KOMB B. MA	190.118	-2.14E 3	-126.122	4.242	-0.248	33.422			
21377	14012	1:BEBAN MATI	51.492	2.07E 3	1.683	-1.393	-0.004	-11.882			
		2:BEBAN HIDL	14.742	905.150	0.658	-0.639	-0.002	-4.880			
		3:BEBAN GEM	-63.820	-1.7E 3	33.132	-1.370	-0.040	-25.122			
		4:KOMBINASI	85.378	3.93E 3	3.071	-2.694	-0.007	-22.067			
		5:KOMB B. MA	-6.674	828.607	36.866	-3.215	-0.047	-41.188			
	13778	1:BEBAN MATI	-51.492	-1.92E 3	-1.683	1.393	-0.004	21.654			
		2:BEBAN HIDL	-14.742	-905.150	-0.658	0.639	-0.002	9.318			
		3:BEBAN GEM	63.820	1.7E 3	-33.132	1.370	-0.122	16.798			
		4:KOMBINASI	-85.378	-3.75E 3	-3.071	2.694	-0.008	40.894			
		5:KOMB B. MA	6.674	-678.444	-36.866	3.215	-0.134	44.883			
21378	14016	1:BEBAN MATI	38.043	1.04E 3	0.362	-1.023	-0.001	-25.957			
		2:BEBAN HIDL	10.635	437.080	0.137	-0.523	-0.001	-11.167			
		3:BEBAN GEM	126.226	-1.56E 3	10.215	-0.437	-0.016	-12.021			
		4:KOMBINASI	62.668	1.95E 3	0.654	-2.065	-0.003	-49.016			
		5:KOMB B. MA	176.962	-332.881	11.170	-1.796	-0.019	-45.280			
	13677	1:BEBAN MATI	-38.043	-814.118	-0.362	1.023	-0.001	32.774			
		2:BEBAN HIDL	-10.635	-437.080	-0.137	0.523	-0.000	14.382			
		3:BEBAN GEM	-126.226	1.56E 3	-10.215	0.437	-0.059	0.572			
		4:KOMBINASI	-62.668	-1.68E 3	-0.654	2.065	-0.002	62.339			
		5:KOMB B. MA	-176.962	558.127	-11.170	1.796	-0.063	42.003			
21379	14017	1:BEBAN MATI	1.983	737.963	0.077	0.115	-0.000	-2.822			
		2:BEBAN HIDL	-0.255	292.567	0.016	0.034	-0.000	-1.644			
		3:BEBAN GEM	130.909	-23.257	-0.245	-0.155	0.004	-0.633			
		4:KOMBINASI	1.972	1.35E 3	0.118	0.192	-0.001	-6.016			
		5:KOMB B. MA	139.284	889.083	-0.171	-0.028	0.003	-4.473			
	14018	1:BEBAN MATI	-1.983	-507.312	-0.077	-0.115	-0.001	10.149			
		2:BEBAN HIDL	0.255	-292.567	-0.016	-0.034	-0.000	5.087			
		3:BEBAN GEM	-130.909	23.257	0.245	0.155	-0.001	0.359			
		4:KOMBINASI	-1.972	-1.08E 3	-0.118	-0.192	-0.001	20.318			
		5:KOMB B. MA	-139.284	-658.432	0.171	0.028	-0.001	13.578			
21380	14018	1:BEBAN MATI	1.195	-224.303	0.119	-0.051	-0.001	-10.275			
		2:BEBAN HIDL	-0.440	-178.933	0.030	0.002	-0.000	-5.137			
		3:BEBAN GEM	128.799	-27.786	-1.144	0.121	0.011	-0.312			
		4:KOMBINASI	0.730	-555.456	0.191	-0.058	-0.001	-20.549			
		5:KOMB B. MA	136.170	-360.838	-1.064	0.078	0.011	-13.685			
	14019	1:BEBAN MATI	-1.195	454.954	-0.119	0.051	-0.001	6.278			
		2:BEBAN HIDL	0.440	178.933	-0.030	-0.002	-0.000	3.031			
		3:BEBAN GEM	-128.799	27.786	1.144	-0.121	0.003	-0.015			
		4:KOMBINASI	-0.730	832.237	-0.191	0.058	-0.001	12.384			
		5:KOMB B. MA	-136.170	591.489	1.064	-0.078	0.002	8.082			
21381	14019	1:BEBAN MATI	-2.567	-750.265	0.158	-0.107	-0.001	-4.532			
		2:BEBAN HIDL	-1.462	-423.293	0.040	-0.005	-0.000	-2.121			
		3:BEBAN GEM	120.383	22.351	-1.315	0.030	0.019	0.095			
		4:KOMBINASI	-5.420	-1.58E 3	0.254	-0.137	-0.002	-8.833			
		5:KOMB B. MA	122.958	-980.772	-1.199	-0.078	0.019	-5.706			
	13677	1:BEBAN MATI	2.567	980.917	-0.158	0.107	-0.001	-5.654			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 296	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	1.462	423.293	-0.040	0.005	-0.000	-2.860			
		3:BEBAN GEM	-120.383	-22.351	1.315	-0.030	-0.004	0.168			
		4:KOMBINASI	5.420	1.85E 3	-0.254	0.137	-0.001	-11.361			
		5:KOMB B. MA	-122.958	1.21E 3	1.199	0.078	-0.005	-7.193			
21382	14023	1:BEBAN MATI	36.957	-1.79E 3	1.802	2.537	-0.001	-22.664			
		2:BEBAN HIDL	10.112	-755.724	1.318	1.166	-0.001	-10.180			
		3:BEBAN GEM	232.197	-1.4E 3	-199.178	1.297	0.228	10.251			
		4:KOMBINASI	60.528	-3.36E 3	4.271	4.910	-0.003	-43.486			
		5:KOMB B. MA	286.832	-3.72E 3	-206.544	4.598	0.238	-18.009			
	13819	1:BEBAN MATI	-36.957	1.87E 3	-1.802	-2.537	-0.004	18.181			
		2:BEBAN HIDL	-10.112	755.724	-1.318	-1.166	-0.002	8.328			
		3:BEBAN GEM	-232.197	1.4E 3	199.178	-1.297	0.260	-13.691			
		4:KOMBINASI	-60.528	3.45E 3	-4.271	-4.910	-0.008	35.142			
		5:KOMB B. MA	-286.832	3.79E 3	206.544	-4.598	0.268	8.803			
21383	14027	1:BEBAN MATI	32.675	-2.78E 3	0.910	2.946	-0.002	-5.990			
		2:BEBAN HIDL	9.123	-1.22E 3	0.817	1.327	-0.002	-3.185			
		3:BEBAN GEM	526.820	-1.52E 3	-163.172	1.660	0.400	21.542			
		4:KOMBINASI	53.806	-5.28E 3	2.399	5.658	-0.006	-12.283			
		5:KOMB B. MA	591.309	-5.1E 3	-169.930	5.485	0.417	14.718			
	13823	1:BEBAN MATI	-32.675	2.93E 3	-0.910	-2.946	-0.002	-7.997			
		2:BEBAN HIDL	-9.123	1.22E 3	-0.817	-1.327	-0.002	-2.774			
		3:BEBAN GEM	-526.820	1.52E 3	163.172	-1.660	0.400	-28.992			
		4:KOMBINASI	-53.806	5.46E 3	-2.399	-5.658	-0.006	-14.036			
		5:KOMB B. MA	-591.309	5.25E 3	169.930	-5.485	0.416	-40.104			
21384	14031	1:BEBAN MATI	34.098	-3.83E 3	-1.449	2.464	0.004	17.963			
		2:BEBAN HIDL	9.737	-1.67E 3	0.040	1.067	-0.000	7.091			
		3:BEBAN GEM	946.672	-1.82E 3	-109.821	2.152	0.368	33.530			
		4:KOMBINASI	56.497	-7.27E 3	-1.675	4.664	0.004	32.902			
		5:KOMB B. MA	1.03E 3	-6.74E 3	-116.738	5.364	0.390	57.425			
	12748	1:BEBAN MATI	-34.098	4.06E 3	1.449	-2.464	0.007	-46.970			
		2:BEBAN HIDL	-9.737	1.67E 3	-0.040	-1.067	0.000	-19.368			
		3:BEBAN GEM	-946.672	1.82E 3	109.821	-2.152	0.439	-46.915			
		4:KOMBINASI	-56.497	7.54E 3	1.675	-4.664	0.009	-87.353			
		5:KOMB B. MA	-1.03E 3	6.97E 3	116.738	-5.364	0.468	-107.851			
21385	14032	1:BEBAN MATI	-2.669	1.23E 3	-0.219	0.320	0.002	-7.416			
		2:BEBAN HIDL	-3.536	488.897	-0.055	0.170	0.000	-3.609			
		3:BEBAN GEM	632.885	-516.773	-15.061	1.111	0.095	-6.144			
		4:KOMBINASI	-8.860	2.26E 3	-0.351	0.656	0.003	-14.674			
		5:KOMB B. MA	659.739	983.615	-16.066	1.589	0.102	-16.033			
	14033	1:BEBAN MATI	2.669	-872.496	0.219	-0.320	0.001	19.805			
		2:BEBAN HIDL	3.536	-488.897	0.055	-0.170	0.000	9.362			
		3:BEBAN GEM	-632.885	516.773	15.061	-1.111	0.082	0.062			
		4:KOMBINASI	8.860	-1.83E 3	0.351	-0.656	0.001	38.745			
		5:KOMB B. MA	-659.739	-623.222	16.066	-1.589	0.087	25.487			
21386	14033	1:BEBAN MATI	-0.924	-866.042	0.563	0.303	-0.003	-19.858			
		2:BEBAN HIDL	-3.578	-476.353	0.187	0.173	-0.001	-9.389			
		3:BEBAN GEM	962.515	-539.650	-6.024	-1.212	0.034	0.192			
		4:KOMBINASI	-6.834	-1.8E 3	0.974	0.640	-0.005	-38.853			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 297	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	1.01E 3	-1.72E 3	-5.650	-0.866	0.032	-25.291			
	14034	1:BEAN MATI	0.924	1.23E 3	-0.563	-0.303	-0.004	7.546			
		2:BEAN HIDL	3.578	476.353	-0.187	-0.173	-0.001	3.784			
		3:BEAN GEM	-962.515	539.650	6.024	1.212	0.037	-6.542			
		4:KOMBINASI	6.834	2.23E 3	-0.974	-0.640	-0.006	15.109			
		5:KOMB B. MA	-1.01E 3	2.08E 3	5.650	0.866	0.035	2.947			
21387	14034	1:BEAN MATI	3.611	-2.8E 3	1.707	0.253	-0.011	-6.350			
		2:BEAN HIDL	-3.963	-1.3E 3	0.552	0.144	-0.003	-3.109			
		3:BEAN GEM	1.55E 3	-645.151	7.089	-4.007	-0.057	6.660			
		4:KOMBINASI	-2.008	-5.45E 3	2.931	0.534	-0.018	-12.596			
		5:KOMB B. MA	1.63E 3	-4.26E 3	9.481	-3.868	-0.073	-1.223			
	12748	1:BEAN MATI	-3.611	3.16E 3	-1.707	-0.253	-0.009	-28.768			
		2:BEAN HIDL	3.963	1.3E 3	-0.552	-0.144	-0.003	-12.223			
		3:BEAN GEM	-1.55E 3	645.151	-7.089	4.007	-0.026	-14.252			
		4:KOMBINASI	2.008	5.88E 3	-2.931	-0.534	-0.016	-54.078			
		5:KOMB B. MA	-1.63E 3	4.62E 3	-9.481	3.868	-0.039	-51.066			
21388	14035	1:BEAN MATI	3.778	1.15E 3	0.132	0.312	-0.001	-5.914			
		2:BEAN HIDL	-0.937	450.302	0.072	0.167	-0.000	-2.914			
		3:BEAN GEM	-311.404	-534.827	-21.340	1.149	0.134	-6.142			
		4:KOMBINASI	3.034	2.1E 3	0.275	0.641	-0.002	-11.759			
		5:KOMB B. MA	-323.758	856.323	-22.232	1.618	0.140	-14.112			
	14037	1:BEAN MATI	-3.778	-787.318	-0.132	-0.312	-0.001	17.300			
		2:BEAN HIDL	0.937	-450.302	-0.072	-0.167	-0.000	8.213			
		3:BEAN GEM	311.404	534.827	21.340	-1.149	0.117	-0.152			
		4:KOMBINASI	-3.034	-1.67E 3	-0.275	-0.641	-0.001	33.901			
		5:KOMB B. MA	323.758	-495.930	22.232	-1.618	0.122	22.068			
21389	14037	1:BEAN MATI	8.497	-778.758	-0.023	-0.397	0.000	-17.324			
		2:BEAN HIDL	0.413	-429.102	0.016	-0.225	-0.000	-8.230			
		3:BEAN GEM	-324.344	-517.106	-14.590	-1.167	0.089	0.381			
		4:KOMBINASI	10.857	-1.62E 3	-0.002	-0.837	-0.000	-33.956			
		5:KOMB B. MA	-331.817	-1.58E 3	-15.333	-1.758	0.094	-21.862			
	14039	1:BEAN MATI	-8.497	1.14E 3	0.023	0.397	0.000	6.039			
		2:BEAN HIDL	-0.413	429.102	-0.016	0.225	-0.000	3.180			
		3:BEAN GEM	324.344	517.106	14.590	1.167	0.082	-6.466			
		4:KOMBINASI	-10.857	2.05E 3	0.002	0.837	0.000	12.335			
		5:KOMB B. MA	331.817	1.94E 3	15.333	1.758	0.087	1.158			
21390	14039	1:BEAN MATI	17.344	-2.56E 3	-0.238	-0.967	0.002	-4.978			
		2:BEAN HIDL	2.398	-1.19E 3	-0.051	-0.521	0.000	-2.598			
		3:BEAN GEM	-340.449	-588.695	-0.879	-4.050	0.000	6.551			
		4:KOMBINASI	24.650	-4.98E 3	-0.367	-1.994	0.002	-10.130			
		5:KOMB B. MA	-338.688	-3.89E 3	-1.191	-5.532	0.002	0.341			
	12722	1:BEAN MATI	-17.344	2.92E 3	0.238	0.967	0.001	-27.241			
		2:BEAN HIDL	-2.398	1.19E 3	0.051	0.521	0.000	-11.433			
		3:BEAN GEM	340.449	588.695	0.879	4.050	0.010	-13.478			
		4:KOMBINASI	-24.650	5.41E 3	0.367	1.994	0.002	-50.982			
		5:KOMB B. MA	338.688	4.25E 3	1.191	5.532	0.012	-48.253			
21391	14041	1:BEAN MATI	15.063	2.01E 3	0.234	-0.340	-0.001	-2.584			
		2:BEAN HIDL	3.369	715.432	0.021	-0.190	-0.000	-1.507			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-105.461	-2.2E 3	24.034	-0.673	-0.138	-23.586			
		4:KOMBINASI	23.466	3.56E 3	0.314	-0.713	-0.002	-5.513			
		5:KOMB B. MA	-93.650	134.464	25.482	-1.161	-0.146	-28.254			
	13673	1:BEBAN MATI	-15.063	-1.65E 3	-0.234	0.340	-0.001	24.166			
		2:BEBAN HIDL	-3.369	-715.432	-0.021	0.190	-0.000	9.926			
		3:BEBAN GEM	105.461	2.2E 3	-24.034	0.673	-0.145	-2.291			
		4:KOMBINASI	-23.466	-3.13E 3	-0.314	0.713	-0.002	44.882			
		5:KOMB B. MA	93.650	225.929	-25.482	1.161	-0.154	27.716			
21392	14042	1:BEBAN MATI	3.451	583.561	0.005	-0.130	-0.000	-2.149			
		2:BEBAN HIDL	0.212	214.448	0.017	-0.024	-0.000	-1.233			
		3:BEBAN GEM	-300.951	-77.155	-6.379	-0.249	0.036	-0.795			
		4:KOMBINASI	4.481	1.04E 3	0.034	-0.195	-0.000	-4.551			
		5:KOMB B. MA	-312.420	631.217	-6.682	-0.406	0.038	-3.724			
	14043	1:BEBAN MATI	-3.451	-352.909	-0.005	0.130	0.000	7.659			
		2:BEBAN HIDL	-0.212	-214.448	-0.017	0.024	-0.000	3.756			
		3:BEBAN GEM	300.951	77.155	6.379	0.249	0.039	-0.113			
		4:KOMBINASI	-4.481	-766.608	-0.034	0.195	0.000	15.201			
		5:KOMB B. MA	312.420	-400.565	6.682	0.406	0.041	9.795			
21393	14043	1:BEBAN MATI	1.086	-270.630	-0.029	0.103	0.000	-7.674			
		2:BEBAN HIDL	-0.401	-164.000	0.006	0.005	-0.000	-3.767			
		3:BEBAN GEM	-384.436	-71.306	-8.995	0.264	0.050	0.118			
		4:KOMBINASI	0.662	-587.156	-0.025	0.132	0.000	-15.236			
		5:KOMB B. MA	-402.812	-443.901	-9.470	0.383	0.052	-9.810			
	14044	1:BEBAN MATI	-1.086	501.282	0.029	-0.103	0.000	3.132			
		2:BEBAN HIDL	0.401	164.000	-0.006	-0.005	-0.000	1.837			
		3:BEBAN GEM	384.436	71.306	8.995	-0.264	0.056	-0.957			
		4:KOMBINASI	-0.662	863.938	0.025	-0.132	0.000	6.698			
		5:KOMB B. MA	402.812	674.553	9.470	-0.383	0.059	3.229			
21394	14044	1:BEBAN MATI	-1.796	-858.527	0.028	0.154	-0.000	-1.859			
		2:BEBAN HIDL	-1.020	-429.670	0.022	0.009	-0.000	-1.179			
		3:BEBAN GEM	-462.018	2.151	-13.179	0.136	0.075	0.967			
		4:KOMBINASI	-3.787	-1.72E 3	0.068	0.198	-0.000	-4.117			
		5:KOMB B. MA	-487.526	-1.11E 3	-13.797	0.302	0.078	-1.551			
	13673	1:BEBAN MATI	1.796	1.09E 3	-0.028	-0.154	-0.000	-9.601			
		2:BEBAN HIDL	1.020	429.670	-0.022	-0.009	-0.000	-3.878			
		3:BEBAN GEM	462.018	-2.151	13.179	-0.136	0.080	-0.942			
		4:KOMBINASI	3.787	1.99E 3	-0.068	-0.198	-0.001	-17.726			
		5:KOMB B. MA	487.526	1.34E 3	13.797	-0.302	0.084	-12.916			
21395	14048	1:BEBAN MATI	29.443	-2.76E 3	-1.161	0.875	0.009	-7.909			
		2:BEBAN HIDL	5.412	-1.17E 3	-0.353	0.661	0.003	-2.808			
		3:BEBAN GEM	348.963	-2.51E 3	1.129	1.453	0.044	30.042			
		4:KOMBINASI	43.990	-5.19E 3	-1.958	2.107	0.015	-13.985			
		5:KOMB B. MA	399.101	-6.1E 3	-0.187	2.797	0.057	21.949			
	12769	1:BEBAN MATI	-29.443	3.13E 3	1.161	-0.875	0.005	-26.745			
		2:BEBAN HIDL	-5.412	1.17E 3	0.353	-0.661	0.002	-10.951			
		3:BEBAN GEM	-348.963	2.51E 3	-1.129	-1.453	-0.058	-59.524			
		4:KOMBINASI	-43.990	5.62E 3	1.958	-2.107	0.008	-49.616			
		5:KOMB B. MA	-399.101	6.46E 3	0.187	-2.797	-0.055	-95.816			



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Job No 1	Sheet No 299	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21396	14049	1:BEBAN MATI	5.259	1.64E 3	-0.204	0.704	0.001	-4.966			
		2:BEBAN HIDL	0.505	194.733	-0.037	0.564	0.000	-1.323			
		3:BEBAN GEM	-549.112	-581.588	1.307	1.213	-0.006	-7.375			
		4:KOMBINASI	7.119	2.27E 3	-0.305	1.748	0.001	-8.076			
		5:KOMB B. MA	-571.005	1.14E 3	1.146	2.317	-0.005	-13.504			
	14050	1:BEBAN MATI	-5.259	-285.227	0.204	-0.704	0.001	16.268			
		2:BEBAN HIDL	-0.505	-194.733	0.037	-0.564	0.000	3.615			
		3:BEBAN GEM	549.112	581.588	-1.307	-1.213	-0.010	0.531			
		4:KOMBINASI	-7.119	-653.845	0.305	-1.748	0.002	25.306			
		5:KOMB B. MA	571.005	208.600	-1.146	-2.317	-0.009	18.995			
21397	14050	1:BEBAN MATI	11.647	-276.355	0.276	-0.906	-0.002	-16.260			
		2:BEBAN HIDL	2.622	-196.047	0.060	-0.666	-0.000	-3.610			
		3:BEBAN GEM	-656.712	-577.331	2.829	-0.817	-0.015	-0.442			
		4:KOMBINASI	18.172	-645.302	0.426	-2.152	-0.002	-25.288			
		5:KOMB B. MA	-676.327	-1E 3	3.282	-2.163	-0.018	-18.890			
	14051	1:BEBAN MATI	-11.647	1.63E 3	-0.276	0.906	-0.002	5.062			
		2:BEBAN HIDL	-2.622	196.047	-0.060	0.666	-0.000	1.303			
		3:BEBAN GEM	656.712	577.331	-2.829	0.817	-0.018	-6.352			
		4:KOMBINASI	-18.172	2.27E 3	-0.426	2.152	-0.003	8.160			
		5:KOMB B. MA	676.327	2.35E 3	-3.282	2.163	-0.021	-0.825			
21398	14051	1:BEBAN MATI	28.545	-2.11E 3	2.251	-2.491	-0.011	-4.032			
		2:BEBAN HIDL	7.166	-507.832	0.471	-1.653	-0.002	-0.772			
		3:BEBAN GEM	-739.488	-644.925	14.670	-3.620	-0.074	6.920			
		4:KOMBINASI	45.720	-3.35E 3	3.455	-5.635	-0.017	-6.073			
		5:KOMB B. MA	-743.618	-3.09E 3	17.938	-7.284	-0.090	2.771			
	12769	1:BEBAN MATI	-28.545	3.46E 3	-2.251	2.491	-0.015	-28.772			
		2:BEBAN HIDL	-7.166	507.832	-0.471	1.653	-0.003	-5.204			
		3:BEBAN GEM	739.488	644.925	-14.670	3.620	-0.099	-14.509			
		4:KOMBINASI	-45.720	4.97E 3	-3.455	5.635	-0.024	-42.854			
		5:KOMB B. MA	743.618	4.44E 3	-17.938	7.284	-0.121	-47.130			
21399	14055	1:BEBAN MATI	-11.964	1.88E 3	-0.171	-3.677	0.001	8.611			
		2:BEBAN HIDL	-4.280	637.262	-0.083	-1.804	0.001	3.094			
		3:BEBAN GEM	-73.483	-1.5E 3	11.404	-0.992	-0.048	-29.336			
		4:KOMBINASI	-21.205	3.28E 3	-0.338	-7.298	0.003	15.284			
		5:KOMB B. MA	-91.689	688.718	11.753	-5.801	-0.049	-20.335			
	14059	1:BEBAN MATI	11.964	-1.58E 3	0.171	3.677	0.000	8.371			
		2:BEBAN HIDL	4.280	-637.262	0.083	1.804	0.000	3.156			
		3:BEBAN GEM	73.483	1.5E 3	-11.404	0.992	-0.063	14.621			
		4:KOMBINASI	21.205	-2.92E 3	0.338	7.298	0.001	15.094			
		5:KOMB B. MA	91.689	-388.390	-11.753	5.801	-0.066	25.616			
21400	14059	1:BEBAN MATI	-4.650	1.02E 3	-0.225	-2.115	0.002	-9.238			
		2:BEBAN HIDL	-1.757	324.360	-0.079	-0.946	0.000	-3.505			
		3:BEBAN GEM	-392.327	-1.47E 3	8.498	-1.080	-0.030	-14.582			
		4:KOMBINASI	-8.390	1.74E 3	-0.397	-4.051	0.002	-16.694			
		5:KOMB B. MA	-417.647	-330.579	8.650	-3.816	-0.029	-26.652			
	13676	1:BEBAN MATI	4.650	-721.120	0.225	2.115	0.001	17.782			
		2:BEBAN HIDL	1.757	-324.360	0.079	0.946	0.000	6.686			
		3:BEBAN GEM	392.327	1.47E 3	-8.498	1.080	-0.054	0.137			



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Job No 1	Sheet No 300	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	8.390	-1.38E 3	0.397	4.051	0.001	32.036			
		5:KOMB B. MA	417.647	630.907	-8.650	3.816	-0.055	21.938			
21401	14060	1:BEBAN MATI	0.397	768.688	0.132	-0.049	-0.001	-3.541			
		2:BEBAN HIDL	-0.273	311.840	0.040	-0.001	-0.000	-2.041			
		3:BEBAN GEM	17.056	-47.537	-9.127	-0.162	0.054	-0.452			
		4:KOMBINASI	0.040	1.42E 3	0.222	-0.061	-0.001	-7.515			
		5:KOMB B. MA	18.142	905.879	-9.428	-0.220	0.056	-5.240			
	14061	1:BEBAN MATI	-0.397	-538.037	-0.132	0.049	-0.001	11.230			
		2:BEBAN HIDL	0.273	-311.840	-0.040	0.001	-0.000	5.711			
		3:BEBAN GEM	-17.056	47.537	9.127	0.162	0.053	-0.107			
		4:KOMBINASI	-0.040	-1.14E 3	-0.222	0.061	-0.001	22.613			
		5:KOMB B. MA	-18.142	-675.227	9.428	0.220	0.055	14.543			
21402	14061	1:BEBAN MATI	-0.397	-148.325	0.088	0.050	-0.000	-11.320			
		2:BEBAN HIDL	-0.332	-136.074	0.026	-0.001	-0.000	-5.750			
		3:BEBAN GEM	20.207	-50.820	-5.843	0.176	0.027	0.181			
		4:KOMBINASI	-1.007	-395.708	0.147	0.058	-0.001	-22.784			
		5:KOMB B. MA	20.622	-283.330	-6.032	0.234	0.027	-14.580			
	14062	1:BEBAN MATI	0.397	378.976	-0.088	-0.050	-0.001	8.217			
		2:BEBAN HIDL	0.332	136.074	-0.026	0.001	-0.000	4.149			
		3:BEBAN GEM	-20.207	50.820	5.843	-0.176	0.042	-0.779			
		4:KOMBINASI	1.007	672.490	-0.147	-0.058	-0.001	16.498			
		5:KOMB B. MA	-20.622	513.981	6.032	-0.234	0.044	9.889			
21403	14062	1:BEBAN MATI	-0.292	-716.977	0.121	0.080	-0.000	-6.777			
		2:BEBAN HIDL	-0.143	-401.735	0.036	-0.004	-0.000	-3.396			
		3:BEBAN GEM	26.679	-1.888	-6.771	0.205	0.022	0.860			
		4:KOMBINASI	-0.580	-1.5E 3	0.202	0.089	-0.001	-13.566			
		5:KOMB B. MA	27.634	-960.000	-6.967	0.292	0.023	-7.911			
	13676	1:BEBAN MATI	0.292	947.629	-0.121	-0.080	-0.001	-3.018			
		2:BEBAN HIDL	0.143	401.735	-0.036	0.004	-0.000	-1.331			
		3:BEBAN GEM	-26.679	1.888	6.771	-0.205	0.057	-0.882			
		4:KOMBINASI	0.580	1.78E 3	-0.202	-0.089	-0.002	-5.752			
		5:KOMB B. MA	-27.634	1.19E 3	6.967	-0.292	0.059	-4.743			
21404	14066	1:BEBAN MATI	8.191	-1.52E 3	-0.328	3.624	0.002	-9.054			
		2:BEBAN HIDL	1.758	-645.662	-0.072	1.859	0.000	-3.065			
		3:BEBAN GEM	-1.02E 3	-1.5E 3	11.370	0.521	-0.048	14.609			
		4:KOMBINASI	12.642	-2.86E 3	-0.509	7.324	0.003	-15.769			
		5:KOMB B. MA	-1.07E 3	-3.48E 3	11.567	5.287	-0.048	4.446			
	14070	1:BEBAN MATI	-8.191	1.82E 3	0.328	-3.624	0.001	-7.369			
		2:BEBAN HIDL	-1.758	645.662	0.072	-1.859	0.000	-3.267			
		3:BEBAN GEM	1.02E 3	1.5E 3	-11.370	-0.521	-0.063	-29.298			
		4:KOMBINASI	-12.642	3.22E 3	0.509	-7.324	0.002	-14.069			
		5:KOMB B. MA	1.07E 3	3.78E 3	-11.567	-5.287	-0.065	-40.091			
21405	14070	1:BEBAN MATI	20.601	-2.26E 3	-3.403	5.484	0.014	8.837			
		2:BEBAN HIDL	4.445	-854.257	-0.740	2.560	0.003	4.004			
		3:BEBAN GEM	-1.59E 3	-1.64E 3	116.598	1.813	-0.427	29.711			
		4:KOMBINASI	31.834	-4.07E 3	-5.268	10.677	0.022	17.010			
		5:KOMB B. MA	-1.65E 3	-4.49E 3	118.581	8.924	-0.433	42.436			
	12747	1:BEBAN MATI	-20.601	2.56E 3	3.403	-5.484	0.019	-32.440			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 301	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-4.445	854.257	0.740	-2.560	0.004	-12.381			
		3:BEBAN GEM	1.59E 3	1.64E 3	-116.598	-1.813	-0.716	-45.797			
		4:KOMBINASI	-31.834	4.44E 3	5.268	-10.677	0.030	-58.738			
		5:KOMB B. MA	1.65E 3	4.79E 3	-118.581	-8.924	-0.730	-87.955			
21406	14071	1:BEBAN MATI	11.514	2.08E 3	0.113	-0.339	-0.001	-8.732			
		2:BEBAN HIDL	1.134	480.762	0.033	-0.170	-0.000	-3.520			
		3:BEBAN GEM	-398.994	-516.695	-19.400	1.088	0.123	-6.260			
		4:KOMBINASI	15.632	3.27E 3	0.189	-0.679	-0.001	-16.110			
		5:KOMB B. MA	-406.749	1.83E 3	-20.237	0.701	0.128	-17.417			
	14072	1:BEBAN MATI	-11.514	-729.972	-0.113	0.339	-0.001	25.268			
		2:BEBAN HIDL	-1.134	-480.762	-0.033	0.170	-0.000	9.178			
		3:BEBAN GEM	398.994	516.695	19.400	-1.088	0.106	0.179			
		4:KOMBINASI	-15.632	-1.65E 3	-0.189	0.679	-0.001	45.006			
		5:KOMB B. MA	406.749	-475.900	20.237	-0.701	0.110	30.963			
21407	14072	1:BEBAN MATI	19.172	-726.291	0.035	-0.552	-0.000	-25.329			
		2:BEBAN HIDL	2.900	-477.363	-0.014	-0.262	0.000	-9.210			
		3:BEBAN GEM	-495.171	-512.463	-12.516	-1.113	0.077	0.044			
		4:KOMBINASI	27.645	-1.64E 3	0.019	-1.082	-0.000	-45.130			
		5:KOMB B. MA	-499.018	-1.55E 3	-13.116	-1.878	0.080	-30.808			
	14073	1:BEBAN MATI	-19.172	2.08E 3	-0.035	0.552	-0.000	8.836			
		2:BEBAN HIDL	-2.900	477.363	0.014	0.262	0.000	3.592			
		3:BEBAN GEM	495.171	512.463	12.516	1.113	0.070	-6.075			
		4:KOMBINASI	-27.645	3.26E 3	-0.019	1.082	0.000	16.351			
		5:KOMB B. MA	499.018	2.9E 3	13.116	1.878	0.074	4.613			
21408	14073	1:BEBAN MATI	34.349	-3.46E 3	-0.400	-0.654	0.002	-7.481			
		2:BEBAN HIDL	5.830	-1.31E 3	-0.196	-0.283	0.001	-2.975			
		3:BEBAN GEM	-726.645	-637.745	10.219	-3.802	-0.018	6.173			
		4:KOMBINASI	50.547	-6.25E 3	-0.794	-1.238	0.004	-13.738			
		5:KOMB B. MA	-725.130	-4.92E 3	10.212	-4.815	-0.017	-2.785			
	12747	1:BEBAN MATI	-34.349	4.81E 3	0.400	0.654	0.003	-41.198			
		2:BEBAN HIDL	-5.830	1.31E 3	0.196	0.283	0.001	-12.429			
		3:BEBAN GEM	726.645	637.745	-10.219	3.802	-0.102	-13.678			
		4:KOMBINASI	-50.547	7.87E 3	0.794	1.238	0.006	-69.324			
		5:KOMB B. MA	725.130	6.27E 3	-10.212	4.815	-0.103	-63.018			
21409	14077	1:BEBAN MATI	20.806	3.37E 3	-0.604	1.648	0.003	8.276			
		2:BEBAN HIDL	7.150	1.36E 3	0.751	0.315	-0.001	3.432			
		3:BEBAN GEM	-2.01E 3	-1.51E 3	36.617	-1.671	-0.118	-29.025			
		4:KOMBINASI	36.408	6.23E 3	0.476	2.482	0.001	15.423			
		5:KOMB B. MA	-2.09E 3	2.6E 3	38.294	0.083	-0.122	-20.141			
	13991	1:BEBAN MATI	-20.806	-3.22E 3	0.604	-1.648	0.000	7.896			
		2:BEBAN HIDL	-7.150	-1.36E 3	-0.751	-0.315	-0.002	3.240			
		3:BEBAN GEM	2.01E 3	1.51E 3	-36.617	1.671	-0.061	21.620			
		4:KOMBINASI	-36.408	-6.05E 3	-0.476	-2.482	-0.004	14.660			
		5:KOMB B. MA	2.09E 3	-2.45E 3	-38.294	-0.083	-0.065	32.541			
21410	14081	1:BEBAN MATI	14.270	1.79E 3	-0.431	0.567	0.002	-20.345			
		2:BEBAN HIDL	4.453	680.729	0.039	0.099	-0.000	-8.343			
		3:BEBAN GEM	-995.752	-1.38E 3	18.864	-0.636	-0.083	-14.029			
		4:KOMBINASI	24.248	3.24E 3	-0.455	0.839	0.002	-37.763			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 302	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.03E 3	746.881	19.400	-0.041	-0.085	-40.081			
	13675	1:BEBAN MATI	-14.270	-1.49E 3	0.431	-0.567	0.002	36.424			
		2:BEBAN HIDL	-4.453	-680.729	-0.039	-0.099	-0.000	15.019			
		3:BEBAN GEM	995.752	1.38E 3	-18.864	0.636	-0.102	0.474			
		4:KOMBINASI	-24.248	-2.88E 3	0.455	-0.839	0.002	67.739			
		5:KOMB B. MA	1.03E 3	-446.553	-19.400	0.041	-0.105	45.933			
21411	14082	1:BEBAN MATI	3.643	661.124	0.072	-0.018	-0.000	-2.436			
		2:BEBAN HIDL	0.135	265.372	0.030	-0.009	-0.000	-1.490			
		3:BEBAN GEM	-26.461	-40.227	-11.644	-0.162	0.069	-0.483			
		4:KOMBINASI	4.587	1.22E 3	0.134	-0.035	-0.001	-5.308			
		5:KOMB B. MA	-24.060	778.109	-12.136	-0.193	0.072	-3.838			
	14083	1:BEBAN MATI	-3.643	-430.472	-0.072	0.018	-0.000	8.859			
		2:BEBAN HIDL	-0.135	-265.372	-0.030	0.009	-0.000	4.613			
		3:BEBAN GEM	26.461	40.227	11.644	0.162	0.068	0.010			
		4:KOMBINASI	-4.587	-941.161	-0.134	0.035	-0.001	18.012			
		5:KOMB B. MA	24.060	-547.457	12.136	0.193	0.071	11.637			
21412	14083	1:BEBAN MATI	2.515	-341.018	0.107	-0.025	-0.001	-8.887			
		2:BEBAN HIDL	-0.385	-204.522	0.044	-0.014	-0.000	-4.632			
		3:BEBAN GEM	5.404	-42.109	-16.903	0.165	0.096	0.058			
		4:KOMBINASI	2.401	-736.456	0.198	-0.052	-0.001	-18.076			
		5:KOMB B. MA	7.958	-507.945	-17.615	0.140	0.100	-11.605			
	14084	1:BEBAN MATI	-2.515	571.670	-0.107	0.025	-0.001	3.517			
		2:BEBAN HIDL	0.385	204.522	-0.044	0.014	-0.000	2.225			
		3:BEBAN GEM	-5.404	42.109	16.903	-0.165	0.103	-0.554			
		4:KOMBINASI	-2.401	1.01E 3	-0.198	0.052	-0.001	7.780			
		5:KOMB B. MA	-7.958	738.597	17.615	-0.140	0.107	4.270			
21413	14084	1:BEBAN MATI	1.773	-1E 3	0.147	-0.031	-0.001	-1.989			
		2:BEBAN HIDL	-1.094	-500.021	0.064	-0.017	-0.000	-1.460			
		3:BEBAN GEM	36.201	3.258	-27.141	0.140	0.163	0.622			
		4:KOMBINASI	0.378	-2E 3	0.278	-0.064	-0.002	-4.723			
		5:KOMB B. MA	39.128	-1.3E 3	-28.314	0.106	0.170	-2.213			
	13675	1:BEBAN MATI	-1.773	1.23E 3	-0.147	0.031	-0.001	-11.136			
		2:BEBAN HIDL	1.094	500.021	-0.064	0.017	-0.000	-4.424			
		3:BEBAN GEM	-36.201	-3.258	27.141	-0.140	0.156	-0.583			
		4:KOMBINASI	-0.378	2.28E 3	-0.278	0.064	-0.001	-20.442			
		5:KOMB B. MA	-39.128	1.53E 3	28.314	-0.106	0.163	-14.403			
21414	14088	1:BEBAN MATI	16.272	-2.44E 3	-2.006	1.776	0.003	-18.397			
		2:BEBAN HIDL	5.070	-1.02E 3	0.320	1.021	-0.001	-7.541			
		3:BEBAN GEM	-1.05E 3	-1.44E 3	69.438	0.916	-0.163	14.202			
		4:KOMBINASI	27.639	-4.56E 3	-1.895	3.765	0.002	-34.142			
		5:KOMB B. MA	-1.08E 3	-4.56E 3	71.096	3.350	-0.169	-8.009			
	13994	1:BEBAN MATI	-16.272	2.59E 3	2.006	-1.776	0.007	6.077			
		2:BEBAN HIDL	-5.070	1.02E 3	-0.320	-1.021	-0.001	2.524			
		3:BEBAN GEM	1.05E 3	1.44E 3	-69.438	-0.916	-0.177	-21.269			
		4:KOMBINASI	-27.639	4.74E 3	1.895	-3.765	0.007	11.332			
		5:KOMB B. MA	1.08E 3	4.71E 3	-71.096	-3.350	-0.180	-14.740			
21415	14092	1:BEBAN MATI	11.989	-3.98E 3	-1.861	1.479	0.008	11.795			
		2:BEBAN HIDL	3.444	-1.64E 3	-0.283	0.895	0.001	4.993			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 303	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-207.616	-1.67E 3	42.696	1.748	-0.173	28.972			
		4:KOMBINASI	19.897	-7.39E 3	-2.686	3.207	0.012	22.143			
		5:KOMB B. MA	-203.941	-6.71E 3	42.800	3.852	-0.173	45.212			
	12746	1:BEBAN MATI	-11.989	4.28E 3	1.861	-1.479	0.010	-52.299			
		2:BEBAN HIDL	-3.444	1.64E 3	0.283	-0.895	0.002	-21.032			
		3:BEBAN GEM	207.616	1.67E 3	-42.696	-1.748	-0.245	-45.325			
		4:KOMBINASI	-19.897	7.75E 3	2.686	-3.207	0.015	-96.410			
		5:KOMB B. MA	203.941	7.01E 3	-42.800	-3.852	-0.247	-112.509			
21416	14093	1:BEBAN MATI	4.974	2.08E 3	0.160	0.020	-0.001	-7.822			
		2:BEBAN HIDL	-0.998	485.132	0.069	0.002	-0.000	-3.107			
		3:BEBAN GEM	-42.754	-522.251	-23.408	1.111	0.149	-6.338			
		4:KOMBINASI	4.371	3.28E 3	0.302	0.028	-0.002	-14.358			
		5:KOMB B. MA	-40.517	1.83E 3	-24.377	1.187	0.156	-16.340			
	14094	1:BEBAN MATI	-4.974	-733.735	-0.160	-0.020	-0.001	24.402			
		2:BEBAN HIDL	0.998	-485.132	-0.069	-0.002	-0.000	8.816			
		3:BEBAN GEM	42.754	522.251	23.408	-1.111	0.126	0.192			
		4:KOMBINASI	-4.371	-1.66E 3	-0.302	-0.028	-0.002	43.388			
		5:KOMB B. MA	40.517	-476.451	24.377	-1.187	0.131	29.893			
21417	14094	1:BEBAN MATI	10.094	-692.120	0.129	-0.010	-0.001	-24.432			
		2:BEBAN HIDL	0.236	-462.754	0.071	0.011	-0.000	-8.835			
		3:BEBAN GEM	-8.959	-521.331	-20.615	-1.082	0.124	0.033			
		4:KOMBINASI	12.490	-1.57E 3	0.269	0.006	-0.002	-43.455			
		5:KOMB B. MA	0.829	-1.52E 3	-21.473	-1.140	0.130	-29.698			
	14095	1:BEBAN MATI	-10.094	2.04E 3	-0.129	0.010	-0.001	8.341			
		2:BEBAN HIDL	-0.236	462.754	-0.071	-0.011	-0.000	3.390			
		3:BEBAN GEM	8.959	521.331	20.615	1.082	0.118	-6.168			
		4:KOMBINASI	-12.490	3.19E 3	-0.269	-0.006	-0.002	15.433			
		5:KOMB B. MA	-0.829	2.87E 3	21.473	1.140	0.123	3.898			
21418	14095	1:BEBAN MATI	20.185	-3.36E 3	0.119	-0.056	-0.001	-6.942			
		2:BEBAN HIDL	2.017	-1.28E 3	0.107	0.017	-0.001	-2.765			
		3:BEBAN GEM	3.141	-650.217	-20.226	-3.735	0.116	6.269			
		4:KOMBINASI	27.449	-6.08E 3	0.314	-0.040	-0.002	-12.754			
		5:KOMB B. MA	24.694	-4.81E 3	-21.054	-3.967	0.120	-2.019			
	12746	1:BEBAN MATI	-20.185	4.71E 3	-0.119	0.056	-0.001	-40.576			
		2:BEBAN HIDL	-2.017	1.28E 3	-0.107	-0.017	-0.001	-12.251			
		3:BEBAN GEM	-3.141	650.217	20.226	3.735	0.122	-13.920			
		4:KOMBINASI	-27.449	7.7E 3	-0.314	0.040	-0.002	-68.292			
		5:KOMB B. MA	-24.694	6.16E 3	21.054	3.967	0.127	-62.542			
21419	14099	1:BEBAN MATI	10.479	3.41E 3	0.242	1.232	0.001	10.130			
		2:BEBAN HIDL	3.164	1.4E 3	0.689	0.103	-0.001	4.598			
		3:BEBAN GEM	-1.04E 3	-1.51E 3	105.940	-1.793	-0.225	-28.744			
		4:KOMBINASI	17.638	6.34E 3	1.392	1.642	-0.001	19.513			
		5:KOMB B. MA	-1.08E 3	2.67E 3	111.892	-0.589	-0.237	-17.292			
	13997	1:BEBAN MATI	-10.479	-3.26E 3	-0.242	-1.232	-0.002	6.232			
		2:BEBAN HIDL	-3.164	-1.4E 3	-0.689	-0.103	-0.002	2.282			
		3:BEBAN GEM	1.04E 3	1.51E 3	-105.940	1.793	-0.294	21.347			
		4:KOMBINASI	-17.638	-6.16E 3	-1.392	-1.642	-0.006	11.130			
		5:KOMB B. MA	1.08E 3	-2.52E 3	-111.892	0.589	-0.312	30.016			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

304

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21420	14103	1:BEBAN MATI	9.303	1.87E 3	-0.202	0.523	0.001	-19.202			
		2:BEBAN HIDL	2.019	741.482	0.033	0.019	-0.000	-7.706			
		3:BEBAN GEM	-373.614	-1.35E 3	41.312	-0.595	-0.183	-14.008			
		4:KOMBINASI	14.393	3.43E 3	-0.190	0.658	0.001	-35.373			
		5:KOMB B. MA	-381.781	903.269	43.196	-0.090	-0.191	-38.534			
13674	13674	1:BEBAN MATI	-9.303	-1.57E 3	0.202	-0.523	0.001	36.105			
		2:BEBAN HIDL	-2.019	-741.482	-0.033	-0.019	-0.000	14.978			
		3:BEBAN GEM	373.614	1.35E 3	-41.312	0.595	-0.222	0.789			
		4:KOMBINASI	-14.393	-3.07E 3	0.190	-0.658	0.001	67.290			
		5:KOMB B. MA	381.781	-602.942	-43.196	0.090	-0.232	45.920			
21421	14104	1:BEBAN MATI	2.139	649.367	0.050	0.030	-0.000	-2.376			
		2:BEBAN HIDL	-0.118	266.511	0.030	-0.006	-0.000	-1.512			
		3:BEBAN GEM	-60.630	-39.209	-11.187	-0.168	0.066	-0.503			
		4:KOMBINASI	2.378	1.21E 3	0.107	0.027	-0.001	-5.271			
		5:KOMB B. MA	-61.594	768.104	-11.678	-0.150	0.069	-3.812			
	14105	14105	1:BEBAN MATI	-2.139	-418.715	-0.050	-0.030	-0.000	8.661		
			2:BEBAN HIDL	0.118	-266.511	-0.030	0.006	-0.000	4.649		
			3:BEBAN GEM	60.630	39.209	11.187	0.168	0.065	0.042		
			4:KOMBINASI	-2.378	-928.876	-0.107	-0.027	-0.001	17.831		
			5:KOMB B. MA	61.594	-537.453	11.678	0.150	0.068	11.494		
21422	14105	1:BEBAN MATI	1.463	-334.203	0.066	-0.043	-0.000	-8.681			
		2:BEBAN HIDL	-0.411	-207.129	0.039	0.008	-0.000	-4.664			
		3:BEBAN GEM	-87.478	-43.604	-14.143	0.165	0.079	0.028			
		4:KOMBINASI	1.098	-732.450	0.140	-0.039	-0.001	-17.879			
		5:KOMB B. MA	-90.635	-504.265	-14.762	0.135	0.083	-11.450			
	14106	14106	1:BEBAN MATI	-1.463	564.855	-0.066	0.043	-0.000	3.391		
			2:BEBAN HIDL	0.411	207.129	-0.039	-0.008	-0.000	2.227		
			3:BEBAN GEM	87.478	43.604	14.143	-0.165	0.087	-0.541		
			4:KOMBINASI	-1.098	1.01E 3	-0.140	0.039	-0.001	7.631		
			5:KOMB B. MA	90.635	734.917	14.762	-0.135	0.091	4.159		
21423	14106	1:BEBAN MATI	1.190	-988.194	0.090	-0.065	-0.001	-1.876			
		2:BEBAN HIDL	-0.766	-502.719	0.054	0.012	-0.000	-1.449			
		3:BEBAN GEM	-154.765	0.524	-20.125	0.137	0.118	0.612			
		4:KOMBINASI	0.203	-1.99E 3	0.195	-0.058	-0.001	-4.569			
		5:KOMB B. MA	-161.773	-1.29E 3	-21.009	0.087	0.123	-2.102			
	13674	13674	1:BEBAN MATI	-1.190	1.22E 3	-0.090	0.065	-0.001	-11.110		
			2:BEBAN HIDL	0.766	502.719	-0.054	-0.012	-0.000	-4.467		
			3:BEBAN GEM	154.765	-0.524	20.125	-0.137	0.119	-0.606		
			4:KOMBINASI	-0.203	2.27E 3	-0.195	0.058	-0.001	-20.480		
			5:KOMB B. MA	161.773	1.52E 3	21.009	-0.087	0.124	-14.427		
21424	14110	1:BEBAN MATI	10.447	-2.38E 3	-1.454	1.816	0.003	-18.857			
		2:BEBAN HIDL	2.552	-972.197	0.164	1.048	-0.001	-8.148			
		3:BEBAN GEM	-573.447	-1.41E 3	185.609	0.969	-0.411	13.511			
		4:KOMBINASI	16.620	-4.41E 3	-1.483	3.856	0.002	-35.665			
		5:KOMB B. MA	-590.141	-4.44E 3	193.533	3.463	-0.429	-9.559			
	14000	14000	1:BEBAN MATI	-10.447	2.53E 3	1.454	-1.816	0.005	6.828		
		2:BEBAN HIDL	-2.552	972.197	-0.164	-1.048	-0.000	3.381			
		3:BEBAN GEM	573.447	1.41E 3	-185.609	-0.969	-0.499	-20.434			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 305	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-16.620	4.59E 3	1.483	-3.856	0.005	13.604			
		5:KOMB B. MA	590.141	4.59E 3	-193.533	-3.463	-0.519	-12.598			
21425	14114	1:BEBAN MATI	6.294	-3.87E 3	-1.514	1.412	0.007	10.799			
		2:BEBAN HIDL	0.482	-1.61E 3	-0.279	0.959	0.001	3.862			
		3:BEBAN GEM	102.612	-1.65E 3	64.627	1.801	-0.294	27.986			
		4:KOMBINASI	8.323	-7.22E 3	-2.263	3.230	0.010	19.139			
		5:KOMB B. MA	114.326	-6.57E 3	66.177	3.879	-0.301	42.502			
	12722	1:BEBAN MATI	-6.294	4.17E 3	1.514	-1.412	0.008	-50.177			
		2:BEBAN HIDL	-0.482	1.61E 3	0.279	-0.959	0.002	-19.656			
		3:BEBAN GEM	-102.612	1.65E 3	-64.627	-1.801	-0.340	-44.211			
		4:KOMBINASI	-8.323	7.58E 3	2.263	-3.230	0.012	-91.662			
		5:KOMB B. MA	-114.326	6.87E 3	-66.177	-3.879	-0.348	-108.392			
21426	14116	1:BEBAN MATI	2.000	2.84E 3	-0.436	0.851	0.002	-3.392			
		2:BEBAN HIDL	0.767	690.789	-0.174	0.249	0.001	-1.266			
		3:BEBAN GEM	-359.068	-2.01E 3	25.993	-0.444	-0.151	-23.479			
		4:KOMBINASI	3.627	4.51E 3	-0.801	1.419	0.004	-6.096			
		5:KOMB B. MA	-374.561	1.14E 3	26.752	0.534	-0.155	-28.804			
	13678	1:BEBAN MATI	-2.000	-1.49E 3	0.436	-0.851	0.003	28.869			
		2:BEBAN HIDL	-0.767	-690.789	0.174	-0.249	0.001	9.395			
		3:BEBAN GEM	359.068	2.01E 3	-25.993	0.444	-0.155	-0.166			
		4:KOMBINASI	-3.627	-2.89E 3	0.801	-1.419	0.005	49.676			
		5:KOMB B. MA	374.561	205.447	-26.752	-0.534	-0.160	34.332			
21427	14117	1:BEBAN MATI	-2.296	-258.780	0.040	-0.053	-0.000	0.413			
		2:BEBAN HIDL	-0.978	-243.955	0.027	-0.030	-0.000	-0.410			
		3:BEBAN GEM	-550.257	-2.598	-9.989	-0.089	0.081	0.296			
		4:KOMBINASI	-4.320	-700.864	0.091	-0.111	-0.001	-0.161			
		5:KOMB B. MA	-580.652	-407.881	-10.433	-0.164	0.084	0.478			
	13678	1:BEBAN MATI	2.296	604.757	-0.040	0.053	-0.000	-8.034			
		2:BEBAN HIDL	0.978	243.955	-0.027	0.030	-0.000	-3.897			
		3:BEBAN GEM	550.257	2.598	9.989	0.089	0.096	-0.342			
		4:KOMBINASI	4.320	1.12E 3	-0.091	0.111	-0.001	-15.875			
		5:KOMB B. MA	580.652	753.858	10.433	0.164	0.100	-10.731			
21428	14119	1:BEBAN MATI	-6.484	-3.57E 3	-0.280	-1.141	0.000	-7.389			
		2:BEBAN HIDL	-1.603	-1.24E 3	-0.118	-0.227	0.000	-1.359			
		3:BEBAN GEM	-536.424	-2.27E 3	5.889	1.088	-0.075	24.151			
		4:KOMBINASI	-10.347	-6.27E 3	-0.525	-1.732	0.001	-11.042			
		5:KOMB B. MA	-570.691	-6.7E 3	5.832	-0.135	-0.078	17.154			
	12770	1:BEBAN MATI	6.484	4.92E 3	0.280	1.141	0.003	-42.610			
		2:BEBAN HIDL	1.603	1.24E 3	0.118	0.227	0.001	-13.200			
		3:BEBAN GEM	536.424	2.27E 3	-5.889	-1.088	0.006	-50.885			
		4:KOMBINASI	10.347	7.89E 3	0.525	1.732	0.006	-72.252			
		5:KOMB B. MA	570.691	8.05E 3	-5.832	0.135	0.010	-103.959			
21429	14120	1:BEBAN MATI	-34.962	-248.803	-0.648	-1.702	0.005	-2.190			
		2:BEBAN HIDL	-9.085	-228.352	-0.145	-1.006	0.001	0.675			
		3:BEBAN GEM	-2.32E 3	-1.09E 3	-49.789	-0.843	0.387	-0.241			
		4:KOMBINASI	-56.490	-663.928	-1.009	-3.652	0.008	-1.548			
		5:KOMB B. MA	-2.48E 3	-1.53E 3	-53.013	-3.191	0.413	-2.037			
	12770	1:BEBAN MATI	34.962	2.27E 3	0.648	1.702	0.006	-20.080			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 306	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	9.085	228.352	0.145	1.006	0.001	-4.706			
		3:BEBAN GEM	2.32E 3	1.09E 3	49.789	0.843	0.491	-19.073			
		4:KOMBINASI	56.490	3.09E 3	1.009	3.652	0.010	-31.625			
		5:KOMB B. MA	2.48E 3	3.56E 3	53.013	3.191	0.523	-42.930			
21430	14122	1:BEBAN MATI	9.876	645.972	-0.091	0.009	0.000	1.988			
		2:BEBAN HIDL	3.035	157.577	-0.037	0.007	0.000	0.269			
		3:BEBAN GEM	339.493	-164.759	13.371	0.171	-0.080	-2.303			
		4:KOMBINASI	16.708	1.03E 3	-0.168	0.022	0.001	2.816			
		5:KOMB B. MA	368.164	567.521	13.926	0.192	-0.084	-0.269			
	13728	1:BEBAN MATI	-9.876	-415.321	0.091	-0.009	0.001	4.256			
		2:BEBAN HIDL	-3.035	-157.577	0.037	-0.007	0.000	1.585			
		3:BEBAN GEM	-339.493	164.759	-13.371	-0.171	-0.077	0.364			
		4:KOMBINASI	-16.708	-750.509	0.168	-0.022	0.001	7.644			
		5:KOMB B. MA	-368.164	-336.870	-13.926	-0.192	-0.080	5.590			
21431	14124	1:BEBAN MATI	7.666	3.18E 3	0.062	-0.064	-0.000	-2.806			
		2:BEBAN HIDL	1.453	783.820	0.003	-0.024	-0.000	-0.947			
		3:BEBAN GEM	1.26E 3	-1.92E 3	28.276	-0.784	-0.175	-22.457			
		4:KOMBINASI	11.523	5.07E 3	0.079	-0.114	-0.001	-4.882			
		5:KOMB B. MA	1.33E 3	1.64E 3	29.753	-0.901	-0.184	-26.954			
	13682	1:BEBAN MATI	-7.666	-1.83E 3	-0.062	0.064	-0.000	32.318			
		2:BEBAN HIDL	-1.453	-783.820	-0.003	0.024	0.000	10.171			
		3:BEBAN GEM	-1.26E 3	1.92E 3	-28.276	0.784	-0.158	-0.093			
		4:KOMBINASI	-11.523	-3.45E 3	-0.079	0.114	-0.000	55.055			
		5:KOMB B. MA	-1.33E 3	-290.853	-29.753	0.901	-0.166	38.323			
21432	14125	1:BEBAN MATI	-5.061	425.071	0.109	-0.205	-0.001	-6.298			
		2:BEBAN HIDL	-1.664	100.948	0.044	-0.038	-0.000	-2.675			
		3:BEBAN GEM	-695.386	-70.989	-7.838	-0.583	0.054	-0.984			
		4:KOMBINASI	-8.736	671.602	0.200	-0.306	-0.001	-11.838			
		5:KOMB B. MA	-736.215	411.102	-8.095	-0.839	0.056	-8.937			
	13728	1:BEBAN MATI	5.061	-136.756	-0.109	0.205	-0.001	10.431			
		2:BEBAN HIDL	1.664	-100.948	-0.044	0.038	-0.000	4.160			
		3:BEBAN GEM	695.386	70.989	7.838	0.583	0.061	-0.060			
		4:KOMBINASI	8.736	-325.624	-0.200	0.306	-0.002	19.173			
		5:KOMB B. MA	736.215	-122.787	8.095	0.839	0.063	12.864			
21433	14126	1:BEBAN MATI	-3.815	-1.01E 3	0.033	0.166	-0.000	-1.626			
		2:BEBAN HIDL	-1.082	-503.215	0.014	0.002	-0.000	-1.015			
		3:BEBAN GEM	-846.103	36.611	-5.529	0.486	0.036	1.158			
		4:KOMBINASI	-6.309	-2.02E 3	0.063	0.203	-0.000	-3.575			
		5:KOMB B. MA	-892.872	-1.27E 3	-5.763	0.678	0.038	-1.019			
	13682	1:BEBAN MATI	3.815	1.3E 3	-0.033	-0.166	-0.000	-15.365			
		2:BEBAN HIDL	1.082	503.215	-0.014	-0.002	-0.000	-6.388			
		3:BEBAN GEM	846.103	-36.611	5.529	-0.486	0.045	-0.619			
		4:KOMBINASI	6.309	2.36E 3	-0.063	-0.203	-0.000	-28.659			
		5:KOMB B. MA	892.872	1.56E 3	5.763	-0.678	0.047	-19.848			
21434	14128	1:BEBAN MATI	11.234	-582.937	-0.107	0.116	0.001	-1.075			
		2:BEBAN HIDL	3.545	-356.043	-0.054	0.058	0.000	0.483			
		3:BEBAN GEM	281.249	3.330	17.322	-0.132	-0.107	2.604			
		4:KOMBINASI	19.153	-1.27E 3	-0.214	0.232	0.001	-0.517			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 307	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	308.672	-793.066	18.048	0.012	-0.111	1.949			
	13660	1:BEAN MATI	-11.234	813.589	0.107	-0.116	0.001	-7.142			
		2:BEAN HIDL	-3.545	356.043	0.054	-0.058	0.000	-4.673			
		3:BEAN GEM	-281.249	-3.330	-17.322	0.132	-0.097	-2.565			
		4:KOMBINASI	-19.153	1.55E 3	0.214	-0.232	0.001	-16.048			
		5:KOMB B. MA	-308.672	1.02E 3	-18.048	-0.012	-0.101	-12.639			
21435	14130	1:BEAN MATI	-6.626	-4.16E 3	-0.809	0.152	0.005	-5.891			
		2:BEAN HIDL	-3.516	-1.43E 3	-0.280	0.057	0.002	-0.149			
		3:BEAN GEM	1.32E 3	-2.35E 3	18.212	1.462	-0.111	22.892			
		4:KOMBINASI	-13.577	-7.29E 3	-1.418	0.273	0.008	-7.307			
		5:KOMB B. MA	1.38E 3	-7.49E 3	18.146	1.721	-0.111	18.057			
	12771	1:BEAN MATI	6.626	5.51E 3	0.809	-0.152	0.005	-51.057			
		2:BEAN HIDL	3.516	1.43E 3	0.280	-0.057	0.002	-16.687			
		3:BEAN GEM	-1.32E 3	2.35E 3	-18.212	-1.462	-0.103	-50.536			
		4:KOMBINASI	13.577	8.91E 3	1.418	-0.273	0.008	-87.967			
		5:KOMB B. MA	-1.38E 3	8.84E 3	-18.146	-1.721	-0.102	-114.131			
21436	14131	1:BEAN MATI	-2.500	2.74E 3	0.097	0.189	-0.001	-17.414			
		2:BEAN HIDL	-0.275	689.742	0.047	0.180	-0.000	-6.495			
		3:BEAN GEM	-1.52E 3	-336.389	-23.410	1.949	0.180	-5.265			
		4:KOMBINASI	-3.440	4.39E 3	0.190	0.516	-0.002	-31.289			
		5:KOMB B. MA	-1.6E 3	2.8E 3	-24.456	2.344	0.189	-26.840			
	13660	1:BEAN MATI	2.500	-1.05E 3	-0.097	-0.189	-0.001	45.321			
		2:BEAN HIDL	0.275	-689.742	-0.047	-0.180	-0.000	16.641			
		3:BEAN GEM	1.52E 3	336.389	23.410	-1.949	0.164	0.317			
		4:KOMBINASI	3.440	-2.37E 3	-0.190	-0.516	-0.001	81.010			
		5:KOMB B. MA	1.6E 3	-1.11E 3	24.456	-2.344	0.171	55.638			
21437	14132	1:BEAN MATI	7.151	-4.63E 3	-1.249	1.237	0.010	-9.957			
		2:BEAN HIDL	2.522	-1.77E 3	-0.442	0.879	0.004	-3.497			
		3:BEAN GEM	-1.28E 3	-548.038	-0.417	-4.537	-0.015	5.599			
		4:KOMBINASI	12.616	-8.39E 3	-2.206	2.891	0.018	-17.543			
		5:KOMB B. MA	-1.34E 3	-6.27E 3	-1.953	-2.999	-0.004	-6.175			
	12771	1:BEAN MATI	-7.151	6.32E 3	1.249	-1.237	0.008	-70.524			
		2:BEAN HIDL	-2.522	1.77E 3	0.442	-0.879	0.003	-22.573			
		3:BEAN GEM	1.28E 3	548.038	0.417	4.537	0.021	-13.661			
		4:KOMBINASI	-12.616	10.4E 3	2.206	-2.891	0.015	-120.746			
		5:KOMB B. MA	1.34E 3	7.95E 3	1.953	2.999	0.032	-98.412			
21438	14134	1:BEAN MATI	12.004	606.315	0.000	0.000	-0.000	2.138			
		2:BEAN HIDL	3.605	143.950	0.000	0.000	-0.000	0.338			
		3:BEAN GEM	1.18E 3	-166.419	-2.905	0.176	0.017	-2.282			
		4:KOMBINASI	20.174	957.898	0.000	0.000	-0.000	3.106			
		5:KOMB B. MA	1.25E 3	517.946	-3.050	0.185	0.018	-0.056			
	13727	1:BEAN MATI	-12.004	-375.664	-0.000	-0.000	-0.000	3.640			
		2:BEAN HIDL	-3.605	-143.950	-0.000	-0.000	-0.000	1.356			
		3:BEAN GEM	-1.18E 3	166.419	2.905	-0.176	0.017	0.324			
		4:KOMBINASI	-20.174	-681.116	-0.000	-0.000	-0.000	6.538			
		5:KOMB B. MA	-1.25E 3	-287.294	3.050	-0.185	0.018	4.794			
21439	14136	1:BEAN MATI	7.666	3.18E 3	-0.062	0.064	0.000	-2.806			
		2:BEAN HIDL	1.453	783.819	-0.003	0.024	0.000	-0.947			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

308

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.31E 3	-1.91E 3	-38.678	-0.787	0.233	-22.397			
		4:KOMBINASI	11.523	5.07E 3	-0.079	0.114	0.001	-4.882			
		5:KOMB B. MA	1.38E 3	1.65E 3	-40.675	-0.749	0.245	-26.891			
	13687	1:BEBAN MATI	-7.666	-1.83E 3	0.062	-0.064	0.000	32.318			
		2:BEBAN HIDL	-1.453	-783.819	0.003	-0.024	-0.000	10.171			
		3:BEBAN GEM	-1.31E 3	1.91E 3	38.678	0.787	0.222	-0.050			
		4:KOMBINASI	-11.523	-3.45E 3	0.079	-0.114	0.000	55.055			
		5:KOMB B. MA	-1.38E 3	-300.083	40.675	0.749	0.233	38.368			
21440	14137	1:BEBAN MATI	-6.794	561.265	0.021	-0.146	-0.000	-2.882			
		2:BEBAN HIDL	-2.142	147.073	0.008	-0.009	-0.000	-1.521			
		3:BEBAN GEM	-939.097	-66.683	-1.892	-0.579	0.004	-1.023			
		4:KOMBINASI	-11.580	908.835	0.038	-0.190	-0.000	-5.892			
		5:KOMB B. MA	-994.131	579.492	-1.961	-0.759	0.004	-4.869			
	13727	1:BEBAN MATI	6.794	-272.951	-0.021	0.146	-0.000	9.018			
		2:BEBAN HIDL	2.142	-147.073	-0.008	0.009	-0.000	3.684			
		3:BEBAN GEM	939.097	66.683	1.892	0.579	0.024	0.042			
		4:KOMBINASI	11.580	-562.858	-0.038	0.190	-0.000	16.716			
		5:KOMB B. MA	994.131	-291.178	1.961	0.759	0.025	11.272			
21441	14138	1:BEBAN MATI	-4.632	-969.257	-0.054	0.171	0.000	-1.115			
		2:BEBAN HIDL	-1.355	-488.893	-0.020	0.005	0.000	-0.843			
		3:BEBAN GEM	-894.751	34.136	6.931	0.487	-0.052	1.111			
		4:KOMBINASI	-7.726	-1.95E 3	-0.096	0.214	0.001	-2.686			
		5:KOMB B. MA	-944.933	-1.23E 3	7.212	0.686	-0.054	-0.453			
	13687	1:BEBAN MATI	4.632	1.26E 3	0.054	-0.171	0.000	-15.263			
		2:BEBAN HIDL	1.355	488.893	0.020	-0.005	0.000	-6.349			
		3:BEBAN GEM	894.751	-34.136	-6.931	-0.487	-0.050	-0.609			
		4:KOMBINASI	7.726	2.29E 3	0.096	-0.214	0.001	-28.475			
		5:KOMB B. MA	944.933	1.52E 3	-7.212	-0.686	-0.052	-19.713			
21442	14140	1:BEBAN MATI	13.705	-545.790	0.000	-0.000	-0.000	-0.931			
		2:BEBAN HIDL	4.373	-341.214	0.000	-0.000	-0.000	0.548			
		3:BEBAN GEM	717.138	6.818	-1.826	-0.132	0.010	2.560			
		4:KOMBINASI	23.442	-1.2E 3	0.000	-0.000	-0.000	-0.241			
		5:KOMB B. MA	769.323	-743.359	-1.917	-0.139	0.010	2.085			
	13718	1:BEBAN MATI	-13.705	776.442	-0.000	0.000	-0.000	-6.849			
		2:BEBAN HIDL	-4.373	341.214	-0.000	0.000	-0.000	-4.563			
		3:BEBAN GEM	-717.138	-6.818	1.826	0.132	0.012	-2.479			
		4:KOMBINASI	-23.442	1.48E 3	-0.000	0.000	-0.000	-15.519			
		5:KOMB B. MA	-769.323	974.011	1.917	0.139	0.013	-12.190			
21443	14142	1:BEBAN MATI	-6.626	-4.16E 3	0.809	-0.152	-0.005	-5.891			
		2:BEBAN HIDL	-3.516	-1.43E 3	0.280	-0.057	-0.002	-0.149			
		3:BEBAN GEM	1.35E 3	-2.34E 3	-35.427	1.460	0.210	22.801			
		4:KOMBINASI	-13.577	-7.29E 3	1.418	-0.273	-0.008	-7.307			
		5:KOMB B. MA	1.41E 3	-7.48E 3	-36.222	1.347	0.214	17.961			
	12772	1:BEBAN MATI	6.626	5.51E 3	-0.809	0.152	-0.005	-51.057			
		2:BEBAN HIDL	3.516	1.43E 3	-0.280	0.057	-0.002	-16.687			
		3:BEBAN GEM	-1.35E 3	2.34E 3	35.427	-1.460	0.207	-50.396			
		4:KOMBINASI	13.577	8.91E 3	-1.418	0.273	-0.008	-87.967			
		5:KOMB B. MA	-1.41E 3	8.83E 3	36.222	-1.347	0.212	-113.984			



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Job No 1	Sheet No 309	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21444	14143	1:BEBAN MATI	-11.148	2.86E 3	0.190	0.452	-0.002	-10.656			
		2:BEBAN HIDL	-3.510	731.192	0.078	0.366	-0.001	-3.940			
		3:BEBAN GEM	-1.44E 3	-352.611	-14.584	1.886	0.103	-5.710			
		4:KOMBINASI	-18.994	4.61E 3	0.353	1.127	-0.003	-19.091			
		5:KOMB B. MA	-1.52E 3	2.93E 3	-15.076	2.651	0.106	-19.015			
13718	14143	1:BEBAN MATI	11.148	-1.18E 3	-0.190	-0.452	-0.001	40.380			
		2:BEBAN HIDL	3.510	-731.192	-0.078	-0.366	-0.000	14.696			
		3:BEBAN GEM	1.44E 3	352.611	14.584	-1.886	0.112	0.523			
		4:KOMBINASI	18.994	-2.58E 3	-0.353	-1.127	-0.002	71.969			
		5:KOMB B. MA	1.52E 3	-1.25E 3	15.076	-2.651	0.116	49.747			
21445	14144	1:BEBAN MATI	-17.231	-4.4E 3	-1.321	1.314	0.010	-8.478			
		2:BEBAN HIDL	-5.442	-1.68E 3	-0.485	0.905	0.004	-2.912			
		3:BEBAN GEM	-1.32E 3	-553.668	27.182	-4.533	-0.214	5.493			
		4:KOMBINASI	-29.384	-7.97E 3	-2.361	3.025	0.019	-14.833			
		5:KOMB B. MA	-1.41E 3	-5.99E 3	26.930	-2.902	-0.212	-4.458			
12772	14144	1:BEBAN MATI	17.231	6.08E 3	1.321	-1.314	0.009	-68.609			
		2:BEBAN HIDL	5.442	1.68E 3	0.485	-0.905	0.003	-21.831			
		3:BEBAN GEM	1.32E 3	553.668	-27.182	4.533	-0.186	-13.637			
		4:KOMBINASI	29.384	9.99E 3	2.361	-3.025	0.016	-117.261			
		5:KOMB B. MA	1.41E 3	7.68E 3	-26.930	2.902	-0.185	-96.027			
21446	14145	1:BEBAN MATI	54.950	-2.06E 3	2.267	-8.022	-0.018	-5.420			
		2:BEBAN HIDL	17.747	-897.085	0.697	-4.264	-0.005	-2.796			
		3:BEBAN GEM	221.951	-1.76E 3	15.342	0.809	-0.077	26.968			
		4:KOMBINASI	94.335	-3.91E 3	3.836	-16.449	-0.031	-10.977			
		5:KOMB B. MA	298.647	-4.44E 3	18.795	-9.731	-0.103	21.219			
12777	14145	1:BEBAN MATI	-54.950	2.51E 3	-2.267	8.022	-0.015	-28.181			
		2:BEBAN HIDL	-17.747	897.085	-0.697	4.264	-0.005	-10.401			
		3:BEBAN GEM	-221.951	1.76E 3	-15.342	-0.809	-0.148	-52.831			
		4:KOMBINASI	-94.335	4.45E 3	-3.836	16.449	-0.026	-50.458			
		5:KOMB B. MA	-298.647	4.89E 3	-18.795	9.731	-0.174	-89.894			
21447	14147	1:BEBAN MATI	48.878	990.697	-0.172	3.405	0.002	-9.591			
		2:BEBAN HIDL	13.078	325.111	-0.038	1.908	0.000	-4.286			
		3:BEBAN GEM	-267.137	-489.294	13.994	1.181	-0.092	-8.123			
		4:KOMBINASI	79.579	1.71E 3	-0.267	7.139	0.003	-18.367			
		5:KOMB B. MA	-223.769	672.005	14.499	5.789	-0.095	-20.691			
14153	14153	1:BEBAN MATI	-48.878	-540.206	0.172	-3.405	0.001	20.851			
		2:BEBAN HIDL	-13.078	-325.111	0.038	-1.908	0.000	9.068			
		3:BEBAN GEM	267.137	489.294	-13.994	-1.181	-0.114	0.925			
		4:KOMBINASI	-79.579	-1.17E 3	0.267	-7.139	0.001	39.530			
		5:KOMB B. MA	223.769	-221.514	-14.499	-5.789	-0.118	27.263			
21448	14148	1:BEBAN MATI	31.356	-609.495	0.721	-3.496	-0.005	-20.276			
		2:BEBAN HIDL	10.616	-333.413	0.217	-1.790	-0.002	-9.089			
		3:BEBAN GEM	-15.260	-1.63E 3	11.183	1.166	-0.063	3.095			
		4:KOMBINASI	54.612	-1.26E 3	1.212	-7.060	-0.009	-38.873			
		5:KOMB B. MA	21.703	-2.52E 3	12.592	-3.346	-0.073	-22.480			
14145	14145	1:BEBAN MATI	-31.356	1.06E 3	-0.721	3.496	-0.005	7.997			
		2:BEBAN HIDL	-10.616	333.413	-0.217	1.790	-0.002	4.184			
		3:BEBAN GEM	15.260	1.63E 3	-11.183	-1.166	-0.101	-27.033			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 310	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-54.612	1.81E 3	-1.212	7.060	-0.009	16.291			
		5:KOMB B. MA	-21.703	2.97E 3	-12.592	3.346	-0.113	-17.877			
21449	14150	1:BEBAN MATI	26.048	1.14E 3	0.271	2.570	-0.002	-6.783			
		2:BEBAN HIDL	9.414	424.620	0.078	1.680	-0.001	-2.804			
		3:BEBAN GEM	-486.820	-1.63E 3	22.254	0.588	-0.172	-21.146			
		4:KOMBINASI	46.319	2.05E 3	0.451	5.771	-0.004	-12.625			
		5:KOMB B. MA	-479.465	-319.932	23.685	4.195	-0.184	-30.669			
	14148	1:BEBAN MATI	-26.048	-691.276	-0.271	-2.570	-0.002	20.265			
		2:BEBAN HIDL	-9.414	-424.620	-0.078	-1.680	-0.001	9.050			
		3:BEBAN GEM	486.820	1.63E 3	-22.254	-0.588	-0.155	-2.901			
		4:KOMBINASI	-46.319	-1.51E 3	-0.451	-5.771	-0.003	38.798			
		5:KOMB B. MA	479.465	770.424	-23.685	-4.195	-0.165	22.649			
21450	14153	1:BEBAN MATI	42.327	-760.215	0.785	-2.655	-0.005	-20.823			
		2:BEBAN HIDL	11.923	-427.277	0.283	-1.501	-0.002	-9.056			
		3:BEBAN GEM	-469.895	-475.971	14.541	-0.758	-0.106	-0.859			
		4:KOMBINASI	69.870	-1.6E 3	1.394	-5.587	-0.009	-39.477			
		5:KOMB B. MA	-443.908	-1.52E 3	16.223	-4.351	-0.118	-27.158			
	14157	1:BEBAN MATI	-42.327	1.21E 3	-0.785	2.655	-0.007	6.327			
		2:BEBAN HIDL	-11.923	427.277	-0.283	1.501	-0.002	2.771			
		3:BEBAN GEM	469.895	475.971	-14.541	0.758	-0.108	-6.143			
		4:KOMBINASI	-69.870	2.14E 3	-1.394	5.587	-0.012	12.025			
		5:KOMB B. MA	443.908	1.97E 3	-16.223	4.351	-0.121	1.539			
21451	14157	1:BEBAN MATI	59.150	-2.02E 3	3.984	-6.692	-0.029	-3.687			
		2:BEBAN HIDL	18.375	-886.208	1.416	-3.617	-0.010	-1.315			
		3:BEBAN GEM	-672.251	-500.833	14.094	-3.426	-0.111	6.818			
		4:KOMBINASI	100.380	-3.84E 3	7.046	-13.817	-0.051	-6.528			
		5:KOMB B. MA	-635.689	-3.08E 3	19.633	-12.459	-0.152	2.683			
	12778	1:BEBAN MATI	-59.150	2.47E 3	-3.984	6.692	-0.030	-29.356			
		2:BEBAN HIDL	-18.375	886.208	-1.416	3.617	-0.011	-11.721			
		3:BEBAN GEM	672.251	500.833	-14.094	3.426	-0.096	-14.185			
		4:KOMBINASI	-100.380	4.38E 3	-7.046	13.817	-0.053	-53.981			
		5:KOMB B. MA	635.689	3.53E 3	-19.633	12.459	-0.137	-51.283			
21452	14160	1:BEBAN MATI	93.439	-4.18E 3	-0.222	0.125	0.003	-14.135			
		2:BEBAN HIDL	33.459	-2.07E 3	-0.067	0.057	0.001	-7.633			
		3:BEBAN GEM	316.497	-1.76E 3	11.917	1.221	-0.069	25.271			
		4:KOMBINASI	165.661	-8.33E 3	-0.374	0.241	0.005	-29.176			
		5:KOMB B. MA	445.836	-7.27E 3	12.251	1.441	-0.069	7.819			
	12778	1:BEBAN MATI	-93.439	4.63E 3	0.222	-0.125	0.000	-50.706			
		2:BEBAN HIDL	-33.459	2.07E 3	0.067	-0.057	0.000	-22.833			
		3:BEBAN GEM	-316.497	1.76E 3	-11.917	-1.221	-0.106	-51.141			
		4:KOMBINASI	-165.661	8.87E 3	0.374	-0.241	0.001	-97.381			
		5:KOMB B. MA	-445.836	7.72E 3	-12.251	-1.441	-0.111	-118.104			
21453	14161	1:BEBAN MATI	58.215	-1.33E 3	-0.002	0.071	-0.000	-38.758			
		2:BEBAN HIDL	20.613	-732.594	-0.003	0.029	-0.000	-19.428			
		3:BEBAN GEM	373.623	-1.46E 3	12.940	0.327	-0.090	3.424			
		4:KOMBINASI	102.840	-2.77E 3	-0.006	0.132	-0.000	-77.594			
		5:KOMB B. MA	462.888	-3.3E 3	13.584	0.432	-0.094	-46.819			
	14160	1:BEBAN MATI	-58.215	1.78E 3	0.002	-0.071	0.000	15.912			



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Job No 1	Sheet No 311	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-20.613	732.594	0.003	-0.029	0.000	8.652			
		3:BEBAN GEM	-373.623	1.46E 3	-12.940	-0.327	-0.101	-24.885			
		4:KOMBINASI	-102.840	3.31E 3	0.006	-0.132	0.000	32.938			
		5:KOMB B. MA	-462.888	3.75E 3	-13.584	-0.432	-0.105	-5.026			
21454	14162	1:BEBAN MATI	50.016	1.87E 3	0.250	-0.024	-0.002	-14.374			
		2:BEBAN HIDL	17.402	854.496	0.072	-0.018	-0.001	-6.750			
		3:BEBAN GEM	460.753	-1.48E 3	14.324	-0.312	-0.106	-19.069			
		4:KOMBINASI	87.861	3.61E 3	0.415	-0.058	-0.003	-28.049			
		5:KOMB B. MA	544.247	826.816	15.333	-0.363	-0.114	-38.446			
	14161	1:BEBAN MATI	-50.016	-1.41E 3	-0.250	0.024	-0.002	38.502			
		2:BEBAN HIDL	-17.402	-854.496	-0.072	0.018	-0.000	19.320			
		3:BEBAN GEM	-460.753	1.48E 3	-14.324	0.312	-0.105	-2.665			
		4:KOMBINASI	-87.861	-3.07E 3	-0.415	0.058	-0.003	77.114			
		5:KOMB B. MA	-544.247	-376.324	-15.333	0.363	-0.112	47.295			
21455	14164	1:BEBAN MATI	3.221	1.07E 3	-0.571	2.816	0.005	-5.258			
		2:BEBAN HIDL	0.868	362.423	-0.205	1.596	0.002	-2.351			
		3:BEBAN GEM	-1.18E 3	-431.720	1.708	1.141	-0.030	-6.552			
		4:KOMBINASI	5.254	1.87E 3	-1.013	5.933	0.008	-10.071			
		5:KOMB B. MA	-1.24E 3	838.030	1.100	4.971	-0.026	-13.548			
	13667	1:BEBAN MATI	-3.221	-623.391	0.571	-2.816	0.004	17.742			
		2:BEBAN HIDL	-0.868	-362.423	0.205	-1.596	0.001	7.682			
		3:BEBAN GEM	1.18E 3	431.720	-1.708	-1.141	0.005	0.201			
		4:KOMBINASI	-5.254	-1.33E 3	1.013	-5.933	0.007	33.581			
		5:KOMB B. MA	1.24E 3	-387.539	-1.100	-4.971	0.010	22.562			
21456	14171	1:BEBAN MATI	15.611	-1.87E 3	3.278	-6.693	-0.025	-2.625			
		2:BEBAN HIDL	5.417	-814.635	1.184	-3.630	-0.009	-0.893			
		3:BEBAN GEM	-926.430	-446.189	1.838	-3.450	-0.020	6.727			
		4:KOMBINASI	27.400	-3.55E 3	5.828	-13.839	-0.045	-4.579			
		5:KOMB B. MA	-953.891	-2.83E 3	5.918	-12.493	-0.051	3.903			
	12779	1:BEBAN MATI	-15.611	2.32E 3	-3.278	6.693	-0.023	-28.213			
		2:BEBAN HIDL	-5.417	814.635	-1.184	3.630	-0.008	-11.090			
		3:BEBAN GEM	926.430	446.189	-1.838	3.450	-0.007	-13.290			
		4:KOMBINASI	-27.400	4.09E 3	-5.828	13.839	-0.041	-51.599			
		5:KOMB B. MA	953.891	3.28E 3	-5.918	12.493	-0.036	-48.821			
21457	14174	1:BEBAN MATI	93.439	-4.18E 3	0.222	-0.125	-0.003	-14.135			
		2:BEBAN HIDL	33.459	-2.07E 3	0.067	-0.057	-0.001	-7.633			
		3:BEBAN GEM	318.236	-1.75E 3	-17.283	1.231	0.119	25.265			
		4:KOMBINASI	165.661	-8.33E 3	0.374	-0.241	-0.005	-29.176			
		5:KOMB B. MA	447.662	-7.26E 3	-17.885	1.134	0.121	7.813			
	12779	1:BEBAN MATI	-93.439	4.63E 3	-0.222	0.125	-0.000	-50.706			
		2:BEBAN HIDL	-33.459	2.07E 3	-0.067	0.057	-0.000	-22.833			
		3:BEBAN GEM	-318.236	1.75E 3	17.283	-1.231	0.135	-50.945			
		4:KOMBINASI	-165.661	8.87E 3	-0.374	0.241	-0.001	-97.381			
		5:KOMB B. MA	-447.662	7.71E 3	17.885	-1.134	0.142	-117.899			
21458	14175	1:BEBAN MATI	58.215	-1.33E 3	0.002	-0.071	0.000	-38.758			
		2:BEBAN HIDL	20.613	-732.594	0.003	-0.029	0.000	-19.428			
		3:BEBAN GEM	382.454	-1.46E 3	-16.167	0.334	0.111	3.469			
		4:KOMBINASI	102.839	-2.77E 3	0.006	-0.132	0.000	-77.594			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

312

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	472.160	-3.3E 3	-16.972	0.262	0.117	-46.772			
	14174	1:BEBAN MATI	-58.215	1.78E 3	-0.002	0.071	-0.000	15.912			
		2:BEBAN HIDL	-20.613	732.594	-0.003	0.029	-0.000	8.652			
		3:BEBAN GEM	-382.454	1.46E 3	16.167	-0.334	0.126	-24.876			
		4:KOMBINASI	-102.839	3.31E 3	-0.006	0.132	-0.000	32.938			
		5:KOMB B. MA	-472.160	3.75E 3	16.972	-0.262	0.132	-5.016			
21459	14176	1:BEBAN MATI	50.016	1.87E 3	-0.250	0.024	0.002	-14.374			
		2:BEBAN HIDL	17.402	854.495	-0.072	0.018	0.001	-6.750			
		3:BEBAN GEM	477.377	-1.48E 3	-15.427	-0.312	0.112	-19.027			
		4:KOMBINASI	87.861	3.61E 3	-0.415	0.058	0.003	-28.049			
		5:KOMB B. MA	561.702	826.304	-16.491	-0.292	0.120	-38.402			
	14175	1:BEBAN MATI	-50.016	-1.41E 3	0.250	-0.024	0.002	38.502			
		2:BEBAN HIDL	-17.402	-854.495	0.072	-0.018	0.000	19.320			
		3:BEBAN GEM	-477.377	1.48E 3	15.427	0.312	0.115	-2.714			
		4:KOMBINASI	-87.861	-3.07E 3	0.415	-0.058	0.003	77.114			
		5:KOMB B. MA	-561.702	-375.812	16.491	0.292	0.122	47.244			
21460	14178	1:BEBAN MATI	42.327	1.21E 3	-0.785	2.655	0.007	-6.327			
		2:BEBAN HIDL	11.923	427.277	-0.283	1.501	0.002	-2.771			
		3:BEBAN GEM	-547.894	-472.938	-14.350	1.102	0.105	-6.612			
		4:KOMBINASI	69.870	2.14E 3	-1.394	5.587	0.012	-12.025			
		5:KOMB B. MA	-525.807	970.488	-16.022	4.712	0.118	-14.932			
	14183	1:BEBAN MATI	-42.327	-760.215	0.785	-2.655	0.005	20.823			
		2:BEBAN HIDL	-11.923	-427.277	0.283	-1.501	0.002	9.056			
		3:BEBAN GEM	547.894	472.938	14.350	-1.102	0.106	-0.345			
		4:KOMBINASI	-69.870	-1.6E 3	1.394	-5.587	0.009	39.477			
		5:KOMB B. MA	525.807	-519.997	16.022	-4.712	0.118	25.894			
21461	14181	1:BEBAN MATI	0.532	3.07E 3	0.135	0.620	-0.001	-12.234			
		2:BEBAN HIDL	0.553	812.010	0.051	0.448	-0.001	-4.562			
		3:BEBAN GEM	-1.43E 3	-359.412	11.581	1.874	-0.081	-5.749			
		4:KOMBINASI	1.523	4.99E 3	0.244	1.461	-0.002	-21.979			
		5:KOMB B. MA	-1.5E 3	3.18E 3	12.325	2.857	-0.087	-21.007			
	13662	1:BEBAN MATI	-0.532	-1.39E 3	-0.135	-0.620	-0.001	45.032			
		2:BEBAN HIDL	-0.553	-812.010	-0.051	-0.448	-0.000	16.506			
		3:BEBAN GEM	1.43E 3	359.412	-11.581	-1.874	-0.089	0.462			
		4:KOMBINASI	-1.523	-2.96E 3	-0.244	-1.461	-0.001	80.448			
		5:KOMB B. MA	1.5E 3	-1.5E 3	-12.325	-2.857	-0.094	55.421			
21462	14183	1:BEBAN MATI	48.878	-540.206	0.172	-3.405	-0.001	-20.851			
		2:BEBAN HIDL	13.078	-325.111	0.038	-1.908	-0.000	-9.068			
		3:BEBAN GEM	-237.297	-461.520	-13.924	-0.847	0.117	0.438			
		4:KOMBINASI	79.579	-1.17E 3	0.267	-7.139	-0.001	-39.530			
		5:KOMB B. MA	-192.437	-1.22E 3	-14.425	-5.439	0.122	-25.832			
	14187	1:BEBAN MATI	-48.878	990.697	-0.172	3.405	-0.002	9.591			
		2:BEBAN HIDL	-13.078	325.111	-0.038	1.908	-0.000	4.286			
		3:BEBAN GEM	237.297	461.520	13.924	0.847	0.087	-7.227			
		4:KOMBINASI	-79.579	1.71E 3	-0.267	7.139	-0.003	18.367			
		5:KOMB B. MA	192.437	1.67E 3	14.425	5.439	0.090	4.575			
21463	14187	1:BEBAN MATI	78.729	-1.99E 3	2.088	-8.067	-0.014	-7.029			
		2:BEBAN HIDL	21.218	-883.717	0.574	-4.338	-0.004	-2.863			



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Job No 1	Sheet No 313	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-30.247	-493.781	-8.586	-3.584	0.072	7.920			
		4:KOMBINASI	128.423	-3.81E 3	3.424	-16.621	-0.023	-13.016			
		5:KOMB B. MA	59.700	-3.04E 3	-6.583	-14.433	0.059	-0.431			
	12780	1:BEBAN MATI	-78.729	2.44E 3	-2.088	8.067	-0.017	-25.600			
		2:BEBAN HIDL	-21.218	883.717	-0.574	4.338	-0.004	-10.137			
		3:BEBAN GEM	30.247	493.781	8.586	3.584	0.054	-15.184			
		4:KOMBINASI	-128.423	4.35E 3	-3.424	16.621	-0.027	-46.939			
		5:KOMB B. MA	-59.700	3.49E 3	6.583	14.433	0.038	-47.625			
21464	14190	1:BEBAN MATI	-3.850	-4.53E 3	-0.586	2.143	0.005	-15.691			
		2:BEBAN HIDL	-0.538	-1.76E 3	-0.220	1.405	0.002	-5.667			
		3:BEBAN GEM	-1.85E 3	-526.611	32.872	-4.823	-0.247	5.659			
		4:KOMBINASI	-5.481	-8.25E 3	-1.055	4.820	0.010	-27.896			
		5:KOMB B. MA	-1.94E 3	-6.14E 3	33.798	-2.078	-0.253	-13.149			
	12773	1:BEBAN MATI	3.850	6.22E 3	0.586	-2.143	0.003	-63.369			
		2:BEBAN HIDL	0.538	1.76E 3	0.220	-1.405	0.001	-20.227			
		3:BEBAN GEM	1.85E 3	526.611	-32.872	4.823	-0.236	-13.405			
		4:KOMBINASI	5.481	10.3E 3	1.055	-4.820	0.006	-108.407			
		5:KOMB B. MA	1.94E 3	7.83E 3	-33.798	2.078	-0.244	-89.581			
21465	14191	1:BEBAN MATI	54.950	-2.06E 3	-2.267	8.022	0.018	-5.420			
		2:BEBAN HIDL	17.747	-897.085	-0.697	4.264	0.005	-2.796			
		3:BEBAN GEM	174.588	-1.69E 3	-13.913	1.546	0.078	26.464			
		4:KOMBINASI	94.336	-3.91E 3	-3.836	16.449	0.031	-10.977			
		5:KOMB B. MA	248.916	-4.37E 3	-17.294	12.204	0.103	20.689			
	12780	1:BEBAN MATI	-54.950	2.51E 3	2.267	-8.022	0.015	-28.181			
		2:BEBAN HIDL	-17.747	897.085	0.697	-4.264	0.005	-10.401			
		3:BEBAN GEM	-174.588	1.69E 3	13.913	-1.546	0.127	-51.342			
		4:KOMBINASI	-94.336	4.45E 3	3.836	-16.449	0.026	-50.458			
		5:KOMB B. MA	-248.916	4.82E 3	17.294	-12.204	0.151	-88.330			
21466	14192	1:BEBAN MATI	31.356	-609.495	-0.721	3.496	0.005	-20.276			
		2:BEBAN HIDL	10.616	-333.413	-0.217	1.790	0.002	-9.089			
		3:BEBAN GEM	-108.777	-1.57E 3	-11.166	-0.142	0.063	2.921			
		4:KOMBINASI	54.612	-1.26E 3	-1.212	7.060	0.009	-38.873			
		5:KOMB B. MA	-76.490	-2.46E 3	-12.575	4.421	0.072	-22.663			
	14191	1:BEBAN MATI	-31.356	1.06E 3	0.721	-3.496	0.005	7.997			
		2:BEBAN HIDL	-10.616	333.413	0.217	-1.790	0.002	4.184			
		3:BEBAN GEM	108.777	1.57E 3	11.166	0.142	0.101	-26.046			
		4:KOMBINASI	-54.612	1.81E 3	1.212	-7.060	0.009	16.291			
		5:KOMB B. MA	76.490	2.91E 3	12.575	-4.421	0.113	-16.841			
21467	14193	1:BEBAN MATI	26.048	1.14E 3	-0.271	-2.570	0.002	-6.783			
		2:BEBAN HIDL	9.414	424.620	-0.078	-1.680	0.001	-2.804			
		3:BEBAN GEM	-661.215	-1.58E 3	-22.343	-0.605	0.175	-20.698			
		4:KOMBINASI	46.319	2.05E 3	-0.451	-5.771	0.004	-12.625			
		5:KOMB B. MA	-662.579	-265.931	-23.779	-4.212	0.186	-30.198			
	14192	1:BEBAN MATI	-26.048	-691.275	0.271	2.570	0.002	20.265			
		2:BEBAN HIDL	-9.414	-424.620	0.078	1.680	0.001	9.050			
		3:BEBAN GEM	661.215	1.58E 3	22.343	0.605	0.154	-2.592			
		4:KOMBINASI	-46.319	-1.51E 3	0.451	5.771	0.003	38.798			
		5:KOMB B. MA	662.579	716.422	23.779	4.212	0.164	22.973			



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Job No 1	Sheet No 314	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21468	14194	1:BEBAN MATI	26.699	-2.19E 3	-3.643	4.962	0.025	-7.299			
		2:BEBAN HIDL	4.182	-563.641	-0.720	2.791	0.005	-1.292			
		3:BEBAN GEM	176.739	-715.878	-2.610	-3.026	-0.025	8.343			
		4:KOMBINASI	38.730	-3.53E 3	-5.525	10.420	0.038	-10.826			
		5:KOMB B. MA	214.784	-3.28E 3	-6.816	3.459	0.001	0.686			
12735	12735	1:BEBAN MATI	-26.699	3.54E 3	3.643	-4.962	0.018	-26.383			
		2:BEBAN HIDL	-4.182	563.641	0.720	-2.791	0.003	-5.341			
		3:BEBAN GEM	-176.739	715.878	2.610	3.026	0.056	-16.768			
		4:KOMBINASI	-38.730	5.15E 3	5.525	-10.420	0.027	-40.206			
		5:KOMB B. MA	-214.784	4.63E 3	6.816	-3.459	0.079	-47.194			
21469	14196	1:BEBAN MATI	77.991	3.66E 3	0.996	-3.304	-0.004	11.853			
		2:BEBAN HIDL	16.868	749.439	0.246	-2.417	-0.001	2.901			
		3:BEBAN GEM	-289.366	-1.68E 3	-5.773	-1.097	0.032	-39.071			
		4:KOMBINASI	120.578	5.59E 3	1.589	-7.832	-0.006	18.866			
		5:KOMB B. MA	-215.722	2.35E 3	-4.918	-5.905	0.029	-27.431			
14203	14203	1:BEBAN MATI	-77.991	-2.82E 3	-0.996	3.304	-0.004	11.980			
		2:BEBAN HIDL	-16.868	-749.439	-0.246	2.417	-0.001	2.611			
		3:BEBAN GEM	289.366	1.68E 3	5.773	1.097	0.011	26.696			
		4:KOMBINASI	-120.578	-4.58E 3	-1.589	7.832	-0.006	18.554			
		5:KOMB B. MA	215.722	-1.5E 3	4.918	5.905	0.007	41.578			
21470	14197	1:BEBAN MATI	8.940	-243.691	-0.761	1.748	0.005	-19.425			
		2:BEBAN HIDL	1.019	-218.828	-0.150	1.298	0.001	-4.620			
		3:BEBAN GEM	114.577	-636.581	0.483	-1.179	-0.010	1.175			
		4:KOMBINASI	12.358	-642.554	-1.153	4.175	0.008	-30.702			
		5:KOMB B. MA	129.857	-1.04E 3	-0.344	1.289	-0.004	-20.964			
	14194	14194	1:BEBAN MATI	-8.940	1.59E 3	0.761	-1.748	0.004	8.612		
			2:BEBAN HIDL	-1.019	218.828	0.150	-1.298	0.001	2.044		
			3:BEBAN GEM	-114.577	636.581	-0.483	1.179	0.004	-8.666		
			4:KOMBINASI	-12.358	2.26E 3	1.153	-4.175	0.006	13.606		
			5:KOMB B. MA	-129.857	2.39E 3	0.344	-1.289	0.009	0.740		
21471	14199	1:BEBAN MATI	11.277	1.82E 3	1.094	-1.495	-0.007	-5.981			
		2:BEBAN HIDL	2.300	245.725	0.310	-0.646	-0.002	-1.783			
		3:BEBAN GEM	20.403	-642.713	-3.021	0.719	0.019	-6.511			
		4:KOMBINASI	17.213	2.57E 3	1.809	-2.826	-0.012	-10.029			
		5:KOMB B. MA	34.080	1.29E 3	-1.892	-1.127	0.012	-13.886			
	14197	14197	1:BEBAN MATI	-11.277	-467.423	-1.094	1.495	-0.006	19.427		
			2:BEBAN HIDL	-2.300	-245.725	-0.310	0.646	-0.002	4.674		
			3:BEBAN GEM	-20.403	642.713	3.021	-0.719	0.016	-1.053		
			4:KOMBINASI	-17.213	-954.067	-1.809	2.826	-0.010	30.791		
			5:KOMB B. MA	-34.080	59.991	1.892	1.127	0.010	21.126		
21472	14201	1:BEBAN MATI	89.111	3.85E 3	-0.321	0.236	0.001	13.677			
		2:BEBAN HIDL	24.591	1.67E 3	-0.077	-0.039	0.000	6.494			
		3:BEBAN GEM	-192.091	-1.62E 3	3.365	-1.094	-0.012	-37.648			
		4:KOMBINASI	146.278	7.29E 3	-0.509	0.220	0.001	26.802			
		5:KOMB B. MA	-97.830	3.15E 3	3.165	-0.937	-0.011	-21.956			
	14206	14206	1:BEBAN MATI	-89.111	-3.63E 3	0.321	-0.236	0.002	13.824		
		2:BEBAN HIDL	-24.591	-1.67E 3	0.077	0.039	0.000	5.755			
		3:BEBAN GEM	192.091	1.62E 3	-3.365	1.094	-0.013	25.734			



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Job No 1	Sheet No 315	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-146.278	-7.02E 3	0.509	-0.220	0.002	25.797			
		5:KOMB B. MA	97.830	-2.93E 3	-3.165	0.937	-0.012	44.298			
21473	14203	1:BEBAN MATI	64.682	2.41E 3	0.782	-1.952	-0.003	-13.019			
		2:BEBAN HIDL	14.164	479.844	0.195	-1.585	-0.001	-3.017			
		3:BEBAN GEM	-265.218	-1.63E 3	-4.344	-1.232	0.023	-26.649			
		4:KOMBINASI	100.282	3.65E 3	1.251	-4.879	-0.004	-20.451			
		5:KOMB B. MA	-205.298	979.797	-3.662	-4.196	0.021	-42.811			
	14208	1:BEBAN MATI	-64.682	-1.56E 3	-0.782	1.952	-0.003	27.610			
		2:BEBAN HIDL	-14.164	-479.844	-0.195	1.585	-0.001	6.547			
		3:BEBAN GEM	265.218	1.63E 3	4.344	1.232	0.009	14.644			
		4:KOMBINASI	-100.282	-2.64E 3	-1.251	4.879	-0.005	43.606			
		5:KOMB B. MA	205.298	-135.802	3.662	4.196	0.006	46.914			
21474	14206	1:BEBAN MATI	68.783	2.57E 3	-0.263	0.206	0.001	-14.990			
		2:BEBAN HIDL	18.947	1.08E 3	-0.062	-0.024	0.000	-6.164			
		3:BEBAN GEM	-172.320	-1.5E 3	2.564	-0.777	-0.006	-25.110			
		4:KOMBINASI	112.854	4.81E 3	-0.415	0.209	0.001	-27.852			
		5:KOMB B. MA	-100.786	1.64E 3	2.392	-0.624	-0.005	-45.055			
	14211	1:BEBAN MATI	-68.783	-2.34E 3	0.263	-0.206	0.001	33.062			
		2:BEBAN HIDL	-18.947	-1.08E 3	0.062	0.024	0.000	14.103			
		3:BEBAN GEM	172.320	1.5E 3	-2.564	0.777	-0.013	14.096			
		4:KOMBINASI	-112.854	-4.54E 3	0.415	-0.209	0.002	62.239			
		5:KOMB B. MA	100.786	-1.42E 3	-2.392	0.624	-0.013	56.325			
21475	14208	1:BEBAN MATI	57.814	1.17E 3	0.357	-0.999	-0.001	-28.330			
		2:BEBAN HIDL	12.886	224.668	0.082	-0.886	-0.000	-6.856			
		3:BEBAN GEM	-250.035	-1.63E 3	-1.964	-1.172	0.016	-14.529			
		4:KOMBINASI	89.995	1.77E 3	0.559	-2.616	-0.002	-44.965			
		5:KOMB B. MA	-196.990	-404.548	-1.657	-2.761	0.016	-47.699			
	13653	1:BEBAN MATI	-57.814	-330.628	-0.357	0.999	-0.002	33.866			
		2:BEBAN HIDL	-12.886	-224.668	-0.082	0.886	-0.000	8.508			
		3:BEBAN GEM	250.035	1.63E 3	1.964	1.172	-0.002	2.523			
		4:KOMBINASI	-89.995	-756.222	-0.559	2.616	-0.003	54.252			
		5:KOMB B. MA	196.990	1.25E 3	1.657	2.761	-0.004	41.620			
21476	14211	1:BEBAN MATI	58.012	1.43E 3	-0.211	0.138	0.001	-34.254			
		2:BEBAN HIDL	15.918	585.522	-0.062	-0.018	0.000	-14.561			
		3:BEBAN GEM	-168.272	-1.46E 3	4.957	-0.499	-0.008	-13.355			
		4:KOMBINASI	95.083	2.65E 3	-0.353	0.136	0.001	-64.402			
		5:KOMB B. MA	-109.123	249.173	4.957	-0.397	-0.008	-57.014			
	13705	1:BEBAN MATI	-58.012	-1.2E 3	0.211	-0.138	0.001	43.931			
		2:BEBAN HIDL	-15.918	-585.522	0.062	0.018	0.000	18.868			
		3:BEBAN GEM	168.272	1.46E 3	-4.957	0.499	-0.028	2.635			
		4:KOMBINASI	-95.083	-2.38E 3	0.353	-0.136	0.002	82.905			
		5:KOMB B. MA	109.123	-23.927	-4.957	0.397	-0.028	58.018			
21477	14212	1:BEBAN MATI	-0.818	-645.587	-0.043	-0.147	0.000	-6.995			
		2:BEBAN HIDL	-0.226	-390.781	0.000	0.003	-0.000	-3.407			
		3:BEBAN GEM	28.527	-0.591	0.399	0.182	-0.001	1.155			
		4:KOMBINASI	-1.343	-1.4E 3	-0.051	-0.172	0.000	-13.844			
		5:KOMB B. MA	28.999	-880.676	0.376	0.046	-0.000	-7.826			
	13653	1:BEBAN MATI	0.818	876.239	0.043	0.147	0.000	-1.960			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 316	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	0.226	390.781	-0.000	-0.003	-0.000	-1.192			
		3:BEBAN GEM	-28.527	0.591	-0.399	-0.182	-0.004	-1.162			
		4:KOMBINASI	1.343	1.68E 3	0.051	0.172	0.000	-4.259			
		5:KOMB B. MA	-28.999	1.11E 3	-0.376	-0.046	-0.004	-3.895			
21478	14213	1:BEBAN MATI	2.804	-126.411	0.004	-0.089	0.000	-11.368			
		2:BEBAN HIDL	0.444	-140.626	0.010	0.005	-0.000	-5.914			
		3:BEBAN GEM	61.482	-59.583	-0.471	0.156	0.002	0.324			
		4:KOMBINASI	4.076	-376.695	0.021	-0.098	0.000	-23.103			
		5:KOMB B. MA	67.628	-273.349	-0.485	0.078	0.002	-14.576			
	14212	1:BEBAN MATI	-2.804	357.063	-0.004	0.089	-0.000	8.523			
		2:BEBAN HIDL	-0.444	140.626	-0.010	-0.005	-0.000	4.259			
		3:BEBAN GEM	-61.482	59.583	0.471	-0.156	0.004	-1.025			
		4:KOMBINASI	-4.076	653.477	-0.021	0.098	-0.000	17.042			
		5:KOMB B. MA	-67.628	504.000	0.485	-0.078	0.004	10.002			
21479	14214	1:BEBAN MATI	3.317	799.067	0.028	0.084	-0.000	-3.132			
		2:BEBAN HIDL	0.297	323.406	0.017	0.033	-0.000	-2.031			
		3:BEBAN GEM	99.718	-51.843	-1.048	-0.139	0.006	-0.362			
		4:KOMBINASI	4.456	1.48E 3	0.061	0.154	-0.000	-7.008			
		5:KOMB B. MA	108.199	938.676	-1.061	-0.043	0.006	-4.730			
	14213	1:BEBAN MATI	-3.317	-568.415	-0.028	-0.084	-0.000	11.178			
		2:BEBAN HIDL	-0.297	-323.406	-0.017	-0.033	-0.000	5.837			
		3:BEBAN GEM	-99.718	51.843	1.048	0.139	0.007	-0.249			
		4:KOMBINASI	-4.456	-1.2E 3	-0.061	-0.154	-0.001	22.753			
		5:KOMB B. MA	-108.199	-708.024	1.061	0.043	0.007	14.419			
21480	14216	1:BEBAN MATI	57.404	-1.95E 3	-0.170	2.126	0.001	-24.415			
		2:BEBAN HIDL	13.245	-563.421	-0.049	1.347	0.000	-5.871			
		3:BEBAN GEM	-161.923	-1.62E 3	-3.760	0.434	0.019	9.833			
		4:KOMBINASI	90.077	-3.24E 3	-0.283	4.707	0.002	-38.692			
		5:KOMB B. MA	-104.668	-3.99E 3	-4.148	3.390	0.022	-17.613			
	14221	1:BEBAN MATI	-57.404	2.79E 3	0.170	-2.126	0.000	6.975			
		2:BEBAN HIDL	-13.245	563.421	0.049	-1.347	0.000	1.727			
		3:BEBAN GEM	161.923	1.62E 3	3.760	-0.434	0.008	-21.758			
		4:KOMBINASI	-90.077	4.25E 3	0.283	-4.707	0.000	11.134			
		5:KOMB B. MA	104.668	4.83E 3	4.148	-3.390	0.009	-14.835			
21481	14219	1:BEBAN MATI	50.890	-2.86E 3	0.044	-0.139	-0.000	-28.789			
		2:BEBAN HIDL	13.911	-1.24E 3	0.012	0.027	-0.000	-12.670			
		3:BEBAN GEM	-148.194	-1.49E 3	-3.546	0.755	0.021	9.384			
		4:KOMBINASI	83.325	-5.41E 3	0.071	-0.124	-0.001	-54.819			
		5:KOMB B. MA	-96.368	-5.16E 3	-3.672	0.670	0.022	-26.538			
	14224	1:BEBAN MATI	-50.890	3.08E 3	-0.044	0.139	0.000	6.951			
		2:BEBAN HIDL	-13.911	1.24E 3	-0.012	-0.027	0.000	3.568			
		3:BEBAN GEM	148.194	1.49E 3	3.546	-0.755	0.005	-20.329			
		4:KOMBINASI	-83.325	5.68E 3	-0.071	0.124	0.000	14.049			
		5:KOMB B. MA	96.368	5.39E 3	3.672	-0.670	0.005	-12.254			
21482	14221	1:BEBAN MATI	63.236	-3.12E 3	-0.372	3.061	0.002	-5.849			
		2:BEBAN HIDL	14.782	-792.556	-0.101	2.029	0.001	-1.293			
		3:BEBAN GEM	-71.171	-1.67E 3	-5.203	1.156	0.022	22.308			
		4:KOMBINASI	99.534	-5.01E 3	-0.608	6.919	0.004	-9.088			



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Job No 1	Sheet No 317	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-2.625	-5.35E 3	-5.896	5.492	0.026	16.799			
	14226	1:BEBAN MATI	-63.236	3.97E 3	0.372	-3.061	0.000	-20.219			
		2:BEBAN HIDL	-14.782	792.556	0.101	-2.029	0.000	-4.536			
		3:BEBAN GEM	71.171	1.67E 3	5.203	-1.156	0.016	-34.600			
		4:KOMBINASI	-99.534	6.03E 3	0.608	-6.919	0.000	-31.521			
		5:KOMB B. MA	2.625	6.2E 3	5.896	-5.492	0.017	-59.271			
21483	14224	1:BEBAN MATI	52.621	-3.97E 3	0.190	-0.151	-0.001	-5.623			
		2:BEBAN HIDL	14.407	-1.75E 3	0.062	0.039	-0.000	-3.015			
		3:BEBAN GEM	-92.475	-1.63E 3	-6.945	1.054	0.035	20.932			
		4:KOMBINASI	86.196	-7.56E 3	0.327	-0.118	-0.002	-11.571			
		5:KOMB B. MA	-35.834	-6.74E 3	-7.065	0.980	0.036	14.547			
	14229	1:BEBAN MATI	-52.621	4.2E 3	-0.190	0.151	-0.000	-24.412			
		2:BEBAN HIDL	-14.407	1.75E 3	-0.062	-0.039	-0.000	-9.851			
		3:BEBAN GEM	92.475	1.63E 3	6.945	-1.054	0.016	-32.955			
		4:KOMBINASI	-86.196	7.83E 3	-0.327	0.118	-0.001	-45.056			
		5:KOMB B. MA	35.834	6.96E 3	7.065	-0.980	0.016	-64.925			
21484	14226	1:BEBAN MATI	79.423	-4.19E 3	-5.576	4.025	0.015	21.625			
		2:BEBAN HIDL	18.748	-919.981	-1.329	2.498	0.003	5.093			
		3:BEBAN GEM	93.853	-1.82E 3	-26.878	2.393	0.055	35.156			
		4:KOMBINASI	125.303	-6.49E 3	-8.817	8.826	0.023	34.099			
		5:KOMB B. MA	189.217	-6.65E 3	-34.594	8.036	0.075	61.595			
	12738	1:BEBAN MATI	-79.423	5.03E 3	5.576	-4.025	0.026	-55.511			
		2:BEBAN HIDL	-18.748	919.981	1.329	-2.498	0.006	-11.859			
		3:BEBAN GEM	-93.853	1.82E 3	26.878	-2.393	0.142	-48.521			
		4:KOMBINASI	-125.303	7.51E 3	8.817	-8.826	0.042	-85.588			
		5:KOMB B. MA	-189.217	7.49E 3	34.594	-8.036	0.180	-113.573			
21485	14229	1:BEBAN MATI	59.728	-5E 3	1.054	-0.145	-0.004	25.762			
		2:BEBAN HIDL	16.431	-2.17E 3	0.429	0.051	-0.002	10.427			
		3:BEBAN GEM	36.347	-1.99E 3	-22.919	1.592	0.084	33.311			
		4:KOMBINASI	97.963	-9.48E 3	1.951	-0.091	-0.007	47.597			
		5:KOMB B. MA	107.751	-8.39E 3	-22.754	1.558	0.083	66.995			
	12766	1:BEBAN MATI	-59.728	5.23E 3	-1.054	0.145	-0.004	-63.401			
		2:BEBAN HIDL	-16.431	2.17E 3	-0.429	-0.051	-0.002	-26.406			
		3:BEBAN GEM	-36.347	1.99E 3	22.919	-1.592	0.085	-47.918			
		4:KOMBINASI	-97.963	9.75E 3	-1.951	0.091	-0.007	-118.331			
		5:KOMB B. MA	-107.751	8.62E 3	22.754	-1.558	0.084	-129.559			
21486	14230	1:BEBAN MATI	37.989	-2.88E 3	0.753	-0.102	-0.006	-9.498			
		2:BEBAN HIDL	8.778	-1.33E 3	0.179	-0.045	-0.002	-3.493			
		3:BEBAN GEM	150.870	-715.831	17.256	-4.017	-0.127	7.933			
		4:KOMBINASI	59.633	-5.58E 3	1.190	-0.194	-0.010	-16.987			
		5:KOMB B. MA	201.670	-4.43E 3	18.980	-4.347	-0.140	-3.265			
	12738	1:BEBAN MATI	-37.989	3.24E 3	-0.753	0.102	-0.002	-26.505			
		2:BEBAN HIDL	-8.778	1.33E 3	-0.179	0.045	-0.001	-12.139			
		3:BEBAN GEM	-150.870	715.831	-17.256	4.017	-0.076	-16.357			
		4:KOMBINASI	-59.633	6.01E 3	-1.190	0.194	-0.004	-51.229			
		5:KOMB B. MA	-201.670	4.79E 3	-18.980	4.347	-0.083	-50.963			
21487	14231	1:BEBAN MATI	20.108	-770.307	0.257	-0.049	-0.001	-21.549			
		2:BEBAN HIDL	4.567	-477.368	0.057	-0.019	-0.000	-9.759			



Software licensed to Snow Panther [LZ0]

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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	153.699	-586.874	8.148	-1.199	-0.043	0.922			
		4:KOMBINASI	31.437	-1.69E 3	0.400	-0.089	-0.002	-41.473			
		5:KOMB B. MA	184.233	-1.67E 3	8.846	-1.319	-0.046	-26.436			
	14230	1:BEBAN MATI	-20.108	1.13E 3	-0.257	0.049	-0.002	10.364			
		2:BEBAN HIDL	-4.567	477.368	-0.057	0.019	-0.000	4.141			
		3:BEBAN GEM	-153.699	586.874	-8.148	1.199	-0.053	-7.829			
		4:KOMBINASI	-31.437	2.12E 3	-0.400	0.089	-0.003	19.062			
		5:KOMB B. MA	-184.233	2.03E 3	-8.846	1.319	-0.058	4.628			
21488	14232	1:BEBAN MATI	13.614	1.36E 3	-0.485	0.041	0.003	-7.582			
		2:BEBAN HIDL	3.069	491.878	-0.142	0.012	0.001	-3.940			
		3:BEBAN GEM	190.191	-564.903	-1.117	1.082	0.012	-6.006			
		4:KOMBINASI	21.246	2.42E 3	-0.810	0.068	0.005	-15.403			
		5:KOMB B. MA	215.155	1.06E 3	-1.743	1.184	0.017	-16.252			
	14231	1:BEBAN MATI	-13.614	-1E 3	0.485	-0.041	0.002	21.471			
		2:BEBAN HIDL	-3.069	-491.878	0.142	-0.012	0.001	9.729			
		3:BEBAN GEM	-190.191	564.903	1.117	-1.082	0.001	-0.642			
		4:KOMBINASI	-21.246	-1.99E 3	0.810	-0.068	0.004	41.331			
		5:KOMB B. MA	-215.155	-702.002	1.743	-1.184	0.004	26.634			
21489	14233	1:BEBAN MATI	30.488	-1.06E 3	-5.181	0.682	0.029	-5.763			
		2:BEBAN HIDL	8.516	-246.690	-1.504	0.512	0.008	-1.262			
		3:BEBAN GEM	-92.495	-919.546	6.372	-2.832	-0.027	3.525			
		4:KOMBINASI	50.210	-1.66E 3	-8.624	1.638	0.047	-8.934			
		5:KOMB B. MA	-61.523	-2.17E 3	0.608	-1.984	0.005	-2.818			
	12731	1:BEBAN MATI	-30.488	2.41E 3	5.181	-0.682	0.032	-14.611			
		2:BEBAN HIDL	-8.516	246.690	1.504	-0.512	0.009	-1.641			
		3:BEBAN GEM	92.495	919.546	-6.372	2.832	-0.048	-14.347			
		4:KOMBINASI	-50.210	3.28E 3	8.624	-1.638	0.054	-20.159			
		5:KOMB B. MA	61.523	3.52E 3	-0.608	1.984	-0.012	-30.660			
21490	14235	1:BEBAN MATI	57.207	2.7E 3	0.600	3.363	-0.002	1.854			
		2:BEBAN HIDL	16.080	1.18E 3	0.406	1.654	-0.001	1.246			
		3:BEBAN GEM	-126.096	-1.52E 3	-28.272	-1.444	0.098	-33.173			
		4:KOMBINASI	94.377	5.13E 3	1.369	6.683	-0.005	4.218			
		5:KOMB B. MA	-65.546	1.81E 3	-28.842	2.839	0.100	-32.230			
	14416	1:BEBAN MATI	-57.207	-2.55E 3	-0.600	-3.363	-0.001	11.013			
		2:BEBAN HIDL	-16.080	-1.18E 3	-0.406	-1.654	-0.001	4.535			
		3:BEBAN GEM	126.096	1.52E 3	28.272	1.444	0.040	25.726			
		4:KOMBINASI	-94.377	-4.95E 3	-1.369	-6.683	-0.002	20.472			
		5:KOMB B. MA	65.546	-1.66E 3	28.842	-2.839	0.041	40.747			
21491	14236	1:BEBAN MATI	8.928	712.137	-0.907	-1.049	0.005	-5.782			
		2:BEBAN HIDL	1.565	42.589	-0.269	-0.588	0.001	-1.020			
		3:BEBAN GEM	-85.735	-815.844	-3.594	-0.855	0.033	-5.827			
		4:KOMBINASI	13.218	922.707	-1.519	-2.200	0.008	-8.570			
		5:KOMB B. MA	-80.154	-118.946	-4.842	-2.300	0.040	-12.513			
	14233	1:BEBAN MATI	-8.928	638.254	0.907	1.049	0.006	6.217			
		2:BEBAN HIDL	-1.565	-42.589	0.269	0.588	0.002	1.521			
		3:BEBAN GEM	85.735	815.844	3.594	0.855	0.009	-3.773			
		4:KOMBINASI	-13.218	697.763	1.519	2.200	0.010	9.894			
		5:KOMB B. MA	80.154	1.47E 3	4.842	2.300	0.017	3.167			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 319	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21492	14238	1:BEBAN MATI	-2.229	940.068	-0.419	-1.244	0.001	-3.474			
		2:BEBAN HIDL	-0.424	97.334	-0.095	-0.019	0.000	-0.534			
		3:BEBAN GEM	-558.301	-4.41E 3	-2.562	0.760	-0.014	-28.239			
		4:KOMBINASI	-3.353	1.28E 3	-0.655	-1.524	0.002	-5.023			
		5:KOMB B. MA	-588.699	-3.63E 3	-3.166	-0.458	-0.014	-33.445			
	14242	1:BEBAN MATI	2.229	185.260	0.419	1.244	0.003	7.175			
		2:BEBAN HIDL	0.424	-97.334	0.095	0.019	0.001	1.488			
		3:BEBAN GEM	558.301	4.41E 3	2.562	-0.760	0.039	-15.021			
		4:KOMBINASI	3.353	66.578	0.655	1.524	0.004	10.992			
		5:KOMB B. MA	588.699	4.76E 3	3.166	0.458	0.045	-7.704			
21493	14240	1:BEBAN MATI	38.292	1.55E 3	1.653	2.540	-0.003	-21.525			
		2:BEBAN HIDL	10.481	678.394	0.956	1.334	-0.002	-9.204			
		3:BEBAN GEM	-60.776	-1.41E 3	-147.762	-1.196	0.285	-17.816			
		4:KOMBINASI	62.720	2.95E 3	3.513	5.182	-0.006	-40.557			
		5:KOMB B. MA	-19.234	484.164	-152.924	2.084	0.296	-45.754			
	14420	1:BEBAN MATI	-38.292	-1.48E 3	-1.653	-2.540	-0.001	25.239			
		2:BEBAN HIDL	-10.481	-678.394	-0.956	-1.334	-0.001	10.868			
		3:BEBAN GEM	60.776	1.41E 3	147.762	1.196	0.077	14.371			
		4:KOMBINASI	-62.720	-2.86E 3	-3.513	-5.182	-0.002	47.674			
		5:KOMB B. MA	19.234	-409.083	152.924	-2.084	0.079	46.849			
21494	14242	1:BEBAN MATI	11.618	-619.432	-1.831	-3.561	0.007	-6.459			
		2:BEBAN HIDL	4.115	-184.095	-0.281	-1.213	0.001	-1.228			
		3:BEBAN GEM	-467.562	-4.71E 3	-10.791	-0.070	-0.087	15.571			
		4:KOMBINASI	20.526	-1.04E 3	-2.647	-6.214	0.011	-9.717			
		5:KOMB B. MA	-476.853	-5.68E 3	-13.331	-4.362	-0.083	9.153			
	12782	1:BEBAN MATI	-11.618	1.74E 3	1.831	3.561	0.011	-5.133			
		2:BEBAN HIDL	-4.115	184.095	0.281	1.213	0.001	-0.577			
		3:BEBAN GEM	467.562	4.71E 3	10.791	0.070	0.193	-61.785			
		4:KOMBINASI	-20.526	2.39E 3	2.647	6.214	0.015	-7.083			
		5:KOMB B. MA	476.853	6.8E 3	13.331	4.362	0.214	-70.354			
21495	14243	1:BEBAN MATI	-4.681	-343.333	-0.475	0.034	0.003	-1.629			
		2:BEBAN HIDL	-1.758	-257.911	-0.130	-0.013	0.001	-1.015			
		3:BEBAN GEM	339.265	-108.903	-2.376	0.678	0.029	-0.483			
		4:KOMBINASI	-8.430	-824.657	-0.778	0.021	0.004	-3.578			
		5:KOMB B. MA	350.492	-612.428	-3.047	0.739	0.033	-2.745			
	13700	1:BEBAN MATI	4.681	573.985	0.475	-0.034	0.003	-3.769			
		2:BEBAN HIDL	1.758	257.911	0.130	0.013	0.001	-2.020			
		3:BEBAN GEM	-339.265	108.903	2.376	-0.678	-0.001	-0.798			
		4:KOMBINASI	8.430	1.1E 3	0.778	-0.021	0.005	-7.755			
		5:KOMB B. MA	-350.492	843.080	3.047	-0.739	0.003	-5.819			
21496	14244	1:BEBAN MATI	-4.620	487.901	-0.721	0.126	0.005	2.039			
		2:BEBAN HIDL	-1.294	129.788	-0.184	0.023	0.001	0.046			
		3:BEBAN GEM	463.275	-183.922	-10.985	1.501	0.086	-2.861			
		4:KOMBINASI	-7.615	793.142	-1.160	0.187	0.007	2.520			
		5:KOMB B. MA	481.043	372.656	-12.365	1.716	0.096	-0.938			
	14243	1:BEBAN MATI	4.620	-257.250	0.721	-0.126	0.004	2.346			
		2:BEBAN HIDL	1.294	-129.788	0.184	-0.023	0.001	1.481			
		3:BEBAN GEM	-463.275	183.922	10.985	-1.501	0.043	0.697			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 320	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	7.615	-516.360	1.160	-0.187	0.006	5.185			
		5:KOMB B. MA	-481.043	-142.004	12.365	-1.716	0.050	3.966			
21497	14245	1:BEBAN MATI	35.481	-2.74E 3	-0.227	-1.079	0.002	-9.123			
		2:BEBAN HIDL	8.032	-1.25E 3	-0.073	-0.572	0.001	-3.340			
		3:BEBAN GEM	49.502	-657.436	22.787	-4.218	-0.151	8.382			
		4:KOMBINASI	55.428	-5.29E 3	-0.390	-2.210	0.003	-16.291			
		5:KOMB B. MA	92.277	-4.18E 3	23.654	-5.851	-0.157	-2.326			
	12736	1:BEBAN MATI	-35.481	3.1E 3	0.227	1.079	0.001	-25.265			
		2:BEBAN HIDL	-8.032	1.25E 3	0.073	0.572	0.000	-11.368			
		3:BEBAN GEM	-49.502	657.436	-22.787	4.218	-0.117	-16.118			
		4:KOMBINASI	-55.428	5.72E 3	0.390	2.210	0.001	-48.506			
		5:KOMB B. MA	-92.277	4.54E 3	-23.654	5.851	-0.122	-49.010			
21498	14247	1:BEBAN MATI	19.611	2.19E 3	0.216	-1.780	-0.001	-3.212			
		2:BEBAN HIDL	3.572	376.108	0.061	-0.886	-0.000	-0.838			
		3:BEBAN GEM	43.924	-2.35E 3	-3.519	-1.354	0.014	-25.045			
		4:KOMBINASI	29.249	3.23E 3	0.356	-3.553	-0.002	-5.195			
		5:KOMB B. MA	67.874	-45.801	-3.443	-3.733	0.013	-30.012			
	13659	1:BEBAN MATI	-19.611	-842.727	-0.216	1.780	-0.001	21.075			
		2:BEBAN HIDL	-3.572	-376.108	-0.061	0.886	-0.000	5.264			
		3:BEBAN GEM	-43.924	2.35E 3	3.519	1.354	0.028	-2.577			
		4:KOMBINASI	-29.249	-1.61E 3	-0.356	3.553	-0.002	33.712			
		5:KOMB B. MA	-67.874	1.4E 3	3.443	3.733	0.027	21.527			
21499	14248	1:BEBAN MATI	21.653	-714.418	-0.072	-0.430	0.000	-20.395			
		2:BEBAN HIDL	5.070	-443.362	-0.025	-0.302	0.000	-9.121			
		3:BEBAN GEM	-14.648	-585.671	13.032	-1.224	-0.069	1.353			
		4:KOMBINASI	34.096	-1.57E 3	-0.127	-1.000	0.001	-39.068			
		5:KOMB B. MA	9.315	-1.6E 3	13.596	-1.896	-0.072	-24.447			
	14245	1:BEBAN MATI	-21.653	1.07E 3	0.072	0.430	0.000	9.868			
		2:BEBAN HIDL	-5.070	443.362	0.025	0.302	0.000	3.903			
		3:BEBAN GEM	14.648	585.671	-13.032	1.224	-0.084	-8.245			
		4:KOMBINASI	-34.096	2E 3	0.127	1.000	0.001	18.086			
		5:KOMB B. MA	-9.315	1.96E 3	-13.596	1.896	-0.088	3.552			
21500	14250	1:BEBAN MATI	17.209	1.31E 3	0.082	0.318	-0.001	-7.067			
		2:BEBAN HIDL	4.356	464.185	0.022	0.081	-0.000	-3.609			
		3:BEBAN GEM	-76.972	-597.447	7.691	1.082	-0.040	-5.936			
		4:KOMBINASI	27.621	2.31E 3	0.134	0.512	-0.001	-14.254			
		5:KOMB B. MA	-60.998	956.623	8.171	1.503	-0.042	-15.465			
	14248	1:BEBAN MATI	-17.209	-945.037	-0.082	-0.318	-0.000	20.308			
		2:BEBAN HIDL	-4.356	-464.185	-0.022	-0.081	-0.000	9.071			
		3:BEBAN GEM	76.972	597.447	-7.691	-1.082	-0.051	-1.095			
		4:KOMBINASI	-27.621	-1.88E 3	-0.134	-0.512	-0.001	38.884			
		5:KOMB B. MA	60.998	-596.229	-8.171	-1.503	-0.054	24.602			
21501	14252	1:BEBAN MATI	24.545	2.33E 3	-0.062	0.152	0.000	-2.738			
		2:BEBAN HIDL	5.709	877.779	-0.021	0.039	0.000	-1.614			
		3:BEBAN GEM	-90.390	-2.18E 3	-14.986	-0.793	0.077	-22.938			
		4:KOMBINASI	38.588	4.2E 3	-0.109	0.244	0.001	-5.868			
		5:KOMB B. MA	-66.940	567.902	-15.810	-0.658	0.082	-27.791			
	13701	1:BEBAN MATI	-24.545	-1.97E 3	0.062	-0.152	0.000	28.070			



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Job No

1

Sheet No

321

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-5.709	-877.779	0.021	-0.039	0.000	11.944			
		3:BEBAN GEM	90.390	2.18E 3	14.986	0.793	0.099	-2.746			
		4:KOMBINASI	-38.588	-3.77E 3	0.109	-0.244	0.000	52.795			
		5:KOMB B. MA	66.940	-207.509	15.810	0.658	0.104	32.353			
21502	14253	1:BEBAN MATI	1.066	-591.722	0.012	0.182	-0.000	-5.737			
		2:BEBAN HIDL	0.230	-344.012	-0.002	-0.021	-0.000	-2.667			
		3:BEBAN GEM	-22.810	7.736	3.738	0.192	-0.016	1.549			
		4:KOMBINASI	1.647	-1.26E 3	0.011	0.185	-0.000	-11.152			
		5:KOMB B. MA	-22.747	-790.006	3.936	0.371	-0.017	-5.711			
	13659	1:BEBAN MATI	-1.066	822.373	-0.012	-0.182	-0.000	-2.584			
		2:BEBAN HIDL	-0.230	344.012	0.002	0.021	0.000	-1.381			
		3:BEBAN GEM	22.810	-7.736	-3.738	-0.192	-0.028	-1.458			
		4:KOMBINASI	-1.647	1.54E 3	-0.011	-0.185	-0.000	-5.310			
		5:KOMB B. MA	22.747	1.02E 3	-3.936	-0.371	-0.029	-4.943			
21503	14254	1:BEBAN MATI	3.657	-100.496	-0.035	0.114	0.000	-9.363			
		2:BEBAN HIDL	0.684	-101.696	-0.012	-0.021	0.000	-4.506			
		3:BEBAN GEM	-50.349	-87.350	3.017	0.267	-0.019	0.482			
		4:KOMBINASI	5.483	-283.309	-0.061	0.103	0.000	-18.445			
		5:KOMB B. MA	-48.799	-253.232	3.126	0.382	-0.019	-11.560			
	14253	1:BEBAN MATI	-3.657	331.148	0.035	-0.114	0.000	6.823			
		2:BEBAN HIDL	-0.684	101.696	0.012	0.021	0.000	3.309			
		3:BEBAN GEM	50.349	87.350	-3.017	-0.267	-0.017	-1.510			
		4:KOMBINASI	-5.483	560.091	0.061	-0.103	0.000	13.482			
		5:KOMB B. MA	48.799	483.883	-3.126	-0.382	-0.018	7.223			
21504	14255	1:BEBAN MATI	4.966	673.938	-0.064	-0.127	0.000	-2.669			
		2:BEBAN HIDL	0.755	250.352	-0.027	-0.044	0.000	-1.535			
		3:BEBAN GEM	-79.653	-97.865	4.334	-0.236	-0.027	-0.684			
		4:KOMBINASI	7.167	1.21E 3	-0.120	-0.223	0.001	-5.659			
		5:KOMB B. MA	-78.217	721.391	4.470	-0.401	-0.028	-4.309			
	14254	1:BEBAN MATI	-4.966	-443.286	0.064	0.127	0.000	9.243			
		2:BEBAN HIDL	-0.755	-250.352	0.027	0.044	0.000	4.481			
		3:BEBAN GEM	79.653	97.865	-4.334	0.236	-0.024	-0.467			
		4:KOMBINASI	-7.167	-932.507	0.120	0.223	0.001	18.262			
		5:KOMB B. MA	78.217	-490.739	-4.470	0.401	-0.025	11.441			
21505	14257	1:BEBAN MATI	33.030	-2.32E 3	-1.367	3.230	0.008	-7.273			
		2:BEBAN HIDL	5.097	-587.465	-0.203	1.955	0.001	-1.311			
		3:BEBAN GEM	402.785	-2.46E 3	-12.913	1.892	0.044	30.772			
		4:KOMBINASI	47.790	-3.73E 3	-1.966	7.003	0.011	-10.825			
		5:KOMB B. MA	459.011	-5.26E 3	-15.048	6.389	0.055	24.251			
	12776	1:BEBAN MATI	-33.030	3.67E 3	1.367	-3.230	0.008	-28.012			
		2:BEBAN HIDL	-5.097	587.465	0.203	-1.955	0.001	-5.602			
		3:BEBAN GEM	-402.785	2.46E 3	12.913	-1.892	0.108	-59.694			
		4:KOMBINASI	-47.790	5.35E 3	1.966	-7.003	0.012	-42.578			
		5:KOMB B. MA	-459.011	6.61E 3	15.048	-6.389	0.122	-94.052			
21506	14260	1:BEBAN MATI	46.758	-3.14E 3	0.410	-0.264	-0.003	-8.693			
		2:BEBAN HIDL	10.010	-1.37E 3	0.120	-0.021	-0.001	-3.182			
		3:BEBAN GEM	281.759	-2.44E 3	-12.641	1.637	0.069	29.440			
		4:KOMBINASI	72.126	-5.95E 3	0.685	-0.350	-0.005	-15.524			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 322	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	348.611	-6.52E 3	-12.790	1.442	0.069	20.310			
	12775	1:BEBAN MATI	-46.758	3.5E 3	-0.410	0.264	-0.002	-30.346			
		2:BEBAN HIDL	-10.010	1.37E 3	-0.120	0.021	-0.001	-12.898			
		3:BEBAN GEM	-281.759	2.44E 3	12.641	-1.637	0.080	-58.202			
		4:KOMBINASI	-72.126	6.38E 3	-0.685	0.350	-0.003	-57.051			
		5:KOMB B. MA	-348.611	6.88E 3	12.790	-1.442	0.081	-99.196			
21507	14261	1:BEBAN MATI	26.989	-2.14E 3	1.470	-3.071	-0.009	-7.297			
		2:BEBAN HIDL	3.678	-526.315	0.214	-1.880	-0.001	-1.308			
		3:BEBAN GEM	9.239	-726.909	6.973	-3.760	-0.060	8.755			
		4:KOMBINASI	38.271	-3.41E 3	2.106	-6.694	-0.013	-10.849			
		5:KOMB B. MA	38.897	-3.22E 3	8.919	-8.147	-0.073	1.111			
	12776	1:BEBAN MATI	-26.989	3.49E 3	-1.470	3.071	-0.009	-25.818			
		2:BEBAN HIDL	-3.678	526.315	-0.214	1.880	-0.001	-4.886			
		3:BEBAN GEM	-9.239	726.909	-6.973	3.760	-0.022	-17.309			
		4:KOMBINASI	-38.271	5.03E 3	-2.106	6.694	-0.012	-38.799			
		5:KOMB B. MA	-38.897	4.57E 3	-8.919	8.147	-0.032	-46.924			
21508	14262	1:BEBAN MATI	16.455	-198.937	0.200	-0.980	-0.001	-18.543			
		2:BEBAN HIDL	2.331	-192.542	0.025	-0.857	-0.000	-4.141			
		3:BEBAN GEM	-76.399	-645.029	-0.261	-0.866	0.002	0.576			
		4:KOMBINASI	23.476	-546.791	0.280	-2.547	-0.002	-28.877			
		5:KOMB B. MA	-62.365	-991.742	-0.059	-2.403	0.001	-20.423			
	14261	1:BEBAN MATI	-16.455	1.55E 3	-0.200	0.980	-0.001	8.256			
		2:BEBAN HIDL	-2.331	192.542	-0.025	0.857	-0.000	1.875			
		3:BEBAN GEM	76.399	645.029	0.261	0.866	0.001	-8.166			
		4:KOMBINASI	-23.476	2.17E 3	-0.280	2.547	-0.001	12.908			
		5:KOMB B. MA	62.365	2.34E 3	0.059	2.403	-0.000	0.807			
21509	14263	1:BEBAN MATI	16.265	1.75E 3	-0.284	0.917	0.002	-5.838			
		2:BEBAN HIDL	2.843	214.790	-0.070	0.470	0.000	-1.629			
		3:BEBAN GEM	-150.031	-646.636	-3.030	1.182	0.020	-7.150			
		4:KOMBINASI	24.067	2.45E 3	-0.452	1.852	0.002	-9.612			
		5:KOMB B. MA	-139.562	1.2E 3	-3.507	2.440	0.022	-14.322			
	14262	1:BEBAN MATI	-16.265	-402.163	0.284	-0.917	0.002	18.516			
		2:BEBAN HIDL	-2.843	-214.790	0.070	-0.470	0.000	4.157			
		3:BEBAN GEM	150.031	646.636	3.030	-1.182	0.016	-0.460			
		4:KOMBINASI	-24.067	-826.260	0.452	-1.852	0.003	28.870			
		5:KOMB B. MA	139.562	147.930	3.507	-2.440	0.019	20.527			
21510	14265	1:BEBAN MATI	22.988	-2.23E 3	1.513	-1.391	-0.004	-18.218			
		2:BEBAN HIDL	6.660	-982.007	0.880	-0.456	-0.002	-8.382			
		3:BEBAN GEM	193.211	-1.65E 3	-195.583	1.175	0.524	12.293			
		4:KOMBINASI	38.241	-4.25E 3	3.223	-2.400	-0.009	-35.273			
		5:KOMB B. MA	229.855	-4.55E 3	-203.321	-0.432	0.545	-10.340			
	14431	1:BEBAN MATI	-22.988	2.38E 3	-1.513	1.391	-0.003	6.919			
		2:BEBAN HIDL	-6.660	982.007	-0.880	0.456	-0.002	3.567			
		3:BEBAN GEM	-193.211	1.65E 3	195.583	-1.175	0.435	-20.371			
		4:KOMBINASI	-38.241	4.43E 3	-3.223	2.400	-0.007	14.010			
		5:KOMB B. MA	-229.855	4.7E 3	203.321	0.432	0.452	-12.330			
21511	14267	1:BEBAN MATI	-22.539	761.064	4.602	-4.227	-0.011	-4.172			
		2:BEBAN HIDL	-5.317	215.831	0.072	-1.798	-0.001	-1.188			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

323

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.83E 3	-4.1E 3	725.098	-0.257	-1.533	-17.867			
		4:KOMBINASI	-35.554	1.26E 3	5.637	-7.948	-0.015	-6.908			
		5:KOMB B. MA	-1.95E 3	-3.42E 3	765.998	-5.575	-1.621	-23.645			
	14351	1:BEBAN MATI	22.539	-198.400	-4.602	4.227	-0.011	6.525			
		2:BEBAN HIDL	5.317	-215.831	-0.072	1.798	0.000	2.246			
		3:BEBAN GEM	1.83E 3	4.1E 3	-725.098	0.257	-2.023	-2.258			
		4:KOMBINASI	35.554	-583.410	-5.637	7.948	-0.013	11.424			
		5:KOMB B. MA	1.95E 3	3.98E 3	-765.998	5.575	-2.135	5.502			
21512	14269	1:BEBAN MATI	19.267	-3.45E 3	5.648	-0.925	-0.010	8.394			
		2:BEBAN HIDL	6.033	-1.5E 3	2.762	-0.313	-0.004	2.976			
		3:BEBAN GEM	445.910	-1.89E 3	-569.841	2.274	0.936	29.547			
		4:KOMBINASI	32.774	-6.55E 3	11.196	-1.612	-0.019	14.834			
		5:KOMB B. MA	491.093	-6.34E 3	-591.028	1.275	0.970	41.203			
	14435	1:BEBAN MATI	-19.267	3.53E 3	-5.648	0.925	-0.004	-16.949			
		2:BEBAN HIDL	-6.033	1.5E 3	-2.762	0.313	-0.002	-6.660			
		3:BEBAN GEM	-445.910	1.89E 3	569.841	-2.274	0.461	-34.188			
		4:KOMBINASI	-32.774	6.64E 3	-11.196	1.612	-0.008	-30.994			
		5:KOMB B. MA	-491.093	6.42E 3	591.028	-1.275	0.479	-56.842			
21513	14271	1:BEBAN MATI	-7.044	-1.58E 3	0.314	-0.740	-0.004	-2.074			
		2:BEBAN HIDL	-0.402	-460.439	-0.200	-0.862	0.000	-1.192			
		3:BEBAN GEM	-1.36E 3	-4.06E 3	94.052	0.588	-0.618	22.983			
		4:KOMBINASI	-9.096	-2.64E 3	0.058	-2.268	-0.004	-4.395			
		5:KOMB B. MA	-1.44E 3	-6.13E 3	98.950	-0.640	-0.652	21.343			
	12760	1:BEBAN MATI	7.044	2.71E 3	-0.314	0.740	0.000	-18.981			
		2:BEBAN HIDL	0.402	460.439	0.200	0.862	0.001	-3.324			
		3:BEBAN GEM	1.36E 3	4.06E 3	-94.052	-0.588	-0.305	-62.835			
		4:KOMBINASI	9.096	3.99E 3	-0.058	2.268	0.003	-28.095			
		5:KOMB B. MA	1.44E 3	7.25E 3	-98.950	0.640	-0.319	-86.951			
21514	14272	1:BEBAN MATI	-21.867	-575.352	0.832	-1.053	-0.007	3.324			
		2:BEBAN HIDL	-8.170	-190.078	0.185	-0.721	-0.002	1.131			
		3:BEBAN GEM	2.29E 3	-1.08E 3	83.576	-3.027	-0.377	5.639			
		4:KOMBINASI	-39.313	-994.547	1.294	-2.416	-0.011	5.798			
		5:KOMB B. MA	2.37E 3	-1.82E 3	88.697	-4.663	-0.403	9.923			
	12763	1:BEBAN MATI	21.867	935.745	-0.832	1.053	-0.003	-12.215			
		2:BEBAN HIDL	8.170	190.078	-0.185	0.721	-0.000	-3.368			
		3:BEBAN GEM	-2.29E 3	1.08E 3	-83.576	3.027	-0.607	-18.290			
		4:KOMBINASI	39.313	1.43E 3	-1.294	2.416	-0.004	-20.047			
		5:KOMB B. MA	-2.37E 3	2.18E 3	-88.697	4.663	-0.641	-33.441			
21515	14273	1:BEBAN MATI	-4.152	333.767	0.120	1.625	-0.001	4.806			
		2:BEBAN HIDL	-3.854	116.414	0.016	0.562	-0.000	2.243			
		3:BEBAN GEM	1.89E 3	-1.03E 3	25.931	-0.476	-0.122	-7.022			
		4:KOMBINASI	-11.150	586.783	0.169	2.849	-0.001	9.355			
		5:KOMB B. MA	1.98E 3	-679.631	27.356	1.462	-0.129	-1.222			
	14272	1:BEBAN MATI	4.152	26.625	-0.120	-1.625	-0.001	-2.999			
		2:BEBAN HIDL	3.854	-116.414	-0.016	-0.562	-0.000	-0.873			
		3:BEBAN GEM	-1.89E 3	1.03E 3	-25.931	0.476	-0.183	-5.118			
		4:KOMBINASI	11.150	-154.312	-0.169	-2.849	-0.001	-4.994			
		5:KOMB B. MA	-1.98E 3	1.04E 3	-27.356	-1.462	-0.193	-8.896			



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Job No 1	Sheet No 324	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21516	14275	1:BEBAN MATI	16.805	3.37E 3	0.036	-2.635	0.000	9.982			
		2:BEBAN HIDL	3.930	638.805	0.001	-1.713	0.000	2.195			
		3:BEBAN GEM	-630.917	-1.5E 3	-1.712	-1.119	0.018	-29.127			
		4:KOMBINASI	26.454	5.06E 3	0.045	-5.903	0.001	15.491			
		5:KOMB B. MA	-643.300	2.18E 3	-1.761	-4.838	0.019	-19.284			
14280	14280	1:BEBAN MATI	-16.805	-2.24E 3	-0.036	2.635	-0.001	17.523			
		2:BEBAN HIDL	-3.930	-638.805	-0.001	1.713	-0.000	4.069			
		3:BEBAN GEM	630.917	1.5E 3	1.712	1.119	-0.001	14.461			
		4:KOMBINASI	-26.454	-3.71E 3	-0.045	5.903	-0.001	27.538			
		5:KOMB B. MA	643.300	-1.06E 3	1.761	4.838	-0.002	35.149			
21517	14278	1:BEBAN MATI	13.694	3.5E 3	0.092	0.241	-0.001	13.081			
		2:BEBAN HIDL	2.840	1.42E 3	-0.002	0.020	-0.000	4.975			
		3:BEBAN GEM	-480.074	-1.41E 3	-10.580	-0.903	0.056	-27.403			
		4:KOMBINASI	20.976	6.47E 3	0.106	0.321	-0.001	23.657			
		5:KOMB B. MA	-488.680	2.87E 3	-11.019	-0.695	0.058	-12.707			
14283	14283	1:BEBAN MATI	-13.694	-3.2E 3	-0.092	-0.241	-0.000	19.769			
		2:BEBAN HIDL	-2.840	-1.42E 3	0.002	-0.020	0.000	8.940			
		3:BEBAN GEM	480.074	1.41E 3	10.580	0.903	0.048	13.545			
		4:KOMBINASI	-20.976	-6.11E 3	-0.106	-0.321	-0.000	38.027			
		5:KOMB B. MA	488.680	-2.57E 3	11.019	0.695	0.050	39.356			
21518	14280	1:BEBAN MATI	17.223	1.78E 3	-0.167	-1.588	0.001	-18.404			
		2:BEBAN HIDL	4.075	329.323	-0.047	-0.895	0.000	-4.407			
		3:BEBAN GEM	-469.990	-1.47E 3	-0.929	-1.153	0.007	-14.451			
		4:KOMBINASI	27.188	2.66E 3	-0.275	-3.337	0.002	-29.135			
		5:KOMB B. MA	-473.821	430.666	-1.170	-3.336	0.009	-36.222			
13665	13665	1:BEBAN MATI	-17.223	-650.175	0.167	1.588	0.000	30.297			
		2:BEBAN HIDL	-4.075	-329.323	0.047	0.895	0.000	7.636			
		3:BEBAN GEM	469.990	1.47E 3	0.929	1.153	0.002	0.046			
		4:KOMBINASI	-27.188	-1.31E 3	0.275	3.337	0.001	48.575			
		5:KOMB B. MA	473.821	694.662	1.170	3.336	0.003	34.927			
21519	14283	1:BEBAN MATI	16.699	2.08E 3	0.291	0.154	-0.001	-20.816			
		2:BEBAN HIDL	3.583	799.770	0.073	0.011	-0.000	-9.322			
		3:BEBAN GEM	-363.219	-1.32E 3	-15.542	-0.530	0.071	-12.978			
		4:KOMBINASI	25.771	3.77E 3	0.466	0.202	-0.002	-39.894			
		5:KOMB B. MA	-362.532	1.17E 3	-15.984	-0.396	0.072	-40.036			
13704	13704	1:BEBAN MATI	-16.699	-1.78E 3	-0.291	-0.154	-0.001	39.731			
		2:BEBAN HIDL	-3.583	-799.770	-0.073	-0.011	-0.000	17.165			
		3:BEBAN GEM	363.219	1.32E 3	15.542	0.530	0.082	0.029			
		4:KOMBINASI	-25.771	-3.41E 3	-0.466	-0.202	-0.002	75.140			
		5:KOMB B. MA	362.532	-872.035	15.984	0.396	0.084	50.060			
21520	14284	1:BEBAN MATI	-1.293	-666.519	-0.042	0.144	0.000	-7.207			
		2:BEBAN HIDL	-0.361	-403.685	-0.015	0.001	0.000	-3.538			
		3:BEBAN GEM	28.749	4.844	4.751	0.195	-0.022	1.161			
		4:KOMBINASI	-2.129	-1.45E 3	-0.074	0.175	0.000	-14.310			
		5:KOMB B. MA	28.677	-903.644	4.938	0.349	-0.023	-8.111			
13665	13665	1:BEBAN MATI	1.293	897.171	0.042	-0.144	0.000	-1.994			
		2:BEBAN HIDL	0.361	403.685	0.015	-0.001	0.000	-1.212			
		3:BEBAN GEM	-28.749	-4.844	-4.751	-0.195	-0.034	-1.104			



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Job No 1	Sheet No 325	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	2.129	1.72E 3	0.074	-0.175	0.000	-4.332			
		5:KOMB B. MA	-28.677	1.13E 3	-4.938	-0.349	-0.035	-3.881			
21521	14285	1:BEBAN MATI	-1.105	-116.168	-0.070	0.091	0.000	-11.223			
		2:BEBAN HIDL	-0.431	-133.940	-0.023	0.000	0.000	-5.856			
		3:BEBAN GEM	38.876	-55.184	4.681	0.176	-0.028	0.420			
		4:KOMBINASI	-2.016	-353.706	-0.121	0.109	0.001	-22.836			
		5:KOMB B. MA	39.456	-254.476	4.832	0.275	-0.029	-14.295			
	14284	1:BEBAN MATI	1.105	346.820	0.070	-0.091	0.001	8.498			
		2:BEBAN HIDL	0.431	133.940	0.023	-0.000	0.000	4.279			
		3:BEBAN GEM	-38.876	55.184	-4.681	-0.176	-0.028	-1.069			
		4:KOMBINASI	2.016	630.488	0.121	-0.109	0.001	17.045			
		5:KOMB B. MA	-39.456	485.127	-4.832	-0.275	-0.028	9.943			
21522	14286	1:BEBAN MATI	0.158	778.434	-0.094	-0.030	0.000	-3.275			
		2:BEBAN HIDL	-0.241	315.811	-0.031	-0.002	0.000	-2.093			
		3:BEBAN GEM	48.286	-56.783	6.073	-0.153	-0.037	-0.331			
		4:KOMBINASI	-0.197	1.44E 3	-0.162	-0.039	0.001	-7.279			
		5:KOMB B. MA	50.713	908.299	6.264	-0.192	-0.039	-4.878			
	14285	1:BEBAN MATI	-0.158	-547.783	0.094	0.030	0.001	11.078			
		2:BEBAN HIDL	0.241	-315.811	0.031	0.002	0.000	5.810			
		3:BEBAN GEM	-48.286	56.783	-6.073	0.153	-0.034	-0.337			
		4:KOMBINASI	0.197	-1.16E 3	0.162	0.039	0.001	22.589			
		5:KOMB B. MA	-50.713	-677.647	-6.264	0.192	-0.035	14.210			
21523	14288	1:BEBAN MATI	19.142	-2.2E 3	-0.333	2.123	0.002	-18.215			
		2:BEBAN HIDL	4.218	-637.886	-0.075	1.713	0.000	-4.086			
		3:BEBAN GEM	-134.392	-1.49E 3	-2.537	0.765	0.009	14.637			
		4:KOMBINASI	29.720	-3.66E 3	-0.520	5.288	0.003	-28.395			
		5:KOMB B. MA	-119.438	-4.15E 3	-3.042	3.954	0.012	-5.297			
	14293	1:BEBAN MATI	-19.142	3.33E 3	0.333	-2.123	0.001	-8.892			
		2:BEBAN HIDL	-4.218	637.886	0.075	-1.713	0.000	-2.170			
		3:BEBAN GEM	134.392	1.49E 3	2.537	-0.765	0.016	-29.216			
		4:KOMBINASI	-29.720	5.01E 3	0.520	-5.288	0.002	-14.143			
		5:KOMB B. MA	119.438	5.27E 3	3.042	-3.954	0.018	-40.871			
21524	14291	1:BEBAN MATI	15.450	-3.08E 3	0.494	-0.238	-0.002	-21.179			
		2:BEBAN HIDL	3.137	-1.41E 3	0.161	-0.016	-0.001	-8.991			
		3:BEBAN GEM	-177.987	-1.4E 3	-17.173	0.911	0.079	13.841			
		4:KOMBINASI	23.559	-5.95E 3	0.851	-0.311	-0.004	-39.800			
		5:KOMB B. MA	-169.554	-5.39E 3	-17.440	0.709	0.080	-12.040			
	14296	1:BEBAN MATI	-15.450	3.38E 3	-0.494	0.238	-0.002	-10.457			
		2:BEBAN HIDL	-3.137	1.41E 3	-0.161	0.016	-0.001	-4.884			
		3:BEBAN GEM	177.987	1.4E 3	17.173	-0.911	0.090	-27.563			
		4:KOMBINASI	-23.559	6.32E 3	-0.851	0.311	-0.004	-20.363			
		5:KOMB B. MA	169.554	5.69E 3	17.440	-0.709	0.091	-42.329			
21525	14293	1:BEBAN MATI	26.616	-3.72E 3	-3.031	3.708	0.014	10.308			
		2:BEBAN HIDL	5.552	-843.341	-0.631	2.367	0.003	2.877			
		3:BEBAN GEM	100.168	-1.63E 3	-18.804	2.139	0.054	29.690			
		4:KOMBINASI	40.822	-5.82E 3	-4.647	8.237	0.021	16.972			
		5:KOMB B. MA	135.124	-5.94E 3	-23.155	7.374	0.072	43.208			
	12740	1:BEBAN MATI	-26.616	4.85E 3	3.031	-3.708	0.016	-52.329			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 326	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-5.552	843.341	0.631	-2.367	0.003	-11.147			
		3:BEBAN GEM	-100.168	1.63E 3	18.804	-2.139	0.130	-45.637			
		4:KOMBINASI	-40.822	7.17E 3	4.647	-8.237	0.025	-80.631			
		5:KOMB B. MA	-135.124	7.06E 3	23.155	-7.374	0.155	-106.937			
21526	14296	1:BEBAN MATI	14.285	-4.55E 3	1.135	-0.276	-0.005	11.958			
		2:BEBAN HIDL	2.691	-1.97E 3	0.403	-0.025	-0.002	5.681			
		3:BEBAN GEM	-32.016	-1.74E 3	-27.914	1.522	0.125	27.827			
		4:KOMBINASI	21.447	-8.61E 3	2.007	-0.370	-0.010	23.440			
		5:KOMB B. MA	-17.718	-7.55E 3	-27.933	1.308	0.124	44.585			
	12765	1:BEBAN MATI	-14.285	4.85E 3	-1.135	0.276	-0.006	-58.057			
		2:BEBAN HIDL	-2.691	1.97E 3	-0.403	0.025	-0.002	-24.969			
		3:BEBAN GEM	32.016	1.74E 3	27.914	-1.522	0.149	-44.847			
		4:KOMBINASI	-21.447	8.97E 3	-2.007	0.370	-0.010	-109.618			
		5:KOMB B. MA	17.718	7.85E 3	27.933	-1.308	0.150	-120.128			
21527	14297	1:BEBAN MATI	39.665	-3.53E 3	-0.059	0.055	0.000	-12.124			
		2:BEBAN HIDL	8.381	-1.33E 3	-0.028	-0.011	0.000	-3.565			
		3:BEBAN GEM	105.959	-710.737	16.783	-3.903	-0.115	8.022			
		4:KOMBINASI	61.008	-6.37E 3	-0.116	0.049	0.000	-20.252			
		5:KOMB B. MA	155.950	-5.08E 3	17.547	-4.049	-0.121	-5.839			
	12740	1:BEBAN MATI	-39.665	4.88E 3	0.059	-0.055	0.001	-37.345			
		2:BEBAN HIDL	-8.381	1.33E 3	0.028	0.011	0.000	-12.139			
		3:BEBAN GEM	-105.959	710.737	-16.783	3.903	-0.082	-16.386			
		4:KOMBINASI	-61.008	7.99E 3	0.116	-0.049	0.001	-64.237			
		5:KOMB B. MA	-155.950	6.43E 3	-17.547	4.049	-0.086	-61.834			
21528	14298	1:BEBAN MATI	23.958	-602.879	-0.081	0.022	0.000	-28.203			
		2:BEBAN HIDL	5.197	-478.111	-0.026	-0.009	0.000	-9.786			
		3:BEBAN GEM	60.480	-582.582	7.944	-1.153	-0.039	1.026			
		4:KOMBINASI	37.065	-1.49E 3	-0.139	0.012	0.001	-49.502			
		5:KOMB B. MA	90.580	-1.5E 3	8.244	-1.194	-0.041	-32.998			
	14297	1:BEBAN MATI	-23.958	1.95E 3	0.081	-0.022	0.001	13.163			
		2:BEBAN HIDL	-5.197	478.111	0.026	0.009	0.000	4.160			
		3:BEBAN GEM	-60.480	582.582	-7.944	1.153	-0.054	-7.882			
		4:KOMBINASI	-37.065	3.11E 3	0.139	-0.012	0.001	22.451			
		5:KOMB B. MA	-90.580	2.85E 3	-8.244	1.194	-0.057	7.383			
21529	14299	1:BEBAN MATI	19.533	2.26E 3	-0.137	-0.004	0.001	-9.476			
		2:BEBAN HIDL	4.543	492.861	-0.032	-0.004	0.000	-3.935			
		3:BEBAN GEM	18.817	-581.673	1.141	1.046	-0.000	-6.073			
		4:KOMBINASI	30.708	3.5E 3	-0.214	-0.011	0.001	-17.667			
		5:KOMB B. MA	42.016	1.94E 3	1.042	1.091	0.001	-18.213			
	14298	1:BEBAN MATI	-19.533	-906.482	0.137	0.004	0.001	28.089			
		2:BEBAN HIDL	-4.543	-492.861	0.032	0.004	0.000	9.735			
		3:BEBAN GEM	-18.817	581.673	-1.141	-1.046	-0.013	-0.773			
		4:KOMBINASI	-30.708	-1.88E 3	0.214	0.011	0.001	49.283			
		5:KOMB B. MA	-42.016	-591.442	-1.042	-1.091	-0.013	33.119			
21530	14301	1:BEBAN MATI	12.648	3.34E 3	0.236	-2.320	-0.001	9.077			
		2:BEBAN HIDL	2.883	636.478	0.054	-1.699	-0.000	2.164			
		3:BEBAN GEM	-493.208	-1.5E 3	-2.507	-1.129	0.017	-29.251			
		4:KOMBINASI	19.791	5.03E 3	0.369	-5.502	-0.001	14.355			



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Job No 1	Sheet No 327	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-503.491	2.15E 3	-2.364	-4.524	0.017	-20.338			
	14306	1:BEBAN MATI	-12.648	-2.22E 3	-0.236	2.320	-0.002	18.163			
		2:BEBAN HIDL	-2.883	-636.478	-0.054	1.699	-0.000	4.078			
		3:BEBAN GEM	493.208	1.5E 3	2.507	1.129	0.008	14.577			
		4:KOMBINASI	-19.791	-3.68E 3	-0.369	5.502	-0.003	28.320			
		5:KOMB B. MA	503.491	-1.03E 3	2.364	4.524	0.006	35.916			
21531	14304	1:BEBAN MATI	12.583	3.39E 3	0.045	0.275	-0.000	10.987			
		2:BEBAN HIDL	2.952	1.4E 3	0.006	0.006	-0.000	4.834			
		3:BEBAN GEM	-505.978	-1.42E 3	-11.344	-0.904	0.057	-27.593			
		4:KOMBINASI	19.824	6.3E 3	0.063	0.340	-0.000	20.919			
		5:KOMB B. MA	-516.922	2.74E 3	-11.863	-0.670	0.059	-15.085			
	14309	1:BEBAN MATI	-12.583	-3.09E 3	-0.045	-0.275	-0.000	20.751			
		2:BEBAN HIDL	-2.952	-1.4E 3	-0.006	-0.006	-0.000	8.888			
		3:BEBAN GEM	505.978	1.42E 3	11.344	0.904	0.054	13.691			
		4:KOMBINASI	-19.824	-5.94E 3	-0.063	-0.340	-0.000	39.122			
		5:KOMB B. MA	516.922	-2.44E 3	11.863	0.670	0.057	40.459			
21532	14306	1:BEBAN MATI	9.526	1.75E 3	0.063	-1.212	0.000	-19.011			
		2:BEBAN HIDL	2.109	327.278	0.015	-0.882	0.000	-4.412			
		3:BEBAN GEM	-359.098	-1.47E 3	-1.490	-1.155	0.010	-14.567			
		4:KOMBINASI	14.806	2.62E 3	0.099	-2.866	0.000	-29.872			
		5:KOMB B. MA	-366.261	401.542	-1.493	-2.954	0.010	-36.953			
	13655	1:BEBAN MATI	-9.526	-624.461	-0.063	1.212	-0.001	30.652			
		2:BEBAN HIDL	-2.109	-327.278	-0.015	0.882	-0.000	7.621			
		3:BEBAN GEM	359.098	1.47E 3	1.490	1.155	0.005	0.141			
		4:KOMBINASI	-14.806	-1.27E 3	-0.099	2.866	-0.001	48.977			
		5:KOMB B. MA	366.261	723.787	1.493	2.954	0.004	35.373			
21533	14309	1:BEBAN MATI	12.972	1.97E 3	0.149	0.175	-0.001	-21.814			
		2:BEBAN HIDL	2.922	781.565	0.047	0.001	-0.000	-9.250			
		3:BEBAN GEM	-427.242	-1.33E 3	-12.971	-0.529	0.063	-13.119			
		4:KOMBINASI	20.241	3.61E 3	0.254	0.212	-0.001	-40.977			
		5:KOMB B. MA	-433.879	1.04E 3	-13.442	-0.380	0.065	-41.139			
	13703	1:BEBAN MATI	-12.972	-1.67E 3	-0.149	-0.175	-0.001	39.639			
		2:BEBAN HIDL	-2.922	-781.565	-0.047	-0.001	-0.000	16.915			
		3:BEBAN GEM	427.242	1.33E 3	12.971	0.529	0.064	0.110			
		4:KOMBINASI	-20.241	-3.25E 3	-0.254	-0.212	-0.001	74.631			
		5:KOMB B. MA	433.879	-743.618	13.442	0.380	0.066	49.904			
21534	14310	1:BEBAN MATI	-0.106	-682.504	-0.029	-0.001	0.000	-7.511			
		2:BEBAN HIDL	-0.053	-403.041	-0.011	-0.001	0.000	-3.548			
		3:BEBAN GEM	28.280	4.132	3.710	0.191	-0.016	1.165			
		4:KOMBINASI	-0.211	-1.46E 3	-0.052	-0.003	0.000	-14.690			
		5:KOMB B. MA	29.557	-919.989	3.861	0.199	-0.016	-8.417			
	13655	1:BEBAN MATI	0.106	913.155	0.029	0.001	0.000	-1.878			
		2:BEBAN HIDL	0.053	403.041	0.011	0.001	0.000	-1.195			
		3:BEBAN GEM	-28.280	-4.132	-3.710	-0.191	-0.028	-1.116			
		4:KOMBINASI	0.211	1.74E 3	0.052	0.003	0.000	-4.166			
		5:KOMB B. MA	-29.557	1.15E 3	-3.861	-0.199	-0.029	-3.767			
21535	14311	1:BEBAN MATI	1.022	-122.062	-0.026	-0.001	0.000	-11.622			
		2:BEBAN HIDL	0.101	-132.310	-0.010	-0.000	0.000	-5.844			



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Job No

1

Sheet No

328

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	51.953	-56.236	3.504	0.174	-0.020	0.408			
		4:KOMBINASI	1.389	-358.171	-0.047	-0.001	0.000	-23.297			
		5:KOMB B. MA	55.634	-260.495	3.647	0.182	-0.020	-14.700			
	14310	1:BEBAN MATI	-1.022	352.714	0.026	0.001	0.000	8.829			
		2:BEBAN HIDL	-0.101	132.310	0.010	0.000	0.000	4.287			
		3:BEBAN GEM	-51.953	56.236	-3.504	-0.174	-0.022	-1.070			
		4:KOMBINASI	-1.389	634.953	0.047	0.001	0.000	17.454			
		5:KOMB B. MA	-55.634	491.147	-3.647	-0.182	-0.023	10.277			
21536	14312	1:BEBAN MATI	2.732	800.866	-0.034	0.000	0.000	-3.402			
		2:BEBAN HIDL	0.356	318.966	-0.014	0.001	0.000	-2.042			
		3:BEBAN GEM	81.543	-56.923	4.929	-0.152	-0.029	-0.345			
		4:KOMBINASI	3.848	1.47E 3	-0.062	0.002	0.000	-7.350			
		5:KOMB B. MA	88.566	932.477	5.134	-0.158	-0.031	-4.989			
	14311	1:BEBAN MATI	-2.732	-570.215	0.034	-0.000	0.000	11.470			
		2:BEBAN HIDL	-0.356	-318.966	0.014	-0.001	0.000	5.795			
		3:BEBAN GEM	-81.543	56.923	-4.929	0.152	-0.029	-0.325			
		4:KOMBINASI	-3.848	-1.19E 3	0.062	-0.002	0.000	23.036			
		5:KOMB B. MA	-88.566	-701.825	-5.134	0.158	-0.030	14.605			
21537	14314	1:BEBAN MATI	9.805	-2.23E 3	-0.242	2.323	0.002	-17.990			
		2:BEBAN HIDL	1.800	-637.969	-0.055	1.700	0.000	-4.060			
		3:BEBAN GEM	-50.653	-1.49E 3	-2.121	0.778	0.009	14.575			
		4:KOMBINASI	14.647	-3.7E 3	-0.379	5.508	0.003	-28.084			
		5:KOMB B. MA	-42.300	-4.18E 3	-2.502	4.160	0.012	-5.122			
	14319	1:BEBAN MATI	-9.805	3.36E 3	0.242	-2.323	0.001	-9.417			
		2:BEBAN HIDL	-1.800	637.969	0.055	-1.700	0.000	-2.196			
		3:BEBAN GEM	50.653	1.49E 3	2.121	-0.778	0.012	-29.178			
		4:KOMBINASI	-14.647	5.05E 3	0.379	-5.508	0.001	-14.814			
		5:KOMB B. MA	42.300	5.3E 3	2.502	-4.160	0.013	-41.371			
21538	14317	1:BEBAN MATI	11.505	-3.1E 3	0.308	-0.300	-0.001	-20.600			
		2:BEBAN HIDL	2.398	-1.4E 3	0.120	-0.021	-0.001	-8.863			
		3:BEBAN GEM	-243.258	-1.4E 3	-16.775	0.914	0.082	13.795			
		4:KOMBINASI	17.644	-5.96E 3	0.562	-0.394	-0.003	-38.901			
		5:KOMB B. MA	-242.477	-5.41E 3	-17.234	0.647	0.084	-11.433			
	14322	1:BEBAN MATI	-11.505	3.4E 3	-0.308	0.300	-0.002	-11.260			
		2:BEBAN HIDL	-2.398	1.4E 3	-0.120	0.021	-0.001	-4.867			
		3:BEBAN GEM	243.258	1.4E 3	16.775	-0.914	0.083	-27.537			
		4:KOMBINASI	-17.644	6.32E 3	-0.562	0.394	-0.003	-21.300			
		5:KOMB B. MA	242.477	5.71E 3	17.234	-0.647	0.085	-43.094			
21539	14319	1:BEBAN MATI	16.653	-3.75E 3	-2.875	3.886	0.013	10.873			
		2:BEBAN HIDL	3.006	-842.583	-0.602	2.349	0.003	2.902			
		3:BEBAN GEM	190.865	-1.63E 3	-18.029	2.153	0.054	29.656			
		4:KOMBINASI	24.793	-5.85E 3	-4.412	8.423	0.020	17.691			
		5:KOMB B. MA	218.865	-5.96E 3	-22.166	7.557	0.072	43.753			
	12742	1:BEBAN MATI	-16.653	4.88E 3	2.875	-3.886	0.015	-53.165			
		2:BEBAN HIDL	-3.006	842.583	0.602	-2.349	0.003	-11.165			
		3:BEBAN GEM	-190.865	1.63E 3	18.029	-2.153	0.123	-45.622			
		4:KOMBINASI	-24.793	7.2E 3	4.412	-8.423	0.023	-81.662			
		5:KOMB B. MA	-218.865	7.09E 3	22.166	-7.557	0.146	-107.768			



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Job No 1	Sheet No 329	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21540	14322	1:BEBAN MATI	9.597	-4.58E 3	1.030	-0.287	-0.005	12.749			
		2:BEBAN HIDL	1.823	-1.95E 3	0.419	-0.007	-0.002	5.650			
		3:BEBAN GEM	-62.649	-1.74E 3	-32.277	1.533	0.145	27.802			
		4:KOMBINASI	14.434	-8.63E 3	1.907	-0.355	-0.009	24.340			
		5:KOMB B. MA	-55.090	-7.58E 3	-32.609	1.318	0.146	45.331			
12764	12764	1:BEBAN MATI	-9.597	4.88E 3	-1.030	0.287	-0.005	-59.177			
		2:BEBAN HIDL	-1.823	1.95E 3	-0.419	0.007	-0.002	-24.810			
		3:BEBAN GEM	62.649	1.74E 3	32.277	-1.533	0.172	-44.835			
		4:KOMBINASI	-14.434	8.99E 3	-1.907	0.355	-0.009	-110.709			
		5:KOMB B. MA	55.090	7.88E 3	32.609	-1.318	0.174	-121.140			
21541	14323	1:BEBAN MATI	40.602	-3.53E 3	-0.121	-0.061	0.001	-12.153			
		2:BEBAN HIDL	8.609	-1.33E 3	-0.044	0.021	0.000	-3.568			
		3:BEBAN GEM	111.228	-720.242	19.647	-3.892	-0.128	8.087			
		4:KOMBINASI	62.496	-6.37E 3	-0.216	-0.039	0.001	-20.293			
		5:KOMB B. MA	162.556	-5.09E 3	20.481	-4.134	-0.134	-5.803			
12742	12742	1:BEBAN MATI	-40.602	4.88E 3	0.121	0.061	0.001	-37.335			
		2:BEBAN HIDL	-8.609	1.33E 3	0.044	-0.021	0.000	-12.133			
		3:BEBAN GEM	-111.228	720.242	-19.647	3.892	-0.103	-16.562			
		4:KOMBINASI	-62.496	7.99E 3	0.216	0.039	0.001	-64.215			
		5:KOMB B. MA	-162.556	6.44E 3	-20.481	4.134	-0.108	-62.005			
21542	14324	1:BEBAN MATI	24.634	-598.900	-0.049	-0.034	0.000	-28.181			
		2:BEBAN HIDL	5.405	-476.130	-0.021	0.012	0.000	-9.764			
		3:BEBAN GEM	102.280	-588.834	11.611	-1.149	-0.059	1.017			
		4:KOMBINASI	38.209	-1.48E 3	-0.093	-0.022	0.000	-49.440			
		5:KOMB B. MA	135.271	-1.5E 3	12.129	-1.234	-0.061	-32.972			
14323	14323	1:BEBAN MATI	-24.634	1.95E 3	0.049	0.034	0.000	13.188			
		2:BEBAN HIDL	-5.405	476.130	0.021	-0.012	0.000	4.161			
		3:BEBAN GEM	-102.280	588.834	-11.611	1.149	-0.078	-7.946			
		4:KOMBINASI	-38.209	3.1E 3	0.093	0.022	0.001	22.483			
		5:KOMB B. MA	-135.271	2.85E 3	-12.129	1.234	-0.081	7.341			
21543	14325	1:BEBAN MATI	19.956	2.26E 3	0.007	-0.007	-0.000	-9.359			
		2:BEBAN HIDL	4.751	496.143	-0.009	0.001	0.000	-3.873			
		3:BEBAN GEM	110.326	-586.497	6.723	1.044	-0.033	-6.141			
		4:KOMBINASI	31.549	3.51E 3	-0.005	-0.006	-0.000	-17.427			
		5:KOMB B. MA	138.649	1.95E 3	7.061	1.090	-0.034	-18.130			
14324	14324	1:BEBAN MATI	-19.956	-914.457	-0.007	0.007	0.000	28.066			
		2:BEBAN HIDL	-4.751	-496.143	0.009	-0.001	0.000	9.711			
		3:BEBAN GEM	-110.326	586.497	-6.723	-1.044	-0.047	-0.761			
		4:KOMBINASI	-31.549	-1.89E 3	0.005	0.006	0.000	49.217			
		5:KOMB B. MA	-138.649	-596.320	-7.061	-1.090	-0.049	33.093			
21544	14327	1:BEBAN MATI	12.856	3.39E 3	0.288	-2.120	-0.001	8.907			
		2:BEBAN HIDL	2.314	658.741	0.063	-1.716	-0.000	2.249			
		3:BEBAN GEM	-292.376	-1.47E 3	-0.710	-1.140	0.009	-29.259			
		4:KOMBINASI	19.128	5.12E 3	0.447	-5.290	-0.001	14.287			
		5:KOMB B. MA	-292.751	2.23E 3	-0.420	-4.347	0.008	-20.466			
14332	14332	1:BEBAN MATI	-12.856	-2.26E 3	-0.288	2.120	-0.002	18.776			
		2:BEBAN HIDL	-2.314	-658.741	-0.063	1.716	-0.000	4.211			
		3:BEBAN GEM	292.376	1.47E 3	0.710	1.140	-0.002	14.806			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-19.128	-3.77E 3	-0.447	5.290	-0.003	29.268			
		5:KOMB B. MA	292.751	-1.11E 3	0.420	4.347	-0.004	36.848			
21545	14330	1:BEBAN MATI	14.759	3.39E 3	-0.152	0.316	0.001	10.275			
		2:BEBAN HIDL	3.008	1.44E 3	-0.046	0.020	0.000	4.945			
		3:BEBAN GEM	-401.209	-1.39E 3	-18.924	-0.909	0.095	-27.615			
		4:KOMBINASI	22.524	6.37E 3	-0.256	0.410	0.001	20.242			
		5:KOMB B. MA	-404.706	2.79E 3	-20.050	-0.627	0.101	-15.753			
	14335	1:BEBAN MATI	-14.759	-3.09E 3	0.152	-0.316	0.001	21.515			
		2:BEBAN HIDL	-3.008	-1.44E 3	0.046	-0.020	0.000	9.131			
		3:BEBAN GEM	401.209	1.39E 3	18.924	0.909	0.090	13.935			
		4:KOMBINASI	-22.524	-6.01E 3	0.256	-0.410	0.001	40.428			
		5:KOMB B. MA	404.706	-2.49E 3	20.050	0.627	0.096	41.626			
21546	14332	1:BEBAN MATI	9.549	1.79E 3	0.101	-0.984	0.000	-19.597			
		2:BEBAN HIDL	1.504	349.098	0.024	-0.897	-0.000	-4.552			
		3:BEBAN GEM	-91.008	-1.45E 3	-1.324	-1.165	0.005	-14.803			
		4:KOMBINASI	13.866	2.71E 3	0.160	-2.616	0.000	-30.800			
		5:KOMB B. MA	-85.107	479.296	-1.275	-2.745	0.005	-37.871			
	13657	1:BEBAN MATI	-9.549	-665.684	-0.101	0.984	-0.001	31.643			
		2:BEBAN HIDL	-1.504	-349.098	-0.024	0.897	-0.000	7.976			
		3:BEBAN GEM	91.008	1.45E 3	1.324	1.165	0.008	0.596			
		4:KOMBINASI	-13.866	-1.36E 3	-0.160	2.616	-0.002	50.732			
		5:KOMB B. MA	85.107	646.031	1.275	2.745	0.008	37.054			
21547	14335	1:BEBAN MATI	14.509	1.97E 3	0.007	0.208	-0.000	-22.594			
		2:BEBAN HIDL	2.769	820.177	0.016	0.009	-0.000	-9.512			
		3:BEBAN GEM	-260.857	-1.3E 3	-23.366	-0.533	0.106	-13.373			
		4:KOMBINASI	21.841	3.68E 3	0.034	0.264	-0.000	-42.332			
		5:KOMB B. MA	-257.729	1.1E 3	-24.518	-0.346	0.112	-42.342			
	13702	1:BEBAN MATI	-14.509	-1.67E 3	-0.007	-0.208	-0.000	40.461			
		2:BEBAN HIDL	-2.769	-820.177	-0.016	-0.009	-0.000	17.556			
		3:BEBAN GEM	260.857	1.3E 3	23.366	0.533	0.123	0.595			
		4:KOMBINASI	-21.841	-3.32E 3	-0.034	-0.264	-0.000	76.641			
		5:KOMB B. MA	257.729	-795.731	24.518	0.346	0.129	51.619			
21548	14336	1:BEBAN MATI	-0.272	-672.479	-0.023	-0.121	0.000	-7.256			
		2:BEBAN HIDL	-0.067	-405.956	-0.011	0.008	0.000	-3.545			
		3:BEBAN GEM	8.067	2.570	6.687	0.196	-0.031	1.167			
		4:KOMBINASI	-0.433	-1.46E 3	-0.045	-0.132	0.000	-14.380			
		5:KOMB B. MA	8.158	-913.354	6.992	0.090	-0.033	-8.158			
	13657	1:BEBAN MATI	0.272	903.131	0.023	0.121	0.000	-2.015			
		2:BEBAN HIDL	0.067	405.956	0.011	-0.008	0.000	-1.232			
		3:BEBAN GEM	-8.067	-2.570	-6.687	-0.196	-0.047	-1.137			
		4:KOMBINASI	0.433	1.73E 3	0.045	0.132	0.000	-4.389			
		5:KOMB B. MA	-8.158	1.14E 3	-6.992	-0.090	-0.050	-3.948			
21549	14337	1:BEBAN MATI	0.479	-119.638	-0.018	-0.078	0.000	-11.328			
		2:BEBAN HIDL	-0.014	-135.006	-0.010	0.006	0.000	-5.883			
		3:BEBAN GEM	25.757	-57.915	6.975	0.176	-0.040	0.386			
		4:KOMBINASI	0.552	-359.575	-0.037	-0.084	0.000	-23.007			
		5:KOMB B. MA	27.515	-261.452	7.300	0.110	-0.042	-14.452			
	14336	1:BEBAN MATI	-0.479	350.290	0.018	0.078	0.000	8.563			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 331	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	0.014	135.006	0.010	-0.006	0.000	4.295			
		3:BEBAN GEM	-25.757	57.915	-6.975	-0.176	-0.042	-1.068			
		4:KOMBINASI	-0.552	636.357	0.037	0.084	0.000	17.147			
		5:KOMB B. MA	-27.515	492.104	-7.300	-0.110	-0.044	10.018			
21550	14338	1:BEBAN MATI	1.732	785.872	-0.029	0.010	0.000	-3.290			
		2:BEBAN HIDL	0.141	320.244	-0.015	-0.005	0.000	-2.068			
		3:BEBAN GEM	43.968	-56.120	9.371	-0.156	-0.056	-0.358			
		4:KOMBINASI	2.304	1.46E 3	-0.059	0.004	0.000	-7.257			
		5:KOMB B. MA	47.982	919.092	9.801	-0.157	-0.059	-4.907			
	14337	1:BEBAN MATI	-1.732	-555.220	0.029	-0.010	0.000	11.181			
		2:BEBAN HIDL	-0.141	-320.244	0.015	0.005	0.000	5.837			
		3:BEBAN GEM	-43.968	56.120	-9.371	0.156	-0.054	-0.302			
		4:KOMBINASI	-2.304	-1.18E 3	0.059	-0.004	0.000	22.756			
		5:KOMB B. MA	-47.982	-688.440	-9.801	0.157	-0.057	14.365			
21551	14340	1:BEBAN MATI	8.548	-2.2E 3	-0.170	2.693	0.001	-19.264			
		2:BEBAN HIDL	0.813	-625.317	-0.037	1.760	0.000	-4.611			
		3:BEBAN GEM	349.009	-1.47E 3	-1.498	0.802	-0.001	13.900			
		4:KOMBINASI	11.559	-3.64E 3	-0.263	6.047	0.002	-30.494			
		5:KOMB B. MA	375.496	-4.12E 3	-1.765	4.591	0.001	-7.435			
	14345	1:BEBAN MATI	-8.548	3.32E 3	0.170	-2.693	0.000	-7.804			
		2:BEBAN HIDL	-0.813	625.317	0.037	-1.760	0.000	-1.522			
		3:BEBAN GEM	-349.009	1.47E 3	1.498	-0.802	0.015	-28.326			
		4:KOMBINASI	-11.559	4.99E 3	0.263	-6.047	0.000	-11.800			
		5:KOMB B. MA	-375.496	5.24E 3	1.765	-4.591	0.016	-38.459			
21552	14343	1:BEBAN MATI	12.251	-3.09E 3	0.246	-0.312	-0.001	-21.684			
		2:BEBAN HIDL	1.749	-1.37E 3	0.115	-0.015	-0.001	-9.930			
		3:BEBAN GEM	32.219	-1.39E 3	-22.588	0.918	0.105	13.069			
		4:KOMBINASI	17.499	-5.9E 3	0.478	-0.399	-0.002	-41.909			
		5:KOMB B. MA	47.129	-5.37E 3	-23.403	0.643	0.109	-13.920			
	14348	1:BEBAN MATI	-12.251	3.39E 3	-0.246	0.312	-0.001	-10.085			
		2:BEBAN HIDL	-1.749	1.37E 3	-0.115	0.015	-0.001	-3.493			
		3:BEBAN GEM	-32.219	1.39E 3	22.588	-0.918	0.117	-26.663			
		4:KOMBINASI	-17.499	6.26E 3	-0.478	0.399	-0.002	-17.691			
		5:KOMB B. MA	-47.129	5.67E 3	23.403	-0.643	0.121	-40.178			
21553	14345	1:BEBAN MATI	12.996	-3.68E 3	-2.345	3.933	0.011	9.332			
		2:BEBAN HIDL	1.388	-848.767	-0.492	2.476	0.002	2.222			
		3:BEBAN GEM	657.357	-1.62E 3	-22.206	2.211	0.058	28.798			
		4:KOMBINASI	17.816	-5.78E 3	-3.602	8.681	0.017	14.753			
		5:KOMB B. MA	704.053	-5.89E 3	-25.957	7.740	0.073	40.902			
	12736	1:BEBAN MATI	-12.996	4.81E 3	2.345	-3.933	0.012	-50.947			
		2:BEBAN HIDL	-1.388	848.767	0.492	-2.476	0.002	-10.545			
		3:BEBAN GEM	-657.357	1.62E 3	22.206	-2.211	0.160	-44.688			
		4:KOMBINASI	-17.816	7.13E 3	3.602	-8.681	0.018	-78.008			
		5:KOMB B. MA	-704.053	7.02E 3	25.957	-7.740	0.181	-104.196			
21554	14348	1:BEBAN MATI	9.130	-4.48E 3	0.892	-0.308	-0.004	11.647			
		2:BEBAN HIDL	0.510	-1.96E 3	0.397	0.005	-0.002	4.231			
		3:BEBAN GEM	266.666	-1.74E 3	-38.641	1.540	0.165	26.902			
		4:KOMBINASI	11.772	-8.5E 3	1.707	-0.361	-0.008	20.747			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 332	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	289.435	-7.48E 3	-39.443	1.312	0.168	42.433			
	12734	1:BEBAN MATI	-9.130	4.78E 3	-0.892	0.308	-0.004	-57.012			
		2:BEBAN HIDL	-0.510	1.96E 3	-0.397	-0.005	-0.002	-23.423			
		3:BEBAN GEM	-266.666	1.74E 3	38.641	-1.540	0.214	-44.013			
		4:KOMBINASI	-11.772	8.86E 3	-1.707	0.361	-0.008	-105.891			
		5:KOMB B. MA	-289.435	7.78E 3	39.443	-1.312	0.219	-117.279			
21555	14349	1:BEBAN MATI	-3.664	-2.46E 3	0.730	-0.989	-0.005	-0.908			
		2:BEBAN HIDL	-4.636	-554.339	0.200	0.353	-0.001	0.199			
		3:BEBAN GEM	1.59E 3	-150.984	8.345	-1.821	-0.104	2.708			
		4:KOMBINASI	-11.815	-3.84E 3	1.196	-0.622	-0.008	-0.771			
		5:KOMB B. MA	1.66E 3	-2.95E 3	9.612	-2.689	-0.115	2.055			
	12782	1:BEBAN MATI	3.664	3.99E 3	-0.730	0.989	-0.006	-46.536			
		2:BEBAN HIDL	4.636	554.339	-0.200	-0.353	-0.002	-8.353			
		3:BEBAN GEM	-1.59E 3	150.984	-8.345	1.821	-0.019	-4.929			
		4:KOMBINASI	11.815	5.67E 3	-1.196	0.622	-0.009	-69.209			
		5:KOMB B. MA	-1.66E 3	4.48E 3	-9.612	2.689	-0.026	-56.723			
21556	14351	1:BEBAN MATI	-18.270	-557.240	-5.446	1.895	0.016	-6.448			
		2:BEBAN HIDL	-3.403	-197.843	-0.647	0.344	0.002	-2.374			
		3:BEBAN GEM	-573.158	-4.05E 3	-758.024	-0.009	2.031	2.401			
		4:KOMBINASI	-27.369	-985.237	-7.571	2.825	0.023	-11.536			
		5:KOMB B. MA	-622.128	-4.93E 3	-801.760	2.092	2.150	-5.352			
	14271	1:BEBAN MATI	18.270	1.12E 3	5.446	-1.895	0.011	2.336			
		2:BEBAN HIDL	3.403	197.843	0.647	-0.344	0.001	1.404			
		3:BEBAN GEM	573.158	4.05E 3	758.024	0.009	1.686	-22.274			
		4:KOMBINASI	27.369	1.66E 3	7.571	-2.825	0.014	5.050			
		5:KOMB B. MA	622.128	5.49E 3	801.760	-2.092	1.782	-20.209			
21557	14352	1:BEBAN MATI	-2.238	-833.493	0.052	1.261	-0.001	3.400			
		2:BEBAN HIDL	-0.851	-344.748	0.006	0.219	-0.000	-0.744			
		3:BEBAN GEM	-145.134	53.749	-3.969	-0.095	0.028	1.288			
		4:KOMBINASI	-4.047	-1.55E 3	0.071	1.863	-0.001	2.890			
		5:KOMB B. MA	-155.139	-983.906	-4.112	1.292	0.029	4.306			
	13706	1:BEBAN MATI	2.238	1.12E 3	-0.052	-1.261	-0.000	-17.781			
		2:BEBAN HIDL	0.851	344.748	-0.006	-0.219	-0.000	-4.328			
		3:BEBAN GEM	145.134	-53.749	3.969	0.095	0.030	-0.497			
		4:KOMBINASI	4.047	1.9E 3	-0.071	-1.863	-0.000	-28.261			
		5:KOMB B. MA	155.139	1.27E 3	4.112	-1.292	0.031	-20.900			
21558	14353	1:BEBAN MATI	3.836	1.33E 3	0.278	0.168	-0.002	-10.062			
		2:BEBAN HIDL	-0.786	180.608	0.055	-0.149	-0.000	-0.901			
		3:BEBAN GEM	1.89E 3	-177.122	1.606	-0.971	-0.033	-0.752			
		4:KOMBINASI	3.346	1.88E 3	0.421	-0.037	-0.003	-13.516			
		5:KOMB B. MA	1.99E 3	1.25E 3	1.997	-0.941	-0.037	-11.392			
	13663	1:BEBAN MATI	-3.836	196.791	-0.278	-0.168	-0.002	18.389			
		2:BEBAN HIDL	0.786	-180.608	-0.055	0.149	-0.000	3.558			
		3:BEBAN GEM	-1.89E 3	177.122	-1.606	0.971	0.009	-1.853			
		4:KOMBINASI	-3.346	-52.823	-0.421	0.037	-0.003	27.760			
		5:KOMB B. MA	-1.99E 3	274.405	-1.997	0.941	0.008	18.578			
21559	14355	1:BEBAN MATI	29.601	-4.17E 3	0.205	1.155	-0.001	-9.268			
		2:BEBAN HIDL	7.467	-1.61E 3	0.091	1.113	-0.001	-3.749			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 333	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.13E 3	-448.837	15.319	-4.429	-0.180	4.114			
		4:KOMBINASI	47.469	-7.58E 3	0.392	3.168	-0.003	-17.119			
		5:KOMB B. MA	1.22E 3	-5.61E 3	16.345	-2.827	-0.191	-7.197			
	12760	1:BEBAN MATI	-29.601	4.62E 3	-0.205	-1.155	-0.002	-55.371			
		2:BEBAN HIDL	-7.467	1.61E 3	-0.091	-1.113	-0.001	-19.959			
		3:BEBAN GEM	-1.13E 3	448.837	-15.319	4.429	-0.045	-10.716			
		4:KOMBINASI	-47.469	8.12E 3	-0.392	-3.168	-0.003	-98.380			
		5:KOMB B. MA	-1.22E 3	6.06E 3	-16.345	2.827	-0.050	-78.598			
21560	14356	1:BEBAN MATI	13.418	2.46E 3	0.163	-1.387	-0.001	-11.686			
		2:BEBAN HIDL	2.402	830.974	0.047	-0.647	-0.000	-3.949			
		3:BEBAN GEM	1E 3	-352.382	8.811	2.207	-0.078	-4.672			
		4:KOMBINASI	19.945	4.28E 3	0.270	-2.698	-0.001	-20.341			
		5:KOMB B. MA	1.07E 3	2.59E 3	9.443	0.543	-0.082	-18.961			
	13706	1:BEBAN MATI	-13.418	-2.01E 3	-0.163	1.387	-0.002	44.519			
		2:BEBAN HIDL	-2.402	-830.974	-0.047	0.647	-0.000	16.172			
		3:BEBAN GEM	-1E 3	352.382	-8.811	-2.207	-0.052	-0.512			
		4:KOMBINASI	-19.945	-3.74E 3	-0.270	2.698	-0.003	79.298			
		5:KOMB B. MA	-1.07E 3	-2.14E 3	-9.443	-0.543	-0.056	53.685			
21561	14358	1:BEBAN MATI	-11.352	2.35E 3	0.284	-2.631	-0.002	-9.918			
		2:BEBAN HIDL	-3.600	362.521	0.078	-1.358	-0.001	-2.698			
		3:BEBAN GEM	-1.35E 3	-1.39E 3	-0.159	-1.301	0.031	-19.458			
		4:KOMBINASI	-19.382	3.4E 3	0.465	-5.330	-0.004	-16.218			
		5:KOMB B. MA	-1.43E 3	1.11E 3	0.164	-4.811	0.030	-31.968			
	13695	1:BEBAN MATI	11.352	-662.871	-0.284	2.631	-0.002	32.084			
		2:BEBAN HIDL	3.600	-362.521	-0.078	1.358	-0.001	8.030			
		3:BEBAN GEM	1.35E 3	1.39E 3	0.159	1.301	-0.029	-0.929			
		4:KOMBINASI	19.382	-1.38E 3	-0.465	5.330	-0.003	51.349			
		5:KOMB B. MA	1.43E 3	574.894	-0.164	4.811	-0.033	35.926			
21562	14359	1:BEBAN MATI	1.165	697.651	-0.043	0.032	0.000	-3.717			
		2:BEBAN HIDL	-0.371	140.143	0.002	-0.017	0.000	-2.836			
		3:BEBAN GEM	-124.777	-176.382	-15.759	0.093	0.121	-2.798			
		4:KOMBINASI	0.805	1.06E 3	-0.049	0.011	0.000	-8.997			
		5:KOMB B. MA	-130.074	596.536	-16.590	0.119	0.128	-8.356			
	13730	1:BEBAN MATI	-1.165	-409.336	0.043	-0.032	0.000	11.859			
		2:BEBAN HIDL	0.371	-140.143	-0.002	0.017	-0.000	4.897			
		3:BEBAN GEM	124.777	176.382	15.759	-0.093	0.111	0.203			
		4:KOMBINASI	-0.805	-715.433	0.049	-0.011	0.000	22.066			
		5:KOMB B. MA	130.074	-308.222	16.590	-0.119	0.116	15.011			
21563	14361	1:BEBAN MATI	0.737	-662.190	0.062	0.273	-0.000	-8.666			
		2:BEBAN HIDL	0.162	-391.544	0.009	0.014	-0.000	-4.295			
		3:BEBAN GEM	90.389	-8.755	10.870	0.551	-0.056	0.859			
		4:KOMBINASI	1.143	-1.42E 3	0.089	0.350	-0.001	-17.271			
		5:KOMB B. MA	95.742	-906.309	11.481	0.860	-0.060	-10.341			
	13695	1:BEBAN MATI	-0.737	950.504	-0.062	-0.273	-0.000	-3.195			
		2:BEBAN HIDL	-0.162	391.544	-0.009	-0.014	-0.000	-1.465			
		3:BEBAN GEM	-90.389	8.755	-10.870	-0.551	-0.103	-0.988			
		4:KOMBINASI	-1.143	1.77E 3	-0.089	-0.350	-0.001	-6.178			
		5:KOMB B. MA	-95.742	1.19E 3	-11.481	-0.860	-0.109	-5.111			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 334	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21564	14362	1:BEBAN MATI	0.125	653.796	0.028	-0.233	-0.000	-3.816			
		2:BEBAN HIDL	-0.333	236.481	0.000	-0.020	-0.000	-2.076			
		3:BEBAN GEM	344.717	-32.848	12.026	-0.532	-0.091	-0.848			
		4:KOMBINASI	-0.383	1.16E 3	0.033	-0.312	-0.000	-7.901			
		5:KOMB B. MA	361.878	761.193	12.655	-0.804	-0.096	-5.952			
13730		1:BEBAN MATI	-0.125	-365.481	-0.028	0.233	-0.000	11.313			
		2:BEBAN HIDL	0.333	-236.481	-0.000	0.020	0.000	5.555			
		3:BEBAN GEM	-344.717	32.848	-12.026	0.532	-0.086	0.365			
		4:KOMBINASI	0.383	-816.948	-0.033	0.312	-0.000	22.462			
		5:KOMB B. MA	-361.878	-472.879	-12.655	0.804	-0.090	15.029			
21565	14364	1:BEBAN MATI	-8.862	-3.32E 3	-0.290	4.939	0.002	-5.044			
		2:BEBAN HIDL	-4.818	-887.429	-0.017	2.588	0.000	-0.132			
		3:BEBAN GEM	756.255	-1.58E 3	-71.732	1.730	0.494	21.375			
		4:KOMBINASI	-18.343	-5.41E 3	-0.376	10.068	0.003	-6.263			
		5:KOMB B. MA	782.315	-5.51E 3	-75.619	8.309	0.521	17.321			
12759		1:BEBAN MATI	8.862	5.01E 3	0.290	-4.939	0.002	-56.249			
		2:BEBAN HIDL	4.818	887.429	0.017	-2.588	0.000	-12.922			
		3:BEBAN GEM	-756.255	1.58E 3	71.732	-1.730	0.561	-44.563			
		4:KOMBINASI	18.343	7.43E 3	0.376	-10.068	0.002	-88.174			
		5:KOMB B. MA	-782.315	7.2E 3	75.619	-8.309	0.591	-110.793			
21566	14365	1:BEBAN MATI	1.319	-1.08E 3	-0.038	0.082	0.000	-2.442			
		2:BEBAN HIDL	-0.155	-560.656	0.004	0.052	-0.000	-1.062			
		3:BEBAN GEM	-254.162	70.665	-17.359	-0.113	0.122	2.948			
		4:KOMBINASI	1.334	-2.19E 3	-0.038	0.182	0.000	-4.629			
		5:KOMB B. MA	-265.644	-1.34E 3	-18.262	-0.005	0.129	0.017			
13709		1:BEBAN MATI	-1.319	1.37E 3	0.038	-0.082	0.000	-15.577			
		2:BEBAN HIDL	0.155	560.656	-0.004	-0.052	-0.000	-7.186			
		3:BEBAN GEM	254.162	-70.665	17.359	0.113	0.133	-1.909			
		4:KOMBINASI	-1.334	2.54E 3	0.038	-0.182	0.000	-30.189			
		5:KOMB B. MA	265.644	1.63E 3	18.262	0.005	0.140	-21.893			
21567	14367	1:BEBAN MATI	9.199	-5.25E 3	-0.047	-0.454	0.001	-16.631			
		2:BEBAN HIDL	1.435	-1.88E 3	-0.071	-0.383	0.001	-5.287			
		3:BEBAN GEM	1.56E 3	-476.970	38.137	-4.783	-0.268	5.048			
		4:KOMBINASI	13.335	-9.3E 3	-0.170	-1.158	0.002	-28.417			
		5:KOMB B. MA	1.65E 3	-6.88E 3	39.954	-5.706	-0.281	-14.503			
12759		1:BEBAN MATI	-9.199	6.94E 3	0.047	0.454	0.000	-73.005			
		2:BEBAN HIDL	-1.435	1.88E 3	0.071	0.383	0.000	-22.324			
		3:BEBAN GEM	-1.56E 3	476.970	-38.137	4.783	-0.293	-12.065			
		4:KOMBINASI	-13.335	11.3E 3	0.170	1.158	0.001	-123.323			
		5:KOMB B. MA	-1.65E 3	8.56E 3	-39.954	5.706	-0.307	-99.067			
21568	14368	1:BEBAN MATI	4.790	3.74E 3	0.013	-0.153	-0.000	-12.831			
		2:BEBAN HIDL	0.469	1.02E 3	-0.021	-0.028	0.000	-4.299			
		3:BEBAN GEM	900.419	-358.677	38.531	2.215	-0.275	-5.398			
		4:KOMBINASI	6.498	6.12E 3	-0.018	-0.229	0.000	-22.276			
		5:KOMB B. MA	950.511	3.98E 3	40.457	2.156	-0.289	-21.078			
13709		1:BEBAN MATI	-4.790	-2.06E 3	-0.013	0.153	-0.000	55.490			
		2:BEBAN HIDL	-0.469	-1.02E 3	0.021	0.028	0.000	19.250			
		3:BEBAN GEM	-900.419	358.677	-38.531	-2.215	-0.292	0.122			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-6.498	-4.09E 3	0.018	0.229	0.000	97.387			
		5:KOMB B. MA	-950.511	-2.29E 3	-40.457	-2.156	-0.306	67.167			
21569	14370	1:BEBAN MATI	-1.795	3.07E 3	0.065	-0.486	-0.001	-12.312			
		2:BEBAN HIDL	-0.911	767.701	0.048	-0.109	-0.000	-4.268			
		3:BEBAN GEM	169.751	-1.34E 3	-6.281	-0.806	0.041	-19.998			
		4:KOMBINASI	-3.611	4.91E 3	0.155	-0.757	-0.001	-21.603			
		5:KOMB B. MA	175.898	2.12E 3	-6.502	-1.398	0.042	-35.870			
	13694	1:BEBAN MATI	1.795	-1.38E 3	-0.065	0.486	-0.000	45.060			
		2:BEBAN HIDL	0.911	-767.701	-0.048	0.109	-0.000	15.561			
		3:BEBAN GEM	-169.751	1.34E 3	6.281	0.806	0.052	0.233			
		4:KOMBINASI	3.611	-2.89E 3	-0.155	0.757	-0.001	78.969			
		5:KOMB B. MA	-175.898	-432.076	6.502	1.398	0.054	54.641			
21570	14371	1:BEBAN MATI	3.034	612.116	-0.038	0.008	0.000	-3.288			
		2:BEBAN HIDL	0.533	181.345	0.000	0.012	0.000	-1.576			
		3:BEBAN GEM	-188.757	-154.693	-4.977	0.155	0.038	-2.714			
		4:KOMBINASI	4.493	1.02E 3	-0.045	0.030	0.000	-6.468			
		5:KOMB B. MA	-194.841	558.495	-5.263	0.179	0.040	-7.084			
	13720	1:BEBAN MATI	-3.034	-323.801	0.038	-0.008	0.000	10.171			
		2:BEBAN HIDL	-0.533	-181.345	-0.000	-0.012	-0.000	4.244			
		3:BEBAN GEM	188.757	154.693	4.977	-0.155	0.036	0.439			
		4:KOMBINASI	-4.493	-678.714	0.045	-0.030	0.000	18.996			
		5:KOMB B. MA	194.841	-270.180	5.263	-0.179	0.038	13.179			
21571	14373	1:BEBAN MATI	0.705	-889.152	-0.068	-0.023	0.001	-6.013			
		2:BEBAN HIDL	-0.532	-483.998	-0.033	-0.014	0.000	-2.402			
		3:BEBAN GEM	477.775	8.683	18.348	0.506	-0.135	0.739			
		4:KOMBINASI	-0.006	-1.84E 3	-0.134	-0.050	0.001	-11.058			
		5:KOMB B. MA	502.049	-1.17E 3	19.177	0.499	-0.141	-6.679			
	13694	1:BEBAN MATI	-0.705	1.18E 3	0.068	0.023	0.000	-9.187			
		2:BEBAN HIDL	0.532	483.998	0.033	0.014	0.000	-4.718			
		3:BEBAN GEM	-477.775	-8.683	-18.348	-0.506	-0.135	-0.611			
		4:KOMBINASI	0.006	2.19E 3	0.134	0.050	0.001	-18.573			
		5:KOMB B. MA	-502.049	1.46E 3	-19.177	-0.499	-0.141	-12.659			
21572	14374	1:BEBAN MATI	-1.644	687.472	-0.014	-0.017	0.000	-3.529			
		2:BEBAN HIDL	-1.050	195.231	-0.012	-0.008	0.000	-1.778			
		3:BEBAN GEM	658.300	-41.199	24.438	-0.571	-0.185	-0.800			
		4:KOMBINASI	-3.652	1.14E 3	-0.035	-0.033	0.000	-7.081			
		5:KOMB B. MA	688.941	761.352	25.639	-0.621	-0.194	-5.437			
	13720	1:BEBAN MATI	1.644	-399.158	0.014	0.017	0.000	11.522			
		2:BEBAN HIDL	1.050	-195.231	0.012	0.008	0.000	4.650			
		3:BEBAN GEM	-658.300	41.199	-24.438	0.571	-0.175	0.194			
		4:KOMBINASI	3.652	-791.358	0.035	0.033	0.000	21.266			
		5:KOMB B. MA	-688.941	-473.038	-25.639	0.621	-0.183	14.516			
21573	14376	1:BEBAN MATI	1.901	-4.62E 3	-0.280	2.098	0.002	-9.066			
		2:BEBAN HIDL	0.463	-1.63E 3	-0.076	0.662	0.001	-2.782			
		3:BEBAN GEM	111.451	-1.65E 3	-24.001	1.554	0.176	20.187			
		4:KOMBINASI	3.022	-8.16E 3	-0.458	3.578	0.004	-15.330			
		5:KOMB B. MA	119.202	-7.33E 3	-25.527	4.127	0.188	10.461			
	12758	1:BEBAN MATI	-1.901	6.31E 3	0.280	-2.098	0.002	-71.285			



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Job No 1	Sheet No 336	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-0.463	1.63E 3	0.076	-0.662	0.000	-21.266			
		3:BEBAN GEM	-111.451	1.65E 3	24.001	-1.554	0.177	-44.477			
		4:KOMBINASI	-3.022	10.2E 3	0.458	-3.578	0.003	-119.568			
		5:KOMB B. MA	-119.202	9.02E 3	25.527	-4.127	0.188	-130.745			
21574	14377	1:BEBAN MATI	4.139	-1.04E 3	0.019	0.003	-0.000	-1.826			
		2:BEBAN HIDL	0.939	-539.225	0.017	-0.001	-0.000	-0.997			
		3:BEBAN GEM	-107.901	65.217	-4.460	-0.122	0.031	2.817			
		4:KOMBINASI	6.469	-2.11E 3	0.050	0.003	-0.000	-3.786			
		5:KOMB B. MA	-108.594	-1.29E 3	-4.654	-0.125	0.032	0.534			
	13712	1:BEBAN MATI	-4.139	1.33E 3	-0.019	-0.003	-0.000	-15.584			
		2:BEBAN HIDL	-0.939	539.225	-0.017	0.001	-0.000	-6.935			
		3:BEBAN GEM	107.901	-65.217	4.460	0.122	0.035	-1.858			
		4:KOMBINASI	-6.469	2.46E 3	-0.050	-0.003	-0.000	-29.796			
		5:KOMB B. MA	108.594	1.58E 3	4.654	0.125	0.037	-21.695			
21575	14379	1:BEBAN MATI	7.100	-5.2E 3	-0.280	-0.153	0.002	-15.959			
		2:BEBAN HIDL	1.860	-1.83E 3	-0.092	0.026	0.001	-4.923			
		3:BEBAN GEM	832.163	-485.066	59.771	-4.696	-0.443	5.117			
		4:KOMBINASI	11.496	-9.18E 3	-0.482	-0.142	0.004	-27.027			
		5:KOMB B. MA	881.987	-6.81E 3	62.424	-5.068	-0.463	-13.540			
	12758	1:BEBAN MATI	-7.100	6.89E 3	0.280	0.153	0.002	-73.001			
		2:BEBAN HIDL	-1.860	1.83E 3	0.092	-0.026	0.001	-22.030			
		3:BEBAN GEM	-832.163	485.066	-59.771	4.696	-0.436	-12.252			
		4:KOMBINASI	-11.496	11.2E 3	0.482	0.142	0.004	-122.849			
		5:KOMB B. MA	-881.987	8.5E 3	-62.424	5.068	-0.455	-99.083			
21576	14380	1:BEBAN MATI	2.633	3.73E 3	0.012	0.058	-0.000	-12.326			
		2:BEBAN HIDL	0.055	999.228	-0.013	-0.012	0.000	-3.978			
		3:BEBAN GEM	1.11E 3	-358.114	73.978	2.222	-0.560	-5.432			
		4:KOMBINASI	3.247	6.07E 3	-0.006	0.050	-0.000	-21.156			
		5:KOMB B. MA	1.17E 3	3.95E 3	77.681	2.383	-0.588	-20.417			
	13712	1:BEBAN MATI	-2.633	-2.04E 3	-0.012	-0.058	-0.000	54.777			
		2:BEBAN HIDL	-0.055	-999.228	0.013	0.012	0.000	18.677			
		3:BEBAN GEM	-1.11E 3	358.114	-73.978	-2.222	-0.528	0.165			
		4:KOMBINASI	-3.247	-4.05E 3	0.006	-0.050	0.000	95.615			
		5:KOMB B. MA	-1.17E 3	-2.27E 3	-77.681	-2.383	-0.555	66.156			
21577	14382	1:BEBAN MATI	8.053	3.11E 3	0.237	-0.318	-0.002	-11.177			
		2:BEBAN HIDL	1.794	827.372	0.103	-0.176	-0.001	-3.412			
		3:BEBAN GEM	-256.545	-1.32E 3	-22.291	-0.758	0.166	-19.790			
		4:KOMBINASI	12.534	5.05E 3	0.449	-0.664	-0.004	-18.871			
		5:KOMB B. MA	-260.242	2.22E 3	-23.107	-1.220	0.172	-34.003			
	13693	1:BEBAN MATI	-8.053	-1.42E 3	-0.237	0.318	-0.002	44.455			
		2:BEBAN HIDL	-1.794	-827.372	-0.103	0.176	-0.001	15.582			
		3:BEBAN GEM	256.545	1.32E 3	22.291	0.758	0.162	0.431			
		4:KOMBINASI	-12.534	-3.03E 3	-0.449	0.664	-0.003	78.278			
		5:KOMB B. MA	260.242	-532.883	23.107	1.220	0.168	54.257			
21578	14383	1:BEBAN MATI	6.448	665.526	0.052	-0.022	-0.000	-3.880			
		2:BEBAN HIDL	1.761	193.979	0.026	-0.009	-0.000	-1.713			
		3:BEBAN GEM	124.274	-149.593	-11.532	0.154	0.083	-2.781			
		4:KOMBINASI	10.556	1.11E 3	0.104	-0.041	-0.001	-7.398			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	137.993	624.841	-12.040	0.134	0.087	-7.829			
	13723	1:BEBAN MATI	-6.448	-377.212	-0.052	0.022	-0.000	11.550			
		2:BEBAN HIDL	-1.761	-193.979	-0.026	0.009	-0.000	4.567			
		3:BEBAN GEM	-124.274	149.593	11.532	-0.154	0.087	0.581			
		4:KOMBINASI	-10.556	-763.021	-0.104	0.041	-0.001	21.166			
		5:KOMB B. MA	-137.993	-336.527	12.040	-0.134	0.090	14.900			
21579	14385	1:BEBAN MATI	-1.519	-830.624	-0.075	-0.234	0.001	-5.675			
		2:BEBAN HIDL	-0.930	-489.081	-0.037	-0.013	0.000	-2.371			
		3:BEBAN GEM	211.625	9.076	25.619	0.490	-0.188	0.733			
		4:KOMBINASI	-3.310	-1.78E 3	-0.149	-0.301	0.001	-10.603			
		5:KOMB B. MA	220.129	-1.11E 3	26.802	0.273	-0.197	-6.328			
	13693	1:BEBAN MATI	1.519	1.12E 3	0.075	0.234	0.001	-8.664			
		2:BEBAN HIDL	0.930	489.081	0.037	0.013	0.000	-4.824			
		3:BEBAN GEM	-211.625	-9.076	-25.619	-0.490	-0.189	-0.599			
		4:KOMBINASI	3.310	2.13E 3	0.149	0.301	0.001	-18.114			
		5:KOMB B. MA	-220.129	1.4E 3	-26.802	-0.273	-0.198	-12.187			
21580	14386	1:BEBAN MATI	-2.992	617.674	-0.057	0.163	0.000	-3.401			
		2:BEBAN HIDL	-1.271	200.938	-0.026	0.008	0.000	-1.781			
		3:BEBAN GEM	113.358	-43.039	27.979	-0.562	-0.206	-0.814			
		4:KOMBINASI	-5.624	1.06E 3	-0.111	0.208	0.001	-6.930			
		5:KOMB B. MA	115.271	693.046	29.305	-0.422	-0.215	-5.324			
	13723	1:BEBAN MATI	2.992	-329.359	0.057	-0.163	0.000	10.366			
		2:BEBAN HIDL	1.271	-200.938	0.026	-0.008	0.000	4.737			
		3:BEBAN GEM	-113.358	43.039	-27.979	0.562	-0.206	0.181			
		4:KOMBINASI	5.624	-716.733	0.111	-0.208	0.001	20.018			
		5:KOMB B. MA	-115.271	-404.732	-29.305	0.422	-0.216	13.399			
21581	14388	1:BEBAN MATI	8.618	-4.44E 3	-0.166	2.095	0.001	-9.459			
		2:BEBAN HIDL	2.173	-1.61E 3	-0.048	0.717	0.000	-3.583			
		3:BEBAN GEM	24.366	-1.63E 3	-32.795	1.548	0.231	19.495			
		4:KOMBINASI	13.819	-7.9E 3	-0.277	3.660	0.002	-17.084			
		5:KOMB B. MA	35.506	-7.11E 3	-34.630	4.150	0.244	8.861			
	12730	1:BEBAN MATI	-8.618	6.12E 3	0.166	-2.095	0.001	-68.207			
		2:BEBAN HIDL	-2.173	1.61E 3	0.048	-0.717	0.000	-20.074			
		3:BEBAN GEM	-24.366	1.63E 3	32.795	-1.548	0.252	-43.442			
		4:KOMBINASI	-13.819	9.92E 3	0.277	-3.660	0.002	-113.967			
		5:KOMB B. MA	-35.506	8.8E 3	34.630	-4.150	0.265	-125.866			
21582	14389	1:BEBAN MATI	7.354	-1.14E 3	0.058	0.014	-0.000	-2.790			
		2:BEBAN HIDL	2.120	-503.186	0.023	0.007	-0.000	-1.853			
		3:BEBAN GEM	288.286	59.081	-18.087	-0.121	0.129	2.589			
		4:KOMBINASI	12.217	-2.17E 3	0.107	0.027	-0.001	-6.312			
		5:KOMB B. MA	311.326	-1.38E 3	-18.920	-0.109	0.135	-1.183			
	13715	1:BEBAN MATI	-7.354	1.43E 3	-0.058	-0.014	-0.000	-16.054			
		2:BEBAN HIDL	-2.120	503.186	-0.023	-0.007	-0.000	-5.549			
		3:BEBAN GEM	-288.286	-59.081	18.087	0.121	0.137	-1.720			
		4:KOMBINASI	-12.217	2.52E 3	-0.107	-0.027	-0.001	-28.144			
		5:KOMB B. MA	-311.326	1.67E 3	18.920	0.109	0.144	-21.190			
21583	14391	1:BEBAN MATI	2.165	-4.11E 3	-0.155	-1.223	0.001	-11.979			
		2:BEBAN HIDL	0.721	-1.64E 3	-0.083	-0.495	0.001	-4.484			



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Job No 1	Sheet No 338	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-170.116	-450.499	54.088	-4.713	-0.401	5.257			
		4:KOMBINASI	3.751	-7.55E 3	-0.319	-2.259	0.002	-21.549			
		5:KOMB B. MA	-176.024	-5.56E 3	56.587	-6.468	-0.420	-9.149			
	12730	1:BEBAN MATI	-2.165	4.56E 3	0.155	1.223	0.001	-51.722			
		2:BEBAN HIDL	-0.721	1.64E 3	0.083	0.495	0.001	-19.634			
		3:BEBAN GEM	170.116	450.499	-54.088	4.713	-0.394	-11.884			
		4:KOMBINASI	-3.751	8.09E 3	0.319	2.259	0.003	-93.481			
		5:KOMB B. MA	176.024	6.01E 3	-56.587	6.468	-0.412	-75.981			
21584	14392	1:BEBAN MATI	-1.318	2.52E 3	-0.255	0.454	0.002	-9.035			
		2:BEBAN HIDL	-0.702	873.099	-0.104	0.226	0.001	-3.630			
		3:BEBAN GEM	-670.208	-381.241	25.225	2.137	-0.181	-5.443			
		4:KOMBINASI	-2.705	4.42E 3	-0.472	0.905	0.004	-16.651			
		5:KOMB B. MA	-705.458	2.64E 3	26.170	2.833	-0.187	-16.928			
	13715	1:BEBAN MATI	1.318	-2.07E 3	0.255	-0.454	0.002	42.744			
		2:BEBAN HIDL	0.702	-873.099	0.104	-0.226	0.001	16.474			
		3:BEBAN GEM	670.208	381.241	-25.225	-2.137	-0.190	-0.165			
		4:KOMBINASI	2.705	-3.88E 3	0.472	-0.905	0.003	77.651			
		5:KOMB B. MA	705.458	-2.19E 3	-26.170	-2.833	-0.198	52.455			
21585	14393	1:BEBAN MATI	-13.051	-444.750	-0.741	2.060	0.007	-0.637			
		2:BEBAN HIDL	-5.040	-179.965	-0.231	0.952	0.002	1.172			
		3:BEBAN GEM	821.242	-915.393	42.645	-1.605	-0.422	-0.005			
		4:KOMBINASI	-23.725	-821.644	-1.259	3.994	0.012	1.110			
		5:KOMB B. MA	846.229	-1.51E 3	43.898	0.946	-0.435	0.061			
	12762	1:BEBAN MATI	13.051	2.47E 3	0.741	-2.060	0.006	-25.091			
		2:BEBAN HIDL	5.040	179.965	0.231	-0.952	0.002	-4.349			
		3:BEBAN GEM	-821.242	915.393	-42.645	1.605	-0.331	-16.154			
		4:KOMBINASI	23.725	3.25E 3	1.259	-3.994	0.010	-37.067			
		5:KOMB B. MA	-846.229	3.54E 3	-43.898	-0.946	-0.340	-44.662			
21586	14395	1:BEBAN MATI	10.679	2.45E 3	-1.655	1.628	0.005	-8.269			
		2:BEBAN HIDL	2.762	965.974	0.550	0.937	-0.001	-3.420			
		3:BEBAN GEM	-384.332	-1.43E 3	-323.378	-0.885	0.867	-21.365			
		4:KOMBINASI	17.234	4.48E 3	-1.106	3.452	0.004	-15.395			
		5:KOMB B. MA	-391.213	1.53E 3	-340.872	1.260	0.914	-32.754			
	14485	1:BEBAN MATI	-10.679	-2.3E 3	1.655	-1.628	0.003	19.894			
		2:BEBAN HIDL	-2.762	-965.974	-0.550	-0.937	-0.001	8.156			
		3:BEBAN GEM	384.332	1.43E 3	323.378	0.885	0.719	14.375			
		4:KOMBINASI	-17.234	-4.3E 3	1.106	-3.452	0.001	36.923			
		5:KOMB B. MA	391.213	-1.38E 3	340.872	-1.260	0.757	39.882			
21587	14396	1:BEBAN MATI	1.719	-377.200	-0.098	-0.001	0.001	1.270			
		2:BEBAN HIDL	-0.787	-236.602	-0.042	0.001	0.000	-0.218			
		3:BEBAN GEM	504.625	-12.914	14.829	-0.095	-0.129	0.011			
		4:KOMBINASI	0.804	-831.203	-0.185	0.001	0.002	1.175			
		5:KOMB B. MA	531.103	-532.721	15.448	-0.100	-0.134	1.150			
	13698	1:BEBAN MATI	-1.719	723.177	0.098	0.001	0.001	-10.982			
		2:BEBAN HIDL	0.787	236.602	0.042	-0.001	0.000	-3.958			
		3:BEBAN GEM	-504.625	12.914	-14.829	0.095	-0.133	-0.239			
		4:KOMBINASI	-0.804	1.25E 3	0.185	-0.001	0.002	-19.511			
		5:KOMB B. MA	-531.103	878.698	-15.448	0.100	-0.138	-13.608			



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Job No 1	Sheet No 339	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21588	14398	1:BEBAN MATI	1.970	-3.31E 3	0.685	1.190	-0.004	-5.701			
		2:BEBAN HIDL	-0.012	-1.4E 3	1.041	0.108	-0.003	-2.361			
		3:BEBAN GEM	417.300	-1.52E 3	-296.929	1.794	0.805	20.998			
		4:KOMBINASI	2.345	-6.21E 3	2.488	1.600	-0.010	-10.619			
		5:KOMB B. MA	440.128	-5.75E 3	-310.465	3.138	0.840	14.931			
	14496	1:BEBAN MATI	-1.970	3.46E 3	-0.685	-1.190	0.000	-10.912			
		2:BEBAN HIDL	0.012	1.4E 3	-1.041	-0.108	-0.002	-4.488			
		3:BEBAN GEM	-417.300	1.52E 3	296.929	-1.794	0.651	-28.473			
		4:KOMBINASI	-2.345	6.39E 3	-2.488	-1.600	-0.003	-20.275			
		5:KOMB B. MA	-440.128	5.9E 3	310.465	-3.138	0.683	-43.501			
21589	14399	1:BEBAN MATI	-19.507	-913.169	-0.143	-0.038	0.001	-6.745			
		2:BEBAN HIDL	-6.222	-456.669	-0.065	0.001	0.001	-2.131			
		3:BEBAN GEM	688.835	-895.673	34.613	-2.319	-0.308	-0.145			
		4:KOMBINASI	-33.364	-1.83E 3	-0.276	-0.044	0.002	-11.504			
		5:KOMB B. MA	700.036	-2.13E 3	36.161	-2.473	-0.322	-8.176			
	12761	1:BEBAN MATI	19.507	2.94E 3	0.143	0.038	0.001	-27.252			
		2:BEBAN HIDL	6.222	456.669	0.065	-0.001	0.001	-5.930			
		3:BEBAN GEM	-688.835	895.673	-34.613	2.319	-0.303	-15.666			
		4:KOMBINASI	33.364	4.26E 3	0.276	0.044	0.003	-42.190			
		5:KOMB B. MA	-700.036	4.15E 3	-36.161	2.473	-0.316	-47.259			
21590	14401	1:BEBAN MATI	7.826	2.54E 3	-1.096	1.701	0.004	-6.640			
		2:BEBAN HIDL	0.402	1.03E 3	0.496	1.030	-0.001	-2.444			
		3:BEBAN GEM	323.274	-1.39E 3	-208.683	-0.931	0.544	-21.075			
		4:KOMBINASI	10.034	4.69E 3	-0.522	3.690	0.003	-11.879			
		5:KOMB B. MA	347.505	1.7E 3	-219.916	1.341	0.574	-30.235			
	14507	1:BEBAN MATI	-7.826	-2.39E 3	1.096	-1.701	0.002	18.714			
		2:BEBAN HIDL	-0.402	-1.03E 3	-0.496	-1.030	-0.001	7.491			
		3:BEBAN GEM	-323.274	1.39E 3	208.683	0.931	0.480	14.265			
		4:KOMBINASI	-10.034	-4.51E 3	0.522	-3.690	-0.000	34.442			
		5:KOMB B. MA	-347.505	-1.55E 3	219.916	-1.341	0.505	38.187			
21591	14402	1:BEBAN MATI	0.560	-394.711	-0.058	0.015	0.000	0.840			
		2:BEBAN HIDL	-0.672	-237.575	-0.031	-0.000	0.000	-0.237			
		3:BEBAN GEM	198.459	-13.205	16.200	-0.079	-0.144	0.044			
		4:KOMBINASI	-0.403	-853.773	-0.118	0.018	0.001	0.629			
		5:KOMB B. MA	208.539	-551.121	16.934	-0.068	-0.150	0.744			
	13697	1:BEBAN MATI	-0.560	740.688	0.058	-0.015	0.001	-10.861			
		2:BEBAN HIDL	0.672	237.575	0.031	0.000	0.000	-3.957			
		3:BEBAN GEM	-198.459	13.205	-16.200	0.079	-0.142	-0.277			
		4:KOMBINASI	0.403	1.27E 3	0.118	-0.018	0.001	-19.364			
		5:KOMB B. MA	-208.539	897.098	-16.934	0.068	-0.149	-13.526			
21592	14404	1:BEBAN MATI	0.664	-3.23E 3	0.181	0.863	-0.002	-6.350			
		2:BEBAN HIDL	-1.749	-1.35E 3	0.628	0.109	-0.002	-3.251			
		3:BEBAN GEM	844.133	-1.5E 3	-29.806	1.799	0.043	20.153			
		4:KOMBINASI	-2.001	-6.05E 3	1.221	1.209	-0.005	-12.821			
		5:KOMB B. MA	885.954	-5.62E 3	-30.739	2.817	0.043	12.860			
	14518	1:BEBAN MATI	-0.664	3.38E 3	-0.181	-0.863	0.001	-9.879			
		2:BEBAN HIDL	1.749	1.35E 3	-0.628	-0.109	-0.001	-3.381			
		3:BEBAN GEM	-844.133	1.5E 3	29.806	-1.799	0.103	-27.506			



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Job No

1

Sheet No

340

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	2.001	6.23E 3	-1.221	-1.209	-0.001	-17.265			
		5:KOMB B. MA	-885.954	5.77E 3	30.739	-2.817	0.108	-40.789			
21593	14405	1:BEBAN MATI	-18.817	-962.590	-0.290	-0.580	0.003	-4.187			
		2:BEBAN HIDL	-5.708	-418.312	-0.131	-0.165	0.001	-1.969			
		3:BEBAN GEM	-117.623	-885.374	36.194	-2.456	-0.326	0.100			
		4:KOMBINASI	-31.713	-1.82E 3	-0.558	-0.960	0.005	-8.175			
		5:KOMB B. MA	-145.746	-2.14E 3	37.636	-3.258	-0.339	-5.264			
	12732	1:BEBAN MATI	18.817	1.5E 3	0.290	0.580	0.002	-17.576			
		2:BEBAN HIDL	5.708	418.312	0.131	0.165	0.001	-5.415			
		3:BEBAN GEM	117.623	885.374	-36.194	2.456	-0.313	-15.728			
		4:KOMBINASI	31.713	2.47E 3	0.558	0.960	0.005	-29.755			
		5:KOMB B. MA	145.746	2.68E 3	-37.636	3.258	-0.325	-37.340			
21594	14406	1:BEBAN MATI	15.718	-2.17E 3	-6.508	3.811	0.039	-3.807			
		2:BEBAN HIDL	3.320	-525.958	-1.778	2.308	0.011	-0.751			
		3:BEBAN GEM	73.593	-679.390	7.015	-2.818	-0.050	6.474			
		4:KOMBINASI	24.174	-3.44E 3	-10.654	8.266	0.063	-5.769			
		5:KOMB B. MA	94.982	-3.19E 3	-0.208	2.237	-0.007	2.540			
	12733	1:BEBAN MATI	-15.718	3.52E 3	6.508	-3.811	0.038	-29.618			
		2:BEBAN HIDL	-3.320	525.958	1.778	-2.308	0.010	-5.439			
		3:BEBAN GEM	-73.593	679.390	-7.015	2.818	-0.033	-14.469			
		4:KOMBINASI	-24.174	5.06E 3	10.654	-8.266	0.062	-44.244			
		5:KOMB B. MA	-94.982	4.54E 3	0.208	-2.237	0.009	-48.074			
21595	14408	1:BEBAN MATI	-0.922	-408.462	-1.084	1.216	0.006	-18.085			
		2:BEBAN HIDL	-1.179	-245.652	-0.297	0.828	0.002	-4.388			
		3:BEBAN GEM	-48.688	-570.437	1.424	-1.077	-0.003	0.143			
		4:KOMBINASI	-2.993	-883.198	-1.777	2.784	0.009	-28.722			
		5:KOMB B. MA	-52.752	-1.15E 3	0.233	0.581	0.004	-20.567			
	14406	1:BEBAN MATI	0.922	1.76E 3	1.084	-1.216	0.007	5.332			
		2:BEBAN HIDL	1.179	245.652	0.297	-0.828	0.002	1.497			
		3:BEBAN GEM	48.688	570.437	-1.424	1.077	-0.014	-6.856			
		4:KOMBINASI	2.993	2.5E 3	1.777	-2.784	0.012	8.794			
		5:KOMB B. MA	52.752	2.51E 3	-0.233	-0.581	-0.006	-0.969			
21596	14410	1:BEBAN MATI	-0.339	1.64E 3	0.698	-1.832	-0.004	-6.722			
		2:BEBAN HIDL	-1.131	212.895	0.197	-1.094	-0.001	-1.864			
		3:BEBAN GEM	-194.192	-578.561	-2.542	0.807	0.029	-6.795			
		4:KOMBINASI	-2.216	2.31E 3	1.153	-3.948	-0.007	-11.048			
		5:KOMB B. MA	-204.918	1.16E 3	-1.852	-1.641	0.025	-14.975			
	14408	1:BEBAN MATI	0.339	-287.039	-0.698	1.832	-0.004	18.045			
		2:BEBAN HIDL	1.131	-212.895	-0.197	1.094	-0.001	4.369			
		3:BEBAN GEM	194.192	578.561	2.542	-0.807	0.001	-0.013			
		4:KOMBINASI	2.216	-685.079	-1.153	3.948	-0.006	28.645			
		5:KOMB B. MA	204.918	192.713	1.852	1.641	-0.003	20.653			
21597	14412	1:BEBAN MATI	75.276	3.36E 3	-1.920	1.120	0.004	10.153			
		2:BEBAN HIDL	21.828	1.47E 3	-0.915	0.663	0.002	4.973			
		3:BEBAN GEM	-79.888	-1.66E 3	2.788	-0.679	-0.047	-37.211			
		4:KOMBINASI	125.256	6.4E 3	-3.768	2.405	0.007	20.141			
		5:KOMB B. MA	4.491	2.5E 3	0.458	0.805	-0.045	-25.934			
	14235	1:BEBAN MATI	-75.276	-3.29E 3	1.920	-1.120	0.001	-1.996			



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Job No 1	Sheet No 341	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-21.828	-1.47E 3	0.915	-0.663	0.001	-1.359			
		3:BEBAN GEM	79.888	1.66E 3	-2.788	0.679	0.040	33.137			
		4:KOMBINASI	-125.256	-6.31E 3	3.768	-2.405	0.002	-4.569			
		5:KOMB B. MA	-4.491	-2.43E 3	-0.458	-0.805	0.043	31.983			
21598	14416	1:BEBAN MATI	51.492	2.07E 3	-1.683	1.393	0.004	-11.882			
		2:BEBAN HIDL	14.742	905.149	-0.658	0.639	0.002	-4.880			
		3:BEBAN GEM	-27.808	-1.47E 3	32.096	-0.719	-0.111	-25.162			
		4:KOMBINASI	85.378	3.93E 3	-3.071	2.694	0.007	-22.067			
		5:KOMB B. MA	31.139	1.07E 3	31.623	1.021	-0.112	-41.230			
	14240	1:BEBAN MATI	-51.492	-1.92E 3	1.683	-1.393	0.004	21.654			
		2:BEBAN HIDL	-14.742	-905.149	0.658	-0.639	0.002	9.318			
		3:BEBAN GEM	27.808	1.47E 3	-32.096	0.719	-0.046	17.953			
		4:KOMBINASI	-85.378	-3.75E 3	3.071	-2.694	0.008	40.894			
		5:KOMB B. MA	-31.139	-917.052	-31.623	-1.021	-0.043	46.095			
21599	14420	1:BEBAN MATI	38.043	1.04E 3	-0.362	1.023	0.001	-25.957			
		2:BEBAN HIDL	10.635	437.079	-0.137	0.523	0.001	-11.167			
		3:BEBAN GEM	26.672	-1.37E 3	21.201	-0.768	-0.095	-13.816			
		4:KOMBINASI	62.668	1.95E 3	-0.654	2.065	0.003	-49.016			
		5:KOMB B. MA	72.430	-140.192	21.817	0.530	-0.097	-47.165			
	13700	1:BEBAN MATI	-38.043	-814.118	0.362	-1.023	0.001	32.774			
		2:BEBAN HIDL	-10.635	-437.079	0.137	-0.523	0.000	14.382			
		3:BEBAN GEM	-26.672	1.37E 3	-21.201	0.768	-0.061	3.717			
		4:KOMBINASI	-62.668	-1.68E 3	0.654	-2.065	0.002	62.339			
		5:KOMB B. MA	-72.430	365.437	-21.817	-0.530	-0.063	45.305			
21600	14421	1:BEBAN MATI	-0.026	-1.04E 3	-0.102	-0.138	0.000	-0.756			
		2:BEBAN HIDL	-0.830	-535.840	-0.021	-0.036	0.000	-0.601			
		3:BEBAN GEM	183.974	6.689	-2.537	0.088	0.017	0.641			
		4:KOMBINASI	-1.359	-2.1E 3	-0.156	-0.224	0.001	-1.868			
		5:KOMB B. MA	192.648	-1.35E 3	-2.779	-0.068	0.018	-0.443			
	13705	1:BEBAN MATI	0.026	1.27E 3	0.102	0.138	0.001	-12.820			
		2:BEBAN HIDL	0.830	535.840	0.021	0.036	0.000	-5.705			
		3:BEBAN GEM	-183.974	-6.689	2.537	-0.088	0.013	-0.562			
		4:KOMBINASI	1.359	2.38E 3	0.156	0.224	0.001	-24.512			
		5:KOMB B. MA	-192.648	1.58E 3	2.779	0.068	0.015	-16.833			
21601	14422	1:BEBAN MATI	1.983	-507.314	-0.077	-0.115	0.001	-10.149			
		2:BEBAN HIDL	-0.255	-292.568	-0.016	-0.034	0.000	-5.087			
		3:BEBAN GEM	228.669	-39.831	-2.816	0.145	0.018	0.078			
		4:KOMBINASI	1.972	-1.08E 3	-0.118	-0.192	0.001	-20.318			
		5:KOMB B. MA	241.932	-724.677	-3.043	0.017	0.019	-13.119			
	14421	1:BEBAN MATI	-1.983	737.965	0.077	0.115	0.000	2.822			
		2:BEBAN HIDL	0.255	292.568	0.016	0.034	0.000	1.644			
		3:BEBAN GEM	-228.669	39.831	2.816	-0.145	0.015	-0.547			
		4:KOMBINASI	-1.972	1.35E 3	0.118	0.192	0.001	6.016			
		5:KOMB B. MA	-241.932	955.328	3.043	-0.017	0.017	3.234			
21602	14423	1:BEBAN MATI	1.195	454.952	-0.119	0.051	0.001	-6.278			
		2:BEBAN HIDL	-0.440	178.932	-0.030	-0.002	0.000	-3.031			
		3:BEBAN GEM	268.797	-31.238	-3.306	-0.129	0.023	-0.345			
		4:KOMBINASI	0.730	832.233	-0.191	0.058	0.001	-12.384			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	283.168	529.511	-3.608	-0.086	0.025	-8.460			
	14422	1:BEBAN MATI	-1.195	-224.300	0.119	-0.051	0.001	10.275			
		2:BEBAN HIDL	0.440	-178.932	0.030	0.002	0.000	5.137			
		3:BEBAN GEM	-268.797	31.238	3.306	0.129	0.016	-0.022			
		4:KOMBINASI	-0.730	-555.451	0.191	-0.058	0.001	20.549			
		5:KOMB B. MA	-283.168	-298.859	3.608	0.086	0.017	13.334			
21603	14427	1:BEBAN MATI	36.957	-1.79E 3	-1.802	-2.537	0.001	-22.664			
		2:BEBAN HIDL	10.112	-755.723	-1.318	-1.166	0.001	-10.180			
		3:BEBAN GEM	165.733	-1.53E 3	368.863	0.166	-0.396	7.878			
		4:KOMBINASI	60.528	-3.36E 3	-4.271	-4.910	0.003	-43.486			
		5:KOMB B. MA	217.044	-3.85E 3	384.714	-3.062	-0.415	-20.500			
	14265	1:BEBAN MATI	-36.957	1.87E 3	1.802	2.537	0.004	18.181			
		2:BEBAN HIDL	-10.112	755.723	1.318	1.166	0.002	8.328			
		3:BEBAN GEM	-165.733	1.53E 3	-368.863	-0.166	-0.508	-11.635			
		4:KOMBINASI	-60.528	3.45E 3	4.271	4.910	0.008	35.142			
		5:KOMB B. MA	-217.044	3.93E 3	-384.714	3.062	-0.528	10.962			
21604	14431	1:BEBAN MATI	32.675	-2.78E 3	-0.910	-2.946	0.002	-5.990			
		2:BEBAN HIDL	9.123	-1.22E 3	-0.817	-1.327	0.002	-3.185			
		3:BEBAN GEM	274.323	-1.74E 3	235.600	0.657	-0.564	20.462			
		4:KOMBINASI	53.806	-5.28E 3	-2.399	-5.658	0.006	-12.283			
		5:KOMB B. MA	326.188	-5.33E 3	245.980	-3.053	-0.590	13.584			
	14269	1:BEBAN MATI	-32.675	2.93E 3	0.910	2.946	0.002	-7.997			
		2:BEBAN HIDL	-9.123	1.22E 3	0.817	1.327	0.002	-2.774			
		3:BEBAN GEM	-274.323	1.74E 3	-235.600	-0.657	-0.591	-28.973			
		4:KOMBINASI	-53.806	5.46E 3	2.399	5.658	0.006	-14.036			
		5:KOMB B. MA	-326.188	5.48E 3	-245.980	3.053	-0.617	-40.083			
21605	14435	1:BEBAN MATI	34.098	-3.83E 3	1.449	-2.464	-0.004	17.963			
		2:BEBAN HIDL	9.737	-1.67E 3	-0.040	-1.067	0.000	7.091			
		3:BEBAN GEM	535.333	-2.09E 3	111.748	1.479	-0.370	34.101			
		4:KOMBINASI	56.497	-7.27E 3	1.675	-4.664	-0.004	32.902			
		5:KOMB B. MA	602.040	-7.02E 3	118.761	-1.552	-0.392	58.024			
	12763	1:BEBAN MATI	-34.098	4.06E 3	-1.449	2.464	-0.007	-46.970			
		2:BEBAN HIDL	-9.737	1.67E 3	0.040	1.067	-0.000	-19.368			
		3:BEBAN GEM	-535.333	2.09E 3	-111.748	-1.479	-0.452	-49.451			
		4:KOMBINASI	-56.497	7.54E 3	-1.675	4.664	-0.009	-87.353			
		5:KOMB B. MA	-602.040	7.25E 3	-118.761	1.552	-0.481	-110.514			
21606	14436	1:BEBAN MATI	-5.086	-2.64E 3	1.304	-0.261	-0.008	-5.961			
		2:BEBAN HIDL	-4.393	-1.24E 3	0.377	-0.138	-0.002	-2.822			
		3:BEBAN GEM	562.672	-646.257	31.222	-3.731	-0.185	6.400			
		4:KOMBINASI	-13.132	-5.15E 3	2.168	-0.534	-0.014	-11.669			
		5:KOMB B. MA	583.083	-4.06E 3	34.313	-4.261	-0.204	-0.935			
	12766	1:BEBAN MATI	5.086	3E 3	-1.304	0.261	-0.007	-27.180			
		2:BEBAN HIDL	4.393	1.24E 3	-0.377	0.138	-0.002	-11.798			
		3:BEBAN GEM	-562.672	646.257	-31.222	3.731	-0.183	-14.005			
		4:KOMBINASI	13.132	5.58E 3	-2.168	0.534	-0.011	-51.493			
		5:KOMB B. MA	-583.083	4.42E 3	-34.313	4.261	-0.200	-48.964			
21607	14437	1:BEBAN MATI	-2.669	-872.499	0.219	-0.320	-0.001	-19.804			
		2:BEBAN HIDL	-3.536	-488.899	0.055	-0.170	-0.000	-9.362			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	679.263	-514.420	13.182	-1.130	-0.074	0.281			
		4:KOMBINASI	-8.860	-1.83E 3	0.351	-0.656	-0.001	-38.745			
		5:KOMB B. MA	708.436	-1.71E 3	14.093	-1.609	-0.078	-25.127			
	14436	1:BEBAN MATI	2.669	1.23E 3	-0.219	0.320	-0.002	7.416			
		2:BEBAN HIDL	3.536	488.899	-0.055	0.170	-0.000	3.609			
		3:BEBAN GEM	-679.263	514.420	-13.182	1.130	-0.081	-6.334			
		4:KOMBINASI	8.860	2.26E 3	-0.351	0.656	-0.003	14.674			
		5:KOMB B. MA	-708.436	2.07E 3	-14.093	1.609	-0.087	2.931			
21608	14438	1:BEBAN MATI	-0.924	1.23E 3	-0.563	-0.303	0.004	-7.546			
		2:BEBAN HIDL	-3.578	476.351	-0.187	-0.173	0.001	-3.784			
		3:BEBAN GEM	906.961	-489.060	5.350	1.107	-0.037	-5.716			
		4:KOMBINASI	-6.834	2.23E 3	-0.974	-0.640	0.006	-15.109			
		5:KOMB B. MA	949.238	998.728	4.943	0.756	-0.034	-15.818			
	14437	1:BEBAN MATI	0.924	-866.037	0.563	0.303	0.003	19.858			
		2:BEBAN HIDL	3.578	-476.351	0.187	0.173	0.001	9.389			
		3:BEBAN GEM	-906.961	489.060	-5.350	-1.107	-0.026	-0.039			
		4:KOMBINASI	6.834	-1.8E 3	0.974	0.640	0.005	38.853			
		5:KOMB B. MA	-949.238	-638.335	-4.943	-0.756	-0.024	25.451			
21609	14439	1:BEBAN MATI	-1.420	-2.5E 3	-0.492	-0.856	0.003	-4.753			
		2:BEBAN HIDL	-2.921	-1.18E 3	-0.215	-0.452	0.001	-2.270			
		3:BEBAN GEM	-13.072	-588.526	51.030	-3.945	-0.287	6.690			
		4:KOMBINASI	-6.378	-4.89E 3	-0.935	-1.750	0.006	-9.337			
		5:KOMB B. MA	-16.899	-3.83E 3	52.960	-5.269	-0.298	0.909			
	12734	1:BEBAN MATI	1.420	2.86E 3	0.492	0.856	0.003	-26.816			
		2:BEBAN HIDL	2.921	1.18E 3	0.215	0.452	0.001	-11.584			
		3:BEBAN GEM	13.072	588.526	-51.030	3.945	-0.313	-13.616			
		4:KOMBINASI	6.378	5.32E 3	0.935	1.750	0.005	-50.713			
		5:KOMB B. MA	16.899	4.19E 3	-52.960	5.269	-0.326	-48.063			
21610	14441	1:BEBAN MATI	3.778	-787.321	-0.132	-0.312	0.001	-17.300			
		2:BEBAN HIDL	-0.937	-450.303	-0.072	-0.167	0.000	-8.213			
		3:BEBAN GEM	-112.835	-517.699	29.310	-1.142	-0.163	0.500			
		4:KOMBINASI	3.034	-1.67E 3	-0.275	-0.641	0.001	-33.901			
		5:KOMB B. MA	-115.261	-1.6E 3	30.600	-1.611	-0.171	-21.703			
	14439	1:BEBAN MATI	-3.778	1.15E 3	0.132	0.312	0.001	5.914			
		2:BEBAN HIDL	0.937	450.303	0.072	0.167	0.000	2.914			
		3:BEBAN GEM	112.835	517.699	-29.310	1.142	-0.182	-6.592			
		4:KOMBINASI	-3.034	2.1E 3	0.275	0.641	0.002	11.759			
		5:KOMB B. MA	115.261	1.96E 3	-30.600	1.611	-0.189	0.741			
21611	14443	1:BEBAN MATI	8.497	1.14E 3	0.023	0.397	-0.000	-6.039			
		2:BEBAN HIDL	0.413	429.100	-0.016	0.225	0.000	-3.180			
		3:BEBAN GEM	-189.476	-529.188	24.940	1.129	-0.149	-5.954			
		4:KOMBINASI	10.857	2.05E 3	0.001	0.837	-0.000	-12.335			
		5:KOMB B. MA	-190.205	840.960	26.200	1.718	-0.156	-14.199			
	14441	1:BEBAN MATI	-8.497	-778.753	-0.023	-0.397	-0.000	17.324			
		2:BEBAN HIDL	-0.413	-429.100	0.016	-0.225	0.000	8.230			
		3:BEBAN GEM	189.476	529.188	-24.940	-1.129	-0.145	-0.274			
		4:KOMBINASI	-10.857	-1.62E 3	-0.001	-0.837	0.000	33.956			
		5:KOMB B. MA	190.205	-480.566	-26.200	-1.718	-0.152	21.974			



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Job No 1	Sheet No 344	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21612	14445	1:BEBAN MATI	15.063	2.01E 3	-0.234	0.340	0.001	-2.584			
		2:BEBAN HIDL	3.369	715.431	-0.021	0.190	0.000	-1.507			
		3:BEBAN GEM	-165.494	-2.2E 3	-29.269	-0.657	0.164	-23.600			
		4:KOMBINASI	23.466	3.56E 3	-0.314	0.713	0.002	-5.513			
		5:KOMB B. MA	-156.685	132.314	-30.979	-0.236	0.174	-28.269			
13696	13696	1:BEBAN MATI	-15.063	-1.65E 3	0.234	-0.340	0.001	24.166			
		2:BEBAN HIDL	-3.369	-715.431	0.021	-0.190	0.000	9.926			
		3:BEBAN GEM	165.494	2.2E 3	29.269	0.657	0.180	-2.302			
		4:KOMBINASI	-23.466	-3.13E 3	0.314	-0.713	0.002	44.882			
		5:KOMB B. MA	156.685	228.079	30.979	0.236	0.190	27.705			
21613	14446	1:BEBAN MATI	3.023	-946.278	-0.003	0.175	0.000	-0.809			
		2:BEBAN HIDL	0.157	-485.241	-0.022	0.033	0.000	-0.531			
		3:BEBAN GEM	-183.283	27.018	10.962	0.112	-0.058	0.839			
		4:KOMBINASI	3.879	-1.91E 3	-0.039	0.263	0.000	-1.819			
		5:KOMB B. MA	-189.331	-1.21E 3	11.493	0.313	-0.060	-0.246			
13701	13701	1:BEBAN MATI	-3.023	1.18E 3	0.003	-0.175	-0.000	-11.684			
		2:BEBAN HIDL	-0.157	485.241	0.022	-0.033	0.000	-5.180			
		3:BEBAN GEM	183.283	-27.018	-10.962	-0.112	-0.071	-0.521			
		4:KOMBINASI	-3.879	2.19E 3	0.039	-0.263	0.000	-22.309			
		5:KOMB B. MA	189.331	1.44E 3	-11.493	-0.313	-0.075	-15.339			
21614	14447	1:BEBAN MATI	3.451	-352.911	-0.005	0.130	-0.000	-7.659			
		2:BEBAN HIDL	0.212	-214.449	-0.017	0.024	0.000	-3.756			
		3:BEBAN GEM	-251.820	-59.388	10.308	0.247	-0.061	0.129			
		4:KOMBINASI	4.481	-766.611	-0.034	0.195	-0.000	-15.201			
		5:KOMB B. MA	-260.832	-543.938	10.807	0.404	-0.065	-9.778			
14446	14446	1:BEBAN MATI	-3.451	583.562	0.005	-0.130	0.000	2.149			
		2:BEBAN HIDL	-0.212	214.449	0.017	-0.024	0.000	1.233			
		3:BEBAN GEM	251.820	59.388	-10.308	-0.247	-0.060	-0.827			
		4:KOMBINASI	-4.481	1.04E 3	0.034	-0.195	0.000	4.551			
		5:KOMB B. MA	260.832	774.589	-10.807	-0.404	-0.063	2.019			
21615	14448	1:BEBAN MATI	1.086	501.280	0.029	-0.103	-0.000	-3.132			
		2:BEBAN HIDL	-0.401	163.999	-0.006	-0.005	0.000	-1.837			
		3:BEBAN GEM	-318.768	-71.058	13.649	-0.258	-0.085	-0.709			
		4:KOMBINASI	0.662	863.934	0.025	-0.132	-0.000	-6.698			
		5:KOMB B. MA	-333.861	525.069	14.356	-0.377	-0.089	-4.979			
14447	14447	1:BEBAN MATI	-1.086	-270.628	-0.029	0.103	-0.000	7.674			
		2:BEBAN HIDL	0.401	-163.999	0.006	0.005	0.000	3.767			
		3:BEBAN GEM	318.768	71.058	-13.649	0.258	-0.076	-0.127			
		4:KOMBINASI	-0.662	-587.152	-0.025	0.132	-0.000	15.236			
		5:KOMB B. MA	333.861	-294.417	-14.356	0.377	-0.080	9.801			
21616	14452	1:BEBAN MATI	29.443	-2.76E 3	1.161	-0.875	-0.009	-7.909			
		2:BEBAN HIDL	5.412	-1.17E 3	0.353	-0.661	-0.003	-2.808			
		3:BEBAN GEM	333.858	-2.49E 3	-12.774	1.725	0.025	29.616			
		4:KOMBINASI	43.990	-5.19E 3	1.958	-2.107	-0.015	-13.985			
		5:KOMB B. MA	383.240	-6.08E 3	-12.041	0.539	0.016	21.502			
12774	12774	1:BEBAN MATI	-29.443	3.13E 3	-1.161	0.875	-0.005	-26.745			
		2:BEBAN HIDL	-5.412	1.17E 3	-0.353	0.661	-0.002	-10.951			
		3:BEBAN GEM	-333.858	2.49E 3	12.774	-1.725	0.125	-58.959			



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Job No 1	Sheet No 345	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-43.990	5.62E 3	-1.958	2.107	-0.008	-49.616			
		5:KOMB B. MA	-383.240	6.44E 3	12.041	-0.539	0.125	-95.222			
21617	14453	1:BEBAN MATI	7.025	-2.1E 3	2.228	-2.251	-0.013	-3.951			
		2:BEBAN HIDL	0.080	-491.047	0.433	-1.516	-0.003	-0.798			
		3:BEBAN GEM	-84.466	-666.564	19.299	-3.621	-0.087	7.303			
		4:KOMBINASI	8.558	-3.3E 3	3.366	-5.126	-0.021	-6.018			
		5:KOMB B. MA	-81.617	-3.09E 3	22.752	-6.963	-0.106	3.238			
	12775	1:BEBAN MATI	-7.025	3.45E 3	-2.228	2.251	-0.013	-28.692			
		2:BEBAN HIDL	-0.080	491.047	-0.433	1.516	-0.002	-4.980			
		3:BEBAN GEM	84.466	666.564	-19.299	3.621	-0.140	-15.147			
		4:KOMBINASI	-8.558	4.92E 3	-3.366	5.126	-0.019	-42.399			
		5:KOMB B. MA	81.617	4.44E 3	-22.752	6.963	-0.162	-47.584			
21618	14454	1:BEBAN MATI	5.259	-285.232	0.204	-0.704	-0.001	-16.268			
		2:BEBAN HIDL	0.505	-194.733	0.037	-0.564	-0.000	-3.615			
		3:BEBAN GEM	-394.698	-593.616	-0.150	-0.830	0.007	-0.253			
		4:KOMBINASI	7.119	-653.852	0.305	-1.748	-0.002	-25.306			
		5:KOMB B. MA	-408.870	-1.03E 3	0.069	-1.914	0.006	-18.703			
	14453	1:BEBAN MATI	-5.259	1.64E 3	-0.204	0.704	-0.001	4.966			
		2:BEBAN HIDL	-0.505	194.733	-0.037	0.564	-0.000	1.323			
		3:BEBAN GEM	394.698	593.616	0.150	0.830	-0.005	-6.733			
		4:KOMBINASI	-7.119	2.27E 3	-0.305	1.748	-0.001	8.076			
		5:KOMB B. MA	408.870	2.38E 3	-0.069	1.914	-0.006	-1.310			
21619	14455	1:BEBAN MATI	11.647	1.63E 3	-0.276	0.906	0.002	-5.062			
		2:BEBAN HIDL	2.622	196.046	-0.060	0.666	0.000	-1.303			
		3:BEBAN GEM	-678.782	-594.506	-1.269	1.196	0.006	-7.341			
		4:KOMBINASI	18.172	2.27E 3	-0.426	2.152	0.003	-8.160			
		5:KOMB B. MA	-699.501	1.12E 3	-1.644	2.561	0.008	-13.552			
	14454	1:BEBAN MATI	-11.647	-276.351	0.276	-0.906	0.002	16.260			
		2:BEBAN HIDL	-2.622	-196.046	0.060	-0.666	0.000	3.610			
		3:BEBAN GEM	678.782	594.506	1.269	-1.196	0.009	0.345			
		4:KOMBINASI	-18.172	-645.294	0.426	-2.152	0.002	25.288			
		5:KOMB B. MA	699.501	230.253	1.644	-2.561	0.011	18.789			
21620	14459	1:BEBAN MATI	-11.964	1.88E 3	0.171	3.677	-0.001	8.611			
		2:BEBAN HIDL	-4.280	637.262	0.083	1.804	-0.001	3.094			
		3:BEBAN GEM	-486.676	-1.47E 3	-7.264	-0.471	0.021	-28.488			
		4:KOMBINASI	-21.205	3.28E 3	0.338	7.298	-0.003	15.284			
		5:KOMB B. MA	-525.542	718.353	-7.406	4.264	0.020	-19.445			
	14463	1:BEBAN MATI	11.964	-1.58E 3	-0.171	-3.677	-0.000	8.371			
		2:BEBAN HIDL	4.280	-637.262	-0.083	-1.804	-0.000	3.156			
		3:BEBAN GEM	486.676	1.47E 3	7.264	0.471	0.050	14.050			
		4:KOMBINASI	21.205	-2.92E 3	-0.338	-7.298	-0.001	15.094			
		5:KOMB B. MA	525.542	-418.025	7.406	-4.264	0.053	25.017			
21621	14463	1:BEBAN MATI	-4.650	1.02E 3	0.225	2.115	-0.002	-9.238			
		2:BEBAN HIDL	-1.757	324.360	0.079	0.946	-0.000	-3.505			
		3:BEBAN GEM	-670.298	-1.43E 3	-6.190	0.121	0.015	-13.658			
		4:KOMBINASI	-8.390	1.74E 3	0.397	4.051	-0.002	-16.694			
		5:KOMB B. MA	-709.517	-289.873	-6.226	2.809	0.014	-25.682			
	13699	1:BEBAN MATI	4.650	-721.120	-0.225	-2.115	-0.001	17.782			



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Job No 1	Sheet No 346	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	1.757	-324.360	-0.079	-0.946	-0.000	6.686			
		3:BEBAN GEM	670.298	1.43E 3	6.190	-0.121	0.045	-0.407			
		4:KOMBINASI	8.390	-1.38E 3	-0.397	-4.051	-0.001	32.036			
		5:KOMB B. MA	709.517	590.201	6.226	-2.809	0.047	21.367			
21622	14464	1:BEBAN MATI	1.554	-1.1E 3	-0.187	0.065	0.001	-1.842			
		2:BEBAN HIDL	-0.037	-572.074	-0.057	0.001	0.000	-1.174			
		3:BEBAN GEM	57.785	6.610	9.503	0.104	-0.050	0.553			
		4:KOMBINASI	1.806	-2.24E 3	-0.316	0.079	0.002	-4.088			
		5:KOMB B. MA	62.206	-1.44E 3	9.757	0.175	-0.052	-1.965			
	13704	1:BEBAN MATI	-1.554	1.33E 3	0.187	-0.065	0.001	-12.509			
		2:BEBAN HIDL	0.037	572.074	0.057	-0.001	0.000	-5.558			
		3:BEBAN GEM	-57.785	-6.610	-9.503	-0.104	-0.062	-0.476			
		4:KOMBINASI	-1.806	2.52E 3	0.316	-0.079	0.002	-23.905			
		5:KOMB B. MA	-62.206	1.67E 3	-9.757	-0.175	-0.063	-16.344			
21623	14465	1:BEBAN MATI	0.397	-538.039	-0.132	0.049	0.001	-11.230			
		2:BEBAN HIDL	-0.273	-311.841	-0.040	0.001	0.000	-5.711			
		3:BEBAN GEM	47.613	-44.528	5.267	0.156	-0.031	-0.042			
		4:KOMBINASI	0.040	-1.14E 3	-0.222	0.061	0.001	-22.613			
		5:KOMB B. MA	50.227	-771.898	5.375	0.214	-0.032	-14.700			
	14464	1:BEBAN MATI	-0.397	768.690	0.132	-0.049	0.001	3.541			
		2:BEBAN HIDL	0.273	311.841	0.040	-0.001	0.000	2.041			
		3:BEBAN GEM	-47.613	44.528	-5.267	-0.156	-0.031	-0.482			
		4:KOMBINASI	-0.040	1.42E 3	0.222	-0.061	0.001	7.515			
		5:KOMB B. MA	-50.227	1E 3	-5.375	-0.214	-0.032	4.260			
21624	14466	1:BEBAN MATI	-0.397	378.974	-0.088	-0.050	0.001	-8.217			
		2:BEBAN HIDL	-0.332	136.073	-0.026	0.001	0.000	-4.149			
		3:BEBAN GEM	41.326	-50.826	3.321	-0.177	-0.025	-0.712			
		4:KOMBINASI	-1.007	672.486	-0.147	-0.058	0.001	-16.498			
		5:KOMB B. MA	42.797	407.251	3.384	-0.235	-0.025	-11.453			
	14465	1:BEBAN MATI	0.397	-148.322	0.088	0.050	0.000	11.320			
		2:BEBAN HIDL	0.332	-136.073	0.026	-0.001	0.000	5.750			
		3:BEBAN GEM	-41.326	50.826	-3.321	0.177	-0.014	0.113			
		4:KOMBINASI	1.007	-395.703	0.147	0.058	0.001	22.784			
		5:KOMB B. MA	-42.797	-176.599	-3.384	0.235	-0.014	14.889			
21625	14470	1:BEBAN MATI	8.191	-1.52E 3	0.328	-3.624	-0.002	-9.054			
		2:BEBAN HIDL	1.758	-645.662	0.072	-1.859	-0.000	-3.065			
		3:BEBAN GEM	-1.02E 3	-1.47E 3	-6.654	0.981	0.017	14.632			
		4:KOMBINASI	12.642	-2.86E 3	0.509	-7.324	-0.003	-15.769			
		5:KOMB B. MA	-1.06E 3	-3.46E 3	-6.615	-3.710	0.016	4.470			
	14474	1:BEBAN MATI	-8.191	1.82E 3	-0.328	3.624	-0.001	-7.369			
		2:BEBAN HIDL	-1.758	645.662	-0.072	1.859	-0.000	-3.267			
		3:BEBAN GEM	1.02E 3	1.47E 3	6.654	-0.981	0.048	-29.062			
		4:KOMBINASI	-12.642	3.22E 3	-0.509	7.324	-0.002	-14.069			
		5:KOMB B. MA	1.06E 3	3.76E 3	6.615	3.710	0.049	-39.844			
21626	14474	1:BEBAN MATI	20.601	-2.26E 3	3.403	-5.484	-0.014	8.837			
		2:BEBAN HIDL	4.445	-854.257	0.740	-2.560	-0.003	4.004			
		3:BEBAN GEM	-1.32E 3	-1.62E 3	-76.473	0.498	0.231	29.027			
		4:KOMBINASI	31.834	-4.07E 3	5.268	-10.677	-0.022	17.010			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.36E 3	-4.47E 3	-76.450	-6.497	0.226	41.717			
	12762	1:BEBAN MATI	-20.601	2.56E 3	-3.403	5.484	-0.019	-32.440			
		2:BEBAN HIDL	-4.445	854.257	-0.740	2.560	-0.004	-12.381			
		3:BEBAN GEM	1.32E 3	1.62E 3	76.473	-0.498	0.519	-44.904			
		4:KOMBINASI	-31.834	4.44E 3	-5.268	10.677	-0.030	-58.738			
		5:KOMB B. MA	1.36E 3	4.77E 3	76.450	6.497	0.523	-87.017			
21627	14475	1:BEBAN MATI	4.693	-3.31E 3	-0.213	0.201	0.001	-7.141			
		2:BEBAN HIDL	-0.988	-1.25E 3	-0.088	0.096	0.000	-2.805			
		3:BEBAN GEM	147.064	-660.847	30.194	-3.626	-0.169	6.324			
		4:KOMBINASI	4.050	-5.97E 3	-0.396	0.395	0.002	-13.058			
		5:KOMB B. MA	158.517	-4.75E 3	31.438	-3.549	-0.176	-2.184			
	12765	1:BEBAN MATI	-4.693	4.66E 3	0.213	-0.201	0.001	-39.784			
		2:BEBAN HIDL	0.988	1.25E 3	0.088	-0.096	0.001	-11.873			
		3:BEBAN GEM	-147.064	660.847	-30.194	3.626	-0.186	-14.100			
		4:KOMBINASI	-4.050	7.59E 3	0.396	-0.395	0.003	-66.738			
		5:KOMB B. MA	-158.517	6.11E 3	-31.438	3.549	-0.194	-61.713			
21628	14476	1:BEBAN MATI	11.514	-729.978	-0.113	0.339	0.001	-25.268			
		2:BEBAN HIDL	1.134	-480.764	-0.033	0.170	0.000	-9.178			
		3:BEBAN GEM	85.192	-525.084	10.720	-1.062	-0.052	0.054			
		4:KOMBINASI	15.632	-1.65E 3	-0.189	0.679	0.001	-45.006			
		5:KOMB B. MA	101.647	-1.57E 3	11.123	-0.674	-0.054	-30.717			
	14475	1:BEBAN MATI	-11.514	2.08E 3	0.113	-0.339	0.001	8.732			
		2:BEBAN HIDL	-1.134	480.764	0.033	-0.170	0.000	3.520			
		3:BEBAN GEM	-85.192	525.084	-10.720	1.062	-0.074	-6.234			
		4:KOMBINASI	-15.632	3.27E 3	0.189	-0.679	0.001	16.110			
		5:KOMB B. MA	-101.647	2.92E 3	-11.123	0.674	-0.077	4.298			
21629	14477	1:BEBAN MATI	19.172	2.08E 3	-0.035	0.552	0.000	-8.836			
		2:BEBAN HIDL	2.900	477.361	0.014	0.262	-0.000	-3.592			
		3:BEBAN GEM	60.667	-521.960	-0.014	1.129	0.016	-6.314			
		4:KOMBINASI	27.645	3.26E 3	-0.019	1.082	-0.000	-16.351			
		5:KOMB B. MA	84.612	1.82E 3	-0.041	1.895	0.017	-17.621			
	14476	1:BEBAN MATI	-19.172	-726.284	0.035	-0.552	0.000	25.329			
		2:BEBAN HIDL	-2.900	-477.361	-0.014	-0.262	-0.000	9.210			
		3:BEBAN GEM	-60.667	521.960	0.014	-1.129	-0.016	0.171			
		4:KOMBINASI	-27.645	-1.64E 3	0.019	-1.082	0.000	45.130			
		5:KOMB B. MA	-84.612	-464.643	0.041	-1.895	-0.016	31.034			
21630	14481	1:BEBAN MATI	20.806	3.37E 3	0.604	-1.648	-0.003	8.276			
		2:BEBAN HIDL	7.150	1.36E 3	-0.751	-0.315	0.001	3.432			
		3:BEBAN GEM	-1.76E 3	-1.48E 3	291.339	-0.586	-0.588	-28.482			
		4:KOMBINASI	36.408	6.23E 3	-0.476	-2.482	-0.001	15.423			
		5:KOMB B. MA	-1.82E 3	2.64E 3	306.060	-2.452	-0.620	-19.571			
	14395	1:BEBAN MATI	-20.806	-3.22E 3	-0.604	1.648	-0.000	7.896			
		2:BEBAN HIDL	-7.150	-1.36E 3	0.751	0.315	0.002	3.240			
		3:BEBAN GEM	1.76E 3	1.48E 3	-291.339	0.586	-0.840	21.237			
		4:KOMBINASI	-36.408	-6.05E 3	0.476	2.482	0.004	14.660			
		5:KOMB B. MA	1.82E 3	-2.49E 3	-306.060	2.452	-0.881	32.140			
21631	14485	1:BEBAN MATI	14.270	1.79E 3	0.431	-0.567	-0.002	-20.345			
		2:BEBAN HIDL	4.453	680.729	-0.039	-0.099	0.000	-8.343			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.02E 3	-1.38E 3	40.423	-0.256	-0.241	-13.920			
		4:KOMBINASI	24.248	3.24E 3	0.455	-0.839	-0.002	-37.763			
		5:KOMB B. MA	-1.06E 3	747.555	42.852	-0.895	-0.256	-39.967			
	13698	1:BEBAN MATI	-14.270	-1.49E 3	-0.431	0.567	-0.002	36.424			
		2:BEBAN HIDL	-4.453	-680.729	0.039	0.099	0.000	15.019			
		3:BEBAN GEM	1.02E 3	1.38E 3	-40.423	0.256	-0.155	0.371			
		4:KOMBINASI	-24.248	-2.88E 3	-0.455	0.839	-0.002	67.739			
		5:KOMB B. MA	1.06E 3	-447.227	-42.852	0.895	-0.165	45.825			
21632	14486	1:BEBAN MATI	4.513	-1.03E 3	-0.072	0.009	0.000	-0.768			
		2:BEBAN HIDL	0.481	-538.383	-0.030	0.004	0.000	-0.645			
		3:BEBAN GEM	172.579	9.245	10.495	0.102	-0.056	0.578			
		4:KOMBINASI	6.186	-2.1E 3	-0.134	0.017	0.001	-1.954			
		5:KOMB B. MA	186.010	-1.35E 3	10.930	0.118	-0.058	-0.548			
	13703	1:BEBAN MATI	-4.513	1.26E 3	0.072	-0.009	0.000	-12.734			
		2:BEBAN HIDL	-0.481	538.383	0.030	-0.004	0.000	-5.691			
		3:BEBAN GEM	-172.579	-9.245	-10.495	-0.102	-0.068	-0.469			
		4:KOMBINASI	-6.186	2.38E 3	0.134	-0.017	0.001	-24.386			
		5:KOMB B. MA	-186.010	1.58E 3	-10.930	-0.118	-0.070	-16.641			
21633	14487	1:BEBAN MATI	3.643	-430.474	-0.072	0.018	0.000	-8.859			
		2:BEBAN HIDL	0.135	-265.373	-0.030	0.009	0.000	-4.613			
		3:BEBAN GEM	246.542	-40.333	10.559	0.157	-0.062	0.032			
		4:KOMBINASI	4.587	-941.166	-0.134	0.035	0.001	-18.012			
		5:KOMB B. MA	262.593	-632.047	10.997	0.188	-0.064	-11.593			
	14486	1:BEBAN MATI	-3.643	661.126	0.072	-0.018	0.000	2.436			
		2:BEBAN HIDL	-0.135	265.373	0.030	-0.009	0.000	1.490			
		3:BEBAN GEM	-246.542	40.333	-10.559	-0.157	-0.063	-0.507			
		4:KOMBINASI	-4.587	1.22E 3	0.134	-0.035	0.001	5.308			
		5:KOMB B. MA	-262.593	862.698	-10.997	-0.188	-0.065	2.798			
21634	14488	1:BEBAN MATI	2.515	571.668	-0.107	0.025	0.001	-3.517			
		2:BEBAN HIDL	-0.385	204.521	-0.044	0.014	0.000	-2.225			
		3:BEBAN GEM	360.846	-42.091	14.978	-0.163	-0.091	-0.533			
		4:KOMBINASI	2.401	1.01E 3	-0.198	0.052	0.001	-7.780			
		5:KOMB B. MA	381.171	650.184	15.594	-0.138	-0.095	-5.411			
	14487	1:BEBAN MATI	-2.515	-341.016	0.107	-0.025	0.001	8.887			
		2:BEBAN HIDL	0.385	-204.521	0.044	-0.014	0.000	4.632			
		3:BEBAN GEM	-360.846	42.091	-14.978	0.163	-0.085	0.037			
		4:KOMBINASI	-2.401	-736.452	0.198	-0.052	0.001	18.076			
		5:KOMB B. MA	-381.171	-419.533	-15.594	0.138	-0.089	11.705			
21635	14492	1:BEBAN MATI	16.272	-2.44E 3	2.006	-1.776	-0.003	-18.397			
		2:BEBAN HIDL	5.070	-1.02E 3	-0.320	-1.021	0.001	-7.541			
		3:BEBAN GEM	-1.19E 3	-1.41E 3	215.812	0.332	-0.454	13.634			
		4:KOMBINASI	27.639	-4.56E 3	1.895	-3.765	-0.002	-34.142			
		5:KOMB B. MA	-1.23E 3	-4.53E 3	228.417	-2.040	-0.480	-8.606			
	14398	1:BEBAN MATI	-16.272	2.59E 3	-2.006	1.776	-0.007	6.077			
		2:BEBAN HIDL	-5.070	1.02E 3	0.320	1.021	0.001	2.524			
		3:BEBAN GEM	1.19E 3	1.41E 3	-215.812	-0.332	-0.604	-20.550			
		4:KOMBINASI	-27.639	4.74E 3	-1.895	3.765	-0.007	11.332			
		5:KOMB B. MA	1.23E 3	4.68E 3	-228.417	2.040	-0.640	-13.986			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21636	14496	1:BEBAN MATI	11.989	-3.98E 3	1.861	-1.479	-0.008	11.795			
		2:BEBAN HIDL	3.444	-1.64E 3	0.283	-0.895	-0.001	4.993			
		3:BEBAN GEM	-448.923	-1.7E 3	-3.060	1.102	-0.057	28.361			
		4:KOMBINASI	19.897	-7.39E 3	2.686	-3.207	-0.012	22.143			
		5:KOMB B. MA	-457.314	-6.74E 3	-1.182	-0.859	-0.069	44.570			
12761		1:BEBAN MATI	-11.989	4.28E 3	-1.861	1.479	-0.010	-52.299			
		2:BEBAN HIDL	-3.444	1.64E 3	-0.283	0.895	-0.002	-21.032			
		3:BEBAN GEM	448.923	1.7E 3	3.060	-1.102	0.087	-45.000			
		4:KOMBINASI	-19.897	7.75E 3	-2.686	3.207	-0.015	-96.410			
		5:KOMB B. MA	457.314	7.04E 3	1.182	0.859	0.080	-112.169			
21637	14497	1:BEBAN MATI	-0.900	-3.31E 3	-0.321	-0.051	0.002	-6.249			
		2:BEBAN HIDL	-3.080	-1.25E 3	-0.118	0.013	0.001	-2.399			
		3:BEBAN GEM	366.851	-662.467	45.441	-3.629	-0.254	6.416			
		4:KOMBINASI	-6.008	-5.97E 3	-0.574	-0.039	0.003	-11.337			
		5:KOMB B. MA	382.445	-4.75E 3	47.321	-3.853	-0.264	-0.952			
12764		1:BEBAN MATI	0.900	4.66E 3	0.321	0.051	0.002	-40.627			
		2:BEBAN HIDL	3.080	1.25E 3	0.118	-0.013	0.001	-12.312			
		3:BEBAN GEM	-366.851	662.467	-45.441	3.629	-0.281	-14.212			
		4:KOMBINASI	6.008	7.59E 3	0.574	0.039	0.004	-68.452			
		5:KOMB B. MA	-382.445	6.1E 3	-47.321	3.853	-0.293	-62.936			
21638	14498	1:BEBAN MATI	4.974	-733.741	-0.160	-0.020	0.001	-24.402			
		2:BEBAN HIDL	-0.998	-485.134	-0.069	-0.002	0.000	-8.816			
		3:BEBAN GEM	376.839	-523.753	26.745	-1.083	-0.146	0.166			
		4:KOMBINASI	4.371	-1.66E 3	-0.302	-0.028	0.002	-43.388			
		5:KOMB B. MA	400.056	-1.57E 3	27.881	-1.158	-0.152	-29.518			
	14497		1:BEBAN MATI	-4.974	2.08E 3	0.160	0.020	0.001	7.822		
			2:BEBAN HIDL	0.998	485.134	0.069	0.002	0.000	3.107		
			3:BEBAN GEM	-376.839	523.753	-26.745	1.083	-0.169	-6.329		
			4:KOMBINASI	-4.371	3.28E 3	0.302	0.028	0.002	14.357		
			5:KOMB B. MA	-400.056	2.93E 3	-27.881	1.158	-0.176	3.040		
21639	14499	1:BEBAN MATI	10.094	2.04E 3	-0.129	0.010	0.001	-8.341			
		2:BEBAN HIDL	0.236	462.752	-0.071	-0.011	0.000	-3.390			
		3:BEBAN GEM	433.515	-520.343	24.412	1.077	-0.145	-6.182			
		4:KOMBINASI	12.490	3.19E 3	-0.269	-0.006	0.002	-15.433			
		5:KOMB B. MA	465.426	1.77E 3	25.460	1.135	-0.151	-16.867			
	14498		1:BEBAN MATI	-10.094	-692.114	0.129	-0.010	0.001	24.432		
			2:BEBAN HIDL	-0.236	-462.752	0.071	0.011	0.000	8.835		
			3:BEBAN GEM	-433.515	520.343	-24.412	-1.077	-0.143	0.059		
			4:KOMBINASI	-12.490	-1.57E 3	0.269	0.006	0.002	43.455		
			5:KOMB B. MA	-465.426	-423.404	-25.460	-1.135	-0.149	29.795		
21640	14503	1:BEBAN MATI	10.479	3.41E 3	-0.242	-1.232	-0.001	10.130			
		2:BEBAN HIDL	3.164	1.4E 3	-0.689	-0.103	0.001	4.598			
		3:BEBAN GEM	-1.35E 3	-1.47E 3	144.636	-0.447	-0.277	-28.082			
		4:KOMBINASI	17.638	6.34E 3	-1.392	-1.642	0.001	19.513			
		5:KOMB B. MA	-1.41E 3	2.71E 3	151.212	-1.763	-0.291	-16.597			
	14401		1:BEBAN MATI	-10.479	-3.26E 3	0.242	1.232	0.002	6.232		
			2:BEBAN HIDL	-3.164	-1.4E 3	0.689	0.103	0.002	2.282		
			3:BEBAN GEM	1.35E 3	1.47E 3	-144.636	0.447	-0.432	20.870		



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Job No 1	Sheet No 350	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-17.638	-6.16E 3	1.392	1.642	0.006	11.130			
		5:KOMB B. MA	1.41E 3	-2.56E 3	-151.212	1.763	-0.450	29.514			
21641	14507	1:BEBAN MATI	9.303	1.87E 3	0.202	-0.523	-0.001	-19.202			
		2:BEBAN HIDL	2.019	741.481	-0.033	-0.019	0.000	-7.706			
		3:BEBAN GEM	-631.198	-1.34E 3	-1.560	-0.290	-0.031	-13.815			
		4:KOMBINASI	14.393	3.43E 3	0.190	-0.658	-0.001	-35.373			
		5:KOMB B. MA	-652.244	907.276	-1.456	-0.839	-0.034	-38.331			
	13697	1:BEBAN MATI	-9.303	-1.57E 3	-0.202	0.523	-0.001	36.105			
		2:BEBAN HIDL	-2.019	-741.481	0.033	0.019	0.000	14.978			
		3:BEBAN GEM	631.198	1.34E 3	1.560	0.290	0.047	0.633			
		4:KOMBINASI	-14.393	-3.07E 3	-0.190	0.658	-0.001	67.290			
		5:KOMB B. MA	652.244	-606.948	1.456	0.839	0.048	45.756			
21642	14508	1:BEBAN MATI	2.843	-1.02E 3	-0.055	-0.040	0.000	-0.743			
		2:BEBAN HIDL	0.154	-539.733	-0.033	0.011	0.000	-0.665			
		3:BEBAN GEM	81.078	7.614	17.941	0.110	-0.098	0.574			
		4:KOMBINASI	3.657	-2.09E 3	-0.120	-0.031	0.001	-1.955			
		5:KOMB B. MA	88.067	-1.33E 3	18.763	0.082	-0.102	-0.539			
	13702	1:BEBAN MATI	-2.843	1.25E 3	0.055	0.040	0.000	-12.607			
		2:BEBAN HIDL	-0.154	539.733	0.033	-0.011	0.000	-5.687			
		3:BEBAN GEM	-81.078	-7.614	-17.941	-0.110	-0.114	-0.485			
		4:KOMBINASI	-3.657	2.36E 3	0.120	0.031	0.001	-24.228			
		5:KOMB B. MA	-88.067	1.57E 3	-18.763	-0.082	-0.119	-16.528			
21643	14509	1:BEBAN MATI	2.139	-418.717	-0.050	-0.030	0.000	-8.661			
		2:BEBAN HIDL	-0.118	-266.512	-0.030	0.006	0.000	-4.649			
		3:BEBAN GEM	104.642	-41.952	15.924	0.164	-0.093	0.006			
		4:KOMBINASI	2.378	-928.880	-0.107	-0.027	0.001	-17.830			
		5:KOMB B. MA	111.943	-622.674	16.653	0.145	-0.098	-11.443			
	14508	1:BEBAN MATI	-2.139	649.368	0.050	0.030	0.000	2.376			
		2:BEBAN HIDL	0.118	266.512	0.030	-0.006	0.000	1.512			
		3:BEBAN GEM	-104.642	41.952	-15.924	-0.164	-0.094	-0.500			
		4:KOMBINASI	-2.378	1.21E 3	0.107	0.027	0.001	5.271			
		5:KOMB B. MA	-111.943	853.326	-16.653	-0.145	-0.098	2.759			
21644	14510	1:BEBAN MATI	1.463	564.852	-0.066	0.043	0.000	-3.391			
		2:BEBAN HIDL	-0.411	207.128	-0.039	-0.008	0.000	-2.227			
		3:BEBAN GEM	135.950	-41.328	19.914	-0.164	-0.124	-0.550			
		4:KOMBINASI	1.098	1.01E 3	-0.140	0.039	0.001	-7.631			
		5:KOMB B. MA	143.964	645.735	20.821	-0.134	-0.130	-5.304			
	14509	1:BEBAN MATI	-1.463	-334.201	0.066	-0.043	0.000	8.681			
		2:BEBAN HIDL	0.411	-207.128	0.039	0.008	0.000	4.664			
		3:BEBAN GEM	-135.950	41.328	-19.914	0.164	-0.110	0.063			
		4:KOMBINASI	-1.098	-732.445	0.140	-0.039	0.001	17.879			
		5:KOMB B. MA	-143.964	-415.083	-20.821	0.134	-0.115	11.546			
21645	14514	1:BEBAN MATI	10.447	-2.38E 3	1.454	-1.816	-0.003	-18.857			
		2:BEBAN HIDL	2.552	-972.197	-0.164	-1.048	0.001	-8.148			
		3:BEBAN GEM	-997.189	-1.38E 3	-43.125	0.295	0.127	12.968			
		4:KOMBINASI	16.620	-4.41E 3	1.483	-3.856	-0.002	-35.665			
		5:KOMB B. MA	-1.04E 3	-4.41E 3	-43.925	-2.135	0.131	-10.129			
	14404	1:BEBAN MATI	-10.447	2.53E 3	-1.454	1.816	-0.005	6.828			



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Job No 1	Sheet No 351	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enginering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-2.552	972.197	0.164	1.048	0.000	3.381			
		3:BEBAN GEM	997.189	1.38E 3	43.125	-0.295	0.085	-19.730			
		4:KOMBINASI	-16.620	4.59E 3	-1.483	3.856	-0.005	13.604			
		5:KOMB B. MA	1.04E 3	4.56E 3	43.925	2.135	0.085	-11.859			
21646	14518	1:BEBAN MATI	6.294	-3.87E 3	1.514	-1.412	-0.007	10.799			
		2:BEBAN HIDL	0.482	-1.61E 3	0.279	-0.959	-0.001	3.862			
		3:BEBAN GEM	-120.440	-1.68E 3	-65.087	1.078	0.268	27.380			
		4:KOMBINASI	8.323	-7.22E 3	2.263	-3.230	-0.010	19.139			
		5:KOMB B. MA	-119.879	-6.6E 3	-66.659	-0.856	0.274	41.866			
	12732	1:BEBAN MATI	-6.294	4.17E 3	-1.514	1.412	-0.008	-50.177			
		2:BEBAN HIDL	-0.482	1.61E 3	-0.279	0.959	-0.002	-19.656			
		3:BEBAN GEM	120.440	1.68E 3	65.087	-1.078	0.370	-43.882			
		4:KOMBINASI	-8.323	7.58E 3	-2.263	3.230	-0.012	-91.662			
		5:KOMB B. MA	119.879	6.9E 3	66.659	0.856	0.380	-108.047			
21647	14520	1:BEBAN MATI	2.000	2.84E 3	0.436	-0.851	-0.002	-3.392			
		2:BEBAN HIDL	0.767	690.789	0.174	-0.249	-0.001	-1.266			
		3:BEBAN GEM	-516.536	-1.99E 3	-34.098	-0.914	0.194	-22.918			
		4:KOMBINASI	3.627	4.51E 3	0.801	-1.419	-0.004	-6.096			
		5:KOMB B. MA	-539.903	1.16E 3	-35.263	-1.960	0.201	-28.216			
	13692	1:BEBAN MATI	-2.000	-1.49E 3	-0.436	0.851	-0.003	28.869			
		2:BEBAN HIDL	-0.767	-690.789	-0.174	0.249	-0.001	9.395			
		3:BEBAN GEM	516.536	1.99E 3	34.098	0.914	0.207	-0.512			
		4:KOMBINASI	-3.627	-2.89E 3	-0.801	1.419	-0.005	49.676			
		5:KOMB B. MA	539.903	186.295	35.263	1.960	0.214	33.969			
21648	14521	1:BEBAN MATI	-2.789	-302.538	-0.000	0.077	-0.000	0.322			
		2:BEBAN HIDL	-1.150	-209.838	-0.017	0.049	0.000	-0.496			
		3:BEBAN GEM	-454.545	-35.594	14.320	-0.046	-0.126	0.223			
		4:KOMBINASI	-5.187	-698.787	-0.027	0.171	0.000	-0.407			
		5:KOMB B. MA	-480.751	-465.815	15.026	0.058	-0.133	0.258			
	13696	1:BEBAN MATI	2.789	648.515	0.000	-0.077	0.000	-8.716			
		2:BEBAN HIDL	1.150	209.838	0.017	-0.049	0.000	-3.208			
		3:BEBAN GEM	454.545	35.594	-14.320	0.046	-0.127	-0.851			
		4:KOMBINASI	5.187	1.11E 3	0.027	-0.171	0.000	-15.592			
		5:KOMB B. MA	480.751	811.792	-15.026	-0.058	-0.133	-11.534			
21649	14523	1:BEBAN MATI	-6.484	-3.57E 3	0.280	1.141	-0.000	-7.389			
		2:BEBAN HIDL	-1.603	-1.24E 3	0.118	0.227	-0.000	-1.359			
		3:BEBAN GEM	-766.323	-2.2E 3	-23.268	1.985	0.173	24.283			
		4:KOMBINASI	-10.347	-6.27E 3	0.525	1.732	-0.001	-11.042			
		5:KOMB B. MA	-812.086	-6.62E 3	-24.080	3.361	0.181	17.292			
	12773	1:BEBAN MATI	6.484	4.92E 3	-0.280	-1.141	-0.003	-42.610			
		2:BEBAN HIDL	1.603	1.24E 3	-0.118	-0.227	-0.001	-13.200			
		3:BEBAN GEM	766.323	2.2E 3	23.268	-1.985	0.101	-50.121			
		4:KOMBINASI	10.347	7.89E 3	-0.525	-1.732	-0.006	-72.252			
		5:KOMB B. MA	812.086	7.97E 3	24.080	-3.361	0.102	-103.157			
21650	14524	1:BEBAN MATI	-40.664	-349.155	0.419	-0.610	-0.006	-2.198			
		2:BEBAN HIDL	-12.161	-164.985	0.030	-0.257	-0.001	0.523			
		3:BEBAN GEM	-1.3E 3	-841.163	25.095	-2.898	-0.247	-0.073			
		4:KOMBINASI	-68.253	-682.962	0.551	-1.143	-0.009	-1.800			



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Job No

1

Sheet No

352

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.42E 3	-1.33E 3	26.786	-3.807	-0.266	-1.961			
	12774	1:BEAN MATI	40.664	2.37E 3	-0.419	0.610	-0.001	-21.843			
		2:BEAN HIDL	12.161	164.985	-0.030	0.257	0.000	-3.436			
		3:BEAN GEM	1.3E 3	841.163	-25.095	2.898	-0.196	-14.775			
		4:KOMBINASI	68.253	3.11E 3	-0.551	1.143	-0.001	-31.709			
		5:KOMB B. MA	1.42E 3	3.36E 3	-26.786	3.807	-0.207	-39.418			
21651	14526	1:BEAN MATI	9.876	645.971	0.091	-0.009	-0.000	1.988			
		2:BEAN HIDL	3.035	157.577	0.037	-0.007	-0.000	0.269			
		3:BEAN GEM	317.433	-167.616	-19.341	0.169	0.116	-2.299			
		4:KOMBINASI	16.708	1.03E 3	0.168	-0.022	-0.001	2.816			
		5:KOMB B. MA	345.002	564.521	-20.194	0.165	0.121	-0.264			
	13726	1:BEAN MATI	-9.876	-415.320	-0.091	0.009	-0.001	4.256			
		2:BEAN HIDL	-3.035	-157.577	-0.037	0.007	-0.000	1.585			
		3:BEAN GEM	-317.433	167.616	19.341	-0.169	0.112	0.326			
		4:KOMBINASI	-16.708	-750.507	-0.168	0.022	-0.001	7.644			
		5:KOMB B. MA	-345.002	-333.870	20.194	-0.165	0.117	5.550			
21652	14528	1:BEAN MATI	-3.786	-814.765	-0.126	0.266	0.001	-4.816			
		2:BEAN HIDL	-1.350	-438.446	-0.054	0.044	0.000	-2.102			
		3:BEAN GEM	-511.164	31.331	14.928	0.515	-0.113	0.938			
		4:KOMBINASI	-6.704	-1.68E 3	-0.237	0.389	0.002	-9.141			
		5:KOMB B. MA	-541.319	-1.04E 3	15.516	0.832	-0.118	-5.092			
	13692	1:BEAN MATI	3.786	1.1E 3	0.126	-0.266	0.001	-9.290			
		2:BEAN HIDL	1.350	438.446	0.054	-0.044	0.000	-4.348			
		3:BEAN GEM	511.164	-31.331	-14.928	-0.515	-0.106	-0.477			
		4:KOMBINASI	6.704	2.03E 3	0.237	-0.389	0.002	-18.105			
		5:KOMB B. MA	541.319	1.33E 3	-15.516	-0.832	-0.110	-12.399			
21653	14529	1:BEAN MATI	-4.938	614.870	-0.064	-0.125	0.001	-3.474			
		2:BEAN HIDL	-1.530	165.280	-0.026	0.002	0.000	-1.722			
		3:BEAN GEM	-733.688	-63.622	9.040	-0.574	-0.070	-1.062			
		4:KOMBINASI	-8.373	1E 3	-0.117	-0.147	0.001	-6.924			
		5:KOMB B. MA	-776.229	647.235	9.413	-0.727	-0.073	-5.622			
	13726	1:BEAN MATI	4.938	-326.556	0.064	0.125	0.000	10.398			
		2:BEAN HIDL	1.530	-165.280	0.026	-0.002	0.000	4.153			
		3:BEAN GEM	733.688	63.622	-9.040	0.574	-0.063	0.127			
		4:KOMBINASI	8.373	-656.314	0.117	0.147	0.001	19.123			
		5:KOMB B. MA	776.229	-358.920	-9.413	0.727	-0.066	13.023			
21654	14531	1:BEAN MATI	11.234	-582.937	0.107	-0.116	-0.001	-1.075			
		2:BEAN HIDL	3.545	-356.042	0.054	-0.058	-0.000	0.483			
		3:BEAN GEM	272.361	8.115	-21.856	-0.121	0.132	2.562			
		4:KOMBINASI	19.153	-1.27E 3	0.214	-0.232	-0.001	-0.517			
		5:KOMB B. MA	299.340	-788.042	-22.810	-0.278	0.137	1.905			
	13662	1:BEAN MATI	-11.234	813.589	-0.107	0.116	-0.001	-7.142			
		2:BEAN HIDL	-3.545	356.042	-0.054	0.058	-0.000	-4.673			
		3:BEAN GEM	-272.361	-8.115	21.856	0.121	0.126	-2.466			
		4:KOMBINASI	-19.153	1.55E 3	-0.214	0.232	-0.001	-16.048			
		5:KOMB B. MA	-299.340	1.02E 3	22.810	0.278	0.131	-12.536			
21655	14533	1:BEAN MATI	67.268	4.91E 3	-4.666	4.934	0.026	45.574			
		2:BEAN HIDL	36.260	932.703	-2.014	3.031	0.011	10.072			



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Job No 1	Sheet No 353	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-618.627	-1.01E 3	29.004	-1.256	-0.160	-30.138			
		4:KOMBINASI	138.737	7.39E 3	-8.822	10.770	0.049	70.804			
		5:KOMB B. MA	-560.535	4.42E 3	24.580	5.434	-0.135	19.972			
	14681	1:BEBAN MATI	-67.268	-4.07E 3	4.666	-4.934	0.008	-12.541			
		2:BEBAN HIDL	-36.260	-932.703	2.014	-3.031	0.004	-3.211			
		3:BEBAN GEM	618.627	1.01E 3	-29.004	1.256	-0.053	22.740			
		4:KOMBINASI	-138.737	-6.38E 3	8.822	-10.770	0.016	-20.188			
		5:KOMB B. MA	560.535	-3.57E 3	-24.580	-5.434	-0.045	9.409			
21656	14535	1:BEBAN MATI	-143.003	5.32E 3	-0.112	-0.225	0.002	53.340			
		2:BEBAN HIDL	57.512	2.18E 3	0.079	0.083	-0.000	22.491			
		3:BEBAN GEM	-430.744	-1.07E 3	3.800	-0.936	-0.004	-29.564			
		4:KOMBINASI	-79.584	9.88E 3	-0.007	-0.137	0.002	99.994			
		5:KOMB B. MA	-560.777	5.51E 3	3.926	-1.158	-0.003	35.793			
	14686	1:BEBAN MATI	143.003	-5.1E 3	0.112	0.225	-0.001	-15.026			
		2:BEBAN HIDL	-57.512	-2.18E 3	-0.079	-0.083	-0.000	-6.446			
		3:BEBAN GEM	430.744	1.07E 3	-3.800	0.936	-0.023	21.713			
		4:KOMBINASI	79.584	-9.61E 3	0.007	0.137	-0.002	-28.344			
		5:KOMB B. MA	560.777	-5.28E 3	-3.926	1.158	-0.026	3.905			
21657	14537	1:BEBAN MATI	-97.785	4.09E 3	-3.017	-3.472	0.010	40.648			
		2:BEBAN HIDL	53.668	1.69E 3	-0.672	-1.586	0.003	17.363			
		3:BEBAN GEM	-353.229	-1.15E 3	5.579	-1.011	-0.051	-30.185			
		4:KOMBINASI	-31.473	7.61E 3	-4.696	-6.703	0.017	76.558			
		5:KOMB B. MA	-436.474	3.9E 3	2.438	-5.485	-0.042	19.371			
	14955	1:BEBAN MATI	97.785	-3.87E 3	3.017	3.472	0.012	-11.370			
		2:BEBAN HIDL	-53.668	-1.69E 3	0.672	1.586	0.002	-4.968			
		3:BEBAN GEM	353.229	1.15E 3	-5.579	1.011	0.010	21.732			
		4:KOMBINASI	31.473	-7.34E 3	4.696	6.703	0.018	-21.592			
		5:KOMB B. MA	436.474	-3.67E 3	-2.438	5.485	0.024	8.468			
21658	14539	1:BEBAN MATI	-39.805	2.6E 3	-1.709	-0.408	0.011	17.072			
		2:BEBAN HIDL	-6.201	369.006	-0.310	-0.882	0.002	3.359			
		3:BEBAN GEM	-948.645	-2.41E 3	-10.641	-0.501	0.119	-39.623			
		4:KOMBINASI	-57.688	3.71E 3	-2.547	-1.900	0.016	25.861			
		5:KOMB B. MA	-1.04E 3	295.947	-13.069	-1.463	0.137	-22.517			
	14723	1:BEBAN MATI	39.805	-1.48E 3	1.709	0.408	0.006	2.934			
		2:BEBAN HIDL	6.201	-369.006	0.310	0.882	0.001	0.259			
		3:BEBAN GEM	948.645	2.41E 3	10.641	0.501	-0.015	16.012			
		4:KOMBINASI	57.688	-2.36E 3	2.547	1.900	0.009	3.935			
		5:KOMB B. MA	1.04E 3	829.381	13.069	1.463	-0.009	19.901			
21659	14541	1:BEBAN MATI	89.197	7.03E 3	-2.409	0.002	0.023	76.128			
		2:BEBAN HIDL	25.069	1.34E 3	-1.054	1.347	0.008	17.193			
		3:BEBAN GEM	-541.988	-968.536	30.468	-1.295	-0.240	-28.748			
		4:KOMBINASI	147.148	10.6E 3	-4.578	2.158	0.040	118.863			
		5:KOMB B. MA	-464.849	6.82E 3	28.950	-0.549	-0.225	56.259			
	14732	1:BEBAN MATI	-89.197	-5.34E 3	2.409	-0.002	0.013	14.854			
		2:BEBAN HIDL	-25.069	-1.34E 3	1.054	-1.347	0.008	2.584			
		3:BEBAN GEM	541.988	968.536	-30.468	1.295	-0.208	14.500			
		4:KOMBINASI	-147.148	-8.56E 3	4.578	-2.158	0.027	21.959			
		5:KOMB B. MA	464.849	-5.13E 3	-28.950	0.549	-0.201	31.630			



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Job No 1	Sheet No 354	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21660	14543	1:BEBAN MATI	89.197	7.03E 3	2.409	-0.002	-0.023	76.128			
		2:BEBAN HIDL	25.069	1.34E 3	1.054	-1.347	-0.008	17.193			
		3:BEBAN GEM	-640.640	-1.1E 3	-24.639	-0.695	0.214	-30.596			
		4:KOMBINASI	147.148	10.6E 3	4.578	-2.158	-0.040	118.863			
		5:KOMB B. MA	-568.433	6.68E 3	-22.829	-1.540	0.198	54.318			
14736	14736	1:BEBAN MATI	-89.197	-5.34E 3	-2.409	0.002	-0.013	14.854			
		2:BEBAN HIDL	-25.069	-1.34E 3	-1.054	1.347	-0.008	2.584			
		3:BEBAN GEM	640.640	1.1E 3	24.639	0.695	0.148	14.382			
		4:KOMBINASI	-147.148	-8.56E 3	-4.578	2.158	-0.027	21.959			
		5:KOMB B. MA	568.433	-4.99E 3	22.829	1.540	0.138	31.506			
21661	14545	1:BEBAN MATI	-39.805	2.6E 3	1.709	0.408	-0.011	17.072			
		2:BEBAN HIDL	-6.201	369.005	0.310	0.882	-0.002	3.359			
		3:BEBAN GEM	-827.436	-2.27E 3	22.814	-0.116	-0.169	-37.395			
		4:KOMBINASI	-57.688	3.71E 3	2.547	1.900	-0.016	25.861			
		5:KOMB B. MA	-912.334	442.998	25.850	0.815	-0.189	-20.177			
15185	15185	1:BEBAN MATI	39.805	-1.48E 3	-1.709	-0.408	-0.006	2.934			
		2:BEBAN HIDL	6.201	-369.005	-0.310	-0.882	-0.001	0.259			
		3:BEBAN GEM	827.436	2.27E 3	-22.814	0.116	-0.055	15.156			
		4:KOMBINASI	57.688	-2.36E 3	-2.547	-1.900	-0.009	3.935			
		5:KOMB B. MA	912.334	682.330	-25.850	-0.815	-0.064	19.003			
21662	14547	1:BEBAN MATI	-97.785	4.09E 3	3.017	3.472	-0.010	40.648			
		2:BEBAN HIDL	53.668	1.69E 3	0.672	1.586	-0.003	17.363			
		3:BEBAN GEM	-401.924	-996.114	12.973	-1.067	-0.046	-28.449			
		4:KOMBINASI	-31.473	7.61E 3	4.696	6.703	-0.017	76.558			
		5:KOMB B. MA	-487.604	4.06E 3	17.042	3.303	-0.060	21.194			
15359	15359	1:BEBAN MATI	97.785	-3.87E 3	-3.017	-3.472	-0.012	-11.370			
		2:BEBAN HIDL	-53.668	-1.69E 3	-0.672	-1.586	-0.002	-4.968			
		3:BEBAN GEM	401.924	996.114	-12.973	1.067	-0.050	21.122			
		4:KOMBINASI	31.473	-7.34E 3	-4.696	-6.703	-0.018	-21.592			
		5:KOMB B. MA	487.604	-3.83E 3	-17.042	-3.303	-0.065	7.828			
21663	14549	1:BEBAN MATI	-143.003	5.32E 3	0.112	0.225	-0.002	53.340			
		2:BEBAN HIDL	57.512	2.18E 3	-0.079	-0.083	0.000	22.491			
		3:BEBAN GEM	-449.160	-1.06E 3	15.035	-0.950	-0.065	-29.176			
		4:KOMBINASI	-79.584	9.88E 3	0.007	0.137	-0.002	99.994			
		5:KOMB B. MA	-580.114	5.52E 3	15.850	-0.822	-0.070	36.200			
15148	15148	1:BEBAN MATI	143.003	-5.1E 3	-0.112	-0.225	0.001	-15.026			
		2:BEBAN HIDL	-57.512	-2.18E 3	0.079	0.083	0.000	-6.446			
		3:BEBAN GEM	449.160	1.06E 3	-15.035	0.950	-0.045	21.410			
		4:KOMBINASI	79.584	-9.61E 3	-0.007	-0.137	0.002	-28.344			
		5:KOMB B. MA	580.114	-5.3E 3	-15.850	0.822	-0.046	3.587			
21664	14551	1:BEBAN MATI	67.268	4.91E 3	4.666	-4.934	-0.026	45.575			
		2:BEBAN HIDL	36.260	932.704	2.014	-3.031	-0.011	10.072			
		3:BEBAN GEM	-652.164	-1E 3	-12.063	-0.448	0.109	-29.451			
		4:KOMBINASI	138.737	7.39E 3	8.822	-10.770	-0.049	70.804			
		5:KOMB B. MA	-595.749	4.42E 3	-6.792	-7.223	0.082	20.694			
15143	15143	1:BEBAN MATI	-67.268	-4.07E 3	-4.666	4.934	-0.008	-12.541			
		2:BEBAN HIDL	-36.260	-932.704	-2.014	3.031	-0.004	-3.211			
		3:BEBAN GEM	652.164	1E 3	12.063	0.448	-0.021	22.065			



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Job No 1	Sheet No 355	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-138.737	-6.38E 3	-8.822	10.770	-0.016	-20.188			
		5:KOMB B. MA	595.749	-3.57E 3	6.792	7.223	-0.032	8.700			
21665	14533	1:BEBAN MATI	20.491	3.55E 3	0.903	-4.837	-0.001	26.372			
		2:BEBAN HIDL	4.944	568.075	0.730	-2.819	-0.002	5.360			
		3:BEBAN GEM	-85.552	-354.296	-14.205	1.922	0.051	-8.881			
		4:KOMBINASI	32.499	5.17E 3	2.252	-10.314	-0.005	40.224			
		5:KOMB B. MA	-66.373	3.52E 3	-13.574	-4.510	0.051	20.263			
	14679	1:BEBAN MATI	-20.491	-2.2E 3	-0.903	4.837	-0.010	7.478			
		2:BEBAN HIDL	-4.944	-568.075	-0.730	2.819	-0.006	1.325			
		3:BEBAN GEM	85.552	354.296	14.205	-1.922	0.116	4.712			
		4:KOMBINASI	-32.499	-3.55E 3	-2.252	10.314	-0.022	11.093			
		5:KOMB B. MA	66.373	-2.17E 3	13.574	4.510	0.109	13.221			
21666	14553	1:BEBAN MATI	-75.455	3.29E 3	0.349	0.052	-0.002	27.537			
		2:BEBAN HIDL	15.043	1.34E 3	-0.005	0.043	-0.000	12.197			
		3:BEBAN GEM	-59.676	-374.178	-17.025	2.301	0.084	-8.784			
		4:KOMBINASI	-66.478	6.09E 3	0.411	0.132	-0.003	52.560			
		5:KOMB B. MA	-129.089	3.7E 3	-17.530	2.494	0.086	25.632			
	14715	1:BEBAN MATI	75.455	-2.93E 3	-0.349	-0.052	-0.002	9.068			
		2:BEBAN HIDL	-15.043	-1.34E 3	0.005	-0.043	0.000	3.539			
		3:BEBAN GEM	59.676	374.178	17.025	-2.301	0.116	4.381			
		4:KOMBINASI	66.478	-5.66E 3	-0.411	-0.132	-0.002	16.545			
		5:KOMB B. MA	129.089	-3.34E 3	17.530	-2.494	0.120	15.792			
21667	14555	1:BEBAN MATI	-0.377	4.91E 3	0.151	-0.064	-0.001	37.664			
		2:BEBAN HIDL	15.363	1.34E 3	0.135	0.010	-0.001	12.199			
		3:BEBAN GEM	-150.203	-383.895	-19.314	2.256	0.104	-8.922			
		4:KOMBINASI	24.128	8.04E 3	0.396	-0.061	-0.002	64.716			
		5:KOMB B. MA	-148.873	5.31E 3	-20.048	2.310	0.107	35.616			
	14798	1:BEBAN MATI	0.377	-3.56E 3	-0.151	0.064	-0.001	12.117			
		2:BEBAN HIDL	-15.363	-1.34E 3	-0.135	-0.010	-0.001	3.609			
		3:BEBAN GEM	150.203	383.895	19.314	-2.256	0.124	4.404			
		4:KOMBINASI	-24.128	-6.42E 3	-0.396	0.061	-0.002	20.315			
		5:KOMB B. MA	148.873	-3.96E 3	20.048	-2.310	0.129	18.907			
21668	14557	1:BEBAN MATI	3.099	4.91E 3	-0.045	0.081	0.001	37.627			
		2:BEBAN HIDL	17.258	1.34E 3	0.043	-0.018	-0.000	12.189			
		3:BEBAN GEM	-150.303	-389.328	-16.579	2.266	0.082	-9.044			
		4:KOMBINASI	31.331	8.04E 3	0.016	0.069	0.000	64.654			
		5:KOMB B. MA	-144.365	5.3E 3	-17.426	2.450	0.087	35.443			
	14824	1:BEBAN MATI	-3.099	-3.56E 3	0.045	-0.081	-0.000	12.166			
		2:BEBAN HIDL	-17.258	-1.34E 3	-0.043	0.018	-0.000	3.621			
		3:BEBAN GEM	150.303	389.328	16.579	-2.266	0.113	4.463			
		4:KOMBINASI	-31.331	-6.42E 3	-0.016	-0.069	-0.001	20.393			
		5:KOMB B. MA	144.365	-3.95E 3	17.426	-2.450	0.118	19.025			
21669	14534	1:BEBAN MATI	-60.802	3.15E 3	-0.444	1.109	0.003	26.137			
		2:BEBAN HIDL	17.734	1.26E 3	0.026	0.588	-0.000	11.389			
		3:BEBAN GEM	-168.462	-429.803	-16.950	2.395	0.082	-9.473			
		4:KOMBINASI	-44.588	5.79E 3	-0.491	2.272	0.002	49.587			
		5:KOMB B. MA	-227.047	3.45E 3	-18.226	3.977	0.088	23.024			
	14746	1:BEBAN MATI	60.802	-2.79E 3	0.444	-1.109	0.003	8.779			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-17.734	-1.26E 3	-0.026	-0.588	0.000	3.396			
		3:BEBAN GEM	168.462	429.803	16.950	-2.395	0.118	4.415			
		4:KOMBINASI	44.588	-5.35E 3	0.491	-2.272	0.003	15.968			
		5:KOMB B. MA	227.047	-3.09E 3	18.226	-3.977	0.126	15.453			
21670	14583	1:BEBAN MATI	45.581	3.49E 3	-1.276	3.034	0.010	25.621			
		2:BEBAN HIDL	10.113	528.906	-0.419	1.908	0.003	4.879			
		3:BEBAN GEM	-318.658	-390.385	-5.516	1.916	-0.026	-9.497			
		4:KOMBINASI	70.878	5.04E 3	-2.201	6.694	0.016	38.551			
		5:KOMB B. MA	-282.942	3.4E 3	-7.320	6.190	-0.015	18.576			
	14762	1:BEBAN MATI	-45.581	-2.14E 3	1.276	-3.034	0.005	7.540			
		2:BEBAN HIDL	-10.113	-528.906	0.419	-1.908	0.002	1.345			
		3:BEBAN GEM	318.658	390.385	5.516	-1.916	0.090	4.903			
		4:KOMBINASI	-70.878	-3.42E 3	2.201	-6.694	0.010	11.201			
		5:KOMB B. MA	282.942	-2.05E 3	7.320	-6.190	0.102	13.496			
21671	14593	1:BEBAN MATI	-100.025	2.47E 3	3.926	8.209	-0.027	26.294			
		2:BEBAN HIDL	25.211	881.344	-0.805	4.353	0.006	9.914			
		3:BEBAN GEM	-331.740	-300.857	7.441	1.879	-0.086	-8.671			
		4:KOMBINASI	-79.692	4.37E 3	3.423	16.816	-0.023	47.414			
		5:KOMB B. MA	-433.225	2.68E 3	11.256	12.794	-0.113	23.137			
	15094	1:BEBAN MATI	100.025	-2.02E 3	-3.926	-8.209	-0.031	6.689			
		2:BEBAN HIDL	-25.211	-881.344	0.805	-4.353	0.006	3.051			
		3:BEBAN GEM	331.740	300.857	-7.441	-1.879	-0.024	4.246			
		4:KOMBINASI	79.692	-3.83E 3	-3.423	-16.816	-0.028	12.909			
		5:KOMB B. MA	433.225	-2.23E 3	-11.256	-12.794	-0.052	12.978			
21672	14599	1:BEBAN MATI	-1.440	878.331	0.344	0.144	-0.003	1.968			
		2:BEBAN HIDL	-0.297	392.540	0.027	-0.010	-0.000	1.204			
		3:BEBAN GEM	22.567	6.258	-0.953	-0.107	0.008	-0.589			
		4:KOMBINASI	-2.204	1.68E 3	0.456	0.157	-0.003	4.289			
		5:KOMB B. MA	22.077	1.12E 3	-0.641	0.026	0.006	2.072			
	14697	1:BEBAN MATI	1.440	-647.680	-0.344	-0.144	-0.001	7.011			
		2:BEBAN HIDL	0.297	-392.540	-0.027	0.010	-0.000	3.415			
		3:BEBAN GEM	-22.567	-6.258	0.953	0.107	0.003	0.663			
		4:KOMBINASI	2.204	-1.41E 3	-0.456	-0.157	-0.002	13.877			
		5:KOMB B. MA	-22.077	-889.774	0.641	-0.026	0.001	9.756			
21673	14601	1:BEBAN MATI	1.951	918.325	0.025	-0.000	-0.000	1.893			
		2:BEBAN HIDL	-0.294	405.236	0.031	0.000	-0.000	1.195			
		3:BEBAN GEM	-22.482	3.562	-4.032	-0.113	0.030	-0.610			
		4:KOMBINASI	1.870	1.75E 3	0.079	-0.000	-0.001	4.183			
		5:KOMB B. MA	-21.831	1.17E 3	-4.190	-0.119	0.031	1.970			
	14811	1:BEBAN MATI	-1.951	-687.673	-0.025	0.000	-0.000	7.556			
		2:BEBAN HIDL	0.294	-405.236	-0.031	-0.000	-0.000	3.574			
		3:BEBAN GEM	22.482	-3.562	4.032	0.113	0.017	0.652			
		4:KOMBINASI	-1.870	-1.47E 3	-0.079	0.000	-0.000	14.786			
		5:KOMB B. MA	21.831	-934.556	4.190	0.119	0.018	10.385			
21674	14603	1:BEBAN MATI	0.726	907.338	-0.105	0.135	0.001	2.052			
		2:BEBAN HIDL	-0.152	408.282	0.018	-0.007	-0.000	1.231			
		3:BEBAN GEM	-28.306	4.016	-4.607	-0.114	0.033	-0.615			
		4:KOMBINASI	0.628	1.74E 3	-0.098	0.150	0.001	4.431			



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Job No 1	Sheet No 357	Rev
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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-29.086	1.16E 3	-4.932	0.011	0.035	2.144			
	14837	1:BEBAN MATI	-0.726	-676.686	0.105	-0.135	0.001	7.269			
		2:BEBAN HIDL	0.152	-408.282	-0.018	0.007	-0.000	3.574			
		3:BEBAN GEM	28.306	-4.016	4.607	0.114	0.021	0.662			
		4:KOMBINASI	-0.628	-1.47E 3	0.098	-0.150	0.001	14.441			
		5:KOMB B. MA	29.086	-925.872	4.932	-0.011	0.023	10.109			
21675	14605	1:BEBAN MATI	-1.071	825.368	-0.124	-0.181	0.001	2.601			
		2:BEBAN HIDL	0.543	345.734	-0.009	0.032	0.000	1.383			
		3:BEBAN GEM	-36.089	-2.183	-3.094	-0.115	0.023	-0.876			
		4:KOMBINASI	-0.417	1.54E 3	-0.162	-0.166	0.002	5.334			
		5:KOMB B. MA	-38.639	1.03E 3	-3.377	-0.283	0.025	2.511			
	14754	1:BEBAN MATI	1.071	-594.716	0.124	0.181	0.000	5.755			
		2:BEBAN HIDL	-0.543	-345.734	0.009	-0.032	0.000	2.686			
		3:BEBAN GEM	36.089	2.183	3.094	0.115	0.014	0.850			
		4:KOMBINASI	0.417	-1.27E 3	0.162	0.166	0.000	11.203			
		5:KOMB B. MA	38.639	-799.864	3.377	0.283	0.015	8.259			
21676	14608	1:BEBAN MATI	-9.672	-52.161	-0.478	-1.245	0.003	-0.852			
		2:BEBAN HIDL	-1.950	41.853	0.000	-0.228	-0.000	-0.354			
		3:BEBAN GEM	-141.863	-56.687	1.789	-0.232	-0.026	-0.038			
		4:KOMBINASI	-14.727	4.372	-0.574	-1.858	0.004	-1.590			
		5:KOMB B. MA	-159.799	-86.571	1.401	-1.625	-0.024	-1.104			
	14895	1:BEBAN MATI	9.672	340.475	0.478	1.245	0.004	-2.036			
		2:BEBAN HIDL	1.950	-41.853	-0.000	0.228	0.000	0.970			
		3:BEBAN GEM	141.863	56.687	-1.789	0.232	-0.000	-0.796			
		4:KOMBINASI	14.727	341.606	0.574	1.858	0.005	-0.891			
		5:KOMB B. MA	159.799	374.885	-1.401	1.625	0.003	-2.290			
21677	14610	1:BEBAN MATI	-9.672	-52.161	0.478	1.245	-0.003	-0.852			
		2:BEBAN HIDL	-1.950	41.853	-0.000	0.228	0.000	-0.354			
		3:BEBAN GEM	-167.940	-35.403	-0.688	0.152	0.013	0.057			
		4:KOMBINASI	-14.727	4.371	0.574	1.858	-0.004	-1.590			
		5:KOMB B. MA	-187.180	-64.222	-0.245	1.541	0.011	-1.005			
	15299	1:BEBAN MATI	9.672	340.476	-0.478	-1.245	-0.004	-2.036			
		2:BEBAN HIDL	1.950	-41.853	0.000	-0.228	-0.000	0.970			
		3:BEBAN GEM	167.940	35.403	0.688	-0.152	-0.003	-0.577			
		4:KOMBINASI	14.727	341.606	-0.574	-1.858	-0.005	-0.891			
		5:KOMB B. MA	187.180	352.537	0.245	-1.541	-0.007	-2.060			
21678	14541	1:BEBAN MATI	26.601	4.9E 3	1.219	-4.641	-0.004	46.898			
		2:BEBAN HIDL	28.364	844.986	0.633	-2.569	-0.004	9.571			
		3:BEBAN GEM	-23.706	-279.039	8.759	2.768	-0.073	-8.291			
		4:KOMBINASI	77.304	7.24E 3	2.475	-9.681	-0.011	71.591			
		5:KOMB B. MA	18.728	5.12E 3	10.796	-3.276	-0.082	43.935			
	14730	1:BEBAN MATI	-26.601	-3.22E 3	-1.219	4.641	-0.014	12.817			
		2:BEBAN HIDL	-28.364	-844.986	-0.633	2.569	-0.005	2.858			
		3:BEBAN GEM	23.706	279.039	-8.759	-2.768	-0.056	4.186			
		4:KOMBINASI	-77.304	-5.21E 3	-2.475	9.681	-0.025	19.953			
		5:KOMB B. MA	-18.728	-3.43E 3	-10.796	3.276	-0.076	18.927			
21679	14611	1:BEBAN MATI	-6.112	-603.919	0.004	-0.960	0.001	-30.506			
		2:BEBAN HIDL	14.284	-328.229	-0.015	-0.892	-0.000	-7.631			



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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-57.528	-847.904	2.058	0.651	-0.011	0.139			
		4:KOMBINASI	15.521	-1.25E 3	-0.019	-2.579	0.001	-48.816			
		5:KOMB B. MA	-57.946	-1.69E 3	2.156	-0.811	-0.011	-34.939			
	14789	1:BEBAN MATI	6.112	1.73E 3	-0.004	0.960	-0.001	19.066			
		2:BEBAN HIDL	-14.284	328.229	0.015	0.892	0.000	4.412			
		3:BEBAN GEM	57.528	847.904	-2.058	-0.651	-0.009	-8.454			
		4:KOMBINASI	-15.521	2.6E 3	0.019	2.579	-0.001	29.937			
		5:KOMB B. MA	57.946	2.82E 3	-2.156	0.811	-0.010	12.836			
21680	14612	1:BEBAN MATI	-6.112	-603.919	-0.004	0.960	-0.001	-30.506			
		2:BEBAN HIDL	14.284	-328.229	0.015	0.892	0.000	-7.631			
		3:BEBAN GEM	-376.189	-817.220	-3.977	0.045	0.025	0.040			
		4:KOMBINASI	15.521	-1.25E 3	0.019	2.579	-0.001	-48.816			
		5:KOMB B. MA	-392.540	-1.66E 3	-4.171	1.543	0.025	-35.042			
	15235	1:BEBAN MATI	6.112	1.73E 3	0.004	-0.960	0.001	19.066			
		2:BEBAN HIDL	-14.284	328.229	-0.015	-0.892	-0.000	4.412			
		3:BEBAN GEM	376.189	817.220	3.977	-0.045	0.014	-8.054			
		4:KOMBINASI	-15.521	2.6E 3	-0.019	-2.579	0.001	29.937			
		5:KOMB B. MA	392.540	2.78E 3	4.171	-1.543	0.016	13.256			
21681	14611	1:BEBAN MATI	0.266	901.715	0.126	-0.155	-0.001	2.046			
		2:BEBAN HIDL	-0.925	406.142	0.039	-0.001	-0.000	1.210			
		3:BEBAN GEM	10.589	3.372	-7.346	-0.113	0.052	-0.605			
		4:KOMBINASI	-1.162	1.73E 3	0.213	-0.188	-0.001	4.392			
		5:KOMB B. MA	10.829	1.15E 3	-7.564	-0.275	0.053	2.137			
	14785	1:BEBAN MATI	-0.266	-671.064	-0.126	0.155	-0.001	7.208			
		2:BEBAN HIDL	0.925	-406.142	-0.039	0.001	-0.000	3.570			
		3:BEBAN GEM	-10.589	-3.372	7.346	0.113	0.035	0.645			
		4:KOMBINASI	1.162	-1.46E 3	-0.213	0.188	-0.001	14.361			
		5:KOMB B. MA	-10.829	-918.289	7.564	0.275	0.036	10.027			
21682	14613	1:BEBAN MATI	14.004	-790.876	-0.522	1.627	0.004	-38.472			
		2:BEBAN HIDL	19.144	-418.260	-0.157	1.234	0.001	-9.859			
		3:BEBAN GEM	193.197	-301.821	-5.253	-1.531	0.027	-0.022			
		4:KOMBINASI	47.435	-1.62E 3	-0.878	3.927	0.007	-61.941			
		5:KOMB B. MA	228.347	-1.36E 3	-6.133	0.760	0.033	-44.411			
	14734	1:BEBAN MATI	-14.004	2.48E 3	0.522	-1.627	0.004	14.423			
		2:BEBAN HIDL	-19.144	418.260	0.157	-1.234	0.001	3.706			
		3:BEBAN GEM	-193.197	301.821	5.253	1.531	0.051	-4.417			
		4:KOMBINASI	-47.435	3.64E 3	0.878	-3.927	0.006	23.238			
		5:KOMB B. MA	-228.347	3.05E 3	6.133	-0.760	0.058	12.009			
21683	14614	1:BEBAN MATI	-22.960	-623.528	-0.907	-2.845	0.006	-17.821			
		2:BEBAN HIDL	3.964	-362.941	0.302	-1.586	-0.002	-7.635			
		3:BEBAN GEM	-1.17E 3	-236.428	0.679	-0.448	-0.020	-0.071			
		4:KOMBINASI	-21.210	-1.33E 3	-0.605	-5.952	0.004	-33.601			
		5:KOMB B. MA	-1.24E 3	-1.09E 3	-0.013	-4.267	-0.016	-22.477			
	15118	1:BEBAN MATI	22.960	1.07E 3	0.907	2.845	0.007	5.335			
		2:BEBAN HIDL	-3.964	362.941	-0.302	1.586	-0.002	2.296			
		3:BEBAN GEM	1.17E 3	236.428	-0.679	0.448	0.010	-3.406			
		4:KOMBINASI	21.210	1.87E 3	0.605	5.952	0.005	10.077			
		5:KOMB B. MA	1.24E 3	1.54E 3	0.013	4.267	0.017	3.137			



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Job No

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Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21684	14613	1:BEBAN MATI	-1.827	1.02E 3	0.000	0.000	-0.000	2.448			
		2:BEBAN HIDL	0.154	384.397	-0.000	-0.000	0.000	1.392			
		3:BEBAN GEM	-123.128	22.652	1.727	0.094	-0.014	-2.380			
		4:KOMBINASI	-1.945	1.84E 3	0.000	-0.000	-0.000	5.166			
		5:KOMB B. MA	-131.019	1.28E 3	1.813	0.099	-0.015	0.785			
14733	14733	1:BEBAN MATI	1.827	-732.807	-0.000	-0.000	-0.000	10.452			
		2:BEBAN HIDL	-0.154	-384.397	0.000	0.000	0.000	4.262			
		3:BEBAN GEM	123.128	-22.652	-1.727	-0.094	-0.011	2.713			
		4:KOMBINASI	1.945	-1.49E 3	-0.000	0.000	-0.000	19.362			
		5:KOMB B. MA	131.019	-987.230	-1.813	-0.099	-0.012	15.858			
21685	14553	1:BEBAN MATI	-11.574	4.82E 3	4.948	3.863	-0.026	53.463			
		2:BEBAN HIDL	20.098	844.944	-1.187	2.360	0.006	11.249			
		3:BEBAN GEM	-803.829	-940.141	25.833	-1.189	-0.178	-26.218			
		4:KOMBINASI	18.268	7.13E 3	4.038	8.412	-0.021	82.154			
		5:KOMB B. MA	-843.536	4.34E 3	31.361	4.031	-0.209	32.683			
14776	14776	1:BEBAN MATI	11.574	-3.69E 3	-4.948	-3.863	-0.023	-11.738			
		2:BEBAN HIDL	-20.098	-844.944	1.187	-2.360	0.005	-2.963			
		3:BEBAN GEM	803.829	940.141	-25.833	1.189	-0.075	16.999			
		4:KOMBINASI	-18.268	-5.78E 3	-4.038	-8.412	-0.019	-18.827			
		5:KOMB B. MA	843.536	-3.21E 3	-31.361	-4.031	-0.098	4.332			
21686	14599	1:BEBAN MATI	23.225	-742.639	-0.269	-1.341	0.003	-34.108			
		2:BEBAN HIDL	18.127	-325.160	-0.095	-0.696	0.000	-8.710			
		3:BEBAN GEM	-305.728	-930.283	5.624	0.633	-0.028	-1.427			
		4:KOMBINASI	56.872	-1.41E 3	-0.476	-2.722	0.003	-54.866			
		5:KOMB B. MA	-286.913	-1.91E 3	5.579	-1.094	-0.026	-40.833			
14701	14701	1:BEBAN MATI	-23.225	1.59E 3	0.269	1.341	-0.001	25.543			
		2:BEBAN HIDL	-18.127	325.160	0.095	0.696	0.001	6.318			
		3:BEBAN GEM	305.728	930.283	-5.624	-0.633	-0.014	-5.415			
		4:KOMBINASI	-56.872	2.42E 3	0.476	2.722	0.000	40.761			
		5:KOMB B. MA	286.913	2.76E 3	-5.579	1.094	-0.015	23.648			
21687	14615	1:BEBAN MATI	-46.909	-1.47E 3	0.253	0.167	-0.001	-28.420			
		2:BEBAN HIDL	11.065	-720.154	-0.004	0.010	-0.000	-12.175			
		3:BEBAN GEM	228.137	-1.18E 3	3.499	0.479	-0.014	2.107			
		4:KOMBINASI	-38.586	-2.92E 3	0.297	0.216	-0.002	-53.583			
		5:KOMB B. MA	199.274	-3.14E 3	3.924	0.676	-0.016	-33.512			
14761	14761	1:BEBAN MATI	46.909	1.83E 3	-0.253	-0.167	-0.002	9.006			
		2:BEBAN HIDL	-11.065	720.154	0.004	-0.010	0.000	3.700			
		3:BEBAN GEM	-228.137	1.18E 3	-3.499	-0.479	-0.027	-16.041			
		4:KOMBINASI	38.586	3.35E 3	-0.297	-0.216	-0.002	16.727			
		5:KOMB B. MA	-199.274	3.51E 3	-3.924	-0.676	-0.030	-5.617			
21688	14536	1:BEBAN MATI	-17.602	3.63E 3	0.113	-0.212	-0.001	38.930			
		2:BEBAN HIDL	5.627	1.41E 3	0.050	-0.031	-0.000	15.459			
		3:BEBAN GEM	-159.824	-1.39E 3	17.212	-0.860	-0.100	-29.026			
		4:KOMBINASI	-12.120	6.61E 3	0.215	-0.304	-0.002	71.450			
		5:KOMB B. MA	-182.041	3.01E 3	18.216	-1.134	-0.106	17.727			
14753	14753	1:BEBAN MATI	17.602	-3.27E 3	-0.113	0.212	-0.000	1.658			
		2:BEBAN HIDL	-5.627	-1.41E 3	-0.050	0.031	-0.000	1.121			
		3:BEBAN GEM	159.824	1.39E 3	-17.212	0.860	-0.103	12.660			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	12.120	-6.18E 3	-0.215	0.304	-0.001	3.782			
		5:KOMB B. MA	182.041	-2.65E 3	-18.216	1.134	-0.108	15.623			
21689	14616	1:BEBAN MATI	-28.434	-1.66E 3	0.306	0.197	-0.001	-40.361			
		2:BEBAN HIDL	11.254	-742.376	-0.082	0.003	0.000	-17.585			
		3:BEBAN GEM	61.180	-757.483	16.008	0.304	-0.079	-0.138			
		4:KOMBINASI	-16.114	-3.18E 3	0.236	0.242	-0.001	-76.570			
		5:KOMB B. MA	42.558	-2.9E 3	17.065	0.519	-0.084	-51.057			
	14844	1:BEBAN MATI	28.434	1.96E 3	-0.306	-0.197	-0.002	22.596			
		2:BEBAN HIDL	-11.254	742.376	0.082	-0.003	0.000	10.305			
		3:BEBAN GEM	-61.180	757.483	-16.008	-0.304	-0.078	-7.290			
		4:KOMBINASI	16.114	3.54E 3	-0.236	-0.242	-0.001	43.604			
		5:KOMB B. MA	-42.558	3.2E 3	-17.065	-0.519	-0.083	21.125			
21690	14559	1:BEBAN MATI	-30.362	4.85E 3	0.133	-0.287	-0.001	57.612			
		2:BEBAN HIDL	10.896	1.99E 3	0.082	0.007	-0.000	25.195			
		3:BEBAN GEM	-334.710	-1E 3	29.290	-0.853	-0.154	-25.990			
		4:KOMBINASI	-19.000	9E 3	0.292	-0.333	-0.001	109.446			
		5:KOMB B. MA	-375.270	4.99E 3	30.937	-1.178	-0.163	45.440			
	14831	1:BEBAN MATI	30.362	-4.55E 3	-0.133	0.287	-0.001	-11.529			
		2:BEBAN HIDL	-10.896	-1.99E 3	-0.082	-0.007	-0.000	-5.705			
		3:BEBAN GEM	334.710	1E 3	-29.290	0.853	-0.133	16.173			
		4:KOMBINASI	19.000	-8.64E 3	-0.292	0.333	-0.002	-22.963			
		5:KOMB B. MA	375.270	-4.69E 3	-30.937	1.178	-0.141	2.029			
21691	14617	1:BEBAN MATI	-33.982	-1.67E 3	-0.036	0.188	0.000	-39.565			
		2:BEBAN HIDL	11.041	-783.469	-0.135	0.004	0.001	-16.906			
		3:BEBAN GEM	-85.589	-756.458	15.546	0.297	-0.077	0.094			
		4:KOMBINASI	-23.113	-3.26E 3	-0.260	0.232	0.001	-74.528			
		5:KOMB B. MA	-117.226	-2.94E 3	16.206	0.503	-0.081	-49.610			
	14818	1:BEBAN MATI	33.982	1.97E 3	0.036	-0.188	0.000	21.672			
		2:BEBAN HIDL	-11.041	783.469	0.135	-0.004	0.001	9.223			
		3:BEBAN GEM	85.589	756.458	-15.546	-0.297	-0.075	-7.512			
		4:KOMBINASI	23.113	3.62E 3	0.260	-0.232	0.001	40.763			
		5:KOMB B. MA	117.226	3.24E 3	-16.206	-0.503	-0.078	19.318			
21692	14560	1:BEBAN MATI	-37.056	4.87E 3	-0.892	-0.241	0.004	58.612			
		2:BEBAN HIDL	11.467	1.95E 3	-0.331	0.029	0.002	24.695			
		3:BEBAN GEM	-379.273	-998.596	33.822	-0.835	-0.170	-25.721			
		4:KOMBINASI	-26.120	8.96E 3	-1.600	-0.243	0.008	109.846			
		5:KOMB B. MA	-428.413	4.99E 3	34.423	-1.101	-0.174	46.422			
	14805	1:BEBAN MATI	37.056	-4.57E 3	0.892	0.241	0.004	-12.367			
		2:BEBAN HIDL	-11.467	-1.95E 3	0.331	-0.029	0.002	-5.544			
		3:BEBAN GEM	379.273	998.596	-33.822	0.835	-0.161	15.928			
		4:KOMBINASI	26.120	-8.6E 3	1.600	0.243	0.008	-23.711			
		5:KOMB B. MA	428.413	-4.69E 3	-34.423	1.101	-0.164	1.031			
21693	14618	1:BEBAN MATI	-36.267	-1.63E 3	-0.376	0.151	0.002	-39.680			
		2:BEBAN HIDL	9.890	-790.530	-0.213	0.009	0.001	-17.054			
		3:BEBAN GEM	-145.177	-755.044	28.573	0.294	-0.145	0.220			
		4:KOMBINASI	-27.696	-3.22E 3	-0.791	0.196	0.005	-74.903			
		5:KOMB B. MA	-182.769	-2.9E 3	29.498	0.466	-0.150	-49.681			
	14792	1:BEBAN MATI	36.267	1.93E 3	0.376	-0.151	0.001	22.227			



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Job No 1	Sheet No 361	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-9.890	790.530	0.213	-0.009	0.001	9.302			
		3:BEBAN GEM	145.177	755.044	-28.573	-0.294	-0.135	-7.625			
		4:KOMBINASI	27.696	3.58E 3	0.791	-0.196	0.003	41.555			
		5:KOMB B. MA	182.769	3.2E 3	-29.498	-0.466	-0.140	19.802			
21694	14561	1:BEBAN MATI	-29.576	4.79E 3	-1.360	-0.292	0.007	60.283			
		2:BEBAN HIDL	8.218	1.96E 3	-0.121	-0.032	0.001	25.139			
		3:BEBAN GEM	-577.797	-1E 3	34.647	-0.831	-0.197	-25.697			
		4:KOMBINASI	-22.343	8.89E 3	-1.825	-0.401	0.010	112.561			
		5:KOMB B. MA	-631.333	4.91E 3	34.947	-1.184	-0.199	48.384			
	14779	1:BEBAN MATI	29.576	-4.49E 3	1.360	0.292	0.006	-14.808			
		2:BEBAN HIDL	-8.218	-1.96E 3	0.121	0.032	0.000	-5.875			
		3:BEBAN GEM	577.797	1E 3	-34.647	0.831	-0.143	15.843			
		4:KOMBINASI	22.343	-8.53E 3	1.825	0.401	0.008	-27.169			
		5:KOMB B. MA	631.333	-4.61E 3	-34.947	1.184	-0.143	-1.698			
21695	14619	1:BEBAN MATI	-56.938	-1.73E 3	-0.635	0.100	0.004	-43.742			
		2:BEBAN HIDL	21.343	-767.959	0.047	-0.027	-0.000	-19.076			
		3:BEBAN GEM	-191.821	-827.118	2.890	0.272	-0.016	-1.483			
		4:KOMBINASI	-34.177	-3.31E 3	-0.687	0.077	0.004	-83.011			
		5:KOMB B. MA	-245.543	-3.06E 3	2.428	0.370	-0.014	-56.745			
	14704	1:BEBAN MATI	56.938	1.96E 3	0.635	-0.100	0.001	30.178			
		2:BEBAN HIDL	-21.343	767.959	-0.047	0.027	-0.000	13.428			
		3:BEBAN GEM	191.821	827.118	-2.890	-0.272	-0.005	-4.600			
		4:KOMBINASI	34.177	3.58E 3	0.687	-0.077	0.001	57.698			
		5:KOMB B. MA	245.543	3.29E 3	-2.428	-0.370	-0.004	33.405			
21696	14620	1:BEBAN MATI	-38.754	-1.23E 3	-0.139	0.363	0.001	-24.714			
		2:BEBAN HIDL	8.044	-586.531	-0.022	0.356	0.000	-10.140			
		3:BEBAN GEM	219.494	-1.23E 3	4.407	0.263	-0.028	1.807			
		4:KOMBINASI	-33.635	-2.41E 3	-0.203	1.004	0.001	-45.880			
		5:KOMB B. MA	196.541	-2.86E 3	4.475	0.852	-0.029	-28.900			
	14995	1:BEBAN MATI	38.754	1.59E 3	0.139	-0.363	0.001	8.176			
		2:BEBAN HIDL	-8.044	586.531	0.022	-0.356	0.000	3.237			
		3:BEBAN GEM	-219.494	1.23E 3	-4.407	-0.263	-0.023	-16.224			
		4:KOMBINASI	33.635	2.84E 3	0.203	-1.004	0.001	14.991			
		5:KOMB B. MA	-196.541	3.22E 3	-4.475	-0.852	-0.024	-6.917			
21697	14538	1:BEBAN MATI	-23.069	3.32E 3	-0.289	-0.577	0.002	35.132			
		2:BEBAN HIDL	6.202	1.23E 3	0.383	-0.386	-0.002	13.309			
		3:BEBAN GEM	-279.130	-1.36E 3	38.811	-0.769	-0.243	-28.904			
		4:KOMBINASI	-17.759	5.95E 3	0.267	-1.310	-0.001	63.453			
		5:KOMB B. MA	-312.434	2.63E 3	40.693	-1.616	-0.255	12.768			
	14988	1:BEBAN MATI	23.069	-2.96E 3	0.289	0.577	0.002	1.825			
		2:BEBAN HIDL	-6.202	-1.23E 3	-0.383	0.386	-0.002	1.145			
		3:BEBAN GEM	279.130	1.36E 3	-38.811	0.769	-0.213	12.907			
		4:KOMBINASI	17.759	-5.52E 3	-0.267	1.310	-0.002	4.022			
		5:KOMB B. MA	312.434	-2.27E 3	-40.693	1.616	-0.224	16.064			
21698	14621	1:BEBAN MATI	-29.108	-1.57E 3	-0.223	-0.335	0.001	-36.317			
		2:BEBAN HIDL	8.829	-679.269	0.253	-0.038	-0.001	-15.062			
		3:BEBAN GEM	125.296	-782.980	0.654	0.171	-0.042	-0.235			
		4:KOMBINASI	-20.803	-2.98E 3	0.138	-0.463	-0.000	-67.679			



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Job No 1	Sheet No 362	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	107.750	-2.8E 3	0.616	-0.178	-0.044	-45.600			
	15057	1:BEBAN MATI	29.108	1.87E 3	0.223	0.335	0.001	19.404			
		2:BEBAN HIDL	-8.829	679.269	-0.253	0.038	-0.002	8.400			
		3:BEBAN GEM	-125.296	782.980	-0.654	-0.171	0.036	-7.444			
		4:KOMBINASI	20.803	3.34E 3	-0.138	0.463	-0.001	36.726			
		5:KOMB B. MA	-107.750	3.1E 3	-0.616	0.178	0.038	16.629			
21699	14562	1:BEBAN MATI	-27.923	4.24E 3	0.650	-1.381	-0.004	51.046			
		2:BEBAN HIDL	9.673	1.65E 3	0.671	-0.891	-0.003	21.306			
		3:BEBAN GEM	-249.671	-949.737	33.502	-0.596	-0.218	-25.593			
		4:KOMBINASI	-18.031	7.73E 3	1.854	-3.083	-0.010	95.345			
		5:KOMB B. MA	-284.274	4.23E 3	36.230	-2.542	-0.235	36.957			
	15046	1:BEBAN MATI	27.923	-3.94E 3	-0.650	1.381	-0.003	-10.928			
		2:BEBAN HIDL	-9.673	-1.65E 3	-0.671	0.891	-0.003	-5.141			
		3:BEBAN GEM	249.671	949.737	-33.502	0.596	-0.110	16.279			
		4:KOMBINASI	18.031	-7.37E 3	-1.854	3.083	-0.009	-21.339			
		5:KOMB B. MA	284.274	-3.93E 3	-36.230	2.542	-0.120	3.081			
21700	14622	1:BEBAN MATI	-21.300	-1.64E 3	0.561	-0.446	-0.003	-36.756			
		2:BEBAN HIDL	15.500	-744.452	0.015	-0.024	0.000	-15.144			
		3:BEBAN GEM	-221.858	-788.062	16.087	0.152	-0.102	-0.068			
		4:KOMBINASI	-0.760	-3.16E 3	0.696	-0.575	-0.003	-68.336			
		5:KOMB B. MA	-244.951	-2.92E 3	17.460	-0.301	-0.110	-45.913			
	15035	1:BEBAN MATI	21.300	1.94E 3	-0.561	0.446	-0.002	19.162			
		2:BEBAN HIDL	-15.500	744.452	-0.015	0.024	-0.000	7.843			
		3:BEBAN GEM	221.858	788.062	-16.087	-0.152	-0.055	-7.660			
		4:KOMBINASI	0.760	3.52E 3	-0.696	0.575	-0.004	35.543			
		5:KOMB B. MA	244.951	3.22E 3	-17.460	0.301	-0.061	15.824			
21701	14563	1:BEBAN MATI	-8.174	4.19E 3	3.638	-0.882	-0.021	48.384			
		2:BEBAN HIDL	39.895	1.59E 3	0.747	-0.629	-0.004	19.227			
		3:BEBAN GEM	-1.34E 3	-939.790	4.844	-0.533	-0.085	-25.465			
		4:KOMBINASI	54.023	7.58E 3	5.561	-2.065	-0.031	88.824			
		5:KOMB B. MA	-1.39E 3	4.16E 3	9.172	-1.819	-0.112	33.182			
	15024	1:BEBAN MATI	8.174	-3.89E 3	-3.638	0.882	-0.015	-8.743			
		2:BEBAN HIDL	-39.895	-1.59E 3	-0.747	0.629	-0.004	-3.621			
		3:BEBAN GEM	1.34E 3	939.790	-4.844	0.533	0.037	16.249			
		4:KOMBINASI	-54.023	-7.22E 3	-5.561	2.065	-0.024	-16.286			
		5:KOMB B. MA	1.39E 3	-3.86E 3	-9.172	1.819	0.023	6.145			
21702	14623	1:BEBAN MATI	-112.001	-657.001	-0.321	1.985	0.002	-17.591			
		2:BEBAN HIDL	-21.542	-330.709	-0.122	1.001	0.001	-6.433			
		3:BEBAN GEM	-685.661	-830.361	6.331	-0.058	-0.032	-0.080			
		4:KOMBINASI	-168.868	-1.32E 3	-0.581	3.984	0.005	-31.402			
		5:KOMB B. MA	-844.870	-1.73E 3	6.253	2.525	-0.030	-21.535			
	15013	1:BEBAN MATI	112.001	957.329	0.321	-1.985	0.001	9.676			
		2:BEBAN HIDL	21.542	330.709	0.122	-1.001	0.000	3.190			
		3:BEBAN GEM	685.661	830.361	-6.331	0.058	-0.030	-8.063			
		4:KOMBINASI	168.868	1.68E 3	0.581	-3.984	0.001	16.715			
		5:KOMB B. MA	844.870	2.03E 3	-6.253	-2.525	-0.031	3.123			
21703	14564	1:BEBAN MATI	-140.211	2.55E 3	0.560	-5.066	0.000	34.168			
		2:BEBAN HIDL	-36.657	850.100	1.738	-2.489	-0.009	12.489			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	488.723	-940.027	128.514	-0.330	-0.719	-25.871			
		4:KOMBINASI	-226.903	4.42E 3	3.452	-10.061	-0.014	60.985			
		5:KOMB B. MA	350.954	2.08E 3	136.542	-6.906	-0.760	14.497			
	15002	1:BEBAN MATI	140.211	-2.25E 3	-0.560	5.066	-0.006	-10.600			
		2:BEBAN HIDL	36.657	-850.100	-1.738	2.489	-0.008	-4.153			
		3:BEBAN GEM	-488.723	940.027	-128.514	0.330	-0.541	16.653			
		4:KOMBINASI	226.903	-4.06E 3	-3.452	10.061	-0.020	-19.365			
		5:KOMB B. MA	-350.954	-1.78E 3	-136.542	6.906	-0.579	4.393			
21704	14624	1:BEBAN MATI	-26.612	-1.1E 3	-3.111	1.175	0.011	-32.573			
		2:BEBAN HIDL	25.111	-518.595	-0.653	0.404	0.002	-14.609			
		3:BEBAN GEM	273.539	-762.613	34.057	0.536	-0.129	-0.561			
		4:KOMBINASI	8.243	-2.15E 3	-4.778	2.057	0.018	-62.462			
		5:KOMB B. MA	275.671	-2.21E 3	32.257	1.981	-0.123	-41.927			
	14970	1:BEBAN MATI	26.612	1.33E 3	3.111	-1.175	0.011	23.638			
		2:BEBAN HIDL	-25.111	518.595	0.653	-0.404	0.002	10.795			
		3:BEBAN GEM	-273.539	762.613	-34.057	-0.536	-0.121	-5.048			
		4:KOMBINASI	-8.243	2.42E 3	4.778	-2.057	0.018	45.638			
		5:KOMB B. MA	-275.671	2.44E 3	-32.257	-1.981	-0.115	24.815			
21705	14586	1:BEBAN MATI	-85.793	2.5E 3	1.425	7.434	-0.011	28.694			
		2:BEBAN HIDL	18.317	916.544	-1.264	3.938	0.010	11.984			
		3:BEBAN GEM	-1.21E 3	-1.03E 3	85.773	-0.670	-0.655	-27.179			
		4:KOMBINASI	-73.645	4.47E 3	-0.312	15.222	0.002	53.607			
		5:KOMB B. MA	-1.35E 3	1.97E 3	90.729	9.093	-0.693	7.346			
	15097	1:BEBAN MATI	85.793	-2.05E 3	-1.425	-7.434	-0.010	4.765			
		2:BEBAN HIDL	-18.317	-916.544	1.264	-3.938	0.009	1.499			
		3:BEBAN GEM	1.21E 3	1.03E 3	-85.773	0.670	-0.607	12.039			
		4:KOMBINASI	73.645	-3.93E 3	0.312	-15.222	0.003	8.116			
		5:KOMB B. MA	1.35E 3	-1.52E 3	-90.729	-9.093	-0.641	18.305			
21706	14625	1:BEBAN MATI	-15.712	-1.06E 3	0.825	-0.225	-0.004	-29.169			
		2:BEBAN HIDL	7.193	-650.779	-0.082	0.006	0.000	-9.381			
		3:BEBAN GEM	-346.946	-1.06E 3	18.898	0.434	-0.123	0.327			
		4:KOMBINASI	-7.347	-2.32E 3	0.860	-0.261	-0.004	-50.012			
		5:KOMB B. MA	-375.690	-2.56E 3	20.619	0.234	-0.133	-34.454			
	15066	1:BEBAN MATI	15.712	2.41E 3	-0.825	0.225	-0.006	8.702			
		2:BEBAN HIDL	-7.193	650.779	0.082	-0.006	0.000	1.722			
		3:BEBAN GEM	346.946	1.06E 3	-18.898	-0.434	-0.100	-12.767			
		4:KOMBINASI	7.347	3.94E 3	-0.860	0.261	-0.006	13.198			
		5:KOMB B. MA	375.690	3.91E 3	-20.619	-0.234	-0.110	-3.670			
21707	14540	1:BEBAN MATI	-24.266	5.17E 3	1.574	1.919	-0.009	50.902			
		2:BEBAN HIDL	3.193	1.28E 3	-1.005	0.597	0.006	14.277			
		3:BEBAN GEM	-344.072	-1.28E 3	32.097	-0.906	-0.201	-28.177			
		4:KOMBINASI	-24.010	8.25E 3	0.280	3.259	-0.001	83.926			
		5:KOMB B. MA	-383.626	4.59E 3	34.672	1.326	-0.217	29.883			
	15063	1:BEBAN MATI	24.266	-3.82E 3	-1.574	-1.919	-0.009	1.958			
		2:BEBAN HIDL	-3.193	-1.28E 3	1.005	-0.597	0.006	0.796			
		3:BEBAN GEM	344.072	1.28E 3	-32.097	0.906	-0.176	13.056			
		4:KOMBINASI	24.010	-6.63E 3	-0.280	-3.259	-0.002	3.623			
		5:KOMB B. MA	383.626	-3.24E 3	-34.672	-1.326	-0.191	16.144			



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Job No 1	Sheet No 364	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21708	14626	1:BEBAN MATI	-25.610	-1.42E 3	-0.199	-0.949	0.001	-44.334			
		2:BEBAN HIDL	10.872	-775.410	0.017	-0.245	0.000	-15.643			
		3:BEBAN GEM	134.082	-749.191	18.018	0.439	-0.138	-0.031			
		4:KOMBINASI	-13.336	-2.94E 3	-0.211	-1.531	0.002	-78.230			
		5:KOMB B. MA	121.700	-2.67E 3	18.731	-0.635	-0.143	-53.753			
	14931	1:BEBAN MATI	25.610	3.11E 3	0.199	0.949	0.002	11.064			
		2:BEBAN HIDL	-10.872	775.410	-0.017	0.245	-0.000	4.237			
		3:BEBAN GEM	-134.082	749.191	-18.018	-0.439	-0.127	-10.989			
		4:KOMBINASI	13.336	4.97E 3	0.211	1.531	0.002	20.056			
		5:KOMB B. MA	-121.700	4.36E 3	-18.731	0.635	-0.132	2.068			
21709	14565	1:BEBAN MATI	-26.815	6.21E 3	0.047	1.870	-0.000	69.104			
		2:BEBAN HIDL	9.024	1.65E 3	-0.734	0.644	0.005	21.460			
		3:BEBAN GEM	47.838	-937.220	24.295	-0.866	-0.186	-25.346			
		4:KOMBINASI	-17.740	10.1E 3	-1.118	3.274	0.008	117.261			
		5:KOMB B. MA	28.829	6.21E 3	25.116	1.347	-0.193	55.367			
	14925	1:BEBAN MATI	26.815	-4.52E 3	-0.047	-1.870	-0.000	9.800			
		2:BEBAN HIDL	-9.024	-1.65E 3	0.734	-0.644	0.006	2.763			
		3:BEBAN GEM	-47.838	937.220	-24.295	0.866	-0.171	11.560			
		4:KOMBINASI	17.740	-8.06E 3	1.118	-3.274	0.008	16.181			
		5:KOMB B. MA	-28.829	-4.52E 3	-25.116	-1.347	-0.176	23.596			
21710	14627	1:BEBAN MATI	-16.932	-1.5E 3	-0.164	-0.640	0.001	-45.137			
		2:BEBAN HIDL	12.355	-828.153	0.048	-0.186	-0.000	-15.650			
		3:BEBAN GEM	624.729	-753.791	16.327	0.443	-0.116	0.037			
		4:KOMBINASI	-0.550	-3.12E 3	-0.120	-1.066	0.001	-79.205			
		5:KOMB B. MA	646.446	-2.79E 3	17.008	-0.287	-0.120	-54.489			
	14919	1:BEBAN MATI	16.932	3.19E 3	0.164	0.640	0.001	10.698			
		2:BEBAN HIDL	-12.355	828.153	-0.048	0.186	-0.001	3.468			
		3:BEBAN GEM	-624.729	753.791	-16.327	-0.443	-0.124	-11.125			
		4:KOMBINASI	0.550	5.15E 3	0.120	1.066	0.000	18.387			
		5:KOMB B. MA	-646.446	4.47E 3	-17.008	0.287	-0.130	1.098			
21711	14566	1:BEBAN MATI	-5.177	6.23E 3	-1.258	1.617	0.010	68.012			
		2:BEBAN HIDL	26.564	1.59E 3	-1.107	0.373	0.008	19.544			
		3:BEBAN GEM	927.351	-920.805	10.194	-0.947	-0.087	-25.123			
		4:KOMBINASI	36.291	10E 3	-3.281	2.537	0.025	112.885			
		5:KOMB B. MA	984.481	6.22E 3	8.781	0.846	-0.077	53.359			
	14913	1:BEBAN MATI	5.177	-4.54E 3	1.258	-1.617	0.008	11.199			
		2:BEBAN HIDL	-26.564	-1.59E 3	1.107	-0.373	0.009	3.854			
		3:BEBAN GEM	-927.351	920.805	-10.194	0.947	-0.062	11.578			
		4:KOMBINASI	-36.291	-7.99E 3	3.281	-2.537	0.023	19.605			
		5:KOMB B. MA	-984.481	-4.53E 3	-8.781	-0.846	-0.052	25.669			
21712	14628	1:BEBAN MATI	-97.627	-889.000	0.248	-1.760	-0.002	-32.331			
		2:BEBAN HIDL	-26.098	-483.242	0.236	-1.208	-0.002	-7.965			
		3:BEBAN GEM	26.426	-823.465	14.382	0.730	-0.098	0.375			
		4:KOMBINASI	-158.910	-1.84E 3	0.674	-4.044	-0.005	-51.542			
		5:KOMB B. MA	-85.539	-2.04E 3	15.490	-1.718	-0.106	-36.717			
	14907	1:BEBAN MATI	97.627	2.58E 3	-0.248	1.760	-0.001	6.839			
	2:BEBAN HIDL	26.098	483.242	-0.236	1.208	-0.002	0.856				
	3:BEBAN GEM	-26.426	823.465	-14.382	-0.730	-0.113	-12.488				



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Job No 1	Sheet No 365	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	158.910	3.87E 3	-0.674	4.044	-0.005	9.577			
		5:KOMB B. MA	85.539	3.73E 3	-15.490	1.718	-0.121	-5.760			
21713	14567	1:BEBAN MATI	-141.757	4.72E 3	-0.769	5.159	0.001	49.351			
		2:BEBAN HIDL	-17.567	787.433	-1.867	2.765	0.014	9.812			
		3:BEBAN GEM	-2.7E 3	-918.814	55.898	-1.044	-0.570	-25.109			
		4:KOMBINASI	-198.215	6.92E 3	-3.910	10.615	0.024	74.921			
		5:KOMB B. MA	-2.99E 3	4.23E 3	56.804	5.722	-0.589	28.874			
	14901	1:BEBAN MATI	141.757	-3.03E 3	0.769	-5.159	0.010	7.675			
		2:BEBAN HIDL	17.567	-787.433	1.867	-2.765	0.013	1.771			
		3:BEBAN GEM	2.7E 3	918.814	-55.898	1.044	-0.252	11.594			
		4:KOMBINASI	198.215	-4.9E 3	3.910	-10.615	0.034	12.043			
		5:KOMB B. MA	2.99E 3	-2.54E 3	-56.804	-5.722	-0.247	20.911			
21714	14597	1:BEBAN MATI	-64.684	2.56E 3	-3.345	0.743	0.016	15.833			
		2:BEBAN HIDL	4.757	574.965	-0.344	0.323	0.002	4.545			
		3:BEBAN GEM	-1.65E 3	-2.33E 3	163.894	-0.220	-0.876	-32.731			
		4:KOMBINASI	-70.009	3.99E 3	-4.564	1.408	0.021	26.271			
		5:KOMB B. MA	-1.8E 3	457.351	168.538	0.706	-0.903	-15.808			
	14768	1:BEBAN MATI	64.684	-1.44E 3	3.345	-0.743	0.017	3.763			
		2:BEBAN HIDL	-4.757	-574.965	0.344	-0.323	0.002	1.094			
		3:BEBAN GEM	1.65E 3	2.33E 3	-163.894	0.220	-0.732	9.863			
		4:KOMBINASI	70.009	-2.64E 3	4.564	-1.408	0.023	6.266			
		5:KOMB B. MA	1.8E 3	667.977	-168.538	-0.706	-0.750	14.775			
21715	14587	1:BEBAN MATI	-74.302	4.6E 3	0.003	-0.067	0.000	51.267			
		2:BEBAN HIDL	25.327	2.04E 3	0.159	-0.035	-0.001	24.184			
		3:BEBAN GEM	587.884	-1.05E 3	17.367	-0.622	-0.135	-26.133			
		4:KOMBINASI	-48.639	8.79E 3	0.257	-0.136	-0.002	100.215			
		5:KOMB B. MA	558.172	4.72E 3	18.333	-0.741	-0.142	38.338			
	15109	1:BEBAN MATI	74.302	-4.15E 3	-0.003	0.067	-0.000	13.124			
		2:BEBAN HIDL	-25.327	-2.04E 3	-0.159	0.035	-0.001	5.836			
		3:BEBAN GEM	-587.884	1.05E 3	-17.367	0.622	-0.120	10.657			
		4:KOMBINASI	48.639	-8.25E 3	-0.257	0.136	-0.002	25.086			
		5:KOMB B. MA	-558.172	-4.27E 3	-18.333	0.741	-0.127	27.815			
21716	14629	1:BEBAN MATI	-20.107	-1.44E 3	-0.036	0.051	0.000	-32.630			
		2:BEBAN HIDL	-0.773	-803.474	-0.130	0.019	0.001	-9.972			
		3:BEBAN GEM	1.29E 3	-1.04E 3	21.533	0.456	-0.138	0.065			
		4:KOMBINASI	-25.365	-3.02E 3	-0.252	0.091	0.001	-55.112			
		5:KOMB B. MA	1.34E 3	-3.01E 3	22.495	0.541	-0.144	-38.546			
	15077	1:BEBAN MATI	20.107	2.79E 3	0.036	-0.051	0.000	7.712			
		2:BEBAN HIDL	0.773	803.474	0.130	-0.019	0.001	0.517			
		3:BEBAN GEM	-1.29E 3	1.04E 3	-21.533	-0.456	-0.116	-12.268			
		4:KOMBINASI	25.365	4.64E 3	0.252	-0.091	0.002	10.082			
		5:KOMB B. MA	-1.34E 3	4.36E 3	-22.495	-0.541	-0.121	-4.859			
21717	14542	1:BEBAN MATI	-25.935	5.74E 3	-0.087	-0.113	0.000	58.737			
		2:BEBAN HIDL	-4.248	1.45E 3	0.140	-0.042	-0.001	16.818			
		3:BEBAN GEM	1.25E 3	-1.32E 3	36.807	-0.812	-0.236	-28.128			
		4:KOMBINASI	-37.919	9.21E 3	0.119	-0.203	-0.001	97.393			
		5:KOMB B. MA	1.28E 3	5.23E 3	38.644	-0.991	-0.248	39.293			
	15071	1:BEBAN MATI	25.935	-4.39E 3	0.087	0.113	0.001	0.896			



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Job No 1	Sheet No 366	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	4.248	-1.45E 3	-0.140	0.042	-0.001	0.242			
		3:BEBAN GEM	-1.25E 3	1.32E 3	-36.807	0.812	-0.197	12.629			
		4:KOMBINASI	37.919	-7.59E 3	-0.119	0.203	-0.001	1.463			
		5:KOMB B. MA	-1.28E 3	-3.88E 3	-38.644	0.991	-0.207	14.302			
21718	14630	1:BEBAN MATI	-25.662	-1.85E 3	0.062	0.068	-0.000	-51.498			
		2:BEBAN HIDL	11.681	-921.838	-0.057	0.019	0.000	-18.253			
		3:BEBAN GEM	1.8E 3	-723.558	30.345	0.364	-0.236	-0.164			
		4:KOMBINASI	-12.105	-3.69E 3	-0.018	0.112	0.000	-91.003			
		5:KOMB B. MA	1.87E 3	-3.16E 3	31.889	0.461	-0.248	-62.622			
	14886	1:BEBAN MATI	25.662	3.53E 3	-0.062	-0.068	-0.000	11.940			
		2:BEBAN HIDL	-11.681	921.838	0.057	-0.019	0.000	4.693			
		3:BEBAN GEM	-1.8E 3	723.558	-30.345	-0.364	-0.211	-10.480			
		4:KOMBINASI	12.105	5.71E 3	0.018	-0.112	0.000	21.837			
		5:KOMB B. MA	-1.87E 3	4.85E 3	-31.889	-0.461	-0.221	3.752			
21719	14568	1:BEBAN MATI	-27.549	6.9E 3	0.106	-0.111	-0.001	77.862			
		2:BEBAN HIDL	9.727	1.88E 3	0.105	-0.038	-0.001	24.479			
		3:BEBAN GEM	941.910	-980.217	-8.060	-0.743	0.064	-25.313			
		4:KOMBINASI	-17.495	11.3E 3	0.295	-0.194	-0.002	132.600			
		5:KOMB B. MA	967.293	7E 3	-8.294	-0.914	0.066	65.970			
	14879	1:BEBAN MATI	27.549	-5.21E 3	-0.106	0.111	-0.001	11.163			
		2:BEBAN HIDL	-9.727	-1.88E 3	-0.105	0.038	-0.001	3.188			
		3:BEBAN GEM	-941.910	980.217	8.060	0.743	0.054	10.894			
		4:KOMBINASI	17.495	-9.26E 3	-0.295	0.194	-0.002	18.495			
		5:KOMB B. MA	-967.293	-5.31E 3	8.294	0.914	0.056	24.514			
21720	14631	1:BEBAN MATI	-22.989	-1.89E 3	0.134	0.066	-0.001	-51.801			
		2:BEBAN HIDL	5.365	-940.022	-0.026	0.023	0.000	-17.436			
		3:BEBAN GEM	414.485	-723.405	-60.685	0.357	0.458	-0.037			
		4:KOMBINASI	-19.004	-3.77E 3	0.118	0.115	-0.001	-90.059			
		5:KOMB B. MA	415.439	-3.21E 3	-63.601	0.454	0.480	-62.301			
	14872	1:BEBAN MATI	22.989	3.57E 3	-0.134	-0.066	-0.001	11.653			
		2:BEBAN HIDL	-5.365	940.022	0.026	-0.023	0.000	3.608			
		3:BEBAN GEM	-414.485	723.405	60.685	-0.357	0.434	-10.605			
		4:KOMBINASI	19.004	5.79E 3	-0.118	-0.115	-0.001	19.757			
		5:KOMB B. MA	-415.439	4.9E 3	63.601	-0.454	0.455	2.683			
21721	14569	1:BEBAN MATI	-15.775	6.97E 3	0.403	-0.132	-0.003	79.870			
		2:BEBAN HIDL	5.064	1.84E 3	0.298	-0.035	-0.002	24.187			
		3:BEBAN GEM	-1.57E 3	-978.263	86.561	-0.725	-0.667	-25.112			
		4:KOMBINASI	-10.828	11.3E 3	0.960	-0.214	-0.007	134.543			
		5:KOMB B. MA	-1.66E 3	7.05E 3	91.471	-0.914	-0.705	68.014			
	14865	1:BEBAN MATI	15.775	-5.29E 3	-0.403	0.132	-0.003	10.297			
		2:BEBAN HIDL	-5.064	-1.84E 3	-0.298	0.035	-0.002	2.912			
		3:BEBAN GEM	1.57E 3	978.263	-86.561	0.725	-0.606	10.722			
		4:KOMBINASI	10.828	-9.29E 3	-0.960	0.214	-0.007	17.015			
		5:KOMB B. MA	1.66E 3	-5.36E 3	-91.471	0.914	-0.641	23.301			
21722	14632	1:BEBAN MATI	-26.465	-1.73E 3	0.250	-0.008	-0.002	-50.149			
		2:BEBAN HIDL	4.544	-977.885	-0.036	0.018	0.000	-18.231			
		3:BEBAN GEM	-1.13E 3	-730.564	55.180	0.400	-0.398	-0.011			
		4:KOMBINASI	-24.488	-3.64E 3	0.242	0.019	-0.002	-89.349			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

367

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.21E 3	-3.09E 3	58.167	0.423	-0.420	-61.100			
	14858	1:BEBAN MATI	26.465	3.42E 3	-0.250	0.008	-0.002	12.263			
		2:BEBAN HIDL	-4.544	977.885	0.036	-0.018	0.000	3.846			
		3:BEBAN GEM	1.13E 3	730.564	-55.180	-0.400	-0.414	-10.735			
		4:KOMBINASI	24.488	5.67E 3	-0.242	-0.019	-0.001	20.870			
		5:KOMB B. MA	1.21E 3	4.77E 3	-58.167	-0.423	-0.436	3.299			
21723	14570	1:BEBAN MATI	-51.848	6.87E 3	1.420	-0.292	-0.010	81.514			
		2:BEBAN HIDL	3.083	1.87E 3	0.206	-0.270	-0.001	23.866			
		3:BEBAN GEM	-815.526	-977.382	33.252	-0.756	-0.251	-25.107			
		4:KOMBINASI	-57.285	11.2E 3	2.035	-0.783	-0.014	136.002			
		5:KOMB B. MA	-906.301	6.96E 3	36.459	-1.248	-0.274	69.471			
	14851	1:BEBAN MATI	51.848	-5.18E 3	-1.420	0.292	-0.011	7.062			
		2:BEBAN HIDL	-3.083	-1.87E 3	-0.206	0.270	-0.002	3.664			
		3:BEBAN GEM	815.526	977.382	-33.252	0.756	-0.239	10.730			
		4:KOMBINASI	57.285	-9.21E 3	-2.035	0.783	-0.015	14.336			
		5:KOMB B. MA	906.301	-5.27E 3	-36.459	1.248	-0.262	20.527			
21724	14633	1:BEBAN MATI	47.736	-2.49E 3	-0.904	0.585	0.007	-63.247			
		2:BEBAN HIDL	9.955	-756.573	-0.112	-0.772	0.001	-15.575			
		3:BEBAN GEM	22.309	-795.846	-8.292	0.327	0.147	-1.411			
		4:KOMBINASI	73.210	-4.2E 3	-1.263	-0.532	0.010	-100.816			
		5:KOMB B. MA	77.133	-3.78E 3	-9.677	0.465	0.162	-74.074			
	14740	1:BEBAN MATI	-47.736	4.18E 3	0.904	-0.585	0.006	14.195			
		2:BEBAN HIDL	-9.955	756.573	0.112	0.772	0.001	4.446			
		3:BEBAN GEM	-22.309	795.846	8.292	-0.327	-0.025	-10.296			
		4:KOMBINASI	-73.210	6.22E 3	1.263	0.532	0.008	24.148			
		5:KOMB B. MA	-77.133	5.47E 3	9.677	-0.465	-0.020	6.052			
21725	14588	1:BEBAN MATI	-74.302	4.6E 3	-0.003	0.067	-0.000	51.267			
		2:BEBAN HIDL	25.327	2.04E 3	-0.159	0.035	0.001	24.184			
		3:BEBAN GEM	618.549	-1.05E 3	-15.992	-0.625	0.128	-26.161			
		4:KOMBINASI	-48.639	8.79E 3	-0.257	0.136	0.002	100.215			
		5:KOMB B. MA	590.370	4.72E 3	-16.889	-0.568	0.135	38.308			
	15123	1:BEBAN MATI	74.302	-4.15E 3	0.003	-0.067	0.000	13.124			
		2:BEBAN HIDL	-25.327	-2.04E 3	0.159	-0.035	0.001	5.836			
		3:BEBAN GEM	-618.549	1.05E 3	15.992	0.625	0.107	10.649			
		4:KOMBINASI	48.639	-8.25E 3	0.257	-0.136	0.002	25.086			
		5:KOMB B. MA	-590.370	-4.27E 3	16.889	0.568	0.114	27.807			
21726	14634	1:BEBAN MATI	-20.107	-1.44E 3	0.036	-0.051	-0.000	-32.630			
		2:BEBAN HIDL	-0.773	-803.474	0.130	-0.019	-0.001	-9.972			
		3:BEBAN GEM	1.33E 3	-1.03E 3	-32.329	0.453	0.200	0.078			
		4:KOMBINASI	-25.365	-3.02E 3	0.252	-0.091	-0.001	-55.112			
		5:KOMB B. MA	1.38E 3	-3.01E 3	-33.831	0.414	0.210	-38.531			
	15089	1:BEBAN MATI	20.107	2.79E 3	-0.036	0.051	-0.000	7.712			
		2:BEBAN HIDL	0.773	803.474	-0.130	0.019	-0.001	0.517			
		3:BEBAN GEM	-1.33E 3	1.03E 3	32.329	-0.453	0.180	-12.230			
		4:KOMBINASI	25.365	4.64E 3	-0.252	0.091	-0.002	10.082			
		5:KOMB B. MA	-1.38E 3	4.36E 3	33.831	-0.414	0.189	-4.819			
21727	14544	1:BEBAN MATI	-25.935	5.74E 3	0.087	0.113	-0.000	58.737			
		2:BEBAN HIDL	-4.248	1.45E 3	-0.140	0.042	0.001	16.818			



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Job No 1	Sheet No 368	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.31E 3	-1.32E 3	-45.107	-0.814	0.288	-28.083			
		4:KOMBINASI	-37.919	9.21E 3	-0.119	0.203	0.001	97.393			
		5:KOMB B. MA	1.34E 3	5.23E 3	-47.360	-0.716	0.302	39.341			
	15083	1:BEBAN MATI	25.935	-4.39E 3	-0.087	-0.113	-0.001	0.896			
		2:BEBAN HIDL	4.248	-1.45E 3	0.140	-0.042	0.001	0.242			
		3:BEBAN GEM	-1.31E 3	1.32E 3	45.107	0.814	0.243	12.598			
		4:KOMBINASI	37.919	-7.59E 3	0.119	-0.203	0.001	1.463			
		5:KOMB B. MA	-1.34E 3	-3.88E 3	47.360	0.716	0.255	14.269			
21728	14635	1:BEBAN MATI	-25.662	-1.85E 3	-0.062	-0.068	0.000	-51.498			
		2:BEBAN HIDL	11.681	-921.837	0.057	-0.019	-0.000	-18.253			
		3:BEBAN GEM	1.89E 3	-719.612	-61.506	0.361	0.466	-0.131			
		4:KOMBINASI	-12.105	-3.69E 3	0.018	-0.112	-0.000	-91.003			
		5:KOMB B. MA	1.97E 3	-3.15E 3	-64.609	0.300	0.490	-62.587			
	14889	1:BEBAN MATI	25.662	3.53E 3	0.062	0.068	0.000	11.940			
		2:BEBAN HIDL	-11.681	921.837	-0.057	0.019	-0.000	4.693			
		3:BEBAN GEM	-1.89E 3	719.612	61.506	-0.361	0.439	-10.455			
		4:KOMBINASI	12.105	5.71E 3	-0.018	0.112	-0.000	21.837			
		5:KOMB B. MA	-1.97E 3	4.84E 3	64.609	-0.300	0.461	3.778			
21729	14571	1:BEBAN MATI	-27.549	6.9E 3	-0.106	0.111	0.001	77.862			
		2:BEBAN HIDL	9.727	1.88E 3	-0.105	0.038	0.001	24.479			
		3:BEBAN GEM	460.894	-980.446	-15.192	-0.742	0.065	-25.282			
		4:KOMBINASI	-17.495	11.3E 3	-0.295	0.194	0.002	132.600			
		5:KOMB B. MA	462.226	6.99E 3	-16.120	-0.645	0.070	66.003			
	14882	1:BEBAN MATI	27.549	-5.21E 3	0.106	-0.111	0.001	11.163			
		2:BEBAN HIDL	-9.727	-1.88E 3	0.105	-0.038	0.001	3.188			
		3:BEBAN GEM	-460.894	980.446	15.192	0.742	0.158	10.859			
		4:KOMBINASI	17.495	-9.26E 3	0.295	-0.194	0.002	18.495			
		5:KOMB B. MA	-462.226	-5.31E 3	16.120	0.645	0.167	24.477			
21730	14636	1:BEBAN MATI	-22.989	-1.89E 3	-0.134	-0.066	0.001	-51.801			
		2:BEBAN HIDL	5.365	-940.021	0.026	-0.023	-0.000	-17.436			
		3:BEBAN GEM	-553.903	-719.837	53.160	0.360	-0.315	-0.009			
		4:KOMBINASI	-19.004	-3.77E 3	-0.118	-0.115	0.001	-90.059			
		5:KOMB B. MA	-601.369	-3.21E 3	55.700	0.299	-0.330	-62.272			
	14875	1:BEBAN MATI	22.989	3.57E 3	0.134	0.066	0.001	11.653			
		2:BEBAN HIDL	-5.365	940.021	-0.026	0.023	-0.000	3.608			
		3:BEBAN GEM	553.903	719.837	-53.160	-0.360	-0.467	-10.580			
		4:KOMBINASI	19.004	5.79E 3	0.118	0.115	0.001	19.757			
		5:KOMB B. MA	601.369	4.89E 3	-55.700	-0.299	-0.489	2.709			
21731	14572	1:BEBAN MATI	-15.775	6.97E 3	-0.403	0.132	0.003	79.870			
		2:BEBAN HIDL	5.064	1.84E 3	-0.298	0.035	0.002	24.187			
		3:BEBAN GEM	-1.48E 3	-978.584	-28.404	-0.746	0.228	-25.089			
		4:KOMBINASI	-10.828	11.3E 3	-0.960	0.214	0.007	134.543			
		5:KOMB B. MA	-1.56E 3	7.05E 3	-30.406	-0.630	0.244	68.038			
	14868	1:BEBAN MATI	15.775	-5.29E 3	0.403	-0.132	0.003	10.297			
		2:BEBAN HIDL	-5.064	-1.84E 3	0.298	-0.035	0.002	2.912			
		3:BEBAN GEM	1.48E 3	978.584	28.404	0.746	0.189	10.694			
		4:KOMBINASI	10.828	-9.29E 3	0.960	-0.214	0.007	17.015			
		5:KOMB B. MA	1.56E 3	-5.36E 3	30.406	0.630	0.203	23.273			



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Job No 1	Sheet No 369	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21732	14637	1:BEBAN MATI	-26.465	-1.73E 3	-0.250	0.008	0.002	-50.149			
		2:BEBAN HIDL	4.544	-977.884	0.036	-0.018	-0.000	-18.231			
		3:BEBAN GEM	-1.04E 3	-728.075	-33.402	0.313	0.239	-0.034			
		4:KOMBINASI	-24.488	-3.64E 3	-0.242	-0.019	0.002	-89.349			
		5:KOMB B. MA	-1.11E 3	-3.08E 3	-35.300	0.326	0.253	-61.123			
	14861	1:BEBAN MATI	26.465	3.42E 3	0.250	-0.008	0.002	12.263			
		2:BEBAN HIDL	-4.544	977.884	-0.036	0.018	-0.000	3.846			
		3:BEBAN GEM	1.04E 3	728.075	33.402	-0.313	0.253	-10.676			
		4:KOMBINASI	24.488	5.67E 3	0.242	0.019	0.001	20.870			
		5:KOMB B. MA	1.11E 3	4.77E 3	35.300	-0.326	0.267	3.361			
21733	14573	1:BEBAN MATI	-51.848	6.87E 3	-1.420	0.292	0.010	81.514			
		2:BEBAN HIDL	3.083	1.87E 3	-0.206	0.270	0.001	23.866			
		3:BEBAN GEM	-852.687	-971.681	-13.170	-0.675	0.096	-25.025			
		4:KOMBINASI	-57.285	11.2E 3	-2.035	0.783	0.014	136.002			
		5:KOMB B. MA	-945.320	6.97E 3	-15.373	-0.255	0.112	69.557			
	14854	1:BEBAN MATI	51.848	-5.18E 3	1.420	-0.292	0.011	7.062			
		2:BEBAN HIDL	-3.083	-1.87E 3	0.206	-0.270	0.002	3.664			
		3:BEBAN GEM	852.687	971.681	13.170	0.675	0.098	10.732			
		4:KOMBINASI	57.285	-9.21E 3	2.035	-0.783	0.015	14.336			
		5:KOMB B. MA	945.320	-5.28E 3	15.373	0.255	0.114	20.529			
21734	14638	1:BEBAN MATI	47.736	-2.49E 3	0.904	-0.585	-0.007	-63.247			
		2:BEBAN HIDL	9.955	-756.572	0.112	0.772	-0.001	-15.575			
		3:BEBAN GEM	-152.587	-744.601	11.849	0.501	-0.178	-0.339			
		4:KOMBINASI	73.210	-4.2E 3	1.263	0.532	-0.010	-100.816			
		5:KOMB B. MA	-106.508	-3.73E 3	13.412	0.404	-0.194	-72.948			
	14743	1:BEBAN MATI	-47.736	4.18E 3	-0.904	0.585	-0.006	14.195			
		2:BEBAN HIDL	-9.955	756.572	-0.112	-0.772	-0.001	4.446			
		3:BEBAN GEM	152.587	744.601	-11.849	-0.501	0.003	-10.614			
		4:KOMBINASI	-73.210	6.22E 3	-1.263	-0.532	-0.008	24.148			
		5:KOMB B. MA	106.508	5.41E 3	-13.412	-0.404	-0.003	5.718			
21735	14589	1:BEBAN MATI	-85.793	2.5E 3	-1.425	-7.434	0.011	28.694			
		2:BEBAN HIDL	18.317	916.543	1.264	-3.938	-0.010	11.984			
		3:BEBAN GEM	-1.59E 3	-983.025	-91.638	-0.018	0.714	-25.899			
		4:KOMBINASI	-73.645	4.47E 3	0.312	-15.222	-0.002	53.607			
		5:KOMB B. MA	-1.75E 3	2.02E 3	-96.887	-9.816	0.756	8.691			
	15140	1:BEBAN MATI	85.793	-2.05E 3	1.425	7.434	0.010	4.765			
		2:BEBAN HIDL	-18.317	-916.543	-1.264	3.938	-0.009	1.499			
		3:BEBAN GEM	1.59E 3	983.025	91.638	0.018	0.634	11.438			
		4:KOMBINASI	73.645	-3.93E 3	-0.312	15.222	-0.003	8.116			
		5:KOMB B. MA	1.75E 3	-1.57E 3	96.887	9.816	0.670	17.674			
21736	14639	1:BEBAN MATI	-15.712	-1.06E 3	-0.825	0.225	0.004	-29.169			
		2:BEBAN HIDL	7.193	-650.779	0.082	-0.006	-0.000	-9.381			
		3:BEBAN GEM	-559.865	-1.07E 3	-28.635	0.352	0.180	0.416			
		4:KOMBINASI	-7.347	-2.32E 3	-0.860	0.261	0.004	-50.012			
		5:KOMB B. MA	-599.255	-2.58E 3	-30.843	0.591	0.192	-34.361			
	15470	1:BEBAN MATI	15.712	2.41E 3	0.825	-0.225	0.006	8.702			
		2:BEBAN HIDL	-7.193	650.779	-0.082	0.006	-0.000	1.722			
		3:BEBAN GEM	559.865	1.07E 3	28.635	-0.352	0.157	-12.990			



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Job No

1

Sheet No

370

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	7.347	3.94E 3	0.860	-0.261	0.006	13.198			
		5:KOMB B. MA	599.255	3.93E 3	30.843	-0.591	0.171	-3.905			
21737	14546	1:BEBAN MATI	-24.266	5.17E 3	-1.574	-1.919	0.009	50.902			
		2:BEBAN HIDL	3.194	1.28E 3	1.005	-0.597	-0.006	14.277			
		3:BEBAN GEM	-525.757	-1.3E 3	-32.995	-0.709	0.205	-28.170			
		4:KOMBINASI	-24.010	8.25E 3	-0.280	-3.259	0.001	83.926			
		5:KOMB B. MA	-574.395	4.57E 3	-35.615	-3.022	0.221	29.890			
	15467	1:BEBAN MATI	24.266	-3.82E 3	1.574	1.919	0.009	1.958			
		2:BEBAN HIDL	-3.194	-1.28E 3	-1.005	0.597	-0.006	0.796			
		3:BEBAN GEM	525.757	1.3E 3	32.995	0.709	0.183	12.862			
		4:KOMBINASI	24.010	-6.63E 3	0.280	3.259	0.002	3.623			
		5:KOMB B. MA	574.395	-3.22E 3	35.615	3.022	0.198	15.941			
21738	14640	1:BEBAN MATI	-25.610	-1.42E 3	0.199	0.949	-0.001	-44.334			
		2:BEBAN HIDL	10.872	-775.409	-0.017	0.245	-0.000	-15.643			
		3:BEBAN GEM	-126.746	-756.821	-25.658	0.147	0.193	-0.133			
		4:KOMBINASI	-13.336	-2.94E 3	0.211	1.531	-0.002	-78.230			
		5:KOMB B. MA	-152.169	-2.68E 3	-26.753	1.251	0.201	-53.860			
	15335	1:BEBAN MATI	25.610	3.11E 3	-0.199	-0.949	-0.002	11.064			
		2:BEBAN HIDL	-10.872	775.409	0.017	-0.245	0.000	4.237			
		3:BEBAN GEM	126.746	756.821	25.658	-0.147	0.185	-11.000			
		4:KOMBINASI	13.336	4.97E 3	-0.211	-1.531	-0.002	20.056			
		5:KOMB B. MA	152.169	4.37E 3	26.753	-1.251	0.193	2.057			
21739	14574	1:BEBAN MATI	-26.815	6.21E 3	-0.047	-1.870	0.000	69.104			
		2:BEBAN HIDL	9.024	1.65E 3	0.734	-0.644	-0.005	21.460			
		3:BEBAN GEM	-390.314	-945.982	-20.881	-0.588	0.173	-25.267			
		4:KOMBINASI	-17.740	10.1E 3	1.118	-3.274	-0.008	117.261			
		5:KOMB B. MA	-431.230	6.2E 3	-21.532	-2.873	0.179	55.450			
	15329	1:BEBAN MATI	26.815	-4.52E 3	0.047	1.870	0.000	9.800			
		2:BEBAN HIDL	-9.024	-1.65E 3	-0.734	0.644	-0.006	2.763			
		3:BEBAN GEM	390.314	945.982	20.881	0.588	0.134	11.351			
		4:KOMBINASI	17.740	-8.06E 3	-1.118	3.274	-0.008	16.181			
		5:KOMB B. MA	431.230	-4.51E 3	21.532	2.873	0.138	23.377			
21740	14641	1:BEBAN MATI	-16.932	-1.5E 3	0.164	0.640	-0.001	-45.137			
		2:BEBAN HIDL	12.355	-828.152	-0.048	0.186	0.000	-15.650			
		3:BEBAN GEM	68.922	-760.433	-16.029	0.140	0.124	-0.027			
		4:KOMBINASI	-0.550	-3.12E 3	0.120	1.066	-0.001	-79.205			
		5:KOMB B. MA	62.850	-2.79E 3	-16.695	0.899	0.129	-54.555			
	15323	1:BEBAN MATI	16.932	3.19E 3	-0.164	-0.640	-0.001	10.698			
		2:BEBAN HIDL	-12.355	828.152	0.048	-0.186	0.001	3.468			
		3:BEBAN GEM	-68.922	760.433	16.029	-0.140	0.112	-11.159			
		4:KOMBINASI	0.550	5.15E 3	-0.120	-1.066	-0.000	18.387			
		5:KOMB B. MA	-62.850	4.48E 3	16.695	-0.899	0.117	1.062			
21741	14575	1:BEBAN MATI	-5.177	6.23E 3	1.258	-1.617	-0.010	68.012			
		2:BEBAN HIDL	26.564	1.59E 3	1.107	-0.373	-0.008	19.544			
		3:BEBAN GEM	242.929	-930.172	3.693	-0.522	-0.044	-25.012			
		4:KOMBINASI	36.291	10E 3	3.281	-2.537	-0.025	112.885			
		5:KOMB B. MA	265.837	6.21E 3	5.800	-2.389	-0.061	53.475			
	15317	1:BEBAN MATI	5.177	-4.54E 3	-1.258	1.617	-0.008	11.199			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

371

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-26.564	-1.59E 3	-1.107	0.373	-0.009	3.854			
		3:BEBAN GEM	-242.929	930.172	-3.693	0.522	-0.011	11.330			
		4:KOMBINASI	-36.291	-7.99E 3	-3.281	2.537	-0.023	19.605			
		5:KOMB B. MA	-265.837	-4.52E 3	-5.800	2.389	-0.024	25.407			
21742	14642	1:BEBAN MATI	-97.627	-888.999	-0.248	1.760	0.002	-32.331			
		2:BEBAN HIDL	-26.098	-483.241	-0.236	1.208	0.002	-7.965			
		3:BEBAN GEM	-434.734	-809.042	-15.289	-0.069	0.114	0.268			
		4:KOMBINASI	-158.910	-1.84E 3	-0.674	4.044	0.005	-51.542			
		5:KOMB B. MA	-569.757	-2.03E 3	-16.442	2.413	0.122	-36.829			
	15311	1:BEBAN MATI	97.627	2.58E 3	0.248	-1.760	0.001	6.839			
		2:BEBAN HIDL	26.098	483.241	0.236	-1.208	0.002	0.856			
		3:BEBAN GEM	434.734	809.042	15.289	0.069	0.111	-12.169			
		4:KOMBINASI	158.910	3.87E 3	0.674	-4.044	0.005	9.577			
		5:KOMB B. MA	569.757	3.72E 3	16.442	-2.413	0.119	-5.425			
21743	14576	1:BEBAN MATI	-141.757	4.72E 3	0.769	-5.159	-0.001	49.351			
		2:BEBAN HIDL	-17.567	787.433	1.867	-2.765	-0.014	9.812			
		3:BEBAN GEM	-2.11E 3	-911.037	-9.569	-0.227	0.199	-24.766			
		4:KOMBINASI	-198.215	6.92E 3	3.910	-10.615	-0.024	74.921			
		5:KOMB B. MA	-2.36E 3	4.24E 3	-8.158	-7.056	0.199	29.234			
	15305	1:BEBAN MATI	141.757	-3.03E 3	-0.769	5.159	-0.010	7.675			
		2:BEBAN HIDL	17.567	-787.433	-1.867	2.765	-0.013	1.771			
		3:BEBAN GEM	2.11E 3	911.037	9.569	0.227	-0.058	11.365			
		4:KOMBINASI	198.215	-4.9E 3	-3.910	10.615	-0.034	12.043			
		5:KOMB B. MA	2.36E 3	-2.55E 3	8.158	7.056	-0.079	20.670			
21744	14598	1:BEBAN MATI	-64.684	2.56E 3	3.345	-0.743	-0.016	15.833			
		2:BEBAN HIDL	4.757	574.964	0.344	-0.323	-0.002	4.545			
		3:BEBAN GEM	-1.3E 3	-2.37E 3	-190.123	-1.252	0.984	-33.608			
		4:KOMBINASI	-70.009	3.99E 3	4.564	-1.408	-0.021	26.271			
		5:KOMB B. MA	-1.43E 3	420.462	-196.078	-2.251	1.017	-16.728			
	15214	1:BEBAN MATI	64.684	-1.44E 3	-3.345	0.743	-0.017	3.763			
		2:BEBAN HIDL	-4.757	-574.964	-0.344	0.323	-0.002	1.094			
		3:BEBAN GEM	1.3E 3	2.37E 3	190.123	1.252	0.880	10.395			
		4:KOMBINASI	70.009	-2.64E 3	-4.564	1.408	-0.023	6.266			
		5:KOMB B. MA	1.43E 3	704.866	196.078	2.251	0.906	15.334			
21745	14643	1:BEBAN MATI	-38.754	-1.23E 3	0.139	-0.363	-0.001	-24.714			
		2:BEBAN HIDL	8.044	-586.531	0.022	-0.356	-0.000	-10.140			
		3:BEBAN GEM	181.417	-1.18E 3	-9.973	0.525	0.062	1.971			
		4:KOMBINASI	-33.635	-2.41E 3	0.203	-1.004	-0.001	-45.880			
		5:KOMB B. MA	156.560	-2.82E 3	-10.319	-0.025	0.064	-28.728			
	15399	1:BEBAN MATI	38.754	1.59E 3	-0.139	0.363	-0.001	8.176			
		2:BEBAN HIDL	-8.044	586.531	-0.022	0.356	-0.000	3.237			
		3:BEBAN GEM	-181.417	1.18E 3	9.973	-0.525	0.056	-15.886			
		4:KOMBINASI	33.635	2.84E 3	-0.203	1.004	-0.001	14.991			
		5:KOMB B. MA	-156.560	3.18E 3	10.319	0.025	0.058	-6.562			
21746	14548	1:BEBAN MATI	-23.069	3.32E 3	0.289	0.577	-0.002	35.132			
		2:BEBAN HIDL	6.202	1.23E 3	-0.383	0.386	0.002	13.309			
		3:BEBAN GEM	-364.319	-1.34E 3	-35.743	-0.872	0.222	-28.590			
		4:KOMBINASI	-17.759	5.95E 3	-0.267	1.310	0.001	63.453			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 372	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-401.883	2.65E 3	-37.471	-0.106	0.233	13.098			
	15392	1:BEBAN MATI	23.069	-2.96E 3	-0.289	-0.577	-0.002	1.825			
		2:BEBAN HIDL	-6.202	-1.23E 3	0.383	-0.386	0.002	1.145			
		3:BEBAN GEM	364.319	1.34E 3	35.743	0.872	0.199	12.770			
		4:KOMBINASI	17.759	-5.52E 3	0.267	-1.310	0.002	4.022			
		5:KOMB B. MA	401.883	-2.29E 3	37.471	0.106	0.208	15.920			
21747	14644	1:BEBAN MATI	-29.108	-1.57E 3	0.223	0.335	-0.001	-36.317			
		2:BEBAN HIDL	8.829	-679.268	-0.253	0.038	0.001	-15.062			
		3:BEBAN GEM	1.579	-756.546	-39.515	0.322	0.214	0.022			
		4:KOMBINASI	-20.803	-2.98E 3	-0.138	0.463	0.000	-67.679			
		5:KOMB B. MA	-22.153	-2.78E 3	-41.420	0.695	0.225	-45.330			
	15461	1:BEBAN MATI	29.108	1.87E 3	-0.223	-0.335	-0.001	19.404			
		2:BEBAN HIDL	-8.829	679.268	0.253	-0.038	0.002	8.400			
		3:BEBAN GEM	-1.579	756.546	39.515	-0.322	0.173	-7.442			
		4:KOMBINASI	20.803	3.34E 3	0.138	-0.463	0.001	36.726			
		5:KOMB B. MA	22.153	3.08E 3	41.420	-0.695	0.181	16.631			
21748	14577	1:BEBAN MATI	-27.923	4.24E 3	-0.650	1.381	0.004	51.046			
		2:BEBAN HIDL	9.673	1.65E 3	-0.671	0.891	0.003	21.306			
		3:BEBAN GEM	-463.074	-928.076	-73.145	-0.984	0.377	-25.378			
		4:KOMBINASI	-18.031	7.73E 3	-1.854	3.083	0.010	95.345			
		5:KOMB B. MA	-508.347	4.26E 3	-77.855	0.883	0.402	37.183			
	15450	1:BEBAN MATI	27.923	-3.94E 3	0.650	-1.381	0.003	-10.928			
		2:BEBAN HIDL	-9.673	-1.65E 3	0.671	-0.891	0.003	-5.141			
		3:BEBAN GEM	463.074	928.076	73.145	0.984	0.340	16.277			
		4:KOMBINASI	18.031	-7.37E 3	1.854	-3.083	0.009	-21.339			
		5:KOMB B. MA	508.347	-3.96E 3	77.855	-0.883	0.361	3.078			
21749	14645	1:BEBAN MATI	-21.300	-1.64E 3	-0.561	0.446	0.003	-36.756			
		2:BEBAN HIDL	15.500	-744.451	-0.015	0.024	-0.000	-15.144			
		3:BEBAN GEM	-385.932	-762.549	-76.648	0.336	0.373	0.148			
		4:KOMBINASI	-0.760	-3.16E 3	-0.696	0.575	0.003	-68.336			
		5:KOMB B. MA	-417.229	-2.89E 3	-81.050	0.814	0.394	-45.686			
	15439	1:BEBAN MATI	21.300	1.94E 3	0.561	-0.446	0.002	19.162			
		2:BEBAN HIDL	-15.500	744.451	0.015	-0.024	0.000	7.843			
		3:BEBAN GEM	385.932	762.549	76.648	-0.336	0.379	-7.626			
		4:KOMBINASI	0.760	3.52E 3	0.696	-0.575	0.004	35.543			
		5:KOMB B. MA	417.229	3.19E 3	81.050	-0.814	0.401	15.860			
21750	14578	1:BEBAN MATI	-8.174	4.19E 3	-3.638	0.882	0.021	48.384			
		2:BEBAN HIDL	39.895	1.59E 3	-0.747	0.629	0.004	19.227			
		3:BEBAN GEM	-1.3E 3	-917.838	-73.055	-1.059	0.411	-25.276			
		4:KOMBINASI	54.023	7.58E 3	-5.561	2.065	0.031	88.824			
		5:KOMB B. MA	-1.35E 3	4.18E 3	-80.794	0.148	0.455	33.380			
	15428	1:BEBAN MATI	8.174	-3.89E 3	3.638	-0.882	0.015	-8.743			
		2:BEBAN HIDL	-39.895	-1.59E 3	0.747	-0.629	0.004	-3.621			
		3:BEBAN GEM	1.3E 3	917.838	73.055	1.059	0.305	16.275			
		4:KOMBINASI	-54.023	-7.22E 3	5.561	-2.065	0.024	-16.286			
		5:KOMB B. MA	1.35E 3	-3.88E 3	80.794	-0.148	0.337	6.173			
21751	14646	1:BEBAN MATI	-112.001	-657.001	0.321	-1.985	-0.002	-17.591			
		2:BEBAN HIDL	-21.542	-330.710	0.122	-1.001	-0.001	-6.433			



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Job No

1

Sheet No

373

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-842.544	-823.934	-1.804	0.637	0.001	0.253			
		4:KOMBINASI	-168.868	-1.32E 3	0.581	-3.984	-0.005	-31.402			
		5:KOMB B. MA	-1.01E 3	-1.72E 3	-1.500	-1.917	-0.002	-21.186			
	15417	1:BEBAN MATI	112.001	957.329	-0.321	1.985	-0.001	9.676			
		2:BEBAN HIDL	21.542	330.710	-0.122	1.001	-0.000	3.190			
		3:BEBAN GEM	842.544	823.934	1.804	-0.637	0.017	-8.333			
		4:KOMBINASI	168.868	1.68E 3	-0.581	3.984	-0.001	16.715			
		5:KOMB B. MA	1.01E 3	2.02E 3	1.500	1.917	0.017	2.840			
21752	14579	1:BEBAN MATI	-140.211	2.55E 3	-0.560	5.066	-0.000	34.168			
		2:BEBAN HIDL	-36.656	850.100	-1.738	2.489	0.009	12.489			
		3:BEBAN GEM	-150.694	-922.179	-85.684	-0.988	0.444	-25.506			
		4:KOMBINASI	-226.903	4.42E 3	-3.452	10.061	0.014	60.985			
		5:KOMB B. MA	-320.434	2.1E 3	-91.571	5.522	0.471	14.880			
	15406	1:BEBAN MATI	140.211	-2.25E 3	0.560	-5.066	0.006	-10.600			
		2:BEBAN HIDL	36.656	-850.100	1.738	-2.489	0.008	-4.153			
		3:BEBAN GEM	150.694	922.179	85.684	0.988	0.397	16.463			
		4:KOMBINASI	226.903	-4.06E 3	3.452	-10.061	0.020	-19.365			
		5:KOMB B. MA	320.434	-1.79E 3	91.571	-5.522	0.427	4.194			
21753	14647	1:BEBAN MATI	-26.612	-1.1E 3	3.111	-1.175	-0.011	-32.573			
		2:BEBAN HIDL	25.111	-518.595	0.653	-0.404	-0.002	-14.609			
		3:BEBAN GEM	19.647	-839.946	-42.196	0.148	0.139	-2.184			
		4:KOMBINASI	8.243	-2.15E 3	4.778	-2.057	-0.018	-62.462			
		5:KOMB B. MA	9.083	-2.3E 3	-40.803	-1.262	0.133	-43.631			
	15374	1:BEBAN MATI	26.612	1.33E 3	-3.111	1.175	-0.011	23.638			
		2:BEBAN HIDL	-25.111	518.595	-0.653	0.404	-0.002	10.795			
		3:BEBAN GEM	-19.647	839.946	42.196	-0.148	0.172	-3.994			
		4:KOMBINASI	-8.243	2.42E 3	-4.778	2.057	-0.018	45.638			
		5:KOMB B. MA	-9.083	2.52E 3	40.803	1.262	0.167	25.922			
21754	14648	1:BEBAN MATI	-46.909	-1.47E 3	-0.253	-0.167	0.001	-28.420			
		2:BEBAN HIDL	11.065	-720.154	0.004	-0.010	0.000	-12.175			
		3:BEBAN GEM	182.332	-1.16E 3	-10.956	0.462	0.057	2.133			
		4:KOMBINASI	-38.586	-2.92E 3	-0.297	-0.216	0.002	-53.583			
		5:KOMB B. MA	151.179	-3.12E 3	-11.754	0.312	0.061	-33.485			
	15207	1:BEBAN MATI	46.909	1.83E 3	0.253	0.167	0.002	9.006			
		2:BEBAN HIDL	-11.065	720.154	-0.004	0.010	-0.000	3.700			
		3:BEBAN GEM	-182.332	1.16E 3	10.956	-0.462	0.072	-15.795			
		4:KOMBINASI	38.586	3.35E 3	0.297	0.216	0.002	16.727			
		5:KOMB B. MA	-151.179	3.48E 3	11.754	-0.312	0.077	-5.360			
21755	14550	1:BEBAN MATI	-17.602	3.63E 3	-0.113	0.212	0.001	38.930			
		2:BEBAN HIDL	5.627	1.41E 3	-0.050	0.031	0.000	15.459			
		3:BEBAN GEM	-255.178	-1.37E 3	-14.831	-0.851	0.089	-28.625			
		4:KOMBINASI	-12.120	6.61E 3	-0.215	0.304	0.002	71.450			
		5:KOMB B. MA	-282.163	3.03E 3	-15.715	-0.663	0.095	18.149			
	15199	1:BEBAN MATI	17.602	-3.27E 3	0.113	-0.212	0.000	1.658			
		2:BEBAN HIDL	-5.627	-1.41E 3	0.050	-0.031	0.000	1.121			
		3:BEBAN GEM	255.178	1.37E 3	14.831	0.851	0.085	12.446			
		4:KOMBINASI	12.120	-6.18E 3	0.215	-0.304	0.001	3.782			
		5:KOMB B. MA	282.163	-2.67E 3	15.715	0.663	0.090	15.398			



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Job No 1	Sheet No 374	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21756	14649	1:BEBAN MATI	-28.434	-1.66E 3	-0.306	-0.197	0.001	-40.361			
		2:BEBAN HIDL	11.254	-742.376	0.082	-0.003	-0.000	-17.585			
		3:BEBAN GEM	-121.387	-743.374	-25.382	0.296	0.134	-0.099			
		4:KOMBINASI	-16.114	-3.18E 3	-0.236	-0.242	0.001	-76.570			
		5:KOMB B. MA	-149.138	-2.89E 3	-26.907	0.111	0.141	-51.016			
15290	14649	1:BEBAN MATI	28.434	1.96E 3	0.306	0.197	0.002	22.596			
		2:BEBAN HIDL	-11.254	742.376	-0.082	0.003	-0.000	10.305			
		3:BEBAN GEM	121.387	743.374	25.382	-0.296	0.115	-7.191			
		4:KOMBINASI	16.114	3.54E 3	0.236	0.242	0.001	43.604			
		5:KOMB B. MA	149.138	3.19E 3	26.907	-0.111	0.122	21.228			
21757	14580	1:BEBAN MATI	-30.362	4.85E 3	-0.133	0.287	0.001	57.612			
		2:BEBAN HIDL	10.896	1.99E 3	-0.082	-0.007	0.000	25.195			
		3:BEBAN GEM	-575.515	-989.954	-21.261	-0.849	0.120	-25.631			
		4:KOMBINASI	-19.000	9E 3	-0.292	0.333	0.001	109.446			
		5:KOMB B. MA	-628.115	5E 3	-22.507	-0.609	0.127	45.816			
15277	14580	1:BEBAN MATI	30.362	-4.55E 3	0.133	-0.287	0.001	-11.529			
		2:BEBAN HIDL	-10.896	-1.99E 3	0.082	0.007	0.000	-5.705			
		3:BEBAN GEM	575.515	989.954	21.261	0.849	0.088	15.923			
		4:KOMBINASI	19.000	-8.64E 3	0.292	-0.333	0.002	-22.963			
		5:KOMB B. MA	628.115	-4.7E 3	22.507	0.609	0.094	1.767			
21758	14650	1:BEBAN MATI	-33.982	-1.67E 3	0.036	-0.188	-0.000	-39.565			
		2:BEBAN HIDL	11.041	-783.469	0.135	-0.004	-0.001	-16.906			
		3:BEBAN GEM	-361.766	-742.243	-17.056	0.296	0.094	0.136			
		4:KOMBINASI	-23.113	-3.26E 3	0.260	-0.232	-0.001	-74.528			
		5:KOMB B. MA	-407.212	-2.92E 3	-17.791	0.120	0.098	-49.567			
15264	14650	1:BEBAN MATI	33.982	1.97E 3	-0.036	0.188	-0.000	21.672			
		2:BEBAN HIDL	-11.041	783.469	-0.135	0.004	-0.001	9.223			
		3:BEBAN GEM	361.766	742.243	17.056	-0.296	0.074	-7.415			
		4:KOMBINASI	23.113	3.62E 3	-0.260	0.232	-0.001	40.763			
		5:KOMB B. MA	407.212	3.22E 3	17.791	-0.120	0.077	19.420			
21759	14581	1:BEBAN MATI	-37.056	4.87E 3	0.892	0.241	-0.004	58.612			
		2:BEBAN HIDL	11.467	1.95E 3	0.331	-0.029	-0.002	24.695			
		3:BEBAN GEM	-638.447	-988.235	-10.271	-0.849	0.054	-25.375			
		4:KOMBINASI	-26.120	8.96E 3	1.600	0.243	-0.008	109.846			
		5:KOMB B. MA	-700.545	5E 3	-9.694	-0.668	0.051	46.785			
15251	14581	1:BEBAN MATI	37.056	-4.57E 3	-0.892	-0.241	-0.004	-12.367			
		2:BEBAN HIDL	-11.467	-1.95E 3	-0.331	0.029	-0.002	-5.544			
		3:BEBAN GEM	638.447	988.235	10.271	0.849	0.047	15.684			
		4:KOMBINASI	26.120	-8.6E 3	-1.600	-0.243	-0.008	-23.711			
		5:KOMB B. MA	700.545	-4.7E 3	9.694	0.668	0.044	0.775			
21760	14651	1:BEBAN MATI	-36.267	-1.63E 3	0.376	-0.151	-0.002	-39.680			
		2:BEBAN HIDL	9.890	-790.530	0.213	-0.009	-0.001	-17.054			
		3:BEBAN GEM	-308.459	-742.904	-17.676	0.301	0.090	0.222			
		4:KOMBINASI	-27.696	-3.22E 3	0.791	-0.196	-0.005	-74.903			
		5:KOMB B. MA	-354.215	-2.88E 3	-18.056	0.160	0.091	-49.679			
15238	14651	1:BEBAN MATI	36.267	1.93E 3	-0.376	0.151	-0.001	22.227			
		2:BEBAN HIDL	-9.890	790.530	-0.213	0.009	-0.001	9.302			
		3:BEBAN GEM	308.459	742.904	17.676	-0.301	0.084	-7.508			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

375

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	27.696	3.58E 3	-0.791	0.196	-0.003	41.555			
		5:KOMB B. MA	354.215	3.18E 3	18.056	-0.160	0.086	19.925			
21761	14582	1:BEBAN MATI	-29.576	4.79E 3	1.360	0.292	-0.007	60.283			
		2:BEBAN HIDL	8.217	1.96E 3	0.121	0.032	-0.001	25.139			
		3:BEBAN GEM	-659.890	-991.842	-9.164	-0.844	0.062	-25.321			
		4:KOMBINASI	-22.343	8.89E 3	1.825	0.401	-0.010	112.561			
		5:KOMB B. MA	-717.530	4.92E 3	-8.190	-0.575	0.057	48.778			
	15225	1:BEBAN MATI	29.576	-4.49E 3	-1.360	-0.292	-0.006	-14.808			
		2:BEBAN HIDL	-8.217	-1.96E 3	-0.121	-0.032	-0.000	-5.875			
		3:BEBAN GEM	659.890	991.842	9.164	0.844	0.028	15.595			
		4:KOMBINASI	22.343	-8.53E 3	-1.825	-0.401	-0.008	-27.169			
		5:KOMB B. MA	717.530	-4.62E 3	8.190	0.575	0.023	-1.958			
21762	14652	1:BEBAN MATI	-56.938	-1.73E 3	0.635	-0.100	-0.004	-43.742			
		2:BEBAN HIDL	21.343	-767.959	-0.047	0.027	0.000	-19.076			
		3:BEBAN GEM	-251.899	-810.620	-0.202	0.270	0.007	-1.377			
		4:KOMBINASI	-34.177	-3.31E 3	0.687	-0.077	-0.004	-83.011			
		5:KOMB B. MA	-308.625	-3.04E 3	0.395	0.200	0.003	-56.633			
	15166	1:BEBAN MATI	56.938	1.96E 3	-0.635	0.100	-0.001	30.178			
		2:BEBAN HIDL	-21.343	767.959	0.047	-0.027	0.000	13.428			
		3:BEBAN GEM	251.899	810.620	0.202	-0.270	-0.005	-4.585			
		4:KOMBINASI	34.177	3.58E 3	-0.687	0.077	-0.001	57.698			
		5:KOMB B. MA	308.625	3.27E 3	-0.395	-0.200	-0.006	33.420			
21763	14554	1:BEBAN MATI	-11.574	4.82E 3	-4.948	-3.863	0.026	53.463			
		2:BEBAN HIDL	20.098	844.944	1.187	-2.360	-0.006	11.249			
		3:BEBAN GEM	-858.792	-934.544	-7.216	-0.369	0.072	-25.577			
		4:KOMBINASI	18.268	7.13E 3	-4.038	-8.412	0.021	82.154			
		5:KOMB B. MA	-901.247	4.34E 3	-11.813	-5.667	0.097	33.357			
	15222	1:BEBAN MATI	11.574	-3.69E 3	4.948	3.863	0.023	-11.738			
		2:BEBAN HIDL	-20.098	-844.944	-1.187	2.360	-0.005	-2.963			
		3:BEBAN GEM	858.792	934.544	7.216	0.369	-0.001	16.412			
		4:KOMBINASI	-18.268	-5.78E 3	4.038	8.412	0.019	-18.827			
		5:KOMB B. MA	901.247	-3.22E 3	11.813	5.667	0.019	3.716			
21764	14600	1:BEBAN MATI	23.225	-742.639	0.269	1.341	-0.003	-34.108			
		2:BEBAN HIDL	18.127	-325.160	0.095	0.696	-0.000	-8.710			
		3:BEBAN GEM	-400.545	-892.914	-6.769	0.010	0.036	-1.533			
		4:KOMBINASI	56.872	-1.41E 3	0.476	2.722	-0.003	-54.866			
		5:KOMB B. MA	-386.471	-1.88E 3	-6.782	1.769	0.035	-40.945			
	15163	1:BEBAN MATI	-23.225	1.59E 3	-0.269	-1.341	0.001	25.543			
		2:BEBAN HIDL	-18.127	325.160	-0.095	-0.696	-0.001	6.318			
		3:BEBAN GEM	400.545	892.914	6.769	-0.010	0.014	-5.034			
		4:KOMBINASI	-56.872	2.42E 3	-0.476	-2.722	-0.000	40.761			
		5:KOMB B. MA	386.471	2.72E 3	6.782	-1.769	0.015	24.048			
21765	14537	1:BEBAN MATI	-28.224	2.34E 3	-5.378	-0.707	0.033	13.479			
		2:BEBAN HIDL	7.676	229.691	2.712	-0.406	-0.016	1.324			
		3:BEBAN GEM	-435.468	-676.909	-30.003	1.831	0.213	-11.118			
		4:KOMBINASI	-21.587	3.17E 3	-2.115	-1.498	0.013	18.294			
		5:KOMB B. MA	-480.860	1.77E 3	-35.254	0.972	0.246	2.600			
	14718	1:BEBAN MATI	28.224	-988.324	5.378	0.707	0.031	6.097			



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Job No 1	Sheet No 376	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-7.676	-229.691	-2.712	0.406	-0.016	1.379			
		3:BEBAN GEM	435.468	676.909	30.003	-1.831	0.140	3.152			
		4:KOMBINASI	21.587	-1.55E 3	2.115	1.498	0.012	9.523			
		5:KOMB B. MA	480.860	-415.385	35.254	-0.972	0.169	10.234			
21766	14535	1:BEBAN MATI	-42.504	3.51E 3	-7.654	-3.844	0.046	29.430			
		2:BEBAN HIDL	6.976	528.305	2.950	-2.277	-0.017	5.396			
		3:BEBAN GEM	-404.358	-326.075	-25.782	1.839	0.164	-8.093			
		4:KOMBINASI	-39.843	5.06E 3	-4.465	-8.256	0.027	43.950			
		5:KOMB B. MA	-462.894	3.49E 3	-32.956	-3.279	0.207	24.170			
	14949	1:BEBAN MATI	42.504	-2.16E 3	7.654	3.844	0.045	3.974			
		2:BEBAN HIDL	-6.976	-528.305	-2.950	2.277	-0.017	0.821			
		3:BEBAN GEM	404.358	326.075	25.782	-1.839	0.140	4.256			
		4:KOMBINASI	39.843	-3.44E 3	4.465	8.256	0.026	6.082			
		5:KOMB B. MA	462.894	-2.14E 3	32.956	3.279	0.181	8.935			
21767	14582	1:BEBAN MATI	-20.137	3.12E 3	0.120	0.027	-0.000	27.966			
		2:BEBAN HIDL	2.351	1.24E 3	-0.339	-0.007	0.002	11.143			
		3:BEBAN GEM	253.779	-390.076	-10.568	2.072	0.053	-7.849			
		4:KOMBINASI	-20.404	5.72E 3	-0.397	0.021	0.003	51.388			
		5:KOMB B. MA	247.741	3.45E 3	-11.179	2.198	0.057	26.410			
	15179	1:BEBAN MATI	20.137	-2.76E 3	-0.120	-0.027	-0.001	6.626			
		2:BEBAN HIDL	-2.351	-1.24E 3	0.339	0.007	0.002	3.402			
		3:BEBAN GEM	-253.779	390.076	10.568	-2.072	0.071	3.258			
		4:KOMBINASI	20.404	-5.29E 3	0.397	-0.021	0.002	13.395			
		5:KOMB B. MA	-247.741	-3.09E 3	11.179	-2.198	0.075	12.089			
21768	14579	1:BEBAN MATI	34.088	3.19E 3	-3.331	-0.374	0.016	29.027			
		2:BEBAN HIDL	18.539	1.3E 3	-2.813	-0.205	0.016	12.071			
		3:BEBAN GEM	1.35E 3	-367.139	2.229	2.126	-0.051	-7.654			
		4:KOMBINASI	70.568	5.91E 3	-8.498	-0.778	0.045	54.147			
		5:KOMB B. MA	1.46E 3	3.58E 3	-2.679	1.735	-0.028	28.233			
	15385	1:BEBAN MATI	-34.088	-2.83E 3	3.331	0.374	0.023	6.366			
		2:BEBAN HIDL	-18.539	-1.3E 3	2.813	0.205	0.017	3.272			
		3:BEBAN GEM	-1.35E 3	367.139	-2.229	-2.126	0.025	3.334			
		4:KOMBINASI	-70.568	-5.48E 3	8.498	0.778	0.055	12.873			
		5:KOMB B. MA	-1.46E 3	-3.22E 3	2.679	-1.735	0.059	11.829			
21769	14576	1:BEBAN MATI	9.741	1.12E 3	0.290	3.384	0.002	17.718			
		2:BEBAN HIDL	-33.698	398.799	-1.796	1.508	0.011	8.007			
		3:BEBAN GEM	1.56E 3	-563.483	71.814	1.281	-0.396	-11.093			
		4:KOMBINASI	-42.228	1.98E 3	-2.526	6.474	0.021	34.074			
		5:KOMB B. MA	1.63E 3	762.954	74.617	5.634	-0.407	10.875			
	15220	1:BEBAN MATI	-9.741	-754.939	-0.290	-3.384	-0.006	-6.714			
		2:BEBAN HIDL	33.698	-398.799	1.796	-1.508	0.010	-3.314			
		3:BEBAN GEM	-1.56E 3	563.483	-71.814	-1.281	-0.449	4.462			
		4:KOMBINASI	42.228	-1.54E 3	2.526	-6.474	0.009	-13.359			
		5:KOMB B. MA	-1.63E 3	-402.560	-74.617	-5.634	-0.471	-4.017			
21770	14653	1:BEBAN MATI	38.167	-2.08E 3	1.301	-1.045	-0.010	-44.148			
		2:BEBAN HIDL	22.654	-796.573	0.294	0.335	-0.002	-16.154			
		3:BEBAN GEM	899.262	-124.155	17.002	-0.851	-0.145	0.437			
		4:KOMBINASI	82.047	-3.77E 3	2.032	-0.718	-0.015	-78.824			



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Job No 1	Sheet No 377	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	995.985	-2.69E 3	19.330	-1.737	-0.163	-53.382			
	15302	1:BEBAN MATI	-38.167	2.53E 3	-1.301	1.045	-0.009	10.255			
		2:BEBAN HIDL	-22.654	796.573	-0.294	-0.335	-0.003	4.436			
		3:BEBAN GEM	-899.262	124.155	-17.002	0.851	-0.105	-2.263			
		4:KOMBINASI	-82.047	4.31E 3	-2.032	0.718	-0.015	19.404			
		5:KOMB B. MA	-995.985	3.14E 3	-19.330	1.737	-0.121	10.541			
21771	14573	1:BEBAN MATI	52.759	4.87E 3	-2.073	-1.080	0.014	57.045			
		2:BEBAN HIDL	13.307	1.67E 3	0.018	-0.932	-0.000	21.185			
		3:BEBAN GEM	1.13E 3	-256.541	-5.150	2.508	0.006	-6.154			
		4:KOMBINASI	84.602	8.52E 3	-2.458	-2.788	0.016	102.351			
		5:KOMB B. MA	1.25E 3	5.6E 3	-7.470	0.994	0.021	63.295			
	15303	1:BEBAN MATI	-52.759	-4.42E 3	2.073	1.080	0.017	11.278			
		2:BEBAN HIDL	-13.307	-1.67E 3	-0.018	0.932	-0.000	3.425			
		3:BEBAN GEM	-1.13E 3	256.541	5.150	-2.508	0.069	2.380			
		4:KOMBINASI	-84.602	-7.98E 3	2.458	2.788	0.020	19.013			
		5:KOMB B. MA	-1.25E 3	-5.15E 3	7.470	-0.994	0.089	15.832			
21772	14654	1:BEBAN MATI	0.886	-2.19E 3	0.581	-0.025	-0.004	-44.987			
		2:BEBAN HIDL	3.098	-960.836	0.046	-0.157	-0.000	-18.336			
		3:BEBAN GEM	1.57E 3	-214.470	0.848	-1.287	-0.025	-0.167			
		4:KOMBINASI	6.020	-4.16E 3	0.771	-0.281	-0.005	-83.322			
		5:KOMB B. MA	1.65E 3	-2.99E 3	1.499	-1.470	-0.030	-56.164			
	14745	1:BEBAN MATI	-0.886	2.64E 3	-0.581	0.025	-0.005	9.464			
		2:BEBAN HIDL	-3.098	960.836	-0.046	0.157	-0.000	4.202			
		3:BEBAN GEM	-1.57E 3	214.470	-0.848	1.287	0.012	-2.988			
		4:KOMBINASI	-6.020	4.71E 3	-0.771	0.281	-0.006	18.079			
		5:KOMB B. MA	-1.65E 3	3.44E 3	-1.499	1.470	0.008	8.847			
21773	14570	1:BEBAN MATI	-13.189	5.05E 3	-2.353	0.151	0.016	62.803			
		2:BEBAN HIDL	1.974	1.88E 3	-0.135	0.244	0.001	24.191			
		3:BEBAN GEM	1.24E 3	-250.965	-17.422	2.662	0.104	-6.568			
		4:KOMBINASI	-12.669	9.07E 3	-3.040	0.571	0.020	114.068			
		5:KOMB B. MA	1.29E 3	5.92E 3	-20.727	3.092	0.126	70.421			
	14744	1:BEBAN MATI	13.189	-4.6E 3	2.353	-0.151	0.019	8.178			
		2:BEBAN HIDL	-1.974	-1.88E 3	0.135	-0.244	0.001	3.498			
		3:BEBAN GEM	-1.24E 3	250.965	17.422	-2.662	0.152	2.876			
		4:KOMBINASI	12.669	-8.53E 3	3.040	-0.571	0.024	15.411			
		5:KOMB B. MA	-1.29E 3	-5.47E 3	20.727	-3.092	0.179	13.297			
21774	14655	1:BEBAN MATI	38.795	-1.97E 3	0.074	1.523	-0.000	-44.737			
		2:BEBAN HIDL	15.251	-823.201	-0.122	0.668	0.001	-16.228			
		3:BEBAN GEM	686.065	-261.608	-19.518	-1.370	0.131	-0.206			
		4:KOMBINASI	70.956	-3.68E 3	-0.107	2.896	0.001	-79.649			
		5:KOMB B. MA	768.314	-2.74E 3	-20.494	0.485	0.138	-54.690			
	14899	1:BEBAN MATI	-38.795	2.42E 3	-0.074	-1.523	-0.001	12.457			
		2:BEBAN HIDL	-15.251	823.201	0.122	-0.668	0.001	4.119			
		3:BEBAN GEM	-686.065	261.608	19.518	1.370	0.156	-3.642			
		4:KOMBINASI	-70.956	4.22E 3	0.107	-2.896	0.000	21.540			
		5:KOMB B. MA	-768.314	3.19E 3	20.494	-0.485	0.163	11.104			
21775	14567	1:BEBAN MATI	53.986	4.64E 3	-2.342	-1.238	0.014	55.854			
		2:BEBAN HIDL	39.285	1.6E 3	-0.947	-1.176	0.007	19.772			



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Job No

1

Sheet No

378

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	204.913	-242.873	-21.322	2.778	0.090	-7.941			
		4:KOMBINASI	127.640	8.13E 3	-4.326	-3.366	0.028	98.660			
		5:KOMB B. MA	292.716	5.35E 3	-25.299	0.974	0.112	59.379			
	14898	1:BEBAN MATI	-53.986	-4.19E 3	2.342	1.238	0.021	9.096			
		2:BEBAN HIDL	-39.285	-1.6E 3	0.947	1.176	0.007	3.808			
		3:BEBAN GEM	-204.913	242.873	21.322	-2.778	0.224	4.369			
		4:KOMBINASI	-127.640	-7.59E 3	4.326	3.366	0.036	17.008			
		5:KOMB B. MA	-292.716	-4.9E 3	25.299	-0.974	0.260	15.968			
21776	14564	1:BEBAN MATI	-6.190	940.334	-0.959	0.883	0.009	13.083			
		2:BEBAN HIDL	-37.796	180.561	-2.356	0.640	0.013	3.600			
		3:BEBAN GEM	1.94E 3	-363.676	-106.331	1.380	0.748	-6.013			
		4:KOMBINASI	-67.901	1.42E 3	-4.921	2.084	0.032	21.459			
		5:KOMB B. MA	2.01E 3	666.811	-114.020	2.716	0.803	8.929			
	14773	1:BEBAN MATI	6.190	-579.941	0.959	-0.883	0.002	-4.138			
		2:BEBAN HIDL	37.796	-180.561	2.356	-0.640	0.015	-1.475			
		3:BEBAN GEM	-1.94E 3	363.676	106.331	-1.380	0.503	1.734			
		4:KOMBINASI	67.901	-984.827	4.921	-2.084	0.026	-7.325			
		5:KOMB B. MA	-2.01E 3	-306.417	114.020	-2.716	0.539	-3.203			
21777	14561	1:BEBAN MATI	8.411	2.97E 3	1.150	0.264	-0.007	26.274			
		2:BEBAN HIDL	4.126	1.24E 3	-0.169	0.153	0.001	11.595			
		3:BEBAN GEM	374.574	-380.512	-33.179	2.103	0.202	-8.036			
		4:KOMBINASI	16.694	5.55E 3	1.110	0.562	-0.007	50.081			
		5:KOMB B. MA	404.189	3.32E 3	-33.789	2.565	0.206	24.793			
	14979	1:BEBAN MATI	-8.411	-2.61E 3	-1.150	-0.264	-0.007	6.555			
		2:BEBAN HIDL	-4.126	-1.24E 3	0.169	-0.153	0.001	3.021			
		3:BEBAN GEM	-374.574	380.512	33.179	-2.103	0.189	3.558			
		4:KOMBINASI	-16.694	-5.12E 3	-1.110	-0.562	-0.007	12.700			
		5:KOMB B. MA	-404.189	-2.96E 3	33.789	-2.565	0.192	12.103			
21778	14581	1:BEBAN MATI	3.302	4.86E 3	-0.126	-0.025	0.001	40.765			
		2:BEBAN HIDL	5.517	1.25E 3	0.010	0.017	0.000	11.285			
		3:BEBAN GEM	-13.880	-395.875	-6.990	2.036	0.034	-7.969			
		4:KOMBINASI	12.790	7.83E 3	-0.135	-0.002	0.001	66.974			
		5:KOMB B. MA	-7.962	5.19E 3	-7.459	2.123	0.037	39.169			
	15246	1:BEBAN MATI	-3.302	-3.51E 3	0.126	0.025	0.001	8.448			
		2:BEBAN HIDL	-5.517	-1.25E 3	-0.010	-0.017	-0.000	3.466			
		3:BEBAN GEM	13.880	395.875	6.990	-2.036	0.048	3.310			
		4:KOMBINASI	-12.790	-6.21E 3	0.135	0.002	0.000	15.684			
		5:KOMB B. MA	7.962	-3.84E 3	7.459	-2.123	0.051	14.004			
21779	14578	1:BEBAN MATI	46.838	4.83E 3	2.377	0.756	-0.011	41.583			
		2:BEBAN HIDL	25.916	1.31E 3	2.312	0.345	-0.014	12.345			
		3:BEBAN GEM	46.803	-363.925	-35.515	2.169	0.275	-8.047			
		4:KOMBINASI	97.672	7.9E 3	6.552	1.459	-0.035	69.653			
		5:KOMB B. MA	111.531	5.24E 3	-33.527	3.240	0.270	40.541			
	15424	1:BEBAN MATI	-46.838	-3.48E 3	-2.377	-0.756	-0.017	7.363			
		2:BEBAN HIDL	-25.916	-1.31E 3	-2.312	-0.345	-0.013	3.070			
		3:BEBAN GEM	-46.803	363.925	35.515	-2.169	0.143	3.764			
		4:KOMBINASI	-97.672	-6.28E 3	-6.552	-1.459	-0.042	13.747			
		5:KOMB B. MA	-111.531	-3.89E 3	33.527	-3.240	0.125	13.157			



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Job No 1	Sheet No 379	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21780	14575	1:BEBAN MATI	2.775	2.27E 3	0.714	-2.234	-0.008	22.191			
		2:BEBAN HIDL	-31.811	279.626	0.501	-0.977	-0.004	6.566			
		3:BEBAN GEM	1.75E 3	-488.605	47.646	0.807	-0.461	-8.610			
		4:KOMBINASI	-47.567	3.18E 3	1.658	-4.244	-0.017	37.135			
		5:KOMB B. MA	1.82E 3	1.93E 3	51.042	-1.973	-0.495	17.090			
15340	15340	1:BEBAN MATI	-2.775	-248.027	-0.714	2.234	-0.004	0.065			
		2:BEBAN HIDL	31.811	-279.626	-0.501	0.977	-0.005	-1.630			
		3:BEBAN GEM	-1.75E 3	488.605	-47.646	-0.807	-0.380	-0.015			
		4:KOMBINASI	47.567	-745.034	-1.658	4.244	-0.013	-2.530			
		5:KOMB B. MA	-1.82E 3	97.232	-51.042	1.973	-0.406	-0.929			
21781	14656	1:BEBAN MATI	16.647	-1.72E 3	-0.104	-0.389	0.001	-55.946			
		2:BEBAN HIDL	17.704	-911.040	-0.447	-0.328	0.003	-19.477			
		3:BEBAN GEM	1.09E 3	-205.863	36.108	-1.283	-0.259	-0.119			
		4:KOMBINASI	48.302	-3.52E 3	-0.840	-0.990	0.005	-98.298			
		5:KOMB B. MA	1.17E 3	-2.48E 3	37.541	-1.932	-0.269	-67.757			
15314	15314	1:BEBAN MATI	-16.647	3.41E 3	0.104	0.389	0.001	18.204			
		2:BEBAN HIDL	-17.704	911.040	0.447	0.328	0.004	6.076			
		3:BEBAN GEM	-1.09E 3	205.863	-36.108	1.283	-0.272	-2.910			
		4:KOMBINASI	-48.302	5.55E 3	0.840	0.990	0.007	31.566			
		5:KOMB B. MA	-1.17E 3	4.17E 3	-37.541	1.932	-0.283	18.794			
21782	14572	1:BEBAN MATI	8.132	7.14E 3	0.618	-0.158	-0.005	81.115			
		2:BEBAN HIDL	14.065	1.93E 3	-0.030	0.027	0.000	24.615			
		3:BEBAN GEM	893.212	-276.865	32.310	2.618	-0.237	-7.224			
		4:KOMBINASI	32.262	11.6E 3	0.693	-0.146	-0.005	136.721			
		5:KOMB B. MA	954.443	8E 3	34.525	2.607	-0.253	88.299			
15315	15315	1:BEBAN MATI	-8.132	-5.45E 3	-0.618	0.158	-0.004	11.481			
		2:BEBAN HIDL	-14.065	-1.93E 3	0.030	-0.027	0.000	3.727			
		3:BEBAN GEM	-893.212	276.865	-32.310	-2.618	-0.238	3.151			
		4:KOMBINASI	-32.262	-9.62E 3	-0.693	0.146	-0.005	19.741			
		5:KOMB B. MA	-954.443	-6.32E 3	-34.525	-2.607	-0.254	17.027			
21783	14657	1:BEBAN MATI	-1.927	-1.81E 3	-0.032	0.066	-0.000	-49.980			
		2:BEBAN HIDL	2.114	-928.177	-0.007	-0.001	0.000	-17.151			
		3:BEBAN GEM	1.7E 3	-200.559	26.942	-1.241	-0.277	0.030			
		4:KOMBINASI	1.070	-3.66E 3	-0.049	0.078	-0.000	-87.418			
		5:KOMB B. MA	1.78E 3	-2.58E 3	28.254	-1.237	-0.291	-60.240			
14863	14863	1:BEBAN MATI	1.927	3.5E 3	0.032	-0.066	0.001	10.895			
		2:BEBAN HIDL	-2.114	928.177	0.007	0.001	0.000	3.498			
		3:BEBAN GEM	-1.7E 3	200.559	-26.942	1.241	-0.119	-2.980			
		4:KOMBINASI	-1.070	5.69E 3	0.049	-0.078	0.001	18.670			
		5:KOMB B. MA	-1.78E 3	4.27E 3	-28.254	1.237	-0.124	9.865			
21784	14569	1:BEBAN MATI	-2.640	6.88E 3	0.243	-0.128	-0.002	79.526			
		2:BEBAN HIDL	-0.035	1.83E 3	0.028	0.010	-0.000	24.062			
		3:BEBAN GEM	1.06E 3	-276.128	-45.880	2.586	0.352	-7.032			
		4:KOMBINASI	-3.225	11.2E 3	0.336	-0.138	-0.002	133.930			
		5:KOMB B. MA	1.11E 3	7.68E 3	-47.914	2.593	0.368	86.579			
14862	14862	1:BEBAN MATI	2.640	-5.19E 3	-0.243	0.128	-0.002	9.223			
		2:BEBAN HIDL	0.035	-1.83E 3	-0.028	-0.010	-0.000	2.792			
		3:BEBAN GEM	-1.06E 3	276.128	45.880	-2.586	0.323	2.970			



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Job No

1

Sheet No

380

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	3.225	-9.15E 3	-0.336	0.138	-0.003	15.535			
		5:KOMB B. MA	-1.11E 3	-5.99E 3	47.914	-2.593	0.337	14.017			
21785	14658	1:BEBAN MATI	9.904	-2.04E 3	-0.282	0.170	0.002	-55.760			
		2:BEBAN HIDL	13.236	-1.01E 3	0.121	0.046	-0.001	-19.408			
		3:BEBAN GEM	446.733	-210.981	-57.633	-1.270	0.432	-0.062			
		4:KOMBINASI	33.062	-4.07E 3	-0.144	0.278	0.001	-97.965			
		5:KOMB B. MA	486.915	-2.87E 3	-60.723	-1.136	0.455	-67.470			
	14911	1:BEBAN MATI	-9.904	3.73E 3	0.282	-0.170	0.002	13.291			
		2:BEBAN HIDL	-13.236	1.01E 3	-0.121	-0.046	-0.001	4.487			
		3:BEBAN GEM	-446.733	210.981	57.633	1.270	0.415	-3.041			
		4:KOMBINASI	-33.062	6.1E 3	0.144	-0.278	0.001	23.128			
		5:KOMB B. MA	-486.915	4.56E 3	60.723	1.136	0.438	12.790			
21786	14566	1:BEBAN MATI	29.767	6.94E 3	0.742	0.495	-0.003	72.870			
		2:BEBAN HIDL	31.377	1.87E 3	1.349	0.442	-0.010	22.074			
		3:BEBAN GEM	884.881	-255.782	-43.515	2.776	0.300	-6.847			
		4:KOMBINASI	85.923	11.3E 3	3.050	1.301	-0.019	122.763			
		5:KOMB B. MA	977.719	7.8E 3	-44.138	3.675	0.306	78.925			
	14910	1:BEBAN MATI	-29.767	-5.25E 3	-0.742	-0.495	-0.008	16.821			
		2:BEBAN HIDL	-31.377	-1.87E 3	-1.349	-0.442	-0.010	5.468			
		3:BEBAN GEM	-884.881	255.782	43.515	-2.776	0.340	3.084			
		4:KOMBINASI	-85.923	-9.3E 3	-3.050	-1.301	-0.026	28.934			
		5:KOMB B. MA	-977.719	-6.11E 3	44.138	-3.675	0.343	23.340			
21787	14563	1:BEBAN MATI	-7.945	2.54E 3	0.048	-2.052	-0.002	27.132			
		2:BEBAN HIDL	-24.186	183.533	0.837	-0.946	-0.007	4.831			
		3:BEBAN GEM	-613.479	-480.765	-71.640	0.900	0.623	-8.313			
		4:KOMBINASI	-48.232	3.35E 3	1.396	-3.975	-0.014	40.287			
		5:KOMB B. MA	-666.610	2.15E 3	-74.673	-1.674	0.647	21.302			
	14936	1:BEBAN MATI	7.945	-518.661	-0.048	2.052	0.001	-0.099			
		2:BEBAN HIDL	24.186	-183.533	-0.837	0.946	-0.008	-1.591			
		3:BEBAN GEM	613.479	480.765	71.640	-0.900	0.642	-0.174			
		4:KOMBINASI	48.232	-916.046	-1.396	3.975	-0.011	-2.664			
		5:KOMB B. MA	666.610	-123.978	74.673	1.674	0.671	-1.236			
21788	14560	1:BEBAN MATI	18.558	4.64E 3	0.120	-0.240	-0.001	39.019			
		2:BEBAN HIDL	7.786	1.24E 3	0.255	-0.118	-0.002	11.656			
		3:BEBAN GEM	-371.747	-372.887	-39.322	2.077	0.244	-8.038			
		4:KOMBINASI	34.726	7.56E 3	0.553	-0.476	-0.003	65.473			
		5:KOMB B. MA	-367.106	4.99E 3	-41.015	1.870	0.254	37.573			
	15018	1:BEBAN MATI	-18.558	-3.29E 3	-0.120	0.240	-0.001	7.618			
		2:BEBAN HIDL	-7.786	-1.24E 3	-0.255	0.118	-0.001	2.982			
		3:BEBAN GEM	371.747	372.887	39.322	-2.077	0.219	3.650			
		4:KOMBINASI	-34.726	-5.94E 3	-0.553	0.476	-0.003	13.914			
		5:KOMB B. MA	367.106	-3.64E 3	41.015	-1.870	0.228	13.240			
21789	14580	1:BEBAN MATI	7.035	4.87E 3	0.214	0.029	-0.001	40.981			
		2:BEBAN HIDL	7.291	1.26E 3	-0.065	-0.015	0.000	11.374			
		3:BEBAN GEM	131.372	-397.038	1.772	2.041	-0.019	-7.990			
		4:KOMBINASI	20.108	7.85E 3	0.153	0.012	-0.001	67.375			
		5:KOMB B. MA	149.350	5.2E 3	2.036	2.164	-0.021	39.415			
	15272	1:BEBAN MATI	-7.035	-3.52E 3	-0.214	-0.029	-0.001	8.353			



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Job No 1	Sheet No 381	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-7.291	-1.26E 3	0.065	0.015	0.000	3.421			
		3:BEBAN GEM	-131.372	397.038	-1.772	-2.041	-0.002	3.318			
		4:KOMBINASI	-20.108	-6.23E 3	-0.153	-0.012	-0.001	15.497			
		5:KOMB B. MA	-149.350	-3.85E 3	-2.036	-2.164	-0.003	13.889			
21790	14577	1:BEBAN MATI	11.479	4.73E 3	0.146	0.057	-0.001	41.009			
		2:BEBAN HIDL	8.151	1.28E 3	-0.387	-0.020	0.002	12.236			
		3:BEBAN GEM	561.167	-374.206	29.724	2.090	-0.187	-8.082			
		4:KOMBINASI	26.816	7.72E 3	-0.444	0.035	0.002	68.789			
		5:KOMB B. MA	605.594	5.1E 3	31.124	2.239	-0.197	39.865			
	15446	1:BEBAN MATI	-11.479	-3.38E 3	-0.146	-0.057	-0.001	6.716			
		2:BEBAN HIDL	-8.151	-1.28E 3	0.387	0.020	0.002	2.798			
		3:BEBAN GEM	-561.167	374.206	-29.724	-2.090	-0.162	3.678			
		4:KOMBINASI	-26.816	-6.1E 3	0.444	-0.035	0.003	12.536			
		5:KOMB B. MA	-605.594	-3.75E 3	-31.124	-2.239	-0.170	12.257			
21791	14574	1:BEBAN MATI	-1.070	2.83E 3	0.099	-0.005	-0.001	25.362			
		2:BEBAN HIDL	-11.912	552.879	-0.130	-0.003	0.001	7.929			
		3:BEBAN GEM	577.547	-472.198	27.504	1.266	-0.251	-8.421			
		4:KOMBINASI	-20.343	4.28E 3	-0.089	-0.011	0.001	43.120			
		5:KOMB B. MA	598.208	2.67E 3	28.901	1.323	-0.264	21.277			
	15346	1:BEBAN MATI	1.070	-803.545	-0.099	0.005	-0.001	6.700			
		2:BEBAN HIDL	11.912	-552.879	0.130	0.003	0.001	1.831			
		3:BEBAN GEM	-577.547	472.198	-27.504	-1.266	-0.234	0.086			
		4:KOMBINASI	20.343	-1.85E 3	0.089	0.011	0.001	10.969			
		5:KOMB B. MA	-598.208	-639.465	-28.901	-1.323	-0.246	7.889			
21792	14659	1:BEBAN MATI	-2.123	-1.71E 3	0.172	-0.088	-0.001	-55.120			
		2:BEBAN HIDL	12.852	-895.416	-0.061	0.024	0.001	-18.834			
		3:BEBAN GEM	920.220	-204.206	56.085	-1.265	-0.421	-0.032			
		4:KOMBINASI	18.016	-3.49E 3	0.109	-0.068	-0.001	-96.278			
		5:KOMB B. MA	971.819	-2.47E 3	59.025	-1.402	-0.443	-66.454			
	15326	1:BEBAN MATI	2.123	3.4E 3	-0.172	0.088	-0.001	17.486			
		2:BEBAN HIDL	-12.852	895.416	0.061	-0.024	0.000	5.662			
		3:BEBAN GEM	-920.220	204.206	-56.085	1.265	-0.404	-2.972			
		4:KOMBINASI	-18.016	5.52E 3	-0.109	0.068	-0.001	30.044			
		5:KOMB B. MA	-971.819	4.15E 3	-59.025	1.402	-0.425	17.763			
21793	14571	1:BEBAN MATI	-1.068	7.13E 3	-0.062	0.141	0.000	81.603			
		2:BEBAN HIDL	12.544	1.91E 3	0.001	-0.015	0.000	24.688			
		3:BEBAN GEM	1.31E 3	-283.162	112.440	2.593	-0.884	-7.306			
		4:KOMBINASI	18.789	11.6E 3	-0.073	0.146	0.000	137.425			
		5:KOMB B. MA	1.38E 3	7.98E 3	118.001	2.855	-0.928	88.745			
	15327	1:BEBAN MATI	1.068	-5.44E 3	0.062	-0.141	0.001	10.881			
		2:BEBAN HIDL	-12.544	-1.91E 3	-0.001	0.015	-0.000	3.357			
		3:BEBAN GEM	-1.31E 3	283.162	-112.440	-2.593	-0.770	3.141			
		4:KOMBINASI	-18.789	-9.58E 3	0.073	-0.146	0.001	18.429			
		5:KOMB B. MA	-1.38E 3	-6.29E 3	-118.001	-2.855	-0.808	16.193			
21794	14660	1:BEBAN MATI	-4.069	-1.83E 3	0.029	-0.059	-0.000	-50.365			
		2:BEBAN HIDL	6.798	-934.474	-0.038	0.013	0.000	-17.290			
		3:BEBAN GEM	-2.21E 3	-203.372	114.098	-1.250	-0.759	-0.007			
		4:KOMBINASI	5.994	-3.7E 3	-0.025	-0.050	0.000	-88.102			



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Job No 1	Sheet No 382	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-2.32E 3	-2.61E 3	119.810	-1.364	-0.797	-60.746			
	14877	1:BEBAN MATI	4.069	3.52E 3	-0.029	0.059	-0.000	10.960			
		2:BEBAN HIDL	-6.798	934.474	0.038	-0.013	0.000	3.543			
		3:BEBAN GEM	2.21E 3	203.372	-114.098	1.250	-0.920	-2.985			
		4:KOMBINASI	-5.994	5.72E 3	0.025	0.050	0.000	18.822			
		5:KOMB B. MA	2.32E 3	4.3E 3	-119.810	1.364	-0.966	9.952			
21795	14568	1:BEBAN MATI	-4.412	6.91E 3	-0.115	0.120	0.001	79.938			
		2:BEBAN HIDL	5.485	1.83E 3	0.114	-0.025	-0.001	24.145			
		3:BEBAN GEM	-556.272	-276.649	-160.202	2.605	1.207	-7.086			
		4:KOMBINASI	3.483	11.2E 3	0.044	0.103	-0.000	134.558			
		5:KOMB B. MA	-585.206	7.72E 3	-168.259	2.839	1.268	86.985			
	14876	1:BEBAN MATI	4.412	-5.22E 3	0.115	-0.120	0.001	9.270			
		2:BEBAN HIDL	-5.485	-1.83E 3	-0.114	0.025	-0.001	2.831			
		3:BEBAN GEM	556.272	276.649	160.202	-2.605	1.149	3.016			
		4:KOMBINASI	-3.483	-9.2E 3	-0.044	-0.103	-0.000	15.653			
		5:KOMB B. MA	585.206	-6.03E 3	168.259	-2.839	1.207	14.135			
21796	14661	1:BEBAN MATI	-1.461	-2.03E 3	-0.046	-0.068	0.000	-54.972			
		2:BEBAN HIDL	11.565	-998.404	0.046	0.003	-0.000	-18.788			
		3:BEBAN GEM	-614.488	-208.633	-49.257	-1.248	0.361	0.052			
		4:KOMBINASI	16.751	-4.04E 3	0.018	-0.077	-0.000	-96.027			
		5:KOMB B. MA	-639.735	-2.85E 3	-51.738	-1.376	0.379	-66.190			
	14923	1:BEBAN MATI	1.461	3.72E 3	0.046	0.068	0.000	12.670			
		2:BEBAN HIDL	-11.565	998.404	-0.046	-0.003	-0.000	4.101			
		3:BEBAN GEM	614.488	208.633	49.257	1.248	0.364	-3.121			
		4:KOMBINASI	-16.751	6.06E 3	-0.018	0.077	-0.000	21.765			
		5:KOMB B. MA	639.735	4.54E 3	51.738	1.376	0.382	11.853			
21797	14565	1:BEBAN MATI	-3.584	6.9E 3	-0.383	0.174	0.003	72.987			
		2:BEBAN HIDL	18.358	1.83E 3	0.015	-0.028	-0.000	21.881			
		3:BEBAN GEM	-538.869	-276.419	-48.362	2.668	0.353	-7.062			
		4:KOMBINASI	25.072	11.2E 3	-0.436	0.163	0.003	122.594			
		5:KOMB B. MA	-558.381	7.71E 3	-51.154	2.958	0.373	78.700			
	14922	1:BEBAN MATI	3.584	-5.21E 3	0.383	-0.174	0.003	16.068			
		2:BEBAN HIDL	-18.358	-1.83E 3	-0.015	0.028	-0.000	5.039			
		3:BEBAN GEM	538.869	276.419	48.362	-2.668	0.358	2.996			
		4:KOMBINASI	-25.072	-9.18E 3	0.436	-0.163	0.003	27.345			
		5:KOMB B. MA	558.381	-6.02E 3	51.154	-2.958	0.379	22.238			
21798	14562	1:BEBAN MATI	-4.025	3E 3	-0.242	0.043	0.002	28.797			
		2:BEBAN HIDL	-8.669	460.599	0.049	-0.004	-0.000	6.234			
		3:BEBAN GEM	-242.564	-471.126	-30.238	1.333	0.269	-8.248			
		4:KOMBINASI	-18.700	4.34E 3	-0.212	0.046	0.002	44.531			
		5:KOMB B. MA	-263.918	2.78E 3	-31.962	1.441	0.284	23.877			
	14942	1:BEBAN MATI	4.025	-976.798	0.242	-0.043	0.002	6.323			
		2:BEBAN HIDL	8.669	-460.599	-0.049	0.004	-0.000	1.897			
		3:BEBAN GEM	242.564	471.126	30.238	-1.333	0.264	-0.069			
		4:KOMBINASI	18.700	-1.91E 3	0.212	-0.046	0.002	10.622			
		5:KOMB B. MA	263.918	-758.475	31.962	-1.441	0.280	7.389			
21799	14559	1:BEBAN MATI	8.814	4.64E 3	-0.267	0.066	0.002	40.094			
		2:BEBAN HIDL	2.443	1.25E 3	0.092	-0.006	-0.001	12.204			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 383	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-115.899	-379.136	-39.134	2.097	0.242	-8.157			
		4:KOMBINASI	14.485	7.56E 3	-0.174	0.070	0.001	67.639			
		5:KOMB B. MA	-111.415	4.99E 3	-41.303	2.264	0.255	38.851			
	15040	1:BEBAN MATI	-8.814	-3.29E 3	0.267	-0.066	0.001	6.544			
		2:BEBAN HIDL	-2.443	-1.25E 3	-0.092	0.006	-0.001	2.497			
		3:BEBAN GEM	115.899	379.136	39.134	-2.097	0.219	3.696			
		4:KOMBINASI	-14.485	-5.94E 3	0.174	-0.070	0.001	11.848			
		5:KOMB B. MA	111.415	-3.64E 3	41.303	-2.264	0.231	11.922			
21800	14550	1:BEBAN MATI	-16.435	3.03E 3	0.999	0.936	-0.006	27.198			
		2:BEBAN HIDL	7.590	1.19E 3	-0.272	0.382	0.002	10.793			
		3:BEBAN GEM	-132.203	-436.245	1.984	2.180	-0.019	-8.320			
		4:KOMBINASI	-7.578	5.54E 3	0.764	1.734	-0.005	49.906			
		5:KOMB B. MA	-150.694	3.29E 3	2.919	3.454	-0.025	24.937			
	15197	1:BEBAN MATI	16.435	-2.67E 3	-0.999	-0.936	-0.005	6.393			
		2:BEBAN HIDL	-7.590	-1.19E 3	0.272	-0.382	0.002	3.199			
		3:BEBAN GEM	132.203	436.245	-1.984	-2.180	-0.004	3.187			
		4:KOMBINASI	7.578	-5.11E 3	-0.764	-1.734	-0.004	12.789			
		5:KOMB B. MA	150.694	-2.93E 3	-2.919	-3.454	-0.009	11.658			
21801	14548	1:BEBAN MATI	-8.453	2.94E 3	0.742	1.021	-0.005	27.853			
		2:BEBAN HIDL	9.957	1.19E 3	-0.239	0.531	0.001	11.398			
		3:BEBAN GEM	-249.101	-409.788	25.904	2.218	-0.171	-8.387			
		4:KOMBINASI	5.788	5.43E 3	0.507	2.076	-0.003	51.659			
		5:KOMB B. MA	-264.035	3.22E 3	27.797	3.669	-0.183	25.885			
	15390	1:BEBAN MATI	8.453	-2.58E 3	-0.742	-1.021	-0.004	4.624			
		2:BEBAN HIDL	-9.957	-1.19E 3	0.239	-0.531	0.001	2.625			
		3:BEBAN GEM	249.101	409.788	-25.904	-2.218	-0.134	3.564			
		4:KOMBINASI	-5.788	-5E 3	-0.507	-2.076	-0.003	9.749			
		5:KOMB B. MA	264.035	-2.86E 3	-27.797	-3.669	-0.144	9.942			
21802	14546	1:BEBAN MATI	13.275	1.34E 3	0.002	0.395	-0.000	14.627			
		2:BEBAN HIDL	-8.410	500.786	-0.166	0.179	0.001	7.165			
		3:BEBAN GEM	-218.318	-500.410	26.458	1.365	-0.250	-8.811			
		4:KOMBINASI	2.474	2.41E 3	-0.262	0.761	0.002	29.016			
		5:KOMB B. MA	-221.005	1.12E 3	27.684	1.936	-0.262	9.675			
	15352	1:BEBAN MATI	-13.275	-804.110	-0.002	-0.395	0.000	4.338			
		2:BEBAN HIDL	8.410	-500.786	0.166	-0.179	0.002	1.675			
		3:BEBAN GEM	218.318	500.410	-26.458	-1.365	-0.217	-0.023			
		4:KOMBINASI	-2.474	-1.77E 3	0.262	-0.761	0.003	7.886			
		5:KOMB B. MA	221.005	-579.151	-27.684	-1.936	-0.227	5.320			
21803	14662	1:BEBAN MATI	-21.768	-1.82E 3	0.090	-0.566	-0.001	-43.105			
		2:BEBAN HIDL	12.712	-777.598	0.003	-0.269	0.000	-16.600			
		3:BEBAN GEM	-395.796	-197.687	36.446	-1.211	-0.272	0.049			
		4:KOMBINASI	-5.783	-3.43E 3	0.112	-1.109	-0.001	-78.287			
		5:KOMB B. MA	-429.727	-2.5E 3	38.360	-1.999	-0.286	-53.013			
	15338	1:BEBAN MATI	21.768	2.27E 3	-0.090	0.566	-0.000	12.977			
		2:BEBAN HIDL	-12.712	777.598	-0.003	0.269	-0.000	5.162			
		3:BEBAN GEM	395.796	197.687	-36.446	1.211	-0.264	-2.957			
		4:KOMBINASI	5.783	3.97E 3	-0.112	1.109	-0.001	23.832			
		5:KOMB B. MA	429.727	2.95E 3	-38.360	1.999	-0.278	12.970			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 384	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21804	14544	1:BEBAN MATI	-18.350	4.72E 3	0.007	1.155	-0.000	58.110			
		2:BEBAN HIDL	12.736	1.7E 3	-0.446	0.454	0.003	21.954			
		3:BEBAN GEM	-988.132	-304.916	12.965	2.608	-0.118	-7.581			
		4:KOMBINASI	-1.641	8.38E 3	-0.705	2.112	0.005	104.859			
		5:KOMB B. MA	-1.05E 3	5.42E 3	13.352	4.166	-0.122	63.323			
	15339	1:BEBAN MATI	18.350	-4.27E 3	-0.007	-1.155	0.000	7.959			
		2:BEBAN HIDL	-12.736	-1.7E 3	0.446	-0.454	0.003	3.032			
		3:BEBAN GEM	988.132	304.916	-12.965	-2.608	-0.073	3.095			
		4:KOMBINASI	1.641	-7.84E 3	0.705	-2.112	0.006	14.402			
		5:KOMB B. MA	1.05E 3	-4.97E 3	-13.352	-4.166	-0.075	13.028			
21805	14663	1:BEBAN MATI	-13.947	-1.89E 3	0.027	-0.484	-0.000	-39.073			
		2:BEBAN HIDL	7.918	-810.049	0.104	-0.231	-0.001	-15.147			
		3:BEBAN GEM	-1.36E 3	-196.927	10.569	-1.203	-0.117	0.103			
		4:KOMBINASI	-4.068	-3.57E 3	0.199	-0.950	-0.001	-71.123			
		5:KOMB B. MA	-1.44E 3	-2.59E 3	11.186	-1.885	-0.124	-48.053			
	14891	1:BEBAN MATI	13.947	2.34E 3	-0.027	0.484	-0.000	7.898			
		2:BEBAN HIDL	-7.918	810.049	-0.104	0.231	-0.001	3.231			
		3:BEBAN GEM	1.36E 3	196.927	-10.569	1.203	-0.038	-3.000			
		4:KOMBINASI	4.068	4.11E 3	-0.199	0.950	-0.002	14.648			
		5:KOMB B. MA	1.44E 3	3.04E 3	-11.186	1.885	-0.041	6.687			
21806	14542	1:BEBAN MATI	-13.674	4.52E 3	-0.087	1.162	0.001	56.621			
		2:BEBAN HIDL	6.820	1.63E 3	-0.399	0.464	0.003	21.400			
		3:BEBAN GEM	-1.33E 3	-299.673	-20.447	2.615	0.136	-7.367			
		4:KOMBINASI	-5.498	8.04E 3	-0.742	2.136	0.005	102.186			
		5:KOMB B. MA	-1.41E 3	5.19E 3	-21.796	4.186	0.145	61.727			
	14890	1:BEBAN MATI	13.674	-4.07E 3	0.087	-1.162	0.001	6.623			
		2:BEBAN HIDL	-6.820	-1.63E 3	0.399	-0.464	0.003	2.559			
		3:BEBAN GEM	1.33E 3	299.673	20.447	-2.615	0.165	2.958			
		4:KOMBINASI	5.498	-7.5E 3	0.742	-2.136	0.006	12.043			
		5:KOMB B. MA	1.41E 3	-4.74E 3	21.796	-4.186	0.176	11.265			
21807	14664	1:BEBAN MATI	-18.517	-2.06E 3	-0.039	-0.452	0.000	-42.967			
		2:BEBAN HIDL	11.703	-871.381	0.151	-0.213	-0.001	-16.556			
		3:BEBAN GEM	-845.042	-203.628	-16.869	-1.204	0.128	0.137			
		4:KOMBINASI	-3.496	-3.87E 3	0.195	-0.883	-0.001	-78.051			
		5:KOMB B. MA	-898.789	-2.8E 3	-17.661	-1.844	0.134	-52.757			
	14935	1:BEBAN MATI	18.517	2.51E 3	0.039	0.452	0.000	9.325			
		2:BEBAN HIDL	-11.703	871.381	-0.151	0.213	-0.001	3.738			
		3:BEBAN GEM	845.042	203.628	16.869	1.204	0.120	-3.133			
		4:KOMBINASI	3.496	4.41E 3	-0.195	0.883	-0.002	17.171			
		5:KOMB B. MA	898.789	3.25E 3	17.661	1.844	0.126	8.278			
21808	14540	1:BEBAN MATI	-31.936	4.58E 3	-0.119	1.218	0.001	52.102			
		2:BEBAN HIDL	17.935	1.64E 3	-0.199	0.490	0.001	19.486			
		3:BEBAN GEM	-647.611	-298.912	-38.185	2.671	0.276	-7.365			
		4:KOMBINASI	-9.627	8.11E 3	-0.460	2.247	0.003	93.700			
		5:KOMB B. MA	-701.167	5.25E 3	-40.332	4.317	0.291	56.060			
	14934	1:BEBAN MATI	31.936	-4.13E 3	0.119	-1.218	0.001	11.960			
		2:BEBAN HIDL	-17.935	-1.64E 3	0.199	-0.490	0.001	4.582			
		3:BEBAN GEM	647.611	298.912	38.185	-2.671	0.286	2.968			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 385	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	9.627	-7.57E 3	0.460	-2.247	0.003	21.684			
		5:KOMB B. MA	701.167	-4.8E 3	40.332	-4.317	0.302	17.826			
21809	14538	1:BEBAN MATI	6.637	1.56E 3	0.074	0.591	-0.001	18.800			
		2:BEBAN HIDL	-5.520	421.662	0.053	0.171	-0.000	5.689			
		3:BEBAN GEM	-512.835	-477.363	-23.966	1.385	0.206	-8.224			
		4:KOMBINASI	-0.868	2.55E 3	0.173	0.983	-0.001	31.663			
		5:KOMB B. MA	-535.152	1.31E 3	-25.058	2.148	0.216	13.579			
	14948	1:BEBAN MATI	-6.637	-1.02E 3	-0.074	-0.591	-0.001	3.977			
		2:BEBAN HIDL	5.520	-421.662	-0.053	-0.171	-0.000	1.754			
		3:BEBAN GEM	512.835	477.363	23.966	-1.385	0.217	-0.203			
		4:KOMBINASI	0.868	-1.9E 3	-0.173	-0.983	-0.002	7.579			
		5:KOMB B. MA	535.152	-771.804	25.058	-2.148	0.227	4.817			
21810	14536	1:BEBAN MATI	-4.013	2.83E 3	0.179	0.904	-0.001	26.119			
		2:BEBAN HIDL	3.480	1.18E 3	-0.141	0.459	0.001	11.479			
		3:BEBAN GEM	-311.844	-424.786	-37.663	2.231	0.230	-8.617			
		4:KOMBINASI	0.752	5.28E 3	-0.011	1.819	0.000	49.708			
		5:KOMB B. MA	-329.361	3.09E 3	-39.452	3.522	0.241	23.959			
	14982	1:BEBAN MATI	4.013	-2.47E 3	-0.179	-0.904	-0.001	5.074			
		2:BEBAN HIDL	-3.480	-1.18E 3	0.141	-0.459	0.001	2.352			
		3:BEBAN GEM	311.844	424.786	37.663	-2.231	0.213	3.618			
		4:KOMBINASI	-0.752	-4.85E 3	0.011	-1.819	0.000	9.853			
		5:KOMB B. MA	329.361	-2.73E 3	39.452	-3.522	0.223	10.284			
21811	14591	1:BEBAN MATI	-10.535	3.58E 3	4.720	2.672	-0.029	29.062			
		2:BEBAN HIDL	7.706	516.302	-0.953	1.453	0.006	4.859			
		3:BEBAN GEM	-179.018	-387.781	-19.700	1.749	0.116	-8.152			
		4:KOMBINASI	-0.311	5.12E 3	4.140	5.531	-0.026	42.650			
		5:KOMB B. MA	-193.879	3.48E 3	-16.536	5.380	0.096	23.418			
	15210	1:BEBAN MATI	10.535	-2.22E 3	-4.720	-2.672	-0.026	5.063			
		2:BEBAN HIDL	-7.706	-516.302	0.953	-1.453	0.006	1.216			
		3:BEBAN GEM	179.018	387.781	19.700	-1.749	0.115	3.589			
		4:KOMBINASI	0.311	-3.5E 3	-4.140	-5.531	-0.023	8.022			
		5:KOMB B. MA	193.879	-2.13E 3	16.536	-5.380	0.098	9.561			
21812	14590	1:BEBAN MATI	1.470	3.47E 3	3.175	2.530	-0.018	29.031			
		2:BEBAN HIDL	15.510	507.723	-1.096	1.664	0.007	5.179			
		3:BEBAN GEM	-938.086	-379.560	-12.503	1.751	0.066	-8.563			
		4:KOMBINASI	26.580	4.98E 3	2.057	5.699	-0.010	43.123			
		5:KOMB B. MA	-974.214	3.38E 3	-10.610	5.367	0.056	23.147			
	15402	1:BEBAN MATI	-1.470	-2.12E 3	-3.175	-2.530	-0.019	3.870			
		2:BEBAN HIDL	-15.510	-507.723	1.096	-1.664	0.006	0.796			
		3:BEBAN GEM	938.086	379.560	12.503	-1.751	0.081	4.097			
		4:KOMBINASI	-26.580	-3.36E 3	-2.057	-5.699	-0.014	5.918			
		5:KOMB B. MA	974.214	-2.03E 3	10.610	-5.367	0.069	8.649			
21813	14589	1:BEBAN MATI	-27.685	2.18E 3	-0.409	1.669	0.003	18.856			
		2:BEBAN HIDL	-7.188	211.222	-0.256	1.070	0.002	4.675			
		3:BEBAN GEM	-2.57E 3	-362.175	61.274	0.404	-0.601	-6.636			
		4:KOMBINASI	-44.724	2.96E 3	-0.901	3.715	0.007	30.107			
		5:KOMB B. MA	-2.73E 3	1.93E 3	63.775	2.735	-0.626	14.693			
	15471	1:BEBAN MATI	27.685	-156.679	0.409	-1.669	0.004	1.788			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 386	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	7.188	-211.222	0.256	-1.070	0.003	-0.947			
		3:BEBAN GEM	2.57E 3	362.175	-61.274	-0.404	-0.481	0.243			
		4:KOMBINASI	44.724	-525.970	0.901	-3.715	0.009	0.631			
		5:KOMB B. MA	2.73E 3	96.871	-63.775	-2.735	-0.499	1.475			
21814	14609	1:BEBAN MATI	-22.099	-1.06E 3	0.284	-0.137	-0.002	-45.502			
		2:BEBAN HIDL	16.417	-690.746	0.043	-0.161	-0.000	-16.786			
		3:BEBAN GEM	-1.51E 3	-229.850	27.431	-1.021	-0.195	-0.097			
		4:KOMBINASI	-0.252	-2.38E 3	0.410	-0.423	-0.003	-81.460			
		5:KOMB B. MA	-1.6E 3	-1.72E 3	29.113	-1.306	-0.207	-55.675			
	15137	1:BEBAN MATI	22.099	2.75E 3	-0.284	0.137	-0.002	17.488			
		2:BEBAN HIDL	-16.417	690.746	-0.043	0.161	-0.000	6.626			
		3:BEBAN GEM	1.51E 3	229.850	-27.431	1.021	-0.208	-3.284			
		4:KOMBINASI	0.252	4.4E 3	-0.410	0.423	-0.003	31.586			
		5:KOMB B. MA	1.6E 3	3.4E 3	-29.113	1.306	-0.221	18.015			
21815	14588	1:BEBAN MATI	-20.279	6.29E 3	-1.139	-1.219	0.008	69.755			
		2:BEBAN HIDL	14.717	1.77E 3	0.531	-0.831	-0.004	22.322			
		3:BEBAN GEM	-1.42E 3	-263.386	7.446	2.455	-0.075	-7.128			
		4:KOMBINASI	-0.788	10.4E 3	-0.519	-2.792	0.004	119.422			
		5:KOMB B. MA	-1.51E 3	7.07E 3	6.997	0.860	-0.073	75.664			
	15128	1:BEBAN MATI	20.279	-4.6E 3	1.139	1.219	0.009	10.353			
		2:BEBAN HIDL	-14.717	-1.77E 3	-0.531	0.831	-0.004	3.686			
		3:BEBAN GEM	1.42E 3	263.386	-7.446	-2.455	-0.034	3.254			
		4:KOMBINASI	0.788	-8.35E 3	0.519	2.792	0.004	18.321			
		5:KOMB B. MA	1.51E 3	-5.39E 3	-6.997	-0.860	-0.030	15.981			
21816	14665	1:BEBAN MATI	-25.539	-1.17E 3	0.116	-0.423	-0.000	-40.343			
		2:BEBAN HIDL	7.139	-730.980	-0.106	-0.385	0.001	-14.658			
		3:BEBAN GEM	-1.39E 3	-220.520	18.199	-0.978	-0.139	-0.227			
		4:KOMBINASI	-19.224	-2.58E 3	-0.030	-1.123	0.000	-71.865			
		5:KOMB B. MA	-1.48E 3	-1.84E 3	19.161	-1.680	-0.146	-49.376			
	15091	1:BEBAN MATI	25.539	2.86E 3	-0.116	0.423	-0.001	10.649			
		2:BEBAN HIDL	-7.139	730.980	0.106	0.385	0.001	3.906			
		3:BEBAN GEM	1.39E 3	220.520	-18.199	0.978	-0.128	-3.017			
		4:KOMBINASI	19.224	4.6E 3	0.030	1.123	0.000	19.028			
		5:KOMB B. MA	1.48E 3	3.53E 3	-19.161	1.680	-0.135	9.824			
21817	14587	1:BEBAN MATI	-25.166	6.08E 3	-1.314	-1.308	0.009	68.538			
		2:BEBAN HIDL	5.296	1.68E 3	0.607	-0.869	-0.004	21.894			
		3:BEBAN GEM	-1.41E 3	-251.128	-20.855	2.463	0.140	-6.874			
		4:KOMBINASI	-21.726	9.99E 3	-0.605	-2.961	0.004	117.276			
		5:KOMB B. MA	-1.51E 3	6.83E 3	-22.847	0.756	0.154	74.457			
	15090	1:BEBAN MATI	25.166	-4.39E 3	1.314	1.308	0.010	8.476			
		2:BEBAN HIDL	-5.296	-1.68E 3	-0.607	0.869	-0.005	2.880			
		3:BEBAN GEM	1.41E 3	251.128	20.855	-2.463	0.167	3.180			
		4:KOMBINASI	21.726	-7.96E 3	0.605	2.961	0.005	14.780			
		5:KOMB B. MA	1.51E 3	-5.14E 3	22.847	-0.756	0.182	13.543			
21818	14607	1:BEBAN MATI	-20.821	-1.37E 3	-0.109	-0.605	0.001	-45.209			
		2:BEBAN HIDL	13.946	-808.601	-0.082	-0.484	0.000	-16.645			
		3:BEBAN GEM	-1.33E 3	-221.326	-7.973	-0.981	0.063	-0.079			
		4:KOMBINASI	-2.671	-2.94E 3	-0.262	-1.501	0.002	-80.882			



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Job No 1	Sheet No 387	Rev
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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.41E 3	-2.09E 3	-8.530	-1.926	0.067	-55.279			
	15079	1:BEBAN MATI	20.821	3.06E 3	0.109	0.605	0.000	12.627			
		2:BEBAN HIDL	-13.946	808.601	0.082	0.484	0.001	4.750			
		3:BEBAN GEM	1.33E 3	221.326	7.973	0.981	0.054	-3.176			
		4:KOMBINASI	2.671	4.96E 3	0.262	1.501	0.002	22.753			
		5:KOMB B. MA	1.41E 3	3.78E 3	8.530	1.926	0.058	12.142			
21819	14586	1:BEBAN MATI	-27.494	6.22E 3	-1.151	-2.146	0.007	63.339			
		2:BEBAN HIDL	25.259	1.76E 3	-0.065	-1.413	0.001	20.096			
		3:BEBAN GEM	-1.88E 3	-240.019	-28.565	2.560	0.215	-6.502			
		4:KOMBINASI	7.422	10.3E 3	-1.485	-4.836	0.010	108.161			
		5:KOMB B. MA	-1.99E 3	7.03E 3	-31.184	-0.307	0.233	68.570			
	15078	1:BEBAN MATI	27.494	-4.53E 3	1.151	2.146	0.010	15.759			
		2:BEBAN HIDL	-25.259	-1.76E 3	0.065	1.413	0.000	5.794			
		3:BEBAN GEM	1.88E 3	240.019	28.565	-2.560	0.205	2.971			
		4:KOMBINASI	-7.422	-8.26E 3	1.485	4.836	0.012	28.181			
		5:KOMB B. MA	1.99E 3	-5.34E 3	31.184	0.307	0.226	22.355			
21820	14585	1:BEBAN MATI	-41.222	2.47E 3	1.942	0.682	-0.017	23.955			
		2:BEBAN HIDL	-8.273	184.048	-0.089	0.218	0.000	4.028			
		3:BEBAN GEM	-1.43E 3	-638.826	-20.713	1.732	0.150	-11.193			
		4:KOMBINASI	-62.703	3.26E 3	2.188	1.167	-0.020	35.191			
		5:KOMB B. MA	-1.55E 3	1.91E 3	-19.860	2.631	0.141	14.620			
	15067	1:BEBAN MATI	41.222	-443.807	-1.942	-0.682	-0.017	1.757			
		2:BEBAN HIDL	8.273	-184.048	0.089	-0.218	0.001	-0.779			
		3:BEBAN GEM	1.43E 3	638.826	20.713	-1.732	0.215	-0.084			
		4:KOMBINASI	62.703	-827.045	-2.188	-1.167	-0.019	0.861			
		5:KOMB B. MA	1.55E 3	116.532	19.860	-2.631	0.210	1.201			
21821	14584	1:BEBAN MATI	-3.377	3.44E 3	4.254	2.307	-0.025	28.420			
		2:BEBAN HIDL	10.368	491.772	-1.006	1.509	0.006	4.946			
		3:BEBAN GEM	-432.994	-370.909	-18.769	1.787	0.116	-8.402			
		4:KOMBINASI	12.536	4.91E 3	3.495	5.183	-0.021	42.018			
		5:KOMB B. MA	-451.800	3.34E 3	-16.057	5.089	0.100	22.565			
	14996	1:BEBAN MATI	3.377	-2.09E 3	-4.254	-2.307	-0.025	4.082			
		2:BEBAN HIDL	-10.368	-491.772	1.006	-1.509	0.006	0.841			
		3:BEBAN GEM	432.994	370.909	18.769	-1.787	0.105	4.037			
		4:KOMBINASI	-12.536	-3.29E 3	-3.495	-5.183	-0.020	6.244			
		5:KOMB B. MA	451.800	-1.99E 3	16.057	-5.089	0.089	8.826			
21822	14594	1:BEBAN MATI	-47.087	2.32E 3	5.388	6.791	-0.039	28.161			
		2:BEBAN HIDL	11.222	817.213	-1.767	3.601	0.013	11.174			
		3:BEBAN GEM	-1.14E 3	-280.391	-4.260	1.769	0.012	-7.459			
		4:KOMBINASI	-38.549	4.09E 3	3.638	13.912	-0.026	51.672			
		5:KOMB B. MA	-1.24E 3	2.52E 3	-0.145	10.810	-0.019	27.034			
	15111	1:BEBAN MATI	47.087	-1.87E 3	-5.388	-6.791	-0.040	2.684			
		2:BEBAN HIDL	-11.222	-817.213	1.767	-3.601	0.013	0.847			
		3:BEBAN GEM	1.14E 3	280.391	4.260	-1.769	0.051	3.334			
		4:KOMBINASI	38.549	-3.55E 3	-3.638	-13.912	-0.027	4.576			
		5:KOMB B. MA	1.24E 3	-2.07E 3	0.145	-10.810	0.021	6.693			
21823	14652	1:BEBAN MATI	2.296	1.3E 3	-0.637	0.133	0.004	12.845			
		2:BEBAN HIDL	-0.072	560.715	0.036	0.038	-0.000	5.554			



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Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	137.811	3.019	-2.175	-0.046	0.015	-0.143			
		4:KOMBINASI	2.640	2.46E 3	-0.707	0.219	0.005	24.301			
		5:KOMB B. MA	146.955	1.64E 3	-2.899	0.107	0.020	16.027			
	15161	1:BEBAN MATI	-2.296	-1.07E 3	0.637	-0.133	0.003	1.120			
		2:BEBAN HIDL	0.072	-560.715	-0.036	-0.038	-0.000	1.044			
		3:BEBAN GEM	-137.811	-3.019	2.175	0.046	0.010	0.179			
		4:KOMBINASI	-2.640	-2.18E 3	0.707	-0.219	0.004	3.015			
		5:KOMB B. MA	-146.955	-1.41E 3	2.899	-0.107	0.014	1.935			
21824	14647	1:BEBAN MATI	-16.998	979.912	-0.520	0.098	0.004	5.523			
		2:BEBAN HIDL	-4.011	421.702	-0.066	-0.002	0.000	2.759			
		3:BEBAN GEM	307.928	8.003	-5.235	-0.005	0.042	-0.176			
		4:KOMBINASI	-26.815	1.85E 3	-0.729	0.115	0.005	11.042			
		5:KOMB B. MA	303.919	1.24E 3	-6.056	0.091	0.048	6.993			
	15370	1:BEBAN MATI	16.998	-749.260	0.520	-0.098	0.003	4.652			
		2:BEBAN HIDL	4.011	-421.702	0.066	0.002	0.000	2.203			
		3:BEBAN GEM	-307.928	-8.003	5.235	0.005	0.020	0.271			
		4:KOMBINASI	26.815	-1.57E 3	0.729	-0.115	0.004	9.107			
		5:KOMB B. MA	-303.919	-1.01E 3	6.056	-0.091	0.024	6.258			
21825	14598	1:BEBAN MATI	-70.840	1.71E 3	-1.483	0.311	0.010	22.542			
		2:BEBAN HIDL	-1.205	645.552	-0.117	0.091	0.001	8.444			
		3:BEBAN GEM	797.855	-149.270	-33.776	1.754	0.231	-3.460			
		4:KOMBINASI	-86.936	3.09E 3	-1.967	0.520	0.014	40.560			
		5:KOMB B. MA	766.185	1.94E 3	-37.018	2.207	0.253	23.975			
	15191	1:BEBAN MATI	70.840	-1.48E 3	1.483	-0.311	0.007	-3.766			
		2:BEBAN HIDL	1.205	-645.552	0.117	-0.091	0.001	-0.847			
		3:BEBAN GEM	-797.855	149.270	33.776	-1.754	0.166	1.704			
		4:KOMBINASI	86.936	-2.81E 3	1.967	-0.520	0.010	-5.874			
		5:KOMB B. MA	-766.185	-1.71E 3	37.018	-2.207	0.182	-2.485			
21826	14610	1:BEBAN MATI	59.513	-520.225	0.455	-1.519	-0.004	-19.591			
		2:BEBAN HIDL	-2.014	-252.479	-0.032	-0.045	0.000	-3.743			
		3:BEBAN GEM	1.71E 3	-96.966	3.834	-0.393	-0.041	0.500			
		4:KOMBINASI	68.193	-1.03E 3	0.495	-1.894	-0.004	-29.497			
		5:KOMB B. MA	1.86E 3	-773.526	4.462	-1.959	-0.047	-21.311			
	15296	1:BEBAN MATI	-59.513	2.05E 3	-0.455	1.519	-0.003	0.716			
		2:BEBAN HIDL	2.014	252.479	0.032	0.045	0.000	0.029			
		3:BEBAN GEM	-1.71E 3	96.966	-3.834	0.393	-0.015	-1.926			
		4:KOMBINASI	-68.193	2.86E 3	-0.495	1.894	-0.003	0.905			
		5:KOMB B. MA	-1.86E 3	2.3E 3	-4.462	1.959	-0.019	-1.289			
21827	14638	1:BEBAN MATI	52.612	3.07E 3	1.252	2.708	-0.009	23.162			
		2:BEBAN HIDL	5.997	455.767	0.267	0.053	-0.002	6.001			
		3:BEBAN GEM	2.12E 3	-139.648	19.621	-0.526	-0.192	-1.976			
		4:KOMBINASI	72.729	4.41E 3	1.930	3.333	-0.014	37.396			
		5:KOMB B. MA	2.29E 3	3.2E 3	22.015	2.187	-0.212	24.688			
	15300	1:BEBAN MATI	-52.612	-1.54E 3	-1.252	-2.708	-0.009	10.757			
		2:BEBAN HIDL	-5.997	-455.767	-0.267	-0.053	-0.002	0.703			
		3:BEBAN GEM	-2.12E 3	139.648	-19.621	0.526	-0.097	-0.078			
		4:KOMBINASI	-72.729	-2.58E 3	-1.930	-3.333	-0.014	14.034			
		5:KOMB B. MA	-2.29E 3	-1.67E 3	-22.015	-2.187	-0.112	11.097			



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Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21828	14666	1:BEBAN MATI	31.403	-303.529	0.133	-0.198	-0.001	-9.733			
		2:BEBAN HIDL	5.412	-175.201	0.044	-0.002	-0.000	-5.657			
		3:BEBAN GEM	1.08E 3	-14.803	2.593	0.342	-0.017	0.061			
		4:KOMBINASI	46.342	-644.557	0.230	-0.241	-0.001	-20.731			
		5:KOMB B. MA	1.16E 3	-424.193	2.882	0.161	-0.019	-13.063			
14738	14738	1:BEBAN MATI	-31.403	591.844	-0.133	0.198	-0.001	3.148			
		2:BEBAN HIDL	-5.412	175.201	-0.044	0.002	-0.000	3.080			
		3:BEBAN GEM	-1.08E 3	14.803	-2.593	-0.342	-0.021	-0.279			
		4:KOMBINASI	-46.342	990.534	-0.230	0.241	-0.002	8.705			
		5:KOMB B. MA	-1.16E 3	712.507	-2.882	-0.161	-0.024	4.703			
21829	14633	1:BEBAN MATI	33.877	1.41E 3	-0.264	0.472	0.002	16.578			
		2:BEBAN HIDL	5.312	541.691	-0.074	0.107	0.000	5.514			
		3:BEBAN GEM	1.35E 3	14.734	-8.156	-0.252	0.079	-0.123			
		4:KOMBINASI	49.152	2.55E 3	-0.434	0.737	0.003	28.717			
		5:KOMB B. MA	1.45E 3	1.75E 3	-8.872	0.271	0.085	19.758			
14737	14737	1:BEBAN MATI	-33.877	-1.12E 3	0.264	-0.472	0.002	1.977			
		2:BEBAN HIDL	-5.312	-541.691	0.074	-0.107	0.001	2.454			
		3:BEBAN GEM	-1.35E 3	-14.734	8.156	0.252	0.041	0.340			
		4:KOMBINASI	-49.152	-2.21E 3	0.434	-0.737	0.004	6.298			
		5:KOMB B. MA	-1.45E 3	-1.46E 3	8.872	-0.271	0.045	3.806			
21830	14608	1:BEBAN MATI	55.226	198.106	-0.479	-0.202	0.002	-18.572			
		2:BEBAN HIDL	2.802	-178.331	-0.091	0.150	0.001	-3.571			
		3:BEBAN GEM	1.75E 3	-24.204	-1.431	0.442	-0.011	0.148			
		4:KOMBINASI	70.754	-47.603	-0.721	-0.003	0.004	-28.000			
		5:KOMB B. MA	1.89E 3	65.693	-2.037	0.352	-0.008	-20.559			
14896	14896	1:BEBAN MATI	-55.226	1.33E 3	0.479	0.202	0.005	10.264			
		2:BEBAN HIDL	-2.802	178.331	0.091	-0.150	0.001	0.948			
		3:BEBAN GEM	-1.75E 3	24.204	1.431	-0.442	0.032	-0.504			
		4:KOMBINASI	-70.754	1.88E 3	0.721	0.003	0.007	13.833			
		5:KOMB B. MA	-1.89E 3	1.46E 3	2.037	-0.352	0.038	10.303			
21831	14597	1:BEBAN MATI	61.066	4E 3	-1.057	0.947	0.007	46.722			
		2:BEBAN HIDL	-7.017	564.657	0.020	-0.387	0.000	8.615			
		3:BEBAN GEM	1.16E 3	-80.581	-18.842	1.249	0.098	-2.949			
		4:KOMBINASI	62.052	5.7E 3	-1.235	0.517	0.009	69.850			
		5:KOMB B. MA	1.28E 3	4.25E 3	-20.829	2.026	0.109	48.795			
14892	14892	1:BEBAN MATI	-61.066	-2.47E 3	1.057	-0.947	0.009	0.881			
		2:BEBAN HIDL	7.017	-564.657	-0.020	0.387	-0.001	-0.309			
		3:BEBAN GEM	-1.16E 3	80.581	18.842	-1.249	0.180	1.763			
		4:KOMBINASI	-62.052	-3.87E 3	1.235	-0.517	0.009	0.563			
		5:KOMB B. MA	-1.28E 3	-2.73E 3	20.829	-2.026	0.197	2.547			
21832	14624	1:BEBAN MATI	-24.848	547.553	0.255	-0.039	-0.001	3.595			
		2:BEBAN HIDL	-4.086	248.874	0.110	0.015	-0.001	1.904			
		3:BEBAN GEM	140.031	-63.800	-8.061	-0.420	0.065	-0.520			
		4:KOMBINASI	-36.355	1.06E 3	0.481	-0.023	-0.002	7.360			
		5:KOMB B. MA	119.733	629.887	-8.144	-0.471	0.067	4.191			
14728	14728	1:BEBAN MATI	24.848	-316.901	-0.255	0.039	-0.002	1.491			
		2:BEBAN HIDL	4.086	-248.874	-0.110	-0.015	-0.001	1.025			
		3:BEBAN GEM	-140.031	63.800	8.061	0.420	0.030	-0.231			



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Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	36.355	-778.480	-0.481	0.023	-0.003	3.429			
		5:KOMB B. MA	-119.733	-399.236	8.144	0.471	0.029	1.864			
21833	14619	1:BEBAN MATI	0.533	1.27E 3	0.373	0.137	-0.002	12.667			
		2:BEBAN HIDL	-0.140	534.846	0.092	0.035	-0.001	5.620			
		3:BEBAN GEM	110.570	8.176	-0.208	-0.055	0.005	-0.334			
		4:KOMBINASI	0.415	2.38E 3	0.595	0.221	-0.003	24.193			
		5:KOMB B. MA	116.547	1.6E 3	0.210	0.100	0.003	15.688			
	14964	1:BEBAN MATI	-0.533	-1.04E 3	-0.373	-0.137	-0.002	0.898			
		2:BEBAN HIDL	0.140	-534.846	-0.092	-0.035	-0.000	0.674			
		3:BEBAN GEM	-110.570	-8.176	0.208	0.055	-0.002	0.431			
		4:KOMBINASI	-0.415	-2.1E 3	-0.595	-0.221	-0.004	2.155			
		5:KOMB B. MA	-116.547	-1.37E 3	-0.210	-0.100	-0.005	1.754			
21834	14650	1:BEBAN MATI	6.553	1.35E 3	0.032	0.003	-0.000	12.731			
		2:BEBAN HIDL	2.306	580.721	-0.034	0.001	0.000	5.585			
		3:BEBAN GEM	122.509	-0.553	7.189	-0.055	-0.042	-0.186			
		4:KOMBINASI	11.553	2.55E 3	-0.016	0.005	0.000	24.214			
		5:KOMB B. MA	136.571	1.7E 3	7.560	-0.055	-0.044	15.887			
	15259	1:BEBAN MATI	-6.553	-1.12E 3	-0.032	-0.003	-0.000	1.827			
		2:BEBAN HIDL	-2.306	-580.721	0.034	-0.001	0.000	1.249			
		3:BEBAN GEM	-122.509	0.553	-7.189	0.055	-0.042	0.179			
		4:KOMBINASI	-11.553	-2.28E 3	0.016	-0.005	0.000	4.190			
		5:KOMB B. MA	-136.571	-1.47E 3	-7.560	0.055	-0.045	2.765			
21835	14645	1:BEBAN MATI	6.753	1.24E 3	0.300	0.040	-0.002	11.414			
		2:BEBAN HIDL	0.068	503.489	-0.083	0.021	0.000	4.462			
		3:BEBAN GEM	564.130	-3.242	22.956	-0.076	-0.132	-0.442			
		4:KOMBINASI	8.212	2.3E 3	0.228	0.081	-0.002	20.837			
		5:KOMB B. MA	599.130	1.54E 3	24.355	-0.028	-0.141	13.628			
	15435	1:BEBAN MATI	-6.753	-1.01E 3	-0.300	-0.040	-0.002	1.859			
		2:BEBAN HIDL	-0.068	-503.489	0.083	-0.021	0.001	1.463			
		3:BEBAN GEM	-564.130	3.242	-22.956	0.076	-0.138	0.403			
		4:KOMBINASI	-8.212	-2.02E 3	-0.228	-0.081	-0.001	4.571			
		5:KOMB B. MA	-599.130	-1.31E 3	-24.355	0.028	-0.146	3.160			
21836	14641	1:BEBAN MATI	1.804	560.015	0.111	-0.004	-0.001	8.223			
		2:BEBAN HIDL	1.799	253.148	-0.056	-0.004	0.001	4.393			
		3:BEBAN GEM	419.485	0.241	14.546	0.072	-0.133	-0.105			
		4:KOMBINASI	5.043	1.08E 3	0.044	-0.011	-0.001	16.897			
		5:KOMB B. MA	443.342	712.157	15.350	0.069	-0.140	10.749			
	15343	1:BEBAN MATI	-1.804	-214.037	-0.111	0.004	-0.001	-1.392			
		2:BEBAN HIDL	-1.799	-253.148	0.056	0.004	0.000	0.076			
		3:BEBAN GEM	-419.485	-0.241	-14.546	-0.072	-0.124	0.109			
		4:KOMBINASI	-5.043	-661.883	-0.044	0.011	-0.000	-1.549			
		5:KOMB B. MA	-443.342	-366.180	-15.350	-0.069	-0.130	-1.232			
21837	14667	1:BEBAN MATI	3.727	-167.722	0.012	-0.024	0.000	-11.750			
		2:BEBAN HIDL	3.852	-123.414	-0.081	-0.012	0.001	-4.736			
		3:BEBAN GEM	563.836	-27.908	18.044	0.326	-0.135	0.058			
		4:KOMBINASI	10.635	-398.729	-0.115	-0.048	0.001	-21.678			
		5:KOMB B. MA	598.065	-271.074	18.909	0.311	-0.141	-14.531			
	15320	1:BEBAN MATI	-3.727	456.037	-0.012	0.024	-0.000	7.163			



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Job No 1	Sheet No 391	Rev
Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-3.852	123.414	0.081	0.012	0.001	2.921			
		3:BEBAN GEM	-563.836	27.908	-18.044	-0.326	-0.131	-0.469			
		4:KOMBINASI	-10.635	744.707	0.115	0.048	0.001	13.268			
		5:KOMB B. MA	-598.065	559.388	-18.909	-0.311	-0.137	8.423			
21838	14636	1:BEBAN MATI	1.854	1.39E 3	0.011	-0.009	-0.000	16.003			
		2:BEBAN HIDL	5.544	550.074	-0.057	-0.003	0.000	6.862			
		3:BEBAN GEM	723.512	9.063	37.601	-0.251	-0.284	-0.352			
		4:KOMBINASI	11.096	2.54E 3	-0.078	-0.015	0.000	30.183			
		5:KOMB B. MA	764.868	1.73E 3	39.458	-0.274	-0.298	19.751			
	15321	1:BEBAN MATI	-1.854	-1.1E 3	-0.011	0.009	0.000	2.280			
		2:BEBAN HIDL	-5.544	-550.074	0.057	0.003	0.000	1.230			
		3:BEBAN GEM	-723.512	-9.063	-37.601	0.251	-0.269	0.485			
		4:KOMBINASI	-11.096	-2.2E 3	0.078	0.015	0.001	4.703			
		5:KOMB B. MA	-764.868	-1.44E 3	-39.458	0.274	-0.282	3.527			
21839	14668	1:BEBAN MATI	0.398	-318.332	0.005	0.006	-0.000	-9.475			
		2:BEBAN HIDL	4.902	-170.973	-0.012	0.001	0.000	-4.018			
		3:BEBAN GEM	1.55E 3	-23.076	113.876	0.321	-0.923	0.069			
		4:KOMBINASI	8.320	-655.555	-0.014	0.009	0.000	-17.799			
		5:KOMB B. MA	1.63E 3	-445.146	119.567	0.344	-0.969	-11.814			
	14870	1:BEBAN MATI	-0.398	606.647	-0.005	-0.006	0.000	2.671			
		2:BEBAN HIDL	-4.902	170.973	0.012	-0.001	0.000	1.503			
		3:BEBAN GEM	-1.55E 3	23.076	-113.876	-0.321	-0.752	-0.408			
		4:KOMBINASI	-8.320	1E 3	0.014	-0.009	0.000	5.611			
		5:KOMB B. MA	-1.63E 3	733.460	-119.567	-0.344	-0.789	3.145			
21840	14631	1:BEBAN MATI	0.627	1.32E 3	-0.002	-0.005	-0.000	15.940			
		2:BEBAN HIDL	5.176	528.930	0.031	-0.002	-0.000	6.845			
		3:BEBAN GEM	-1.07E 3	11.239	-111.787	-0.251	0.848	-0.262			
		4:KOMBINASI	9.034	2.43E 3	0.047	-0.009	-0.000	30.080			
		5:KOMB B. MA	-1.12E 3	1.65E 3	-117.360	-0.270	0.890	19.772			
	14869	1:BEBAN MATI	-0.627	-1.03E 3	0.002	0.005	0.000	1.375			
		2:BEBAN HIDL	-5.176	-528.930	-0.031	0.002	-0.000	0.935			
		3:BEBAN GEM	1.07E 3	-11.239	111.787	0.251	0.797	0.428			
		4:KOMBINASI	-9.034	-2.09E 3	-0.047	0.009	-0.000	3.147			
		5:KOMB B. MA	1.12E 3	-1.36E 3	117.360	0.270	0.837	2.386			
21841	14669	1:BEBAN MATI	3.633	-399.064	0.004	0.022	-0.000	-11.648			
		2:BEBAN HIDL	5.591	-196.086	0.074	0.009	-0.001	-4.709			
		3:BEBAN GEM	-490.167	-23.702	-37.537	0.323	0.264	0.128			
		4:KOMBINASI	13.305	-792.614	0.123	0.042	-0.001	-21.512			
		5:KOMB B. MA	-507.687	-541.602	-39.365	0.368	0.277	-14.339			
	14917	1:BEBAN MATI	-3.633	687.378	-0.004	-0.022	-0.000	3.658			
		2:BEBAN HIDL	-5.591	196.086	-0.074	-0.009	-0.001	1.824			
		3:BEBAN GEM	490.167	23.702	37.537	-0.323	0.288	-0.476			
		4:KOMBINASI	-13.305	1.14E 3	-0.123	-0.042	-0.001	7.308			
		5:KOMB B. MA	507.687	829.916	39.365	-0.368	0.302	4.252			
21842	14627	1:BEBAN MATI	2.365	1.18E 3	-0.076	0.032	0.001	9.150			
		2:BEBAN HIDL	2.599	486.867	0.089	0.017	-0.001	4.724			
		3:BEBAN GEM	-327.383	0.740	-25.773	-0.285	0.186	-0.431			
		4:KOMBINASI	6.996	2.2E 3	0.051	0.066	-0.000	18.539			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-339.828	1.47E 3	-27.085	-0.257	0.195	11.532			
	14916	1:BEBAN MATI	-2.365	-892.319	0.076	-0.032	0.001	6.096			
		2:BEBAN HIDL	-2.599	-486.867	-0.089	-0.017	-0.001	2.438			
		3:BEBAN GEM	327.383	-0.740	25.773	0.285	0.194	0.442			
		4:KOMBINASI	-6.996	-1.85E 3	-0.051	-0.066	-0.000	11.216			
		5:KOMB B. MA	339.828	-1.19E 3	27.085	0.257	0.203	8.023			
21843	14622	1:BEBAN MATI	3.542	731.153	-0.123	-0.004	0.001	11.323			
		2:BEBAN HIDL	0.891	235.889	0.067	-0.003	-0.001	4.030			
		3:BEBAN GEM	-56.797	-1.686	-18.921	0.047	0.171	-0.073			
		4:KOMBINASI	5.676	1.25E 3	-0.040	-0.010	0.000	20.036			
		5:KOMB B. MA	-55.560	870.916	-19.950	0.043	0.180	13.665			
	14939	1:BEBAN MATI	-3.542	-385.175	0.123	0.004	0.001	-1.471			
		2:BEBAN HIDL	-0.891	-235.889	-0.067	0.003	-0.001	0.134			
		3:BEBAN GEM	56.797	1.686	18.921	-0.047	0.163	0.043			
		4:KOMBINASI	-5.676	-839.633	0.040	0.010	0.001	-1.550			
		5:KOMB B. MA	55.560	-524.939	19.950	-0.043	0.172	-1.345			
21844	14617	1:BEBAN MATI	8.124	1.25E 3	-0.128	-0.010	0.001	12.478			
		2:BEBAN HIDL	2.694	536.125	0.021	-0.004	-0.000	5.604			
		3:BEBAN GEM	-58.032	1.888	-11.341	-0.061	0.073	-0.330			
		4:KOMBINASI	14.059	2.36E 3	-0.120	-0.017	0.001	23.940			
		5:KOMB B. MA	-51.194	1.58E 3	-12.024	-0.075	0.077	15.494			
	15029	1:BEBAN MATI	-8.124	-1.02E 3	0.128	0.010	0.001	0.918			
		2:BEBAN HIDL	-2.694	-536.125	-0.021	0.004	-0.000	0.705			
		3:BEBAN GEM	58.032	-1.888	11.341	0.061	0.061	0.352			
		4:KOMBINASI	-14.059	-2.09E 3	0.120	0.017	0.001	2.230			
		5:KOMB B. MA	51.194	-1.35E 3	12.024	0.075	0.065	1.710			
21845	14649	1:BEBAN MATI	0.728	1.34E 3	0.076	0.030	-0.001	12.639			
		2:BEBAN HIDL	1.657	582.402	-0.043	-0.010	0.000	5.579			
		3:BEBAN GEM	66.015	0.067	12.905	-0.058	-0.077	-0.175			
		4:KOMBINASI	3.525	2.53E 3	0.022	0.019	-0.000	24.093			
		5:KOMB B. MA	71.038	1.69E 3	13.600	-0.038	-0.081	15.802			
	15285	1:BEBAN MATI	-0.728	-1.11E 3	-0.076	-0.030	-0.000	1.724			
		2:BEBAN HIDL	-1.657	-582.402	0.043	0.010	0.000	1.274			
		3:BEBAN GEM	-66.015	-0.067	-12.905	0.058	-0.075	0.176			
		4:KOMBINASI	-3.525	-2.26E 3	-0.022	-0.019	-0.000	4.108			
		5:KOMB B. MA	-71.038	-1.45E 3	-13.600	0.038	-0.079	2.674			
21846	14644	1:BEBAN MATI	-0.598	1.23E 3	0.117	0.067	-0.001	11.395			
		2:BEBAN HIDL	2.537	506.408	-0.089	-0.012	0.001	4.527			
		3:BEBAN GEM	202.253	-2.236	29.610	-0.075	-0.179	-0.431			
		4:KOMBINASI	3.341	2.29E 3	-0.003	0.062	-0.000	20.917			
		5:KOMB B. MA	213.290	1.53E 3	31.154	-0.018	-0.189	13.658			
	15457	1:BEBAN MATI	0.598	-999.595	-0.117	-0.067	-0.001	1.725			
		2:BEBAN HIDL	-2.537	-506.408	0.089	0.012	0.001	1.433			
		3:BEBAN GEM	-202.253	2.236	-29.610	0.075	-0.169	0.405			
		4:KOMBINASI	-3.341	-2.01E 3	0.003	-0.062	0.000	4.363			
		5:KOMB B. MA	-213.290	-1.3E 3	-31.154	0.018	-0.178	3.010			
21847	14640	1:BEBAN MATI	-2.426	556.002	0.071	-0.074	-0.001	7.626			
		2:BEBAN HIDL	2.748	256.302	-0.037	-0.013	0.000	4.414			



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Job No 1	Sheet No 393	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	201.901	-0.677	16.841	0.073	-0.152	-0.109			
		4:KOMBINASI	1.485	1.08E 3	0.026	-0.110	-0.000	16.214			
		5:KOMB B. MA	211.218	709.072	17.732	-0.006	-0.160	10.160			
	15349	1:BEBAN MATI	2.426	-210.024	-0.071	0.074	-0.001	-0.865			
		2:BEBAN HIDL	-2.748	-256.302	0.037	0.013	0.000	0.110			
		3:BEBAN GEM	-201.901	0.677	-16.841	-0.073	-0.145	0.097			
		4:KOMBINASI	-1.485	-662.112	-0.026	0.110	-0.000	-0.862			
		5:KOMB B. MA	-211.218	-363.094	-17.732	0.006	-0.153	-0.697			
21848	14670	1:BEBAN MATI	-4.351	-114.566	0.069	-0.190	-0.001	-10.546			
		2:BEBAN HIDL	4.353	-129.245	-0.029	-0.014	0.000	-4.815			
		3:BEBAN GEM	190.814	-26.880	25.517	0.325	-0.193	0.064			
		4:KOMBINASI	1.745	-344.272	0.036	-0.250	-0.000	-20.360			
		5:KOMB B. MA	198.616	-220.337	26.844	0.143	-0.203	-13.369			
	15332	1:BEBAN MATI	4.351	402.880	-0.069	0.190	-0.000	6.741			
		2:BEBAN HIDL	-4.353	129.245	0.029	0.014	0.000	2.914			
		3:BEBAN GEM	-190.814	26.880	-25.517	-0.325	-0.183	-0.459			
		4:KOMBINASI	-1.745	690.249	-0.036	0.250	-0.000	12.751			
		5:KOMB B. MA	-198.616	508.651	-26.844	-0.143	-0.192	8.007			
21849	14635	1:BEBAN MATI	-5.559	1.31E 3	0.000	0.165	-0.000	14.957			
		2:BEBAN HIDL	5.278	553.740	-0.031	0.004	0.000	6.929			
		3:BEBAN GEM	-130.445	8.102	23.775	-0.246	-0.170	-0.374			
		4:KOMBINASI	1.774	2.46E 3	-0.049	0.204	0.000	29.035			
		5:KOMB B. MA	-139.360	1.65E 3	24.946	-0.091	-0.178	18.721			
	15333	1:BEBAN MATI	5.559	-1.02E 3	-0.000	-0.165	0.000	2.231			
		2:BEBAN HIDL	-5.278	-553.740	0.031	-0.004	0.000	1.216			
		3:BEBAN GEM	130.445	-8.102	-23.775	0.246	-0.180	0.493			
		4:KOMBINASI	-1.774	-2.12E 3	0.049	-0.204	0.000	4.623			
		5:KOMB B. MA	139.360	-1.37E 3	-24.946	0.091	-0.189	3.478			
21850	14671	1:BEBAN MATI	-5.733	-254.835	-0.002	-0.157	-0.000	-8.517			
		2:BEBAN HIDL	5.882	-175.137	-0.004	-0.009	0.000	-4.099			
		3:BEBAN GEM	-960.497	-21.673	6.658	0.318	-0.087	0.098			
		4:KOMBINASI	2.532	-586.021	-0.008	-0.203	-0.000	-16.779			
		5:KOMB B. MA	-1.01E 3	-382.673	6.987	0.171	-0.091	-10.874			
	14884	1:BEBAN MATI	5.733	543.149	0.002	0.157	0.000	2.648			
		2:BEBAN HIDL	-5.882	175.137	0.004	0.009	0.000	1.523			
		3:BEBAN GEM	960.497	21.673	-6.658	-0.318	-0.011	-0.417			
		4:KOMBINASI	-2.532	931.998	0.008	0.203	0.000	5.614			
		5:KOMB B. MA	1.01E 3	670.988	-6.987	-0.171	-0.012	3.124			
21851	14630	1:BEBAN MATI	-5.675	1.26E 3	-0.000	0.156	-0.000	14.897			
		2:BEBAN HIDL	5.451	533.548	0.009	0.004	-0.000	6.911			
		3:BEBAN GEM	-715.479	9.744	-15.692	-0.248	0.119	-0.286			
		4:KOMBINASI	1.911	2.36E 3	0.014	0.193	-0.000	28.933			
		5:KOMB B. MA	-753.658	1.59E 3	-16.471	-0.102	0.125	18.743			
	14883	1:BEBAN MATI	5.675	-966.867	0.000	-0.156	0.000	1.446			
		2:BEBAN HIDL	-5.451	-533.548	-0.009	-0.004	-0.000	0.938			
		3:BEBAN GEM	715.479	-9.744	15.692	0.248	0.112	0.429			
		4:KOMBINASI	-1.911	-2.01E 3	-0.014	-0.193	-0.000	3.236			
		5:KOMB B. MA	753.658	-1.3E 3	16.471	0.102	0.117	2.459			



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By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21852	14672	1:BEBAN MATI	-5.296	-327.804	-0.023	-0.159	0.000	-10.442			
		2:BEBAN HIDL	5.219	-200.745	0.030	-0.008	-0.000	-4.776			
		3:BEBAN GEM	-305.965	-23.532	-17.991	0.317	0.132	0.134			
		4:KOMBINASI	1.996	-714.557	0.021	-0.203	-0.000	-20.172			
		5:KOMB B. MA	-323.428	-472.959	-18.896	0.170	0.138	-13.167			
14929	14929	1:BEBAN MATI	5.296	616.118	0.023	0.159	0.000	3.499			
		2:BEBAN HIDL	-5.219	200.745	-0.030	0.008	-0.000	1.823			
		3:BEBAN GEM	305.965	23.532	17.991	-0.317	0.133	-0.480			
		4:KOMBINASI	-1.996	1.06E 3	-0.021	0.203	-0.000	7.116			
		5:KOMB B. MA	323.428	761.274	18.896	-0.170	0.140	4.089			
21853	14626	1:BEBAN MATI	-3.655	1.12E 3	-0.101	0.243	0.001	8.621			
		2:BEBAN HIDL	3.404	491.336	0.031	0.015	-0.000	4.836			
		3:BEBAN GEM	-221.411	-0.231	-16.043	-0.281	0.119	-0.471			
		4:KOMBINASI	1.060	2.13E 3	-0.072	0.316	0.001	18.083			
		5:KOMB B. MA	-234.095	1.41E 3	-16.928	-0.043	0.126	11.027			
14928	14928	1:BEBAN MATI	3.655	-831.294	0.101	-0.243	0.001	5.728			
		2:BEBAN HIDL	-3.404	-491.336	-0.031	-0.015	-0.000	2.392			
		3:BEBAN GEM	221.411	0.231	16.043	0.281	0.117	0.468			
		4:KOMBINASI	-1.060	-1.78E 3	0.072	-0.316	0.001	10.700			
		5:KOMB B. MA	234.095	-1.13E 3	16.928	0.043	0.123	7.654			
21854	14621	1:BEBAN MATI	-1.393	750.048	-0.055	-0.013	0.000	11.167			
		2:BEBAN HIDL	2.665	237.950	0.042	0.000	-0.000	4.035			
		3:BEBAN GEM	-162.991	-0.104	-10.866	0.039	0.097	-0.028			
		4:KOMBINASI	2.592	1.28E 3	0.000	-0.016	-0.000	19.856			
		5:KOMB B. MA	-170.935	892.709	-11.440	0.028	0.102	13.559			
14945	14945	1:BEBAN MATI	1.393	-404.071	0.055	0.013	0.001	-0.981			
		2:BEBAN HIDL	-2.665	-237.950	-0.042	-0.000	-0.000	0.166			
		3:BEBAN GEM	162.991	0.104	10.866	-0.039	0.095	0.026			
		4:KOMBINASI	-2.592	-865.605	-0.000	0.016	0.000	-0.912			
		5:KOMB B. MA	170.935	-546.732	11.440	-0.028	0.100	-0.854			
21855	14616	1:BEBAN MATI	0.814	1.24E 3	-0.094	0.038	0.001	12.355			
		2:BEBAN HIDL	1.791	536.845	0.051	-0.011	-0.000	5.592			
		3:BEBAN GEM	-55.369	2.252	-12.541	-0.063	0.080	-0.333			
		4:KOMBINASI	3.841	2.35E 3	-0.031	0.027	0.000	23.773			
		5:KOMB B. MA	-56.249	1.56E 3	-13.232	-0.036	0.085	15.360			
15051	15051	1:BEBAN MATI	-0.814	-1.01E 3	0.094	-0.038	0.001	0.886			
		2:BEBAN HIDL	-1.791	-536.845	-0.051	0.011	-0.000	0.725			
		3:BEBAN GEM	55.369	-2.252	12.541	0.063	0.067	0.359			
		4:KOMBINASI	-3.841	-2.07E 3	0.031	-0.027	0.000	2.224			
		5:KOMB B. MA	56.249	-1.33E 3	13.232	0.036	0.071	1.699			
21856	14648	1:BEBAN MATI	0.738	1.23E 3	0.520	-0.191	-0.003	11.722			
		2:BEBAN HIDL	2.696	510.156	-0.067	-0.049	0.000	5.130			
		3:BEBAN GEM	-109.491	-4.487	5.854	-0.058	-0.033	-0.395			
		4:KOMBINASI	5.200	2.29E 3	0.518	-0.308	-0.003	22.275			
		5:KOMB B. MA	-112.609	1.53E 3	6.627	-0.282	-0.037	14.385			
15202	15202	1:BEBAN MATI	-0.738	-997.837	-0.520	0.191	-0.003	1.378			
		2:BEBAN HIDL	-2.696	-510.156	0.067	0.049	0.000	0.873			
		3:BEBAN GEM	109.491	4.487	-5.854	0.058	-0.036	0.342			



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Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-5.200	-2.01E 3	-0.518	0.308	-0.003	3.050			
		5:KOMB B. MA	112.609	-1.3E 3	-6.627	0.282	-0.041	2.261			
21857	14643	1:BEBAN MATI	-4.194	1.1E 3	0.242	-0.149	-0.002	9.929			
		2:BEBAN HIDL	2.604	432.750	-0.067	-0.005	0.000	3.928			
		3:BEBAN GEM	-391.452	-2.149	19.517	-0.086	-0.120	-0.549			
		4:KOMBINASI	-0.867	2.01E 3	0.182	-0.186	-0.001	18.200			
		5:KOMB B. MA	-413.656	1.36E 3	20.694	-0.242	-0.128	11.709			
	15395	1:BEBAN MATI	4.194	-871.329	-0.242	0.149	-0.001	1.682			
		2:BEBAN HIDL	-2.604	-432.750	0.067	0.005	0.000	1.165			
		3:BEBAN GEM	391.452	2.149	-19.517	0.086	-0.109	0.524			
		4:KOMBINASI	0.867	-1.74E 3	-0.182	0.186	-0.001	3.881			
		5:KOMB B. MA	413.656	-1.13E 3	-20.694	0.242	-0.116	2.931			
21858	14639	1:BEBAN MATI	-10.562	590.519	-0.016	0.089	0.000	7.875			
		2:BEBAN HIDL	4.075	242.169	-0.047	0.041	0.000	3.942			
		3:BEBAN GEM	-453.817	-13.096	13.848	0.015	-0.132	-0.411			
		4:KOMBINASI	-6.156	1.1E 3	-0.093	0.172	0.001	15.758			
		5:KOMB B. MA	-484.626	722.069	14.496	0.128	-0.138	9.809			
	15468	1:BEBAN MATI	10.562	-244.541	0.016	-0.089	0.000	-0.505			
		2:BEBAN HIDL	-4.075	-242.169	0.047	-0.041	0.000	0.333			
		3:BEBAN GEM	453.817	13.096	-13.848	-0.015	-0.112	0.179			
		4:KOMBINASI	6.156	-680.919	0.093	-0.172	0.001	-0.074			
		5:KOMB B. MA	484.626	-376.091	-14.496	-0.128	-0.118	-0.117			
21859	14673	1:BEBAN MATI	-10.555	-136.551	0.036	0.216	-0.000	-10.498			
		2:BEBAN HIDL	5.070	-103.322	-0.011	0.046	0.000	-4.236			
		3:BEBAN GEM	-624.744	-28.217	11.216	0.313	-0.087	0.175			
		4:KOMBINASI	-4.554	-329.177	0.025	0.333	-0.000	-19.375			
		5:KOMB B. MA	-663.494	-228.172	11.806	0.572	-0.092	-12.857			
	15475	1:BEBAN MATI	10.555	424.865	-0.036	-0.216	-0.000	6.369			
		2:BEBAN HIDL	-5.070	103.322	0.011	-0.046	0.000	2.716			
		3:BEBAN GEM	624.744	28.217	-11.216	-0.313	-0.078	-0.590			
		4:KOMBINASI	4.554	675.155	-0.025	-0.333	-0.000	11.988			
		5:KOMB B. MA	663.494	516.487	-11.806	-0.572	-0.082	7.380			
21860	14634	1:BEBAN MATI	-12.763	1.3E 3	0.012	-0.160	-0.000	15.251			
		2:BEBAN HIDL	7.216	506.317	-0.004	-0.001	0.000	6.390			
		3:BEBAN GEM	-810.511	6.073	8.717	-0.269	-0.071	-0.590			
		4:KOMBINASI	-3.770	2.37E 3	0.007	-0.195	-0.000	28.525			
		5:KOMB B. MA	-859.469	1.61E 3	9.162	-0.443	-0.074	18.465			
	15476	1:BEBAN MATI	12.763	-1.01E 3	-0.012	0.160	-0.000	1.740			
		2:BEBAN HIDL	-7.216	-506.317	0.004	0.001	0.000	1.058			
		3:BEBAN GEM	810.511	-6.073	-8.717	0.269	-0.058	0.679			
		4:KOMBINASI	3.770	-2.02E 3	-0.007	0.195	-0.000	3.781			
		5:KOMB B. MA	859.469	-1.32E 3	-9.162	0.443	-0.061	3.088			
21861	14674	1:BEBAN MATI	-11.948	-270.967	0.024	0.139	-0.000	-9.016			
		2:BEBAN HIDL	5.546	-148.079	-0.003	0.010	0.000	-3.694			
		3:BEBAN GEM	-927.163	-25.131	4.182	0.319	-0.041	0.204			
		4:KOMBINASI	-5.464	-562.087	0.024	0.184	-0.000	-16.730			
		5:KOMB B. MA	-982.142	-386.202	4.413	0.481	-0.044	-11.018			
	15085	1:BEBAN MATI	11.948	559.281	-0.024	-0.139	-0.000	2.910			



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By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-5.546	148.079	0.003	-0.010	0.000	1.516			
		3:BEBAN GEM	927.163	25.131	-4.182	-0.319	-0.020	-0.574			
		4:KOMBINASI	5.464	908.064	-0.024	-0.184	-0.000	5.917			
		5:KOMB B. MA	982.142	674.516	-4.413	-0.481	-0.021	3.217			
21862	14629	1:BEBAN MATI	-12.895	1.25E 3	-0.065	-0.166	0.000	15.184			
		2:BEBAN HIDL	6.816	489.460	0.008	-0.006	-0.000	6.366			
		3:BEBAN GEM	-890.152	7.928	-4.184	-0.271	0.029	-0.505			
		4:KOMBINASI	-4.568	2.29E 3	-0.066	-0.209	0.001	28.407			
		5:KOMB B. MA	-943.465	1.56E 3	-4.454	-0.454	0.031	18.473			
	15084	1:BEBAN MATI	12.895	-965.903	0.065	0.166	0.000	1.145			
		2:BEBAN HIDL	-6.816	-489.460	-0.008	0.006	-0.000	0.834			
		3:BEBAN GEM	890.152	-7.928	4.184	0.271	0.032	0.622			
		4:KOMBINASI	4.568	-1.94E 3	0.066	0.209	0.000	2.708			
		5:KOMB B. MA	943.465	-1.27E 3	4.454	0.454	0.035	2.298			
21863	14675	1:BEBAN MATI	-11.494	-324.463	-0.027	0.112	0.000	-10.478			
		2:BEBAN HIDL	6.324	-167.328	0.005	-0.005	-0.000	-4.232			
		3:BEBAN GEM	-768.444	-26.248	-6.100	0.320	0.042	0.257			
		4:KOMBINASI	-3.675	-657.081	-0.025	0.126	0.000	-19.345			
		5:KOMB B. MA	-814.566	-452.421	-6.429	0.445	0.044	-12.747			
	15073	1:BEBAN MATI	11.494	612.778	0.027	-0.112	0.000	3.584			
		2:BEBAN HIDL	-6.324	167.328	-0.005	0.005	-0.000	1.771			
		3:BEBAN GEM	768.444	26.248	6.100	-0.320	0.047	-0.643			
		4:KOMBINASI	3.675	1E 3	0.025	-0.126	0.000	7.135			
		5:KOMB B. MA	814.566	740.735	6.429	-0.445	0.050	3.971			
21864	14625	1:BEBAN MATI	-11.331	1.1E 3	-0.038	-0.284	0.000	9.181			
		2:BEBAN HIDL	4.465	441.929	0.023	-0.053	-0.000	4.361			
		3:BEBAN GEM	-594.368	-3.644	-10.507	-0.281	0.075	-0.702			
		4:KOMBINASI	-6.453	2.03E 3	-0.008	-0.425	0.000	17.994			
		5:KOMB B. MA	-632.739	1.36E 3	-11.056	-0.611	0.079	11.060			
	15072	1:BEBAN MATI	11.331	-812.417	0.038	0.284	0.000	4.890			
		2:BEBAN HIDL	-4.465	-441.929	-0.023	0.053	-0.000	2.140			
		3:BEBAN GEM	594.368	3.644	10.507	0.281	0.080	0.648			
		4:KOMBINASI	6.453	-1.68E 3	0.008	0.425	-0.000	9.293			
		5:KOMB B. MA	632.739	-1.07E 3	11.056	0.611	0.084	6.855			
21865	14620	1:BEBAN MATI	-6.435	661.883	0.010	-0.102	-0.000	9.108			
		2:BEBAN HIDL	3.210	209.535	0.028	-0.057	-0.000	3.282			
		3:BEBAN GEM	-522.159	-1.338	-10.397	0.057	0.092	-0.104			
		4:KOMBINASI	-2.587	1.13E 3	0.057	-0.214	-0.001	16.182			
		5:KOMB B. MA	-552.776	786.199	-10.890	-0.077	0.096	10.969			
	15064	1:BEBAN MATI	6.435	-315.906	-0.010	0.102	0.000	-0.478			
		2:BEBAN HIDL	-3.210	-209.535	-0.028	0.057	-0.000	0.416			
		3:BEBAN GEM	522.159	1.338	10.397	-0.057	0.091	0.080			
		4:KOMBINASI	2.587	-714.343	-0.057	0.214	-0.000	0.092			
		5:KOMB B. MA	552.776	-440.221	10.890	0.077	0.096	-0.144			
21866	14615	1:BEBAN MATI	-0.111	1.17E 3	-0.113	-0.180	0.000	11.489			
		2:BEBAN HIDL	2.960	482.867	0.014	-0.034	-0.000	5.108			
		3:BEBAN GEM	-238.315	-0.232	-6.752	-0.066	0.045	-0.528			
		4:KOMBINASI	4.603	2.18E 3	-0.113	-0.269	0.000	21.960			



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By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-248.566	1.46E 3	-7.194	-0.269	0.047	14.000			
	14989	1:BEBAN MATI	0.111	-938.193	0.113	0.180	0.001	0.909			
		2:BEBAN HIDL	-2.960	-482.867	-0.014	0.034	-0.000	0.574			
		3:BEBAN GEM	238.315	0.232	6.752	0.066	0.035	0.525			
		4:KOMBINASI	-4.603	-1.9E 3	0.113	0.269	0.001	2.009			
		5:KOMB B. MA	248.566	-1.23E 3	7.194	0.269	0.037	1.804			
21867	14675	1:BEBAN MATI	-20.559	-126.960	0.103	0.082	-0.001	-4.271			
		2:BEBAN HIDL	5.087	-147.478	-0.079	0.042	0.000	-1.485			
		3:BEBAN GEM	353.055	-103.985	14.054	-0.101	-0.086	0.188			
		4:KOMBINASI	-16.531	-388.317	-0.002	0.166	-0.000	-7.502			
		5:KOMB B. MA	353.201	-324.631	14.813	0.002	-0.091	-4.965			
	15075	1:BEBAN MATI	20.559	357.611	-0.103	-0.082	-0.001	1.420			
		2:BEBAN HIDL	-5.087	147.478	0.079	-0.042	0.001	-0.250			
		3:BEBAN GEM	-353.055	103.985	-14.054	0.101	-0.079	-1.412			
		4:KOMBINASI	16.531	665.098	0.002	-0.166	0.000	1.303			
		5:KOMB B. MA	-353.201	555.282	-14.813	-0.002	-0.083	-0.213			
21868	14664	1:BEBAN MATI	-16.750	1.21E 3	0.089	-0.047	-0.001	15.596			
		2:BEBAN HIDL	5.002	405.801	-0.026	-0.015	0.000	5.330			
		3:BEBAN GEM	370.285	36.190	13.817	0.061	-0.088	-0.789			
		4:KOMBINASI	-12.097	2.1E 3	0.066	-0.080	-0.000	27.243			
		5:KOMB B. MA	375.050	1.49E 3	14.582	0.009	-0.093	17.965			
	15069	1:BEBAN MATI	16.750	-979.314	-0.089	0.047	-0.000	-2.714			
		2:BEBAN HIDL	-5.002	-405.801	0.026	0.015	0.000	-0.555			
		3:BEBAN GEM	-370.285	-36.190	-13.817	-0.061	-0.075	1.215			
		4:KOMBINASI	12.097	-1.82E 3	-0.066	0.080	-0.000	-4.144			
		5:KOMB B. MA	-375.050	-1.26E 3	-14.582	-0.009	-0.079	-1.771			
21869	14672	1:BEBAN MATI	-16.567	-362.007	0.002	-0.032	0.000	-11.726			
		2:BEBAN HIDL	5.658	-147.040	-0.027	-0.014	0.000	-4.599			
		3:BEBAN GEM	340.172	-89.964	7.842	-0.087	-0.059	0.160			
		4:KOMBINASI	-10.828	-669.672	-0.041	-0.062	0.000	-21.430			
		5:KOMB B. MA	344.008	-544.693	8.220	-0.133	-0.062	-14.317			
	14932	1:BEBAN MATI	16.567	650.322	-0.002	0.032	-0.000	4.280			
		2:BEBAN HIDL	-5.658	147.040	0.027	0.014	0.000	2.436			
		3:BEBAN GEM	-340.172	89.964	-7.842	0.087	-0.056	-1.483			
		4:KOMBINASI	10.828	1.02E 3	0.041	0.062	0.000	9.034			
		5:KOMB B. MA	-344.008	833.007	-8.220	0.133	-0.059	4.184			
21870	14661	1:BEBAN MATI	-16.528	1.37E 3	0.008	-0.006	-0.000	15.366			
		2:BEBAN HIDL	5.101	547.714	-0.062	0.004	0.000	6.937			
		3:BEBAN GEM	349.538	38.146	4.886	0.066	-0.040	-1.092			
		4:KOMBINASI	-11.671	2.51E 3	-0.090	-0.001	0.001	29.538			
		5:KOMB B. MA	353.548	1.73E 3	5.101	0.066	-0.042	18.382			
	14926	1:BEBAN MATI	16.528	-1.08E 3	-0.008	0.006	-0.000	2.596			
		2:BEBAN HIDL	-5.101	-547.714	0.062	-0.004	0.000	1.120			
		3:BEBAN GEM	-349.538	-38.146	-4.886	-0.066	-0.032	1.653			
		4:KOMBINASI	11.671	-2.17E 3	0.090	0.001	0.001	4.907			
		5:KOMB B. MA	-353.548	-1.45E 3	-5.101	-0.066	-0.033	5.003			
21871	14669	1:BEBAN MATI	-17.529	-329.862	0.049	-0.040	-0.000	-10.220			
		2:BEBAN HIDL	4.651	-179.780	-0.034	-0.013	0.000	-4.240			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 398	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	317.217	-86.354	1.247	-0.089	-0.006	0.239			
		4:KOMBINASI	-13.593	-683.483	0.005	-0.069	-0.000	-19.047			
		5:KOMB B. MA	318.340	-528.402	1.338	-0.141	-0.006	-12.512			
	14920	1:BEBAN MATI	17.529	618.176	-0.049	0.040	-0.000	3.247			
		2:BEBAN HIDL	-4.651	179.780	0.034	0.013	0.000	1.595			
		3:BEBAN GEM	-317.217	86.354	-1.247	0.089	-0.013	-1.510			
		4:KOMBINASI	13.593	1.03E 3	-0.005	0.069	0.000	6.448			
		5:KOMB B. MA	-318.340	816.716	-1.338	0.141	-0.014	2.619			
21872	14658	1:BEBAN MATI	-22.031	1.33E 3	0.215	-0.083	-0.002	15.368			
		2:BEBAN HIDL	0.734	544.352	0.040	-0.052	-0.000	6.984			
		3:BEBAN GEM	-28.449	41.811	16.118	0.063	-0.124	-0.918			
		4:KOMBINASI	-25.262	2.47E 3	0.322	-0.183	-0.002	29.616			
		5:KOMB B. MA	-51.461	1.7E 3	17.163	-0.048	-0.132	18.595			
	14914	1:BEBAN MATI	22.031	-1.04E 3	-0.215	0.083	-0.002	2.058			
		2:BEBAN HIDL	-0.734	-544.352	-0.040	0.052	-0.000	1.023			
		3:BEBAN GEM	28.449	-41.811	-16.118	-0.063	-0.113	1.533			
		4:KOMBINASI	25.262	-2.12E 3	-0.322	0.183	-0.003	4.107			
		5:KOMB B. MA	51.461	-1.41E 3	-17.163	0.048	-0.121	4.281			
21873	14676	1:BEBAN MATI	-18.772	-379.142	0.271	-0.100	-0.002	-11.578			
		2:BEBAN HIDL	0.865	-211.040	0.026	-0.052	-0.000	-4.838			
		3:BEBAN GEM	-218.730	-89.953	28.749	-0.053	-0.216	0.346			
		4:KOMBINASI	-21.142	-792.634	0.367	-0.202	-0.003	-21.634			
		5:KOMB B. MA	-247.919	-600.217	30.473	-0.186	-0.229	-14.117			
	14908	1:BEBAN MATI	18.772	667.456	-0.271	0.100	-0.002	3.880			
		2:BEBAN HIDL	-0.865	211.040	-0.026	0.052	-0.000	1.733			
		3:BEBAN GEM	218.730	89.953	-28.749	0.053	-0.207	-1.669			
		4:KOMBINASI	21.142	1.14E 3	-0.367	0.202	-0.002	7.430			
		5:KOMB B. MA	247.919	888.531	-30.473	0.186	-0.220	3.168			
21874	14655	1:BEBAN MATI	-14.455	1.5E 3	-0.014	-0.302	-0.000	17.846			
		2:BEBAN HIDL	-2.755	483.026	-0.096	-0.026	0.001	4.858			
		3:BEBAN GEM	-108.411	23.809	20.799	0.143	-0.161	-1.180			
		4:KOMBINASI	-21.755	2.57E 3	-0.171	-0.404	0.001	29.187			
		5:KOMB B. MA	-129.940	1.81E 3	21.767	-0.167	-0.169	19.521			
	14902	1:BEBAN MATI	14.455	-1.21E 3	0.014	0.302	0.000	2.029			
		2:BEBAN HIDL	2.755	-483.026	0.096	0.026	0.001	2.248			
		3:BEBAN GEM	108.411	-23.809	-20.799	-0.143	-0.145	1.530			
		4:KOMBINASI	21.755	-2.22E 3	0.171	0.404	0.001	6.031			
		5:KOMB B. MA	129.940	-1.52E 3	-21.767	0.167	-0.151	4.984			
21875	14673	1:BEBAN MATI	-20.559	-126.960	-0.103	-0.082	0.001	-4.271			
		2:BEBAN HIDL	5.087	-147.478	0.079	-0.042	-0.000	-1.485			
		3:BEBAN GEM	333.708	-100.110	-18.518	-0.096	0.113	0.230			
		4:KOMBINASI	-16.531	-388.317	0.002	-0.166	0.000	-7.502			
		5:KOMB B. MA	332.886	-320.562	-19.500	-0.208	0.120	-4.920			
	15478	1:BEBAN MATI	20.559	357.611	0.103	0.082	0.001	1.420			
		2:BEBAN HIDL	-5.087	147.478	-0.079	0.042	-0.001	-0.250			
		3:BEBAN GEM	-333.708	100.110	18.518	0.096	0.104	-1.409			
		4:KOMBINASI	16.531	665.098	-0.002	0.166	-0.000	1.303			
		5:KOMB B. MA	-332.886	551.213	19.500	0.208	0.110	-0.209			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

399

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21876	14662	1:BEBAN MATI	-16.750	1.21E 3	-0.089	0.047	0.001	15.596			
		2:BEBAN HIDL	5.002	405.801	0.026	0.015	-0.000	5.330			
		3:BEBAN GEM	333.781	31.734	-21.383	0.066	0.133	-0.838			
		4:KOMBINASI	-12.097	2.1E 3	-0.066	0.080	0.000	27.243			
		5:KOMB B. MA	336.721	1.49E 3	-22.526	0.125	0.140	17.914			
15473	14670	1:BEBAN MATI	16.750	-979.314	0.089	-0.047	0.000	-2.714			
		2:BEBAN HIDL	-5.002	-405.801	-0.026	-0.015	-0.000	-0.555			
		3:BEBAN GEM	-333.781	-31.734	21.383	-0.066	0.119	1.211			
		4:KOMBINASI	12.097	-1.82E 3	0.066	-0.080	0.000	-4.144			
		5:KOMB B. MA	-336.721	-1.26E 3	22.526	-0.125	0.125	-1.775			
21877	14670	1:BEBAN MATI	-16.567	-362.007	-0.002	0.032	-0.000	-11.726			
		2:BEBAN HIDL	5.658	-147.040	0.027	0.014	-0.000	-4.599			
		3:BEBAN GEM	230.055	-86.079	-14.397	-0.093	0.106	0.215			
		4:KOMBINASI	-10.828	-669.672	0.041	0.062	-0.000	-21.430			
		5:KOMB B. MA	228.386	-540.614	-15.103	-0.057	0.111	-14.259			
15336	15336	1:BEBAN MATI	16.567	650.322	0.002	-0.032	0.000	4.280			
		2:BEBAN HIDL	-5.658	147.040	-0.027	-0.014	-0.000	2.436			
		3:BEBAN GEM	-230.055	86.079	14.397	0.093	0.106	-1.481			
		4:KOMBINASI	10.828	1.02E 3	-0.041	-0.062	-0.000	9.034			
		5:KOMB B. MA	-228.386	828.929	15.103	0.057	0.111	4.186			
21878	14659	1:BEBAN MATI	-16.528	1.37E 3	-0.008	0.006	0.000	15.366			
		2:BEBAN HIDL	5.101	547.713	0.062	-0.004	-0.000	6.937			
		3:BEBAN GEM	1.001	34.148	-9.703	0.069	0.081	-1.143			
		4:KOMBINASI	-11.671	2.51E 3	0.090	0.001	-0.001	29.538			
		5:KOMB B. MA	-12.415	1.73E 3	-10.159	0.076	0.085	18.328			
15330	15330	1:BEBAN MATI	16.528	-1.08E 3	0.008	-0.006	0.000	2.596			
		2:BEBAN HIDL	-5.101	-547.713	-0.062	0.004	-0.000	1.120			
		3:BEBAN GEM	-1.001	-34.148	9.703	-0.069	0.062	1.645			
		4:KOMBINASI	11.671	-2.17E 3	-0.090	-0.001	-0.001	4.907			
		5:KOMB B. MA	12.415	-1.44E 3	10.159	-0.076	0.064	4.995			
21879	14667	1:BEBAN MATI	-17.529	-329.862	-0.049	0.040	0.000	-10.220			
		2:BEBAN HIDL	4.651	-179.780	0.034	0.013	-0.000	-4.240			
		3:BEBAN GEM	-146.829	-82.682	-2.580	-0.091	0.027	0.292			
		4:KOMBINASI	-13.593	-683.483	-0.005	0.069	0.000	-19.047			
		5:KOMB B. MA	-168.909	-524.546	-2.738	-0.047	0.028	-12.457			
15324	15324	1:BEBAN MATI	17.529	618.177	0.049	-0.040	0.000	3.247			
		2:BEBAN HIDL	-4.651	179.780	-0.034	-0.013	-0.000	1.595			
		3:BEBAN GEM	146.829	82.682	2.580	0.091	0.011	-1.508			
		4:KOMBINASI	13.593	1.03E 3	0.005	-0.069	-0.000	6.448			
		5:KOMB B. MA	168.909	812.860	2.738	0.047	0.012	2.620			
21880	14656	1:BEBAN MATI	-22.031	1.33E 3	-0.215	0.083	0.002	15.368			
		2:BEBAN HIDL	0.734	544.351	-0.040	0.052	0.000	6.984			
		3:BEBAN GEM	-244.103	37.626	-9.998	0.070	0.073	-0.979			
		4:KOMBINASI	-25.262	2.47E 3	-0.322	0.183	0.002	29.616			
		5:KOMB B. MA	-277.898	1.69E 3	-10.737	0.188	0.079	18.530			
15318	15318	1:BEBAN MATI	22.031	-1.04E 3	0.215	-0.083	0.002	2.058			
		2:BEBAN HIDL	-0.734	-544.351	0.040	-0.052	0.000	1.023			
		3:BEBAN GEM	244.103	-37.626	9.998	-0.070	0.074	1.533			



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Job No 1	Sheet No 400	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	25.262	-2.12E 3	0.322	-0.183	0.003	4.107			
		5:KOMB B. MA	277.898	-1.41E 3	10.737	-0.188	0.079	4.281			
21881	14677	1:BEBAN MATI	-18.772	-379.142	-0.271	0.100	0.002	-11.578			
		2:BEBAN HIDL	0.865	-211.040	-0.026	0.052	0.000	-4.838			
		3:BEBAN GEM	-206.074	-86.568	-18.263	-0.123	0.140	0.391			
		4:KOMBINASI	-21.142	-792.634	-0.367	0.202	0.003	-21.634			
		5:KOMB B. MA	-234.631	-596.662	-19.462	0.002	0.149	-14.070			
	15312	1:BEBAN MATI	18.772	667.456	0.271	-0.100	0.002	3.880			
		2:BEBAN HIDL	-0.865	211.040	0.026	-0.052	0.000	1.733			
		3:BEBAN GEM	206.074	86.568	18.263	0.123	0.129	-1.664			
		4:KOMBINASI	21.142	1.14E 3	0.367	-0.202	0.002	7.430			
		5:KOMB B. MA	234.631	884.977	19.462	-0.002	0.137	3.173			
21882	14653	1:BEBAN MATI	-14.455	1.5E 3	0.014	0.302	0.000	17.846			
		2:BEBAN HIDL	-2.755	483.025	0.096	0.026	-0.001	4.858			
		3:BEBAN GEM	-122.106	0.721	-11.518	-0.006	0.089	-1.739			
		4:KOMBINASI	-21.755	2.57E 3	0.171	0.404	-0.001	29.187			
		5:KOMB B. MA	-144.320	1.79E 3	-12.022	0.311	0.093	18.934			
	15306	1:BEBAN MATI	14.455	-1.21E 3	-0.014	-0.302	-0.000	2.029			
		2:BEBAN HIDL	2.755	-483.025	-0.096	-0.026	-0.001	2.248			
		3:BEBAN GEM	122.106	-0.721	11.518	0.006	0.081	1.750			
		4:KOMBINASI	21.755	-2.22E 3	-0.171	-0.404	-0.001	6.031			
		5:KOMB B. MA	144.320	-1.5E 3	12.022	-0.311	0.084	5.215			
21883	14605	1:BEBAN MATI	3.771	-440.538	0.252	-1.588	-0.001	-21.509			
		2:BEBAN HIDL	3.970	-290.105	0.120	-1.234	-0.001	-5.302			
		3:BEBAN GEM	509.395	-1.3E 3	2.492	0.815	0.001	1.922			
		4:KOMBINASI	10.876	-992.815	0.495	-3.880	-0.003	-34.294			
		5:KOMB B. MA	541.017	-1.98E 3	2.941	-1.473	-0.001	-22.672			
	14758	1:BEBAN MATI	-3.771	1.79E 3	-0.252	1.588	-0.002	8.379			
		2:BEBAN HIDL	-3.970	290.105	-0.120	1.234	-0.001	1.888			
		3:BEBAN GEM	-509.395	1.3E 3	-2.492	-0.815	-0.030	-17.272			
		4:KOMBINASI	-10.876	2.61E 3	-0.495	3.880	-0.003	13.076			
		5:KOMB B. MA	-541.017	3.33E 3	-2.941	1.473	-0.034	-8.624			
21884	14534	1:BEBAN MATI	-26.843	3.9E 3	3.680	2.718	-0.023	35.882			
		2:BEBAN HIDL	5.766	617.463	-0.860	1.460	0.005	6.900			
		3:BEBAN GEM	79.344	-1.39E 3	17.439	-1.059	-0.123	-30.098			
		4:KOMBINASI	-22.987	5.67E 3	3.041	5.597	-0.020	54.099			
		5:KOMB B. MA	59.928	2.81E 3	21.476	2.481	-0.149	8.419			
	14748	1:BEBAN MATI	26.843	-2.55E 3	-3.680	-2.718	-0.020	2.074			
		2:BEBAN HIDL	-5.766	-617.463	0.860	-1.460	0.005	0.366			
		3:BEBAN GEM	-79.344	1.39E 3	-17.439	1.059	-0.082	13.777			
		4:KOMBINASI	22.987	-4.05E 3	-3.041	-5.597	-0.016	3.074			
		5:KOMB B. MA	-59.928	-1.46E 3	-21.476	-2.481	-0.103	16.760			
21885	14603	1:BEBAN MATI	-8.484	-599.062	-0.096	-1.664	0.001	-31.603			
		2:BEBAN HIDL	6.733	-311.093	0.039	-0.913	-0.000	-8.030			
		3:BEBAN GEM	498.652	-849.315	0.354	0.660	0.004	-0.181			
		4:KOMBINASI	0.592	-1.22E 3	-0.053	-3.457	0.000	-50.772			
		5:KOMB B. MA	519.140	-1.68E 3	0.299	-1.519	0.005	-36.611			
	14841	1:BEBAN MATI	8.484	1.72E 3	0.096	1.664	-0.000	20.210			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 401	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-6.733	311.093	-0.039	0.913	0.000	4.980			
		3:BEBAN GEM	-498.652	849.315	-0.354	-0.660	-0.008	-8.148			
		4:KOMBINASI	-0.592	2.57E 3	0.053	3.457	0.000	32.220			
		5:KOMB B. MA	-519.140	2.8E 3	-0.299	1.519	-0.008	14.643			
21886	14557	1:BEBAN MATI	-12.876	4.91E 3	-0.088	3.694	0.001	52.822			
		2:BEBAN HIDL	13.105	866.513	-1.348	2.370	0.007	11.443			
		3:BEBAN GEM	-59.283	-939.115	21.144	-1.203	-0.137	-26.543			
		4:KOMBINASI	5.517	7.28E 3	-2.262	8.225	0.012	81.695			
		5:KOMB B. MA	-67.260	4.44E 3	21.304	3.853	-0.139	31.818			
	14828	1:BEBAN MATI	12.876	-3.78E 3	0.088	-3.694	0.000	-10.206			
		2:BEBAN HIDL	-13.105	-866.513	1.348	-2.370	0.006	-2.946			
		3:BEBAN GEM	59.283	939.115	-21.144	1.203	-0.070	17.333			
		4:KOMBINASI	-5.517	-5.93E 3	2.262	-8.225	0.010	-16.960			
		5:KOMB B. MA	67.260	-3.32E 3	-21.304	-3.853	-0.070	6.227			
21887	14601	1:BEBAN MATI	-20.384	-645.418	0.042	-1.220	-0.000	-30.721			
		2:BEBAN HIDL	9.372	-331.228	-0.008	-0.882	-0.000	-7.647			
		3:BEBAN GEM	338.810	-848.654	1.326	0.657	-0.000	0.058			
		4:KOMBINASI	-9.466	-1.3E 3	0.037	-2.875	-0.001	-49.101			
		5:KOMB B. MA	340.990	-1.74E 3	1.429	-1.060	-0.000	-35.249			
	14815	1:BEBAN MATI	20.384	1.77E 3	-0.042	1.220	-0.000	18.874			
		2:BEBAN HIDL	-9.372	331.228	0.008	0.882	0.000	4.399			
		3:BEBAN GEM	-338.810	848.654	-1.326	-0.657	-0.013	-8.380			
		4:KOMBINASI	9.466	2.65E 3	-0.037	2.875	0.000	29.687			
		5:KOMB B. MA	-340.990	2.86E 3	-1.429	1.060	-0.014	12.714			
21888	14555	1:BEBAN MATI	-14.375	4.86E 3	0.074	3.913	0.000	52.671			
		2:BEBAN HIDL	18.299	842.522	-1.317	2.355	0.007	11.110			
		3:BEBAN GEM	-254.806	-938.736	23.098	-1.186	-0.145	-26.293			
		4:KOMBINASI	12.028	7.18E 3	-2.018	8.464	0.011	80.982			
		5:KOMB B. MA	-270.942	4.38E 3	23.537	4.080	-0.148	31.729			
	14802	1:BEBAN MATI	14.375	-3.74E 3	-0.074	-3.913	-0.001	-10.509			
		2:BEBAN HIDL	-18.299	-842.522	1.317	-2.355	0.006	-2.848			
		3:BEBAN GEM	254.806	938.736	-23.098	1.186	-0.081	17.088			
		4:KOMBINASI	-12.028	-5.83E 3	2.018	-8.464	0.008	-17.167			
		5:KOMB B. MA	270.942	-3.26E 3	-23.537	-4.080	-0.083	5.724			
21889	14606	1:BEBAN MATI	3.771	-440.539	-0.252	1.588	0.001	-21.509			
		2:BEBAN HIDL	3.970	-290.106	-0.120	1.234	0.001	-5.302			
		3:BEBAN GEM	362.707	-1.26E 3	-3.555	0.200	0.010	1.813			
		4:KOMBINASI	10.876	-992.815	-0.495	3.880	0.003	-34.294			
		5:KOMB B. MA	386.994	-1.94E 3	-4.057	2.538	0.012	-22.787			
	15204	1:BEBAN MATI	-3.771	1.79E 3	0.252	-1.588	0.002	8.379			
		2:BEBAN HIDL	-3.970	290.106	0.120	-1.234	0.001	1.888			
		3:BEBAN GEM	-362.707	1.26E 3	3.555	-0.200	0.032	-16.644			
		4:KOMBINASI	-10.876	2.61E 3	0.495	-3.880	0.003	13.076			
		5:KOMB B. MA	-386.994	3.29E 3	4.057	-2.538	0.036	-7.965			
21890	14552	1:BEBAN MATI	-26.843	3.9E 3	-3.680	-2.718	0.023	35.882			
		2:BEBAN HIDL	5.766	617.464	0.860	-1.460	-0.005	6.900			
		3:BEBAN GEM	-74.110	-1.36E 3	-3.500	-0.516	0.039	-29.430			
		4:KOMBINASI	-22.987	5.67E 3	-3.041	-5.597	0.020	54.099			



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Job No 1	Sheet No 402	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-101.200	2.84E 3	-6.840	-4.136	0.061	9.121			
	15194	1:BEBAN MATI	26.843	-2.55E 3	3.680	2.718	0.020	2.074			
		2:BEBAN HIDL	-5.766	-617.464	-0.860	1.460	-0.005	0.366			
		3:BEBAN GEM	74.110	1.36E 3	3.500	0.516	0.003	13.368			
		4:KOMBINASI	22.987	-4.05E 3	3.041	5.597	0.016	3.074			
		5:KOMB B. MA	101.200	-1.49E 3	6.840	4.136	0.020	16.330			
21891	14604	1:BEBAN MATI	-8.484	-599.062	0.096	1.664	-0.001	-31.603			
		2:BEBAN HIDL	6.733	-311.093	-0.039	0.913	0.000	-8.030			
		3:BEBAN GEM	101.372	-817.626	-1.812	0.050	0.012	-0.278			
		4:KOMBINASI	0.592	-1.22E 3	0.053	3.457	-0.000	-50.772			
		5:KOMB B. MA	101.997	-1.64E 3	-1.830	2.265	0.012	-36.714			
	15287	1:BEBAN MATI	8.484	1.72E 3	-0.096	-1.664	0.000	20.210			
		2:BEBAN HIDL	-6.733	311.093	0.039	-0.913	-0.000	4.980			
		3:BEBAN GEM	-101.372	817.626	1.812	-0.050	0.005	-7.740			
		4:KOMBINASI	-0.592	2.57E 3	-0.053	-3.457	-0.000	32.220			
		5:KOMB B. MA	-101.997	2.77E 3	1.830	-2.265	0.006	15.071			
21892	14558	1:BEBAN MATI	-12.876	4.91E 3	0.088	-3.694	-0.001	52.822			
		2:BEBAN HIDL	13.105	866.513	1.348	-2.370	-0.007	11.443			
		3:BEBAN GEM	-507.403	-932.880	-4.563	-0.382	0.053	-25.870			
		4:KOMBINASI	5.517	7.28E 3	2.262	-8.225	-0.012	81.695			
		5:KOMB B. MA	-537.786	4.45E 3	-3.895	-5.517	0.051	32.524			
	15274	1:BEBAN MATI	12.876	-3.78E 3	-0.088	3.694	-0.000	-10.206			
		2:BEBAN HIDL	-13.105	-866.513	-1.348	2.370	-0.006	-2.946			
		3:BEBAN GEM	507.403	932.880	4.563	0.382	-0.008	16.721			
		4:KOMBINASI	-5.517	-5.93E 3	-2.262	8.225	-0.010	-16.960			
		5:KOMB B. MA	537.786	-3.32E 3	3.895	5.517	-0.012	5.584			
21893	14602	1:BEBAN MATI	-20.384	-645.418	-0.042	1.220	0.000	-30.721			
		2:BEBAN HIDL	9.372	-331.228	0.008	0.882	0.000	-7.647			
		3:BEBAN GEM	-253.171	-817.752	-3.840	0.047	0.025	-0.043			
		4:KOMBINASI	-9.466	-1.3E 3	-0.037	2.875	0.001	-49.101			
		5:KOMB B. MA	-280.591	-1.7E 3	-4.069	1.799	0.027	-35.354			
	15261	1:BEBAN MATI	20.384	1.77E 3	0.042	-1.220	0.000	18.874			
		2:BEBAN HIDL	-9.372	331.228	-0.008	-0.882	-0.000	4.399			
		3:BEBAN GEM	253.171	817.752	3.840	-0.047	0.012	-7.977			
		4:KOMBINASI	9.466	2.65E 3	0.037	-2.875	-0.000	29.687			
		5:KOMB B. MA	280.591	2.83E 3	4.069	-1.799	0.013	13.138			
21894	14556	1:BEBAN MATI	-14.375	4.86E 3	-0.074	-3.913	-0.000	52.671			
		2:BEBAN HIDL	18.299	842.523	1.317	-2.355	-0.007	11.110			
		3:BEBAN GEM	-677.565	-933.046	-5.766	-0.384	0.054	-25.644			
		4:KOMBINASI	12.028	7.18E 3	2.018	-8.464	-0.011	80.982			
		5:KOMB B. MA	-714.839	4.39E 3	-5.338	-5.730	0.052	32.411			
	15248	1:BEBAN MATI	14.375	-3.74E 3	0.074	3.913	0.001	-10.509			
		2:BEBAN HIDL	-18.299	-842.523	-1.317	2.355	-0.006	-2.848			
		3:BEBAN GEM	677.565	933.046	5.766	0.384	0.003	16.494			
		4:KOMBINASI	-12.028	-5.83E 3	-2.018	8.464	-0.008	-17.167			
		5:KOMB B. MA	714.839	-3.26E 3	5.338	5.730	0.000	5.101			
21895	14651	1:BEBAN MATI	-1.280	1.32E 3	-0.095	-0.062	0.001	12.434			
		2:BEBAN HIDL	-0.020	574.285	-0.081	-0.002	0.000	5.440			



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Job No

1

Sheet No

403

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	62.596	-0.566	7.765	-0.057	-0.047	-0.179			
		4:KOMBINASI	-1.567	2.5E 3	-0.243	-0.078	0.002	23.626			
		5:KOMB B. MA	64.434	1.67E 3	8.010	-0.124	-0.048	15.510			
	15233	1:BEBAN MATI	1.280	-1.09E 3	0.095	0.062	0.000	1.758			
		2:BEBAN HIDL	0.020	-574.285	0.081	0.002	0.000	1.318			
		3:BEBAN GEM	-62.596	0.566	-7.765	0.057	-0.045	0.173			
		4:KOMBINASI	1.567	-2.23E 3	0.243	0.078	0.001	4.218			
		5:KOMB B. MA	-64.434	-1.43E 3	-8.010	0.124	-0.046	2.729			
21896	14646	1:BEBAN MATI	5.041	953.472	-0.079	-0.072	0.001	3.064			
		2:BEBAN HIDL	0.383	404.649	-0.064	0.007	0.001	1.333			
		3:BEBAN GEM	43.857	-3.240	3.978	-0.127	-0.034	-0.495			
		4:KOMBINASI	6.662	1.79E 3	-0.197	-0.075	0.002	5.809			
		5:KOMB B. MA	51.320	1.19E 3	4.059	-0.201	-0.035	3.343			
	15413	1:BEBAN MATI	-5.041	-722.820	0.079	0.072	0.000	6.800			
		2:BEBAN HIDL	-0.383	-404.649	0.064	-0.007	0.000	3.429			
		3:BEBAN GEM	-43.857	3.240	-3.978	0.127	-0.013	0.457			
		4:KOMBINASI	-6.662	-1.51E 3	0.197	0.075	0.001	13.646			
		5:KOMB B. MA	-51.320	-962.207	-4.059	0.201	-0.013	9.337			
21897	14677	1:BEBAN MATI	-0.538	9.916	0.221	0.161	-0.002	-11.655			
		2:BEBAN HIDL	0.645	-58.359	-0.030	0.005	0.000	-5.733			
		3:BEBAN GEM	157.672	-34.423	10.265	0.358	-0.077	-0.091			
		4:KOMBINASI	0.387	-81.476	0.218	0.202	-0.002	-23.159			
		5:KOMB B. MA	165.405	-61.244	10.982	0.540	-0.083	-15.190			
	15308	1:BEBAN MATI	0.538	278.399	-0.221	-0.161	-0.002	9.680			
		2:BEBAN HIDL	-0.645	58.359	0.030	-0.005	0.000	4.874			
		3:BEBAN GEM	-157.672	34.423	-10.265	-0.358	-0.074	-0.416			
		4:KOMBINASI	-0.387	427.454	-0.218	-0.202	-0.002	19.415			
		5:KOMB B. MA	-165.405	349.559	-10.982	-0.540	-0.079	12.169			
21898	14637	1:BEBAN MATI	1.559	1.34E 3	0.069	-0.241	-0.001	14.903			
		2:BEBAN HIDL	2.744	579.966	-0.018	-0.023	0.000	7.036			
		3:BEBAN GEM	528.104	16.030	11.097	-0.215	-0.086	-0.221			
		4:KOMBINASI	6.261	2.54E 3	0.055	-0.327	-0.000	29.142			
		5:KOMB B. MA	557.715	1.71E 3	11.710	-0.481	-0.091	18.893			
	15309	1:BEBAN MATI	-1.559	-1.05E 3	-0.069	0.241	-0.000	2.691			
		2:BEBAN HIDL	-2.744	-579.966	0.018	0.023	0.000	1.495			
		3:BEBAN GEM	-528.104	-16.030	-11.097	0.215	-0.077	0.457			
		4:KOMBINASI	-6.261	-2.19E 3	-0.055	0.327	-0.000	5.622			
		5:KOMB B. MA	-557.715	-1.42E 3	-11.710	0.481	-0.081	4.068			
21899	14678	1:BEBAN MATI	-0.287	-248.121	0.014	0.118	-0.000	-8.431			
		2:BEBAN HIDL	2.560	-172.572	0.001	-0.009	-0.000	-4.019			
		3:BEBAN GEM	858.196	-23.733	2.142	0.320	-0.031	0.125			
		4:KOMBINASI	3.750	-573.860	0.019	0.127	-0.000	-16.548			
		5:KOMB B. MA	902.354	-376.584	2.264	0.448	-0.033	-10.711			
	14856	1:BEBAN MATI	0.287	536.436	-0.014	-0.118	0.000	2.661			
		2:BEBAN HIDL	-2.560	172.572	-0.001	0.009	0.000	1.480			
		3:BEBAN GEM	-858.196	23.733	-2.142	-0.320	-0.000	-0.474			
		4:KOMBINASI	-3.750	919.837	-0.019	-0.127	0.000	5.561			
		5:KOMB B. MA	-902.354	664.899	-2.264	-0.448	-0.000	3.051			



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Job No

1

Sheet No

404

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21900	14632	1:BEBAN MATI	1.795	1.25E 3	-0.042	-0.107	0.000	14.771			
		2:BEBAN HIDL	2.758	533.307	0.002	0.024	-0.000	6.925			
		3:BEBAN GEM	691.917	12.235	-10.819	-0.259	0.078	-0.185			
		4:KOMBINASI	6.566	2.35E 3	-0.047	-0.090	0.000	28.806			
		5:KOMB B. MA	729.963	1.58E 3	-11.401	-0.365	0.082	18.732			
	14855	1:BEBAN MATI	-1.795	-962.008	0.042	0.107	0.000	1.500			
		2:BEBAN HIDL	-2.758	-533.307	-0.002	-0.024	-0.000	0.920			
		3:BEBAN GEM	-691.917	-12.235	10.819	0.259	0.081	0.365			
		4:KOMBINASI	-6.566	-2.01E 3	0.047	0.090	0.000	3.272			
		5:KOMB B. MA	-729.963	-1.29E 3	11.401	0.365	0.086	2.436			
21901	14676	1:BEBAN MATI	-0.901	-367.106	-0.123	0.236	0.001	-11.525			
		2:BEBAN HIDL	2.032	-237.912	0.026	0.023	-0.000	-5.649			
		3:BEBAN GEM	275.151	-31.813	-18.355	0.275	0.133	0.019			
		4:KOMBINASI	2.170	-821.187	-0.106	0.321	0.001	-22.869			
		5:KOMB B. MA	289.227	-543.257	-19.380	0.539	0.140	-14.894			
	14905	1:BEBAN MATI	0.901	655.420	0.123	-0.236	0.001	4.004			
		2:BEBAN HIDL	-2.032	237.912	-0.026	-0.023	-0.000	2.150			
		3:BEBAN GEM	-275.151	31.813	18.355	-0.275	0.137	-0.487			
		4:KOMBINASI	-2.170	1.17E 3	0.106	-0.321	0.001	8.244			
		5:KOMB B. MA	-289.227	831.572	19.380	-0.539	0.145	4.782			
21902	14628	1:BEBAN MATI	3.946	956.689	-0.275	-0.263	0.002	3.215			
		2:BEBAN HIDL	1.361	394.709	0.023	-0.015	-0.000	1.462			
		3:BEBAN GEM	64.835	3.792	-16.149	-0.329	0.154	-0.585			
		4:KOMBINASI	6.913	1.78E 3	-0.294	-0.339	0.002	6.197			
		5:KOMB B. MA	72.839	1.2E 3	-17.218	-0.617	0.164	3.478			
	14904	1:BEBAN MATI	-3.946	-668.374	0.275	0.263	0.002	8.737			
		2:BEBAN HIDL	-1.361	-394.709	-0.023	0.015	-0.000	4.344			
		3:BEBAN GEM	-64.835	-3.792	16.149	0.329	0.083	0.641			
		4:KOMBINASI	-6.913	-1.43E 3	0.294	0.339	0.002	17.435			
		5:KOMB B. MA	-72.839	-909.181	17.218	0.617	0.089	12.016			
21903	14618	1:BEBAN MATI	-1.175	1.33E 3	0.143	-0.062	-0.001	12.173			
		2:BEBAN HIDL	-0.492	569.911	0.098	-0.001	-0.001	5.425			
		3:BEBAN GEM	14.670	-0.735	-15.940	-0.059	0.102	-0.340			
		4:KOMBINASI	-2.197	2.51E 3	0.328	-0.076	-0.002	23.288			
		5:KOMB B. MA	13.934	1.67E 3	-16.536	-0.125	0.106	15.071			
	15007	1:BEBAN MATI	1.175	-1.1E 3	-0.143	0.062	-0.001	2.096			
		2:BEBAN HIDL	0.492	-569.911	-0.098	0.001	-0.001	1.281			
		3:BEBAN GEM	-14.670	0.735	15.940	0.059	0.086	0.331			
		4:KOMBINASI	2.197	-2.23E 3	-0.328	0.076	-0.002	4.566			
		5:KOMB B. MA	-13.934	-1.44E 3	16.536	0.125	0.089	3.213			
21904	14549	1:BEBAN MATI	-28.021	3.57E 3	-7.457	-4.262	0.044	29.230			
		2:BEBAN HIDL	11.388	527.560	3.050	-2.076	-0.018	4.981			
		3:BEBAN GEM	-76.606	-360.716	-25.647	1.765	0.158	-7.990			
		4:KOMBINASI	-15.404	5.12E 3	-4.068	-8.436	0.024	43.046			
		5:KOMB B. MA	-101.624	3.5E 3	-32.556	-3.654	0.199	23.830			
	15146	1:BEBAN MATI	28.021	-2.22E 3	7.457	4.262	0.044	4.789			
	2:BEBAN HIDL	-11.388	-527.560	-3.050	2.076	-0.018	1.227				
	3:BEBAN GEM	76.606	360.716	25.647	-1.765	0.144	3.745				



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 405	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	15.404	-3.5E 3	4.068	8.436	0.024	7.711			
		5:KOMB B. MA	101.624	-2.15E 3	32.556	3.654	0.184	9.458			
21905	14547	1:BEBAN MATI	-52.220	3.49E 3	-5.181	-4.593	0.031	27.841			
		2:BEBAN HIDL	3.245	534.019	2.882	-2.613	-0.017	5.120			
		3:BEBAN GEM	-382.899	-356.313	-27.503	1.810	0.188	-8.644			
		4:KOMBINASI	-57.472	5.05E 3	-1.606	-9.693	0.010	41.601			
		5:KOMB B. MA	-452.318	3.44E 3	-32.329	-4.260	0.218	21.837			
	15357	1:BEBAN MATI	52.220	-2.14E 3	5.181	4.593	0.030	5.318			
		2:BEBAN HIDL	-3.245	-534.019	-2.882	2.613	-0.017	1.165			
		3:BEBAN GEM	382.899	356.313	27.503	-1.810	0.136	4.451			
		4:KOMBINASI	57.472	-3.43E 3	1.606	9.693	0.009	8.245			
		5:KOMB B. MA	452.318	-2.09E 3	32.329	4.260	0.162	10.690			
21906	14545	1:BEBAN MATI	-5.924	2.5E 3	-0.814	-2.176	0.001	16.884			
		2:BEBAN HIDL	-7.319	327.150	-0.330	-1.470	0.002	3.474			
		3:BEBAN GEM	-92.113	-403.449	-14.891	1.273	0.038	-7.473			
		4:KOMBINASI	-18.820	3.52E 3	-1.505	-4.963	0.005	25.820			
		5:KOMB B. MA	-107.034	2.27E 3	-16.648	-1.721	0.042	11.122			
	15183	1:BEBAN MATI	5.924	-1.15E 3	0.814	2.176	0.008	4.547			
		2:BEBAN HIDL	7.319	-327.150	0.330	1.470	0.002	0.376			
		3:BEBAN GEM	92.113	403.449	14.891	-1.273	0.138	2.725			
		4:KOMBINASI	18.820	-1.9E 3	1.505	4.963	0.013	6.057			
		5:KOMB B. MA	107.034	-918.621	16.648	1.721	0.154	7.634			
21907	14595	1:BEBAN MATI	-65.439	2.45E 3	5.497	6.769	-0.040	28.733			
		2:BEBAN HIDL	21.217	890.057	-1.901	3.543	0.014	11.606			
		3:BEBAN GEM	-882.348	-301.279	-16.293	1.743	0.097	-7.742			
		4:KOMBINASI	-44.579	4.36E 3	3.555	13.792	-0.026	53.050			
		5:KOMB B. MA	-979.174	2.67E 3	-12.752	10.725	0.070	27.568			
	15125	1:BEBAN MATI	65.439	-2E 3	-5.497	-6.769	-0.041	3.995			
		2:BEBAN HIDL	-21.217	-890.057	1.901	-3.543	0.014	1.486			
		3:BEBAN GEM	882.348	301.279	16.293	-1.743	0.143	3.310			
		4:KOMBINASI	44.579	-3.82E 3	-3.555	-13.792	-0.026	7.173			
		5:KOMB B. MA	979.174	-2.22E 3	12.752	-10.725	0.118	8.363			
21908	14674	1:BEBAN MATI	-19.815	-92.041	-0.000	-0.000	0.000	-3.672			
		2:BEBAN HIDL	4.868	-135.428	0.000	-0.000	-0.000	-1.258			
		3:BEBAN GEM	958.486	-101.187	-2.193	-0.102	0.013	0.211			
		4:KOMBINASI	-15.989	-327.134	0.000	-0.000	-0.000	-6.420			
		5:KOMB B. MA	989.516	-279.544	-2.302	-0.107	0.014	-4.206			
	15087	1:BEBAN MATI	19.815	322.692	0.000	0.000	0.000	1.231			
		2:BEBAN HIDL	-4.868	135.428	-0.000	0.000	-0.000	-0.335			
		3:BEBAN GEM	-958.486	101.187	2.193	0.102	0.013	-1.401			
		4:KOMBINASI	15.989	603.915	-0.000	0.000	0.000	0.941			
		5:KOMB B. MA	-989.516	510.195	2.302	0.107	0.013	-0.441			
21909	14663	1:BEBAN MATI	-17.876	1.16E 3	-0.000	0.000	0.000	15.145			
		2:BEBAN HIDL	4.544	390.728	0.000	0.000	-0.000	5.216			
		3:BEBAN GEM	1.42E 3	33.679	-4.480	0.068	0.027	-0.812			
		4:KOMBINASI	-14.180	2.02E 3	0.000	0.000	-0.000	26.520			
		5:KOMB B. MA	1.47E 3	1.43E 3	-4.704	0.071	0.028	17.422			
	15081	1:BEBAN MATI	17.876	-933.526	0.000	-0.000	0.000	-2.802			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-4.544	-390.728	-0.000	-0.000	-0.000	-0.000	-0.618		
		3:BEBAN GEM	-1.42E 3	-33.679	4.480	-0.068	0.026	1.208			
		4:KOMBINASI	14.180	-1.75E 3	-0.000	-0.000	0.000	-4.351			
		5:KOMB B. MA	-1.47E 3	-1.2E 3	4.704	-0.071	0.027	-1.904			
21910	14671	1:BEBAN MATI	-16.868	-337.341	0.000	-0.000	-0.000	-11.358			
		2:BEBAN HIDL	4.406	-140.463	0.000	0.000	-0.000	-4.508			
		3:BEBAN GEM	2.37E 3	-87.345	-7.735	-0.092	0.058	0.189			
		4:KOMBINASI	-13.191	-629.551	0.000	-0.000	-0.000	-20.842			
		5:KOMB B. MA	2.47E 3	-513.332	-8.122	-0.097	0.061	-13.864			
	14887	1:BEBAN MATI	16.868	625.656	-0.000	0.000	-0.000	4.275			
		2:BEBAN HIDL	-4.406	140.463	-0.000	-0.000	-0.000	2.442			
		3:BEBAN GEM	-2.37E 3	87.345	7.735	0.092	0.056	-1.473			
		4:KOMBINASI	13.191	975.528	-0.000	0.000	-0.000	9.036			
		5:KOMB B. MA	-2.47E 3	801.646	8.122	0.097	0.058	4.193			
21911	14660	1:BEBAN MATI	-16.005	1.34E 3	0.000	0.000	-0.000	15.010			
		2:BEBAN HIDL	4.759	541.457	0.000	0.000	-0.000	6.816			
		3:BEBAN GEM	5.53E 3	36.014	-45.165	0.071	0.378	-1.103			
		4:KOMBINASI	-11.592	2.48E 3	0.000	0.000	-0.000	28.918			
		5:KOMB B. MA	5.79E 3	1.71E 3	-47.423	0.074	0.397	17.941			
	14880	1:BEBAN MATI	16.005	-1.06E 3	-0.000	-0.000	-0.000	2.632			
		2:BEBAN HIDL	-4.759	-541.457	-0.000	-0.000	-0.000	1.148			
		3:BEBAN GEM	-5.53E 3	-36.014	45.165	-0.071	0.286	1.633			
		4:KOMBINASI	11.592	-2.13E 3	-0.000	-0.000	-0.000	4.996			
		5:KOMB B. MA	-5.79E 3	-1.42E 3	47.423	-0.074	0.300	5.035			
21912	14668	1:BEBAN MATI	-15.226	-304.243	-0.000	-0.000	0.000	-9.739			
		2:BEBAN HIDL	3.812	-171.350	-0.000	-0.000	0.000	-4.071			
		3:BEBAN GEM	-11.9E 3	-84.744	141.959	-0.091	-1.099	0.255			
		4:KOMBINASI	-12.172	-639.252	-0.000	-0.000	0.000	-18.199			
		5:KOMB B. MA	-12.5E 3	-496.035	149.057	-0.096	-1.154	-11.913			
	14873	1:BEBAN MATI	15.226	592.558	0.000	0.000	0.000	3.143			
		2:BEBAN HIDL	-3.812	171.350	0.000	0.000	-0.000	1.550			
		3:BEBAN GEM	11.9E 3	84.744	-141.959	0.091	-0.989	-1.502			
		4:KOMBINASI	12.172	985.229	0.000	0.000	0.000	6.251			
		5:KOMB B. MA	12.5E 3	784.349	-149.057	0.096	-1.038	2.496			
21913	14657	1:BEBAN MATI	-12.844	1.3E 3	-0.000	0.000	0.000	14.944			
		2:BEBAN HIDL	4.074	528.699	-0.000	0.000	-0.000	6.780			
		3:BEBAN GEM	-3.15E 3	35.290	16.851	0.070	-0.114	-1.052			
		4:KOMBINASI	-8.894	2.4E 3	-0.000	0.000	0.000	28.780			
		5:KOMB B. MA	-3.32E 3	1.65E 3	17.693	0.074	-0.120	17.907			
	14866	1:BEBAN MATI	12.844	-1.01E 3	0.000	-0.000	0.000	1.999			
		2:BEBAN HIDL	-4.074	-528.699	0.000	-0.000	0.000	0.997			
		3:BEBAN GEM	3.15E 3	-35.290	-16.851	-0.070	-0.134	1.572			
		4:KOMBINASI	8.894	-2.06E 3	0.000	-0.000	0.000	3.995			
		5:KOMB B. MA	3.32E 3	-1.36E 3	-17.693	-0.074	-0.140	4.248			
21914	14678	1:BEBAN MATI	-8.393	-305.656	-0.000	-0.000	0.000	-10.136			
		2:BEBAN HIDL	3.981	-172.468	-0.000	-0.000	0.000	-4.144			
		3:BEBAN GEM	-1.45E 3	-83.475	5.325	-0.088	-0.038	0.327			
		4:KOMBINASI	-3.702	-642.737	-0.000	-0.000	0.000	-18.794			



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Job No 1	Sheet No 407	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-1.53E 3	-496.786	5.592	-0.093	-0.040	-12.280			
	14859	1:BEBAN MATI	8.393	593.971	0.000	0.000	0.000	3.520			
		2:BEBAN HIDL	-3.981	172.468	0.000	0.000	0.000	1.607			
		3:BEBAN GEM	1.45E 3	83.475	-5.325	0.088	-0.040	-1.555			
		4:KOMBINASI	3.702	988.714	0.000	0.000	0.000	6.795			
		5:KOMB B. MA	1.53E 3	785.100	-5.592	0.093	-0.042	2.852			
21915	14654	1:BEBAN MATI	2.199	1.47E 3	-0.000	0.000	0.000	19.090			
		2:BEBAN HIDL	4.667	533.659	-0.000	0.000	-0.000	6.762			
		3:BEBAN GEM	-793.789	38.078	2.720	0.072	-0.022	-0.916			
		4:KOMBINASI	10.106	2.62E 3	-0.000	0.000	0.000	33.728			
		5:KOMB B. MA	-828.479	1.83E 3	2.856	0.076	-0.023	22.186			
	14852	1:BEBAN MATI	-2.199	-1.19E 3	0.000	-0.000	0.000	0.472			
		2:BEBAN HIDL	-4.667	-533.659	0.000	-0.000	0.000	1.088			
		3:BEBAN GEM	793.789	-38.078	-2.720	-0.072	-0.018	1.476			
		4:KOMBINASI	-10.106	-2.28E 3	0.000	-0.000	0.000	2.306			
		5:KOMB B. MA	828.479	-1.55E 3	-2.856	-0.076	-0.019	2.674			
21916	14666	1:BEBAN MATI	-0.204	-539.569	-0.000	-0.000	-0.000	-13.966			
		2:BEBAN HIDL	4.564	-227.891	-0.000	-0.000	0.000	-5.481			
		3:BEBAN GEM	-573.601	-114.538	1.566	-0.101	-0.011	-0.366			
		4:KOMBINASI	7.058	-1.01E 3	-0.000	-0.000	0.000	-25.528			
		5:KOMB B. MA	-599.746	-796.568	1.644	-0.106	-0.012	-17.639			
	14741	1:BEBAN MATI	0.204	827.883	0.000	0.000	0.000	3.908			
		2:BEBAN HIDL	-4.564	227.891	0.000	0.000	0.000	2.129			
		3:BEBAN GEM	573.601	114.538	-1.566	0.101	-0.012	-1.318			
		4:KOMBINASI	-7.058	1.36E 3	0.000	0.000	0.000	8.096			
		5:KOMB B. MA	599.746	1.08E 3	-1.644	0.106	-0.012	3.801			
21917	14679	1:BEBAN MATI	9.535	1.61E 3	0.515	-1.643	-0.004	-8.769			
		2:BEBAN HIDL	-0.048	223.050	0.215	-1.339	-0.001	-2.086			
		3:BEBAN GEM	-16.746	-337.103	-3.924	0.482	0.021	-4.439			
		4:KOMBINASI	11.365	2.29E 3	0.962	-4.114	-0.006	-13.860			
		5:KOMB B. MA	-8.077	1.39E 3	-3.477	-1.940	0.018	-14.682			
	14682	1:BEBAN MATI	-9.535	-256.515	-0.515	1.643	-0.002	19.734			
		2:BEBAN HIDL	0.048	-223.050	-0.215	1.339	-0.002	4.710			
		3:BEBAN GEM	16.746	337.103	3.924	-0.482	0.025	0.472			
		4:KOMBINASI	-11.365	-664.699	-0.962	4.114	-0.005	31.217			
		5:KOMB B. MA	8.077	-36.387	3.477	1.940	0.023	23.056			
21918	14681	1:BEBAN MATI	49.267	3.65E 3	0.024	3.255	0.001	11.282			
		2:BEBAN HIDL	26.771	747.672	-0.423	2.446	0.002	2.678			
		3:BEBAN GEM	-474.116	-940.533	6.171	-0.611	-0.028	-22.417			
		4:KOMBINASI	101.954	5.58E 3	-0.647	7.819	0.004	17.824			
		5:KOMB B. MA	-432.492	3.12E 3	6.250	4.080	-0.027	-10.649			
	14688	1:BEBAN MATI	-49.267	-2.81E 3	-0.024	-3.255	-0.001	12.495			
		2:BEBAN HIDL	-26.771	-747.672	0.423	-2.446	0.001	2.821			
		3:BEBAN GEM	474.116	940.533	-6.171	0.611	-0.018	15.500			
		4:KOMBINASI	-101.954	-4.57E 3	0.647	-7.819	0.001	19.508			
		5:KOMB B. MA	432.492	-2.27E 3	-6.250	-4.080	-0.019	30.463			
21919	14682	1:BEBAN MATI	0.031	-454.447	1.320	1.590	-0.007	-19.719			
		2:BEBAN HIDL	1.128	-241.975	-0.499	0.591	0.003	-4.776			



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Job No 1	Sheet No 408	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-32.073	-333.799	3.437	-0.612	-0.018	-0.391			
		4:KOMBINASI	1.842	-932.496	0.787	2.853	-0.004	-31.304			
		5:KOMB B. MA	-32.970	-950.121	4.630	1.302	-0.024	-22.995			
	14684	1:BEBAN MATI	-0.031	1.8E 3	-1.320	-1.590	-0.009	6.425			
		2:BEBAN HIDL	-1.128	241.975	0.499	-0.591	0.003	1.928			
		3:BEBAN GEM	32.073	333.799	-3.437	0.612	-0.022	-3.537			
		4:KOMBINASI	-1.842	2.55E 3	-0.787	-2.853	-0.006	10.795			
		5:KOMB B. MA	32.970	2.3E 3	-4.630	-1.302	-0.030	3.869			
21920	14684	1:BEBAN MATI	-28.021	-2.22E 3	7.457	4.262	-0.044	-4.789			
		2:BEBAN HIDL	11.388	-527.560	-3.050	2.076	0.018	-1.227			
		3:BEBAN GEM	-108.825	-396.387	21.473	-1.609	-0.128	3.322			
		4:KOMBINASI	-15.404	-3.5E 3	4.068	8.436	-0.024	-7.711			
		5:KOMB B. MA	-135.454	-2.95E 3	28.173	3.818	-0.168	-2.037			
	14535	1:BEBAN MATI	28.021	3.57E 3	-7.457	-4.262	-0.044	-29.230			
		2:BEBAN HIDL	-11.388	527.560	3.050	-2.076	0.018	-4.981			
		3:BEBAN GEM	108.825	396.387	-21.473	1.609	-0.124	-7.987			
		4:KOMBINASI	15.404	5.12E 3	-4.068	-8.436	-0.024	-43.046			
		5:KOMB B. MA	135.454	4.3E 3	-28.173	-3.818	-0.164	-40.605			
21921	14686	1:BEBAN MATI	-100.060	3.88E 3	0.041	-0.217	0.001	14.111			
		2:BEBAN HIDL	39.904	1.66E 3	-0.025	0.063	0.000	6.034			
		3:BEBAN GEM	-303.524	-909.643	-2.778	-0.608	0.013	-21.477			
		4:KOMBINASI	-56.226	7.3E 3	0.009	-0.160	0.001	26.587			
		5:KOMB B. MA	-394.818	3.91E 3	-2.891	-0.818	0.014	-4.820			
	14691	1:BEBAN MATI	100.060	-3.65E 3	-0.041	0.217	-0.001	13.563			
		2:BEBAN HIDL	-39.904	-1.66E 3	0.025	-0.063	0.000	6.147			
		3:BEBAN GEM	303.524	909.643	2.778	0.608	0.007	14.787			
		4:KOMBINASI	56.226	-7.03E 3	-0.009	0.160	-0.001	26.111			
		5:KOMB B. MA	394.818	-3.69E 3	2.891	0.818	0.007	32.777			
21922	14688	1:BEBAN MATI	39.684	2.4E 3	0.296	1.918	-0.000	-13.528			
		2:BEBAN HIDL	21.845	477.685	-0.305	1.613	0.001	-3.230			
		3:BEBAN GEM	-398.295	-918.706	4.822	-0.223	-0.021	-15.192			
		4:KOMBINASI	82.573	3.64E 3	-0.133	4.882	0.001	-21.402			
		5:KOMB B. MA	-365.418	1.72E 3	5.176	2.651	-0.022	-31.417			
	14693	1:BEBAN MATI	-39.684	-1.56E 3	-0.296	-1.918	-0.002	28.075			
		2:BEBAN HIDL	-21.845	-477.685	0.305	-1.613	0.001	6.744			
		3:BEBAN GEM	398.295	918.706	-4.822	0.223	-0.014	8.435			
		4:KOMBINASI	-82.573	-2.63E 3	0.133	-4.882	-0.000	44.480			
		5:KOMB B. MA	365.418	-877.825	-5.176	-2.651	-0.016	40.977			
21923	14691	1:BEBAN MATI	-77.207	2.59E 3	-0.032	-0.183	0.001	-14.737			
		2:BEBAN HIDL	30.246	1.07E 3	-0.024	0.043	0.000	-6.556			
		3:BEBAN GEM	-240.944	-840.366	-3.072	-0.427	0.011	-14.443			
		4:KOMBINASI	-44.254	4.82E 3	-0.077	-0.150	0.001	-28.174			
		5:KOMB B. MA	-312.050	2.35E 3	-3.272	-0.606	0.012	-33.836			
	14696	1:BEBAN MATI	77.207	-2.36E 3	0.032	0.183	-0.000	32.957			
		2:BEBAN HIDL	-30.246	-1.07E 3	0.024	-0.043	0.000	14.443			
		3:BEBAN GEM	240.944	840.366	3.072	0.427	0.012	8.262			
		4:KOMBINASI	44.254	-4.55E 3	0.077	0.150	-0.000	62.657			
		5:KOMB B. MA	312.050	-2.13E 3	3.272	0.606	0.012	50.298			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21924	14693	1:BEBAN MATI	31.761	1.17E 3	0.119	0.974	0.000	-28.787			
		2:BEBAN HIDL	19.184	221.781	-0.152	0.911	0.000	-7.056			
		3:BEBAN GEM	-350.551	-907.578	2.784	0.006	-0.015	-8.167			
		4:KOMBINASI	68.808	1.76E 3	-0.100	2.627	0.001	-45.835			
		5:KOMB B. MA	-324.807	349.915	2.951	1.527	-0.015	-41.596			
14599	14599	1:BEBAN MATI	-31.761	-325.807	-0.119	-0.974	-0.001	34.287			
		2:BEBAN HIDL	-19.184	-221.781	0.152	-0.911	0.001	8.687			
		3:BEBAN GEM	350.551	907.578	-2.784	-0.006	-0.006	1.492			
		4:KOMBINASI	-68.808	-745.819	0.100	-2.627	-0.000	55.045			
		5:KOMB B. MA	324.807	494.081	-2.951	-1.527	-0.007	41.066			
21925	14696	1:BEBAN MATI	-64.468	1.45E 3	-0.503	-0.114	0.002	-34.162			
		2:BEBAN HIDL	24.756	579.173	-0.009	0.033	0.000	-14.898			
		3:BEBAN GEM	-210.893	-818.969	-2.827	-0.270	0.007	-7.850			
		4:KOMBINASI	-37.752	2.66E 3	-0.617	-0.084	0.002	-64.830			
		5:KOMB B. MA	-271.052	934.267	-3.476	-0.378	0.009	-51.343			
14619	14619	1:BEBAN MATI	64.468	-1.22E 3	0.503	0.114	0.002	43.974			
		2:BEBAN HIDL	-24.756	-579.173	0.009	-0.033	-0.000	19.157			
		3:BEBAN GEM	210.893	818.969	2.827	0.270	0.014	1.827			
		4:KOMBINASI	37.752	-2.39E 3	0.617	0.084	0.002	83.420			
		5:KOMB B. MA	271.052	-709.022	3.476	0.378	0.017	57.386			
21926	14697	1:BEBAN MATI	-1.029	360.758	0.339	0.070	-0.002	-8.542			
		2:BEBAN HIDL	0.844	143.095	0.009	-0.012	0.000	-4.271			
		3:BEBAN GEM	32.727	-26.725	-0.090	-0.095	-0.000	-0.614			
		4:KOMBINASI	0.116	661.863	0.421	0.065	-0.003	-17.085			
		5:KOMB B. MA	33.841	418.554	0.250	-0.036	-0.002	-11.750			
14698	14698	1:BEBAN MATI	1.029	-130.107	-0.339	-0.070	-0.002	11.431			
		2:BEBAN HIDL	-0.844	-143.095	-0.009	0.012	-0.000	5.955			
		3:BEBAN GEM	-32.727	26.725	0.090	0.095	0.001	0.299			
		4:KOMBINASI	-0.116	-385.081	-0.421	-0.065	-0.002	23.245			
		5:KOMB B. MA	-33.841	-187.903	-0.250	0.036	-0.001	15.318			
21927	14698	1:BEBAN MATI	0.273	-564.269	0.426	-0.110	-0.002	-11.246			
		2:BEBAN HIDL	0.943	-320.758	0.002	-0.038	0.000	-5.881			
		3:BEBAN GEM	51.531	-31.266	0.192	0.074	-0.001	-0.260			
		4:KOMBINASI	1.837	-1.19E 3	0.514	-0.192	-0.003	-22.904			
		5:KOMB B. MA	54.946	-789.554	0.629	-0.055	-0.004	-15.047			
14699	14699	1:BEBAN MATI	-0.273	794.921	-0.426	0.110	-0.003	3.248			
		2:BEBAN HIDL	-0.943	320.758	-0.002	0.038	-0.000	2.106			
		3:BEBAN GEM	-51.531	31.266	-0.192	-0.074	-0.001	-0.108			
		4:KOMBINASI	-1.837	1.47E 3	-0.514	0.192	-0.003	7.268			
		5:KOMB B. MA	-54.946	1.02E 3	-0.629	0.055	-0.003	4.398			
21928	14699	1:BEBAN MATI	2.296	-1.07E 3	0.637	-0.133	-0.003	-1.120			
		2:BEBAN HIDL	-0.072	-560.714	-0.036	-0.038	0.000	-1.044			
		3:BEBAN GEM	80.498	-3.272	0.621	0.046	-0.001	0.172			
		4:KOMBINASI	2.640	-2.18E 3	0.707	-0.219	-0.004	-3.015			
		5:KOMB B. MA	86.775	-1.41E 3	1.267	-0.107	-0.004	-1.566			
14619	14619	1:BEBAN MATI	-2.296	1.3E 3	-0.637	0.133	-0.004	-12.845			
		2:BEBAN HIDL	0.072	560.714	0.036	0.038	0.000	-5.554			
		3:BEBAN GEM	-80.498	3.272	-0.621	-0.046	-0.006	-0.210			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-2.640	2.46E 3	-0.707	0.219	-0.005	-24.301			
		5:KOMB B. MA	-86.775	1.64E 3	-1.267	0.107	-0.011	-16.398			
21929	14701	1:BEBAN MATI	13.857	-1.96E 3	-0.100	-2.164	0.002	-24.768			
		2:BEBAN HIDL	18.276	-568.742	0.026	-1.337	-0.000	-6.025			
		3:BEBAN GEM	-248.316	-932.706	3.434	0.658	-0.016	5.497			
		4:KOMBINASI	45.871	-3.26E 3	-0.079	-4.735	0.002	-39.360			
		5:KOMB B. MA	-235.908	-3.28E 3	3.521	-2.275	-0.015	-22.610			
	14706	1:BEBAN MATI	-13.857	2.8E 3	0.100	2.164	-0.001	7.276			
		2:BEBAN HIDL	-18.276	568.742	-0.026	1.337	0.000	1.841			
		3:BEBAN GEM	248.316	932.706	-3.434	-0.658	-0.010	-12.357			
		4:KOMBINASI	-45.871	4.27E 3	0.079	4.735	-0.001	11.677			
		5:KOMB B. MA	235.908	4.12E 3	-3.521	2.275	-0.011	-4.594			
21930	14704	1:BEBAN MATI	-53.070	-2.83E 3	-0.019	0.159	0.001	-29.008			
		2:BEBAN HIDL	19.528	-1.24E 3	0.130	-0.037	-0.000	-12.929			
		3:BEBAN GEM	-167.948	-850.908	5.672	0.420	-0.028	5.033			
		4:KOMBINASI	-32.439	-5.39E 3	0.185	0.130	-0.000	-55.497			
		5:KOMB B. MA	-217.699	-4.47E 3	6.014	0.577	-0.029	-31.481			
	14709	1:BEBAN MATI	53.070	3.06E 3	0.019	-0.159	-0.000	7.335			
		2:BEBAN HIDL	-19.528	1.24E 3	-0.130	0.037	-0.001	3.801			
		3:BEBAN GEM	167.948	850.908	-5.672	-0.420	-0.014	-11.292			
		4:KOMBINASI	32.439	5.66E 3	-0.185	-0.130	-0.001	14.883			
		5:KOMB B. MA	217.699	4.7E 3	-6.014	-0.577	-0.016	-2.241			
21931	14706	1:BEBAN MATI	1.941	-3.13E 3	-0.273	-3.109	0.004	-6.133			
		2:BEBAN HIDL	19.537	-798.359	0.067	-2.021	-0.001	-1.407			
		3:BEBAN GEM	-170.554	-970.088	4.505	0.538	-0.015	12.396			
		4:KOMBINASI	33.588	-5.03E 3	-0.221	-6.964	0.003	-9.611			
		5:KOMB B. MA	-165.419	-4.63E 3	4.497	-3.756	-0.012	6.039			
	14711	1:BEBAN MATI	-1.941	3.97E 3	0.273	3.109	-0.002	-19.983			
		2:BEBAN HIDL	-19.537	798.359	-0.067	2.021	0.000	-4.465			
		3:BEBAN GEM	170.554	970.088	-4.505	-0.538	-0.018	-19.531			
		4:KOMBINASI	-33.588	6.04E 3	0.221	6.964	-0.002	-31.123			
		5:KOMB B. MA	165.419	5.47E 3	-4.497	3.756	-0.021	-43.169			
21932	14709	1:BEBAN MATI	-51.262	-3.95E 3	0.040	0.164	-0.000	-6.028			
		2:BEBAN HIDL	18.825	-1.75E 3	0.146	-0.055	-0.001	-3.248			
		3:BEBAN GEM	-114.109	-935.233	9.322	0.582	-0.042	11.642			
		4:KOMBINASI	-31.396	-7.54E 3	0.282	0.108	-0.001	-12.431			
		5:KOMB B. MA	-159.782	-5.98E 3	9.915	0.742	-0.045	4.247			
	14714	1:BEBAN MATI	51.262	4.17E 3	-0.040	-0.164	0.000	-23.824			
		2:BEBAN HIDL	-18.825	1.75E 3	-0.146	0.055	-0.001	-9.640			
		3:BEBAN GEM	114.109	935.233	-9.322	-0.582	-0.026	-18.521			
		4:KOMBINASI	31.396	7.81E 3	-0.282	-0.108	-0.001	-44.013			
		5:KOMB B. MA	159.782	6.2E 3	-9.915	-0.742	-0.028	-49.055			
21933	14711	1:BEBAN MATI	-22.041	-4.19E 3	-8.429	-4.092	0.024	21.407			
		2:BEBAN HIDL	23.829	-926.569	1.916	-2.494	-0.005	5.021			
		3:BEBAN GEM	-56.294	-1.06E 3	2.516	0.288	0.009	19.545			
		4:KOMBINASI	11.677	-6.51E 3	-7.049	-8.900	0.020	33.722			
		5:KOMB B. MA	-66.853	-5.86E 3	-4.637	-5.287	0.030	44.942			
	14553	1:BEBAN MATI	22.041	5.03E 3	8.429	4.092	0.038	-55.335			



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Job No 1	Sheet No 411	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-23.829	926.569	-1.916	2.494	-0.009	-11.836			
		3:BEBAN GEM	56.294	1.06E 3	-2.516	-0.288	-0.027	-27.322			
		4:KOMBINASI	-11.677	7.52E 3	7.049	8.900	0.032	-85.340			
		5:KOMB B. MA	66.853	6.7E 3	4.637	5.287	0.004	-91.125			
21934	14714	1:BEBAN MATI	-52.227	-4.97E 3	0.153	0.147	-0.002	25.160			
		2:BEBAN HIDL	19.583	-2.17E 3	0.144	-0.073	-0.001	10.217			
		3:BEBAN GEM	3.040	-1.14E 3	8.327	0.882	-0.039	18.729			
		4:KOMBINASI	-31.340	-9.45E 3	0.414	0.060	-0.003	46.539			
		5:KOMB B. MA	-37.285	-7.47E 3	8.983	1.029	-0.043	50.956			
	14561	1:BEBAN MATI	52.227	5.2E 3	-0.153	-0.147	0.001	-62.563			
		2:BEBAN HIDL	-19.583	2.17E 3	-0.144	0.073	-0.001	-26.208			
		3:BEBAN GEM	-3.040	1.14E 3	-8.327	-0.882	-0.023	-27.101			
		4:KOMBINASI	31.340	9.72E 3	-0.414	-0.060	-0.000	-117.008			
		5:KOMB B. MA	37.285	7.7E 3	-8.983	-1.029	-0.024	-106.743			
21935	14715	1:BEBAN MATI	-41.265	1.17E 3	0.334	0.016	-0.002	-9.944			
		2:BEBAN HIDL	7.502	485.898	0.003	0.025	-0.000	-4.192			
		3:BEBAN GEM	69.790	-304.863	-9.025	0.689	0.061	-4.288			
		4:KOMBINASI	-37.514	2.18E 3	0.406	0.059	-0.003	-18.640			
		5:KOMB B. MA	36.516	1.14E 3	-9.141	0.754	0.062	-16.962			
	14716	1:BEBAN MATI	41.265	-810.819	-0.334	-0.016	-0.002	21.606			
		2:BEBAN HIDL	-7.502	-485.898	-0.003	-0.025	-0.000	9.910			
		3:BEBAN GEM	-69.790	304.863	9.025	-0.689	0.045	0.701			
		4:KOMBINASI	37.514	-1.75E 3	-0.406	-0.059	-0.002	41.783			
		5:KOMB B. MA	-36.516	-782.252	9.141	-0.754	0.046	28.288			
21936	14716	1:BEBAN MATI	-26.142	-961.949	0.136	-0.053	-0.001	-21.548			
		2:BEBAN HIDL	4.254	-483.339	0.110	0.001	-0.001	-9.884			
		3:BEBAN GEM	201.098	-315.715	-1.995	-0.610	0.018	-0.554			
		4:KOMBINASI	-24.564	-1.93E 3	0.339	-0.062	-0.002	-41.672			
		5:KOMB B. MA	187.563	-1.58E 3	-1.893	-0.693	0.017	-28.060			
	14717	1:BEBAN MATI	26.142	1.32E 3	-0.136	0.053	-0.001	8.107			
		2:BEBAN HIDL	-4.254	483.339	-0.110	-0.001	-0.001	4.196			
		3:BEBAN GEM	-201.098	315.715	1.995	0.610	0.006	-3.162			
		4:KOMBINASI	24.564	2.36E 3	-0.339	0.062	-0.002	16.442			
		5:KOMB B. MA	-187.563	1.94E 3	1.893	0.693	0.005	7.305			
21937	14717	1:BEBAN MATI	-20.137	-2.76E 3	-0.120	-0.027	0.001	-6.626			
		2:BEBAN HIDL	2.351	-1.24E 3	0.339	0.007	-0.002	-3.402			
		3:BEBAN GEM	376.571	-387.709	6.651	-2.103	-0.049	3.214			
		4:KOMBINASI	-20.404	-5.29E 3	0.397	-0.021	-0.002	-13.395			
		5:KOMB B. MA	376.672	-3.91E 3	7.066	-2.230	-0.052	-5.293			
	14561	1:BEBAN MATI	20.137	3.12E 3	0.120	0.027	0.000	-27.966			
		2:BEBAN HIDL	-2.351	1.24E 3	-0.339	-0.007	-0.002	-11.143			
		3:BEBAN GEM	-376.571	387.709	-6.651	2.103	-0.029	-7.776			
		4:KOMBINASI	20.404	5.72E 3	-0.397	0.021	-0.003	-51.388			
		5:KOMB B. MA	-376.672	4.27E 3	-7.066	2.230	-0.031	-42.817			
21938	14718	1:BEBAN MATI	-8.162	577.151	-0.323	1.008	0.002	-6.543			
		2:BEBAN HIDL	-2.524	-60.343	0.467	0.679	-0.003	-1.612			
		3:BEBAN GEM	-37.397	-656.136	0.990	0.261	-0.002	-2.834			
		4:KOMBINASI	-13.833	596.033	0.360	2.296	-0.002	-10.430			



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Job No 1	Sheet No 412	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-48.943	-147.998	0.997	1.689	-0.002	-10.485			
	14721	1:BEBAN MATI	8.162	773.242	0.323	-1.008	0.002	5.389			
		2:BEBAN HIDL	2.524	60.343	-0.467	-0.679	-0.003	0.902			
		3:BEBAN GEM	37.397	656.136	-0.990	-0.261	-0.009	-4.887			
		4:KOMBINASI	13.833	1.02E 3	-0.360	-2.296	-0.002	7.909			
		5:KOMB B. MA	48.943	1.5E 3	-0.997	-1.689	-0.009	0.798			
21939	14720	1:BEBAN MATI	-59.263	2.71E 3	-6.588	-3.437	0.017	2.171			
		2:BEBAN HIDL	36.201	1.17E 3	-1.673	-1.695	0.005	0.870			
		3:BEBAN GEM	-72.466	-968.274	-4.384	-0.418	-0.022	-18.847			
		4:KOMBINASI	-13.195	5.12E 3	-10.583	-6.837	0.027	3.997			
		5:KOMB B. MA	-113.632	2.39E 3	-12.195	-4.892	-0.004	-17.096			
	14959	1:BEBAN MATI	59.263	-2.56E 3	6.588	3.437	0.016	10.736			
		2:BEBAN HIDL	-36.201	-1.17E 3	1.673	1.695	0.003	4.873			
		3:BEBAN GEM	72.466	968.274	4.384	0.418	0.044	14.099			
		4:KOMBINASI	13.195	-4.94E 3	10.583	6.837	0.024	20.680			
		5:KOMB B. MA	113.632	-2.24E 3	12.195	4.892	0.064	28.464			
21940	14721	1:BEBAN MATI	-5.924	-1.15E 3	0.814	2.176	-0.008	-4.547			
		2:BEBAN HIDL	-7.319	-327.150	0.330	1.470	-0.002	-0.376			
		3:BEBAN GEM	260.609	-602.330	6.906	-1.464	-0.135	5.048			
		4:KOMBINASI	-18.820	-1.9E 3	1.505	4.963	-0.013	-6.057			
		5:KOMB B. MA	263.323	-1.97E 3	8.264	1.522	-0.151	0.528			
	14539	1:BEBAN MATI	5.924	2.5E 3	-0.814	-2.176	-0.001	-16.884			
		2:BEBAN HIDL	7.319	327.150	-0.330	-1.470	-0.002	-3.474			
		3:BEBAN GEM	-260.609	602.330	-6.906	1.464	0.054	-12.136			
		4:KOMBINASI	18.820	3.52E 3	-1.505	-4.963	-0.005	-25.820			
		5:KOMB B. MA	-263.323	3.33E 3	-8.264	-1.522	0.054	-31.712			
21941	14723	1:BEBAN MATI	-33.740	1.03E 3	0.369	1.526	-0.002	-2.901			
		2:BEBAN HIDL	-2.777	112.778	0.132	0.024	-0.000	-0.417			
		3:BEBAN GEM	-975.998	-2.4E 3	2.004	-0.145	0.015	-15.639			
		4:KOMBINASI	-44.931	1.42E 3	0.654	1.870	-0.003	-4.149			
		5:KOMB B. MA	-1.06E 3	-1.42E 3	2.552	1.389	0.013	-19.572			
	14727	1:BEBAN MATI	33.740	94.439	-0.369	-1.526	-0.001	7.493			
		2:BEBAN HIDL	2.777	-112.778	-0.132	-0.024	-0.001	1.523			
		3:BEBAN GEM	975.998	2.4E 3	-2.004	0.145	-0.035	-7.865			
		4:KOMBINASI	44.931	-67.118	-0.654	-1.870	-0.003	11.429			
		5:KOMB B. MA	1.06E 3	2.54E 3	-2.552	-1.389	-0.038	0.148			
21942	14725	1:BEBAN MATI	-42.472	1.57E 3	-16.291	-2.582	0.024	-21.284			
		2:BEBAN HIDL	26.717	674.369	-3.063	-1.357	0.005	-9.504			
		3:BEBAN GEM	175.775	-856.697	38.211	-0.067	-0.114	-9.138			
		4:KOMBINASI	-8.219	2.96E 3	-24.450	-5.271	0.037	-40.747			
		5:KOMB B. MA	158.122	1.07E 3	21.993	-3.467	-0.092	-36.581			
	14963	1:BEBAN MATI	42.472	-1.49E 3	16.291	2.582	0.016	25.032			
		2:BEBAN HIDL	-26.717	-674.369	3.063	1.357	0.003	11.157			
		3:BEBAN GEM	-175.775	856.697	-38.211	0.067	0.020	7.037			
		4:KOMBINASI	8.219	-2.87E 3	24.450	5.271	0.023	47.890			
		5:KOMB B. MA	-158.122	-996.309	-21.993	3.467	0.038	39.115			
21943	14727	1:BEBAN MATI	-54.663	-521.067	11.123	3.904	-0.045	-6.726			
		2:BEBAN HIDL	1.170	-169.804	0.001	1.246	-0.000	-1.261			



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Job No 1	Sheet No 413	Rev
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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.17E 3	-2.55E 3	35.031	0.964	-0.015	8.239			
		4:KOMBINASI	-63.723	-896.966	13.350	6.679	-0.054	-10.089			
		5:KOMB B. MA	-1.28E 3	-3.3E 3	47.906	5.664	-0.061	1.168			
	14597	1:BEBAN MATI	54.663	1.65E 3	-11.123	-3.904	-0.065	-3.902			
		2:BEBAN HIDL	-1.170	169.804	-0.001	-1.246	0.000	-0.404			
		3:BEBAN GEM	1.17E 3	2.55E 3	-35.031	-0.964	-0.328	-33.215			
		4:KOMBINASI	63.723	2.25E 3	-13.350	-6.679	-0.077	-5.328			
		5:KOMB B. MA	1.28E 3	4.42E 3	-47.906	-5.664	-0.409	-39.020			
21944	14728	1:BEBAN MATI	-38.107	-290.449	0.471	-0.136	-0.002	-2.175			
		2:BEBAN HIDL	-2.017	-139.738	0.096	-0.028	-0.001	-1.477			
		3:BEBAN GEM	262.542	-106.318	-0.032	-0.868	0.017	0.362			
		4:KOMBINASI	-48.956	-572.119	0.719	-0.207	-0.004	-4.974			
		5:KOMB B. MA	236.352	-485.925	0.495	-1.064	0.015	-2.681			
	14729	1:BEBAN MATI	38.107	521.100	-0.471	0.136	-0.003	-2.600			
		2:BEBAN HIDL	2.017	139.738	-0.096	0.028	-0.000	-0.167			
		3:BEBAN GEM	-262.542	106.318	0.032	0.868	-0.017	-1.613			
		4:KOMBINASI	48.956	848.901	-0.719	0.207	-0.005	-3.387			
		5:KOMB B. MA	-236.352	716.577	-0.495	1.064	-0.021	-4.394			
21945	14729	1:BEBAN MATI	-70.840	-1.48E 3	1.483	-0.311	-0.007	3.766			
		2:BEBAN HIDL	-1.205	-645.552	0.117	-0.091	-0.001	0.847			
		3:BEBAN GEM	573.965	-166.974	22.307	-1.719	-0.104	1.657			
		4:KOMBINASI	-86.936	-2.81E 3	1.967	-0.520	-0.010	5.874			
		5:KOMB B. MA	531.100	-2.04E 3	24.975	-2.171	-0.116	6.013			
	14597	1:BEBAN MATI	70.840	1.71E 3	-1.483	0.311	-0.010	-22.542			
		2:BEBAN HIDL	1.205	645.552	-0.117	0.091	-0.001	-8.444			
		3:BEBAN GEM	-573.965	166.974	-22.307	1.719	-0.159	-3.622			
		4:KOMBINASI	86.936	3.09E 3	-1.967	0.520	-0.014	-40.560			
		5:KOMB B. MA	-531.100	2.27E 3	-24.975	2.171	-0.178	-31.411			
21946	14730	1:BEBAN MATI	14.004	2.48E 3	0.522	-1.627	-0.004	-14.423			
		2:BEBAN HIDL	19.144	418.260	0.157	-1.234	-0.001	-3.706			
		3:BEBAN GEM	99.403	-236.843	6.262	1.347	-0.055	-3.462			
		4:KOMBINASI	47.435	3.64E 3	0.878	-3.927	-0.006	-23.238			
		5:KOMB B. MA	129.863	2.48E 3	7.192	-0.953	-0.062	-20.282			
	14613	1:BEBAN MATI	-14.004	-790.874	-0.522	1.627	-0.004	38.472			
		2:BEBAN HIDL	-19.144	-418.260	-0.157	1.234	-0.001	9.859			
		3:BEBAN GEM	-99.403	236.843	-6.262	-1.347	-0.037	-0.022			
		4:KOMBINASI	-47.435	-1.62E 3	-0.878	3.927	-0.007	61.941			
		5:KOMB B. MA	-129.863	-793.145	-7.192	0.953	-0.043	44.365			
21947	14732	1:BEBAN MATI	67.785	4.5E 3	1.191	-4.087	-0.009	-14.974			
		2:BEBAN HIDL	17.061	882.459	0.046	-0.319	-0.000	-3.017			
		3:BEBAN GEM	-75.479	-866.400	65.228	-0.251	-0.534	-14.136			
		4:KOMBINASI	108.639	6.81E 3	1.504	-5.415	-0.010	-22.796			
		5:KOMB B. MA	-1.232	4.12E 3	69.708	-4.542	-0.569	-31.627			
	14633	1:BEBAN MATI	-67.785	-2.81E 3	-1.191	4.087	-0.009	68.711			
		2:BEBAN HIDL	-17.061	-882.459	-0.046	0.319	-0.001	15.998			
		3:BEBAN GEM	75.479	866.400	-65.228	0.251	-0.426	1.392			
		4:KOMBINASI	-108.639	-4.78E 3	-1.504	5.415	-0.012	108.050			
		5:KOMB B. MA	1.232	-2.43E 3	-69.708	4.542	-0.456	79.771			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21948	14733	1:BEBAN MATI	-2.894	328.392	0.000	0.000	-0.000	-11.252			
		2:BEBAN HIDL	2.115	51.806	-0.000	-0.000	0.000	-4.767			
		3:BEBAN GEM	-340.154	-114.085	1.634	0.097	-0.011	-2.616			
		4:KOMBINASI	-0.088	476.960	0.000	0.000	-0.000	-21.130			
		5:KOMB B. MA	-358.786	239.686	1.716	0.101	-0.012	-16.859			
14666	14666	1:BEBAN MATI	2.894	-40.078	-0.000	-0.000	-0.000	13.962			
		2:BEBAN HIDL	-2.115	-51.806	0.000	0.000	0.000	5.529			
		3:BEBAN GEM	340.154	114.085	-1.634	-0.097	-0.013	0.937			
		4:KOMBINASI	0.088	-130.983	-0.000	-0.000	-0.000	25.601			
		5:KOMB B. MA	358.786	48.628	-1.716	-0.101	-0.014	18.264			
21949	14734	1:BEBAN MATI	26.601	-3.22E 3	-1.219	4.641	0.014	-12.816			
		2:BEBAN HIDL	28.364	-844.987	-0.633	2.569	0.005	-2.858			
		3:BEBAN GEM	260.558	-330.294	-12.158	-2.488	0.055	3.765			
		4:KOMBINASI	77.304	-5.21E 3	-2.475	9.681	0.025	-19.953			
		5:KOMB B. MA	317.206	-4.07E 3	-14.364	3.571	0.075	-10.578			
14543	14543	1:BEBAN MATI	-26.601	4.9E 3	1.219	-4.641	0.004	-46.898			
		2:BEBAN HIDL	-28.364	844.987	0.633	-2.569	0.004	-9.571			
		3:BEBAN GEM	-260.558	330.294	12.158	2.488	0.124	-8.623			
		4:KOMBINASI	-77.304	7.24E 3	2.475	-9.681	0.011	-71.591			
		5:KOMB B. MA	-317.206	5.76E 3	14.364	-3.571	0.136	-61.695			
21950	14736	1:BEBAN MATI	67.785	4.5E 3	-1.191	4.087	0.009	-14.974			
		2:BEBAN HIDL	17.061	882.459	-0.046	0.319	0.000	-3.017			
		3:BEBAN GEM	-305.335	-1E 3	-54.805	-1.185	0.471	-14.573			
		4:KOMBINASI	108.639	6.81E 3	-1.503	5.415	0.010	-22.796			
		5:KOMB B. MA	-242.581	3.97E 3	-58.764	3.034	0.503	-32.085			
14638	14638	1:BEBAN MATI	-67.785	-2.81E 3	1.191	-4.087	0.009	68.711			
		2:BEBAN HIDL	-17.061	-882.459	0.046	-0.319	0.001	15.998			
		3:BEBAN GEM	305.335	1E 3	54.805	1.185	0.336	-0.200			
		4:KOMBINASI	-108.639	-4.78E 3	1.503	-5.415	0.012	108.050			
		5:KOMB B. MA	242.581	-2.28E 3	58.764	-3.034	0.362	78.100			
21951	14737	1:BEBAN MATI	31.403	591.843	-0.133	0.198	0.001	-3.148			
		2:BEBAN HIDL	5.412	175.201	-0.044	0.002	0.000	-3.080			
		3:BEBAN GEM	1.09E 3	-16.670	-3.010	-0.326	0.024	-0.343			
		4:KOMBINASI	46.342	990.534	-0.230	0.241	0.002	-8.705			
		5:KOMB B. MA	1.18E 3	679.460	-3.320	-0.143	0.027	-5.355			
14666	14666	1:BEBAN MATI	-31.403	-303.529	0.133	-0.198	0.001	9.733			
		2:BEBAN HIDL	-5.412	-175.201	0.044	-0.002	0.000	5.657			
		3:BEBAN GEM	-1.09E 3	16.670	3.010	0.326	0.020	0.097			
		4:KOMBINASI	-46.342	-644.557	0.230	-0.241	0.001	20.731			
		5:KOMB B. MA	-1.18E 3	-391.146	3.320	0.143	0.022	13.229			
21952	14738	1:BEBAN MATI	33.877	-1.12E 3	0.264	-0.472	-0.002	-1.977			
		2:BEBAN HIDL	5.312	-541.692	0.074	-0.107	-0.001	-2.454			
		3:BEBAN GEM	1.31E 3	44.928	8.372	0.310	-0.041	0.323			
		4:KOMBINASI	49.152	-2.21E 3	0.434	-0.737	-0.004	-6.298			
		5:KOMB B. MA	1.41E 3	-1.4E 3	9.098	-0.211	-0.045	-3.109			
14638	14638	1:BEBAN MATI	-33.877	1.41E 3	-0.264	0.472	-0.002	-16.578			
		2:BEBAN HIDL	-5.312	541.692	-0.074	0.107	-0.000	-5.514			
		3:BEBAN GEM	-1.31E 3	-44.928	-8.372	-0.310	-0.083	0.337			



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Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-49.152	2.55E 3	-0.434	0.737	-0.003	-28.717			
		5:KOMB B. MA	-1.41E 3	1.68E 3	-9.098	0.211	-0.089	-19.533			
21953	14740	1:BEBAN MATI	61.710	-5.52E 3	-1.524	-0.177	0.012	-11.933			
		2:BEBAN HIDL	7.947	-1.6E 3	-0.167	-0.991	0.001	-3.859			
		3:BEBAN GEM	-70.067	-1.06E 3	10.563	0.732	-0.071	10.414			
		4:KOMBINASI	86.767	-9.18E 3	-2.095	-1.798	0.016	-20.494			
		5:KOMB B. MA	-7.093	-7.59E 3	9.467	-0.003	-0.062	-3.314			
	14570	1:BEBAN MATI	-61.710	7.21E 3	1.524	0.177	0.011	-81.695			
		2:BEBAN HIDL	-7.947	1.6E 3	0.167	0.991	0.001	-19.612			
		3:BEBAN GEM	70.067	1.06E 3	-10.563	-0.732	-0.085	-26.015			
		4:KOMBINASI	-86.767	11.2E 3	2.095	1.798	0.014	-129.413			
		5:KOMB B. MA	7.093	9.28E 3	-9.467	0.003	-0.078	-120.778			
21954	14741	1:BEBAN MATI	2.424	-1.3E 3	-0.000	-0.000	0.000	-2.230			
		2:BEBAN HIDL	4.857	-570.063	-0.000	-0.000	0.000	-1.450			
		3:BEBAN GEM	-686.231	10.948	1.543	-0.081	-0.012	1.406			
		4:KOMBINASI	10.680	-2.48E 3	-0.000	-0.000	0.000	-4.996			
		5:KOMB B. MA	-715.204	-1.63E 3	1.620	-0.085	-0.013	-1.624			
	14654	1:BEBAN MATI	-2.424	1.59E 3	0.000	0.000	0.000	-19.052			
		2:BEBAN HIDL	-4.857	570.063	0.000	0.000	0.000	-6.936			
		3:BEBAN GEM	686.231	-10.948	-1.543	0.081	-0.010	-1.244			
		4:KOMBINASI	-10.680	2.82E 3	0.000	0.000	0.000	-33.960			
		5:KOMB B. MA	715.204	1.92E 3	-1.620	0.085	-0.011	-24.520			
21955	14743	1:BEBAN MATI	61.710	-5.52E 3	1.524	0.177	-0.012	-11.933			
		2:BEBAN HIDL	7.947	-1.6E 3	0.167	0.991	-0.001	-3.859			
		3:BEBAN GEM	-184.717	-1.01E 3	-8.373	0.880	0.052	10.751			
		4:KOMBINASI	86.767	-9.18E 3	2.095	1.798	-0.016	-20.494			
		5:KOMB B. MA	-127.475	-7.54E 3	-7.168	1.696	0.042	-2.960			
	14573	1:BEBAN MATI	-61.710	7.21E 3	-1.524	-0.177	-0.011	-81.695			
		2:BEBAN HIDL	-7.947	1.6E 3	-0.167	-0.991	-0.001	-19.612			
		3:BEBAN GEM	184.717	1.01E 3	8.373	-0.880	0.071	-25.667			
		4:KOMBINASI	-86.767	11.2E 3	-2.095	-1.798	-0.014	-129.413			
		5:KOMB B. MA	127.475	9.23E 3	7.168	-1.696	0.063	-120.413			
21956	14744	1:BEBAN MATI	0.886	2.64E 3	-0.581	0.025	0.005	-9.464			
		2:BEBAN HIDL	3.098	960.836	-0.046	0.157	0.000	-4.202			
		3:BEBAN GEM	1.49E 3	-184.579	-7.300	1.285	0.034	-2.856			
		4:KOMBINASI	6.020	4.71E 3	-0.771	0.281	0.006	-18.080			
		5:KOMB B. MA	1.57E 3	3.02E 3	-8.273	1.469	0.041	-14.984			
	14654	1:BEBAN MATI	-0.886	-2.19E 3	0.581	-0.025	0.004	44.987			
		2:BEBAN HIDL	-3.098	-960.836	0.046	-0.157	0.000	18.336			
		3:BEBAN GEM	-1.49E 3	184.579	7.300	-1.285	0.073	0.141			
		4:KOMBINASI	-6.020	-4.16E 3	0.771	-0.281	0.005	83.322			
		5:KOMB B. MA	-1.57E 3	-2.57E 3	8.273	-1.469	0.081	56.137			
21957	14745	1:BEBAN MATI	-13.189	-4.6E 3	2.353	-0.151	-0.019	-8.178			
		2:BEBAN HIDL	1.974	-1.88E 3	0.135	-0.244	-0.001	-3.498			
		3:BEBAN GEM	1.49E 3	-296.331	9.419	-2.682	-0.093	3.027			
		4:KOMBINASI	-12.669	-8.53E 3	3.040	-0.571	-0.024	-15.410			
		5:KOMB B. MA	1.55E 3	-6.04E 3	12.324	-3.113	-0.117	-7.098			
	14573	1:BEBAN MATI	13.189	5.05E 3	-2.353	0.151	-0.016	-62.803			



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Job No 1	Sheet No 416	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-1.974	1.88E 3	-0.135	0.244	-0.001	-24.191			
		3:BEBAN GEM	-1.49E 3	296.331	-9.419	2.682	-0.046	-7.386			
		4:KOMBINASI	12.669	9.07E 3	-3.040	0.571	-0.020	-114.068			
		5:KOMB B. MA	-1.55E 3	6.49E 3	-12.324	3.113	-0.065	-85.073			
21958	14746	1:BEBAN MATI	-34.500	1.11E 3	-0.220	0.448	0.002	-9.535			
		2:BEBAN HIDL	10.632	450.602	0.025	0.313	-0.000	-3.963			
		3:BEBAN GEM	-130.181	-323.887	-9.188	0.681	0.058	-4.320			
		4:KOMBINASI	-24.388	2.05E 3	-0.223	1.038	0.002	-17.783			
		5:KOMB B. MA	-164.810	1.04E 3	-9.852	1.351	0.062	-16.449			
	14749	1:BEBAN MATI	34.500	-750.648	0.220	-0.448	0.001	20.489			
		2:BEBAN HIDL	-10.632	-450.602	-0.025	-0.313	-0.000	9.266			
		3:BEBAN GEM	130.181	323.887	9.188	-0.681	0.051	0.509			
		4:KOMBINASI	24.388	-1.62E 3	0.223	-1.038	0.001	39.412			
		5:KOMB B. MA	164.810	-680.928	9.852	-1.351	0.054	26.583			
21959	14748	1:BEBAN MATI	-6.789	2.19E 3	0.539	1.831	-0.003	-3.457			
		2:BEBAN HIDL	3.154	374.674	-0.083	0.861	0.000	-0.928			
		3:BEBAN GEM	332.841	-1.29E 3	5.915	-0.192	-0.026	-13.425			
		4:KOMBINASI	-3.101	3.22E 3	0.513	3.575	-0.003	-5.633			
		5:KOMB B. MA	344.586	1.05E 3	6.700	2.146	-0.030	-18.110			
	14605	1:BEBAN MATI	6.789	-835.673	-0.539	-1.831	-0.003	21.237			
		2:BEBAN HIDL	-3.154	-374.674	0.083	-0.861	0.001	5.337			
		3:BEBAN GEM	-332.841	1.29E 3	-5.915	0.192	-0.044	-1.799			
		4:KOMBINASI	3.101	-1.6E 3	-0.513	-3.575	-0.003	34.023			
		5:KOMB B. MA	-344.586	297.864	-6.700	-2.146	-0.049	22.550			
21960	14749	1:BEBAN MATI	-22.068	-910.499	-0.341	-0.318	0.002	-20.420			
		2:BEBAN HIDL	7.993	-455.970	0.096	-0.076	-0.001	-9.221			
		3:BEBAN GEM	-115.856	-319.680	-4.365	-0.613	0.029	-0.367			
		4:KOMBINASI	-13.693	-1.82E 3	-0.255	-0.505	0.001	-39.257			
		5:KOMB B. MA	-138.921	-1.52E 3	-4.866	-1.008	0.032	-26.338			
	14751	1:BEBAN MATI	22.068	1.27E 3	0.341	0.318	0.002	7.585			
		2:BEBAN HIDL	-7.993	455.970	-0.096	0.076	-0.001	3.855			
		3:BEBAN GEM	115.856	319.680	4.365	0.613	0.022	-3.395			
		4:KOMBINASI	13.693	2.25E 3	0.255	0.505	0.002	15.270			
		5:KOMB B. MA	138.921	1.88E 3	4.866	1.008	0.025	6.333			
21961	14751	1:BEBAN MATI	-16.435	-2.67E 3	-0.999	-0.936	0.005	-6.393			
		2:BEBAN HIDL	7.590	-1.19E 3	0.272	-0.382	-0.002	-3.199			
		3:BEBAN GEM	-98.634	-364.417	5.700	-2.193	-0.039	3.462			
		4:KOMBINASI	-7.578	-5.11E 3	-0.764	-1.734	0.004	-12.789			
		5:KOMB B. MA	-115.447	-3.77E 3	5.150	-3.468	-0.036	-4.677			
	14536	1:BEBAN MATI	16.435	3.03E 3	0.999	0.936	0.006	-27.198			
		2:BEBAN HIDL	-7.590	1.19E 3	-0.272	0.382	-0.002	-10.793			
		3:BEBAN GEM	98.634	364.417	-5.700	2.193	-0.029	-7.751			
		4:KOMBINASI	7.578	5.54E 3	0.764	1.734	0.005	-49.906			
		5:KOMB B. MA	115.447	4.13E 3	-5.150	3.468	-0.025	-41.812			
21962	14753	1:BEBAN MATI	-28.867	2.28E 3	0.242	-0.164	-0.001	-3.183			
		2:BEBAN HIDL	7.926	869.951	-0.010	-0.033	-0.000	-1.787			
		3:BEBAN GEM	55.217	-1.19E 3	10.406	-0.443	-0.053	-12.335			
		4:KOMBINASI	-21.959	4.13E 3	0.273	-0.251	-0.001	-6.679			



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By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	33.867	1.56E 3	11.162	-0.649	-0.057	-17.207			
	14615	1:BEBAN MATI	28.867	-1.92E 3	-0.242	0.164	-0.002	27.951			
		2:BEBAN HIDL	-7.926	-869.951	0.010	0.033	0.000	12.024			
		3:BEBAN GEM	-55.217	1.19E 3	-10.406	0.443	-0.069	-1.679			
		4:KOMBINASI	21.959	-3.7E 3	-0.273	0.251	-0.002	52.780			
		5:KOMB B. MA	-33.867	-1.2E 3	-11.162	0.649	-0.074	33.402			
21963	14754	1:BEBAN MATI	-2.150	336.292	-0.225	-0.097	0.001	-6.842			
		2:BEBAN HIDL	1.518	103.644	0.022	0.032	-0.000	-3.329			
		3:BEBAN GEM	-61.498	-52.104	-2.122	-0.151	0.010	-0.810			
		4:KOMBINASI	-0.152	569.381	-0.236	-0.065	0.001	-13.538			
		5:KOMB B. MA	-65.813	343.769	-2.440	-0.236	0.011	-9.691			
	14755	1:BEBAN MATI	2.150	-105.641	0.225	0.097	0.001	9.443			
		2:BEBAN HIDL	-1.518	-103.644	-0.022	-0.032	-0.000	4.549			
		3:BEBAN GEM	61.498	52.104	2.122	0.151	0.015	0.197			
		4:KOMBINASI	0.152	-292.599	0.236	0.065	0.001	18.610			
		5:KOMB B. MA	65.813	-113.118	2.440	0.236	0.017	12.379			
21964	14755	1:BEBAN MATI	-1.167	-437.618	-0.427	0.156	0.003	-9.323			
		2:BEBAN HIDL	2.565	-248.550	0.044	0.052	-0.000	-4.526			
		3:BEBAN GEM	-116.218	-44.310	-2.740	0.129	0.014	-0.189			
		4:KOMBINASI	2.703	-922.821	-0.443	0.271	0.003	-18.430			
		5:KOMB B. MA	-121.657	-633.274	-3.278	0.324	0.017	-12.238			
	14756	1:BEBAN MATI	1.167	668.270	0.427	-0.156	0.002	2.816			
		2:BEBAN HIDL	-2.565	248.550	-0.044	-0.052	-0.000	1.601			
		3:BEBAN GEM	116.218	44.310	2.740	-0.129	0.018	-0.332			
		4:KOMBINASI	-2.703	1.2E 3	0.443	-0.271	0.003	5.941			
		5:KOMB B. MA	121.657	863.925	3.278	-0.324	0.021	3.428			
21965	14756	1:BEBAN MATI	0.738	-997.836	-0.520	0.191	0.003	-1.378			
		2:BEBAN HIDL	2.696	-510.155	0.067	0.049	-0.000	-0.873			
		3:BEBAN GEM	-174.892	6.711	-2.777	0.057	0.019	0.346			
		4:KOMBINASI	5.200	-2.01E 3	-0.518	0.308	0.003	-3.050			
		5:KOMB B. MA	-181.280	-1.3E 3	-3.396	0.281	0.022	-1.539			
	14615	1:BEBAN MATI	-0.738	1.23E 3	0.520	-0.191	0.003	-11.722			
		2:BEBAN HIDL	-2.696	510.155	-0.067	-0.049	-0.000	-5.130			
		3:BEBAN GEM	174.892	-6.711	2.777	-0.057	0.014	-0.267			
		4:KOMBINASI	-5.200	2.29E 3	0.518	-0.308	0.003	-22.275			
		5:KOMB B. MA	181.280	1.53E 3	3.396	-0.281	0.018	-15.080			
21966	14758	1:BEBAN MATI	14.010	-2.33E 3	1.341	-3.187	-0.009	-7.339			
		2:BEBAN HIDL	8.038	-591.275	0.491	-1.982	-0.003	-1.321			
		3:BEBAN GEM	698.154	-1.37E 3	11.765	0.642	-0.006	17.282			
		4:KOMBINASI	29.673	-3.75E 3	2.395	-6.996	-0.016	-10.920			
		5:KOMB B. MA	751.894	-4.13E 3	13.989	-3.702	-0.017	10.015			
	14583	1:BEBAN MATI	-14.010	3.68E 3	-1.341	3.187	-0.007	-28.056			
		2:BEBAN HIDL	-8.038	591.275	-0.491	1.982	-0.003	-5.637			
		3:BEBAN GEM	-698.154	1.37E 3	-11.765	-0.642	-0.133	-33.424			
		4:KOMBINASI	-29.673	5.37E 3	-2.395	6.996	-0.013	-42.686			
		5:KOMB B. MA	-751.894	5.48E 3	-13.989	3.702	-0.148	-66.534			
21967	14761	1:BEBAN MATI	-82.119	-3.18E 3	0.333	0.261	-0.002	-8.141			
		2:BEBAN HIDL	17.925	-1.37E 3	0.010	0.013	-0.000	-3.214			



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Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	446.906	-1.35E 3	0.506	0.925	0.011	16.418			
		4:KOMBINASI	-69.863	-6E 3	0.415	0.333	-0.003	-14.913			
		5:KOMB B. MA	397.887	-5.42E 3	0.870	1.239	0.010	7.169			
	14584	1:BEBAN MATI	82.119	3.54E 3	-0.333	-0.261	-0.002	-31.379			
		2:BEBAN HIDL	-17.925	1.37E 3	-0.010	-0.013	0.000	-12.898			
		3:BEBAN GEM	-446.906	1.35E 3	-0.506	-0.925	-0.017	-32.353			
		4:KOMBINASI	69.863	6.44E 3	-0.415	-0.333	-0.002	-58.292			
		5:KOMB B. MA	-397.887	5.78E 3	-0.870	-1.239	-0.020	-73.089			
21968	14762	1:BEBAN MATI	29.288	1.55E 3	-0.187	0.941	0.002	-8.490			
		2:BEBAN HIDL	5.886	194.829	-0.064	0.883	0.000	-1.918			
		3:BEBAN GEM	-295.677	-366.046	0.524	0.722	-0.012	-5.138			
		4:KOMBINASI	44.564	2.18E 3	-0.327	2.542	0.003	-13.258			
		5:KOMB B. MA	-277.641	1.29E 3	0.325	2.229	-0.010	-15.036			
	14763	1:BEBAN MATI	-29.288	-203.387	0.187	-0.941	-0.000	18.830			
		2:BEBAN HIDL	-5.886	-194.829	0.064	-0.883	0.000	4.211			
		3:BEBAN GEM	295.677	366.046	-0.524	-0.722	0.006	0.830			
		4:KOMBINASI	-44.564	-555.790	0.327	-2.542	0.001	29.333			
		5:KOMB B. MA	277.641	64.064	-0.325	-2.229	0.006	22.228			
21969	14763	1:BEBAN MATI	14.327	-397.388	-0.553	-0.967	0.003	-18.792			
		2:BEBAN HIDL	4.959	-212.990	0.088	-0.447	-0.001	-4.232			
		3:BEBAN GEM	-244.463	-365.256	5.004	-0.416	-0.031	-0.783			
		4:KOMBINASI	25.126	-817.651	-0.523	-1.875	0.003	-29.321			
		5:KOMB B. MA	-239.384	-908.701	4.754	-1.672	-0.030	-22.153			
	14764	1:BEBAN MATI	-14.327	1.75E 3	0.553	0.967	0.003	6.169			
		2:BEBAN HIDL	-4.959	212.990	-0.088	0.447	-0.000	1.725			
		3:BEBAN GEM	244.463	365.256	-5.004	0.416	-0.028	-3.515			
		4:KOMBINASI	-25.126	2.44E 3	0.523	1.875	0.003	10.164			
		5:KOMB B. MA	239.384	2.26E 3	-4.754	1.672	-0.026	3.513			
21970	14764	1:BEBAN MATI	-10.535	-2.22E 3	-4.720	-2.672	0.026	-5.063			
		2:BEBAN HIDL	7.706	-516.301	0.953	-1.453	-0.006	-1.216			
		3:BEBAN GEM	-132.256	-406.729	27.110	-1.978	-0.144	3.828			
		4:KOMBINASI	-0.312	-3.5E 3	-4.140	-5.531	0.023	-8.022			
		5:KOMB B. MA	-144.780	-2.96E 3	24.317	-5.621	-0.129	-1.773			
	14584	1:BEBAN MATI	10.535	3.58E 3	4.720	2.672	0.029	-29.062			
		2:BEBAN HIDL	-7.706	516.301	-0.953	1.453	-0.006	-4.859			
		3:BEBAN GEM	132.256	406.729	-27.110	1.978	-0.175	-8.615			
		4:KOMBINASI	0.312	5.12E 3	4.140	5.531	0.026	-42.650			
		5:KOMB B. MA	144.780	4.31E 3	-24.317	5.621	-0.157	-41.023			
21971	14766	1:BEBAN MATI	-28.710	-2.18E 3	-6.211	1.429	0.015	-18.586			
		2:BEBAN HIDL	27.994	-971.740	-2.910	0.459	0.008	-8.723			
		3:BEBAN GEM	523.609	-816.976	124.733	0.520	-0.329	7.365			
		4:KOMBINASI	10.338	-4.17E 3	-12.108	2.448	0.031	-36.259			
		5:KOMB B. MA	537.876	-3.62E 3	123.013	2.250	-0.325	-16.086			
	14974	1:BEBAN MATI	28.710	2.33E 3	6.211	-1.429	0.015	7.537			
		2:BEBAN HIDL	-27.994	971.740	2.910	-0.459	0.006	3.958			
		3:BEBAN GEM	-523.609	816.976	-124.733	-0.520	-0.283	-11.371			
		4:KOMBINASI	-10.338	4.35E 3	12.108	-2.448	0.028	15.377			
		5:KOMB B. MA	-537.876	3.77E 3	-123.013	-2.250	-0.278	-2.028			



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Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21972	14768	1:BEBAN MATI	-56.704	879.776	-10.566	4.243	0.019	-3.846			
		2:BEBAN HIDL	10.204	257.072	2.340	1.917	-0.003	-1.115			
		3:BEBAN GEM	-2.48E 3	-2.16E 3	-516.875	-0.776	1.067	-9.661			
		4:KOMBINASI	-51.719	1.47E 3	-8.936	8.159	0.018	-6.398			
		5:KOMB B. MA	-2.66E 3	-1.24E 3	-551.881	4.579	1.137	-14.659			
	14894	1:BEBAN MATI	56.704	-317.112	10.566	-4.243	0.033	6.780			
		2:BEBAN HIDL	-10.204	-257.072	-2.340	-1.917	-0.008	2.375			
		3:BEBAN GEM	2.48E 3	2.16E 3	516.875	0.776	1.468	-0.935			
		4:KOMBINASI	51.719	-791.849	8.936	-8.159	0.026	11.936			
		5:KOMB B. MA	2.66E 3	1.8E 3	551.881	-4.579	1.569	7.223			
21973	14770	1:BEBAN MATI	-36.419	-3.39E 3	-10.245	0.961	0.015	7.515			
		2:BEBAN HIDL	33.731	-1.49E 3	-9.760	0.321	0.018	2.535			
		3:BEBAN GEM	883.727	-939.114	438.025	0.467	-0.712	15.840			
		4:KOMBINASI	10.266	-6.45E 3	-27.910	1.667	0.048	13.074			
		5:KOMB B. MA	911.733	-5.27E 3	443.825	1.644	-0.721	25.668			
	14978	1:BEBAN MATI	36.419	3.47E 3	10.245	-0.961	0.010	-15.927			
		2:BEBAN HIDL	-33.731	1.49E 3	9.760	-0.321	0.006	-6.181			
		3:BEBAN GEM	-883.727	939.114	-438.025	-0.467	-0.362	-18.142			
		4:KOMBINASI	-10.266	6.54E 3	27.910	-1.667	0.021	-29.002			
		5:KOMB B. MA	-911.733	5.35E 3	-443.825	-1.644	-0.367	-38.685			
21974	14772	1:BEBAN MATI	-29.887	-1.47E 3	1.371	0.744	-0.002	-2.917			
		2:BEBAN HIDL	20.516	-420.948	2.679	0.978	-0.012	-1.534			
		3:BEBAN GEM	-1.94E 3	-2.17E 3	-54.391	0.057	0.367	12.001			
		4:KOMBINASI	-3.038	-2.44E 3	5.932	2.457	-0.022	-5.954			
		5:KOMB B. MA	-2.06E 3	-4E 3	-54.132	1.391	0.376	8.764			
	14567	1:BEBAN MATI	29.887	2.6E 3	-1.371	-0.744	-0.011	-17.020			
		2:BEBAN HIDL	-20.516	420.948	-2.679	-0.978	-0.014	-2.594			
		3:BEBAN GEM	1.94E 3	2.17E 3	54.391	-0.057	0.167	-33.271			
		4:KOMBINASI	3.038	3.79E 3	-5.932	-2.457	-0.036	-24.575			
		5:KOMB B. MA	2.06E 3	5.13E 3	54.132	-1.391	0.155	-53.511			
21975	14773	1:BEBAN MATI	8.744	28.151	-0.319	-1.741	0.004	3.847			
		2:BEBAN HIDL	-35.565	-129.796	-0.165	-0.637	0.001	1.238			
		3:BEBAN GEM	1.31E 3	-310.539	-35.467	0.457	0.235	-1.886			
		4:KOMBINASI	-46.411	-173.893	-0.648	-3.108	0.006	6.598			
		5:KOMB B. MA	1.37E 3	-375.793	-37.659	-1.643	0.251	2.610			
	14774	1:BEBAN MATI	-8.744	332.242	0.319	1.741	-0.000	-5.636			
		2:BEBAN HIDL	35.565	129.796	0.165	0.637	0.001	-2.766			
		3:BEBAN GEM	-1.31E 3	310.539	35.467	-0.457	0.183	-1.769			
		4:KOMBINASI	46.411	606.364	0.648	3.108	0.001	-11.189			
		5:KOMB B. MA	-1.37E 3	736.186	37.659	1.643	0.192	-9.153			
21976	14774	1:BEBAN MATI	9.741	-754.939	-0.290	-3.384	0.006	6.714			
		2:BEBAN HIDL	-33.698	-398.799	1.796	-1.508	-0.010	3.314			
		3:BEBAN GEM	665.318	-373.395	-121.140	-1.015	0.699	1.725			
		4:KOMBINASI	-42.228	-1.54E 3	2.526	-6.474	-0.009	13.359			
		5:KOMB B. MA	688.106	-1.39E 3	-126.409	-5.355	0.733	10.514			
	14567	1:BEBAN MATI	-9.741	1.12E 3	0.290	3.384	-0.002	-17.718			
		2:BEBAN HIDL	33.698	398.799	-1.796	1.508	-0.011	-8.007			
		3:BEBAN GEM	-665.318	373.395	121.140	1.015	0.727	-6.120			



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Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	42.228	1.98E 3	-2.526	6.474	-0.021	-34.074			
		5:KOMB B. MA	-688.106	1.75E 3	126.409	5.355	0.754	-28.948			
21977	14776	1:BEBAN MATI	-2.733	3.38E 3	0.373	2.735	-0.001	10.155			
		2:BEBAN HIDL	16.598	641.450	-0.070	1.712	0.000	2.252			
		3:BEBAN GEM	-510.521	-857.868	1.541	-0.409	-0.016	-16.736			
		4:KOMBINASI	23.278	5.08E 3	0.335	6.022	-0.001	15.790			
		5:KOMB B. MA	-528.821	2.86E 3	1.949	3.334	-0.017	-6.067			
	14781	1:BEBAN MATI	2.733	-2.25E 3	-0.373	-2.735	-0.003	17.432			
		2:BEBAN HIDL	-16.598	-641.450	0.070	-1.712	0.000	4.038			
		3:BEBAN GEM	510.521	857.868	-1.541	0.409	0.001	8.323			
		4:KOMBINASI	-23.278	-3.73E 3	-0.335	-6.022	-0.003	27.380			
		5:KOMB B. MA	528.821	-1.73E 3	-1.949	-3.334	-0.002	28.595			
21978	14779	1:BEBAN MATI	-32.797	3.49E 3	-0.601	-0.259	0.003	13.108			
		2:BEBAN HIDL	9.839	1.42E 3	-0.047	-0.025	0.000	5.070			
		3:BEBAN GEM	-399.133	-807.244	22.915	-0.494	-0.120	-15.693			
		4:KOMBINASI	-23.613	6.46E 3	-0.796	-0.352	0.005	23.842			
		5:KOMB B. MA	-445.983	3.5E 3	23.431	-0.793	-0.122	-0.327			
	14784	1:BEBAN MATI	32.797	-3.19E 3	0.601	0.259	0.003	19.669			
		2:BEBAN HIDL	-9.839	-1.42E 3	0.047	0.025	0.000	8.831			
		3:BEBAN GEM	399.133	807.244	-22.915	0.494	-0.105	7.777			
		4:KOMBINASI	23.613	-6.1E 3	0.796	0.352	0.003	37.732			
		5:KOMB B. MA	445.983	-3.2E 3	-23.431	0.793	-0.107	33.133			
21979	14781	1:BEBAN MATI	-3.122	1.78E 3	0.075	1.665	0.000	-18.337			
		2:BEBAN HIDL	15.231	331.659	0.039	0.893	-0.000	-4.377			
		3:BEBAN GEM	-278.660	-834.412	1.152	-0.029	-0.003	-8.069			
		4:KOMBINASI	20.624	2.67E 3	0.153	3.427	0.000	-29.007			
		5:KOMB B. MA	-286.577	1.11E 3	1.308	2.170	-0.003	-29.435			
	14611	1:BEBAN MATI	3.122	-656.846	-0.075	-1.665	-0.001	30.296			
		2:BEBAN HIDL	-15.231	-331.659	-0.039	-0.893	-0.000	7.629			
		3:BEBAN GEM	278.660	834.412	-1.152	0.029	-0.008	-0.114			
		4:KOMBINASI	-20.624	-1.32E 3	-0.153	-3.427	-0.002	48.562			
		5:KOMB B. MA	286.577	20.290	-1.308	-2.170	-0.010	34.754			
21980	14784	1:BEBAN MATI	-34.648	2.07E 3	-0.472	-0.170	0.003	-20.709			
		2:BEBAN HIDL	10.370	799.246	-0.108	-0.014	0.001	-9.213			
		3:BEBAN GEM	-267.105	-755.560	27.555	-0.286	-0.126	-7.455			
		4:KOMBINASI	-24.986	3.77E 3	-0.740	-0.227	0.004	-39.590			
		5:KOMB B. MA	-308.887	1.76E 3	28.396	-0.479	-0.130	-34.064			
	14618	1:BEBAN MATI	34.648	-1.77E 3	0.472	0.170	0.002	39.577			
		2:BEBAN HIDL	-10.370	-799.246	0.108	0.014	0.000	17.051			
		3:BEBAN GEM	267.105	755.560	-27.555	0.286	-0.144	0.045			
		4:KOMBINASI	24.986	-3.41E 3	0.740	0.227	0.003	74.774			
		5:KOMB B. MA	308.887	-1.46E 3	-28.396	0.479	-0.149	49.856			
21981	14785	1:BEBAN MATI	-0.007	354.916	0.103	-0.094	-0.001	-8.509			
		2:BEBAN HIDL	-0.767	136.735	0.044	-0.000	-0.000	-4.313			
		3:BEBAN GEM	9.857	-28.924	-7.571	-0.102	0.046	-0.595			
		4:KOMBINASI	-1.235	644.675	0.194	-0.113	-0.001	-17.112			
		5:KOMB B. MA	9.882	406.587	-7.820	-0.201	0.047	-11.722			
	14786	1:BEBAN MATI	0.007	-124.264	-0.103	0.094	-0.001	11.329			



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Job No 1	Sheet No 421	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	0.767	-136.735	-0.044	0.000	-0.000	5.922			
		3:BEBAN GEM	-9.857	28.924	7.571	0.102	0.043	0.254			
		4:KOMBINASI	1.235	-367.893	-0.194	0.113	-0.001	23.070			
		5:KOMB B. MA	-9.882	-175.935	7.820	0.201	0.045	15.149			
21982	14786	1:BEBAN MATI	-0.705	-538.552	0.082	0.032	-0.000	-11.193			
		2:BEBAN HIDL	-0.321	-313.139	0.057	0.002	-0.000	-5.879			
		3:BEBAN GEM	8.857	-28.767	-9.849	0.086	0.056	-0.211			
		4:KOMBINASI	-1.359	-1.15E 3	0.190	0.041	-0.001	-22.837			
		5:KOMB B. MA	8.402	-756.641	-10.225	0.124	0.059	-14.941			
	14787	1:BEBAN MATI	0.705	769.204	-0.082	-0.032	-0.001	3.498			
		2:BEBAN HIDL	0.321	313.139	-0.057	-0.002	-0.000	2.194			
		3:BEBAN GEM	-8.857	28.767	9.849	-0.086	0.059	-0.128			
		4:KOMBINASI	1.359	1.42E 3	-0.190	-0.041	-0.001	7.707			
		5:KOMB B. MA	-8.402	987.292	10.225	-0.124	0.062	4.680			
21983	14787	1:BEBAN MATI	-1.280	-1.09E 3	0.095	0.062	-0.000	-1.758			
		2:BEBAN HIDL	-0.020	-574.285	0.081	0.002	-0.000	-1.318			
		3:BEBAN GEM	10.425	-0.468	-13.170	0.056	0.075	0.173			
		4:KOMBINASI	-1.567	-2.23E 3	0.243	0.078	-0.001	-4.218			
		5:KOMB B. MA	9.655	-1.44E 3	-13.685	0.123	0.078	-2.366			
	14618	1:BEBAN MATI	1.280	1.32E 3	-0.095	-0.062	-0.001	-12.434			
		2:BEBAN HIDL	0.020	574.285	-0.081	-0.002	-0.000	-5.440			
		3:BEBAN GEM	-10.425	0.468	13.170	-0.056	0.080	-0.179			
		4:KOMBINASI	1.567	2.5E 3	-0.243	-0.078	-0.002	-23.626			
		5:KOMB B. MA	-9.655	1.67E 3	13.685	-0.123	0.083	-15.886			
21984	14789	1:BEBAN MATI	-9.791	-2.2E 3	-0.033	-2.119	0.001	-18.257			
		2:BEBAN HIDL	13.802	-638.519	0.101	-1.714	-0.001	-4.074			
		3:BEBAN GEM	166.506	-863.092	0.434	0.624	0.007	8.466			
		4:KOMBINASI	10.334	-3.66E 3	0.122	-5.284	-0.000	-28.427			
		5:KOMB B. MA	173.322	-3.49E 3	0.484	-2.492	0.007	-11.812			
	14794	1:BEBAN MATI	9.791	3.33E 3	0.033	2.119	-0.000	-8.843			
		2:BEBAN HIDL	-13.802	638.519	-0.101	1.714	-0.000	-2.187			
		3:BEBAN GEM	-166.506	863.092	-0.434	-0.624	-0.011	-16.930			
		4:KOMBINASI	-10.334	5.01E 3	-0.122	5.284	-0.001	-14.111			
		5:KOMB B. MA	-173.322	4.62E 3	-0.484	2.492	-0.012	-27.931			
21985	14792	1:BEBAN MATI	-37.662	-3.06E 3	-0.286	0.236	0.002	-21.144			
		2:BEBAN HIDL	8.633	-1.41E 3	-0.230	0.020	0.001	-8.923			
		3:BEBAN GEM	-17.509	-806.099	23.826	0.502	-0.109	7.948			
		4:KOMBINASI	-31.381	-5.93E 3	-0.712	0.315	0.004	-39.649			
		5:KOMB B. MA	-50.866	-4.75E 3	24.593	0.774	-0.112	-18.152			
	14797	1:BEBAN MATI	37.662	3.36E 3	0.286	-0.236	0.001	-10.356			
		2:BEBAN HIDL	-8.633	1.41E 3	0.230	-0.020	0.001	-4.898			
		3:BEBAN GEM	17.509	806.099	-23.826	-0.502	-0.124	-15.853			
		4:KOMBINASI	31.381	6.29E 3	0.712	-0.315	0.003	-20.264			
		5:KOMB B. MA	50.866	5.05E 3	-24.593	-0.774	-0.129	-29.940			
21986	14794	1:BEBAN MATI	-14.411	-3.72E 3	-0.441	-3.717	0.002	10.258			
		2:BEBAN HIDL	15.438	-844.506	1.148	-2.370	-0.005	2.895			
		3:BEBAN GEM	417.664	-951.533	5.998	0.364	0.009	16.894			
		4:KOMBINASI	7.407	-5.82E 3	1.308	-8.253	-0.006	16.941			



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Job No

1

Sheet No

422

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	433.399	-5.23E 3	6.546	-4.757	0.008	29.734			
	14555	1:BEBAN MATI	14.411	4.85E 3	0.441	3.717	0.002	-52.283			
		2:BEBAN HIDL	-15.438	844.506	-1.148	2.370	-0.006	-11.177			
		3:BEBAN GEM	-417.664	951.533	-5.998	-0.364	-0.068	-26.226			
		4:KOMBINASI	-7.407	7.17E 3	-1.308	8.253	-0.007	-80.622			
		5:KOMB B. MA	-433.399	6.35E 3	-6.546	4.757	-0.072	-86.526			
21987	14797	1:BEBAN MATI	-38.802	-4.53E 3	-0.115	0.276	0.000	11.856			
		2:BEBAN HIDL	6.863	-1.96E 3	-0.281	0.027	0.001	5.694			
		3:BEBAN GEM	155.782	-1E 3	25.113	0.836	-0.101	16.005			
		4:KOMBINASI	-35.581	-8.57E 3	-0.587	0.376	0.003	23.339			
		5:KOMB B. MA	128.888	-6.76E 3	26.085	1.171	-0.104	32.078			
	14560	1:BEBAN MATI	38.802	4.83E 3	0.115	-0.276	0.001	-57.768			
		2:BEBAN HIDL	-6.863	1.96E 3	0.281	-0.027	0.001	-24.914			
		3:BEBAN GEM	-155.782	1E 3	-25.113	-0.836	-0.146	-25.837			
		4:KOMBINASI	35.581	8.93E 3	0.587	-0.376	0.003	-109.183			
		5:KOMB B. MA	-128.888	7.06E 3	-26.085	-1.171	-0.151	-99.844			
21988	14798	1:BEBAN MATI	2.028	1.98E 3	0.144	-0.026	-0.001	-13.167			
		2:BEBAN HIDL	8.625	486.711	0.088	0.006	-0.001	-4.208			
		3:BEBAN GEM	-120.046	-314.058	-11.521	0.671	0.078	-4.329			
		4:KOMBINASI	16.233	3.15E 3	0.313	-0.022	-0.002	-22.534			
		5:KOMB B. MA	-118.846	1.94E 3	-11.901	0.682	0.081	-20.238			
	14799	1:BEBAN MATI	-2.028	-627.743	-0.144	0.026	-0.001	28.500			
		2:BEBAN HIDL	-8.625	-486.711	-0.088	-0.006	-0.000	9.936			
		3:BEBAN GEM	120.046	314.058	11.521	-0.671	0.058	0.634			
		4:KOMBINASI	-16.233	-1.53E 3	-0.313	0.022	-0.002	50.097			
		5:KOMB B. MA	118.846	-590.008	11.901	-0.682	0.059	35.127			
21989	14799	1:BEBAN MATI	3.393	-881.364	0.139	0.002	-0.001	-28.399			
		2:BEBAN HIDL	6.229	-483.966	0.053	-0.002	-0.000	-9.888			
		3:BEBAN GEM	-123.839	-313.555	-6.558	-0.594	0.045	-0.497			
		4:KOMBINASI	14.038	-1.83E 3	0.252	-0.001	-0.001	-49.900			
		5:KOMB B. MA	-122.901	-1.5E 3	-6.715	-0.623	0.046	-34.854			
	14800	1:BEBAN MATI	-3.393	2.23E 3	-0.139	-0.002	-0.001	10.081			
		2:BEBAN HIDL	-6.229	483.966	-0.053	0.002	-0.000	4.193			
		3:BEBAN GEM	123.839	313.555	6.558	0.594	0.032	-3.192			
		4:KOMBINASI	-14.038	3.45E 3	-0.252	0.001	-0.001	18.806			
		5:KOMB B. MA	122.901	2.85E 3	6.715	0.623	0.033	9.245			
21990	14800	1:BEBAN MATI	3.302	-3.51E 3	0.126	0.025	-0.001	-8.448			
		2:BEBAN HIDL	5.517	-1.25E 3	-0.010	-0.017	0.000	-3.466			
		3:BEBAN GEM	-125.128	-389.000	-0.204	-2.067	-0.009	3.253			
		4:KOMBINASI	12.790	-6.21E 3	0.135	0.002	-0.000	-15.684			
		5:KOMB B. MA	-124.772	-4.67E 3	-0.094	-2.156	-0.010	-7.112			
	14560	1:BEBAN MATI	-3.302	4.86E 3	-0.126	-0.025	-0.001	-40.765			
		2:BEBAN HIDL	-5.517	1.25E 3	0.010	0.017	-0.000	-11.285			
		3:BEBAN GEM	125.128	389.000	0.204	2.067	0.011	-7.831			
		4:KOMBINASI	-12.790	7.83E 3	-0.135	-0.002	-0.001	-66.974			
		5:KOMB B. MA	124.772	6.02E 3	0.094	2.156	0.011	-55.759			
21991	14802	1:BEBAN MATI	-16.700	3.34E 3	-0.025	2.340	0.000	9.051			
		2:BEBAN HIDL	12.954	636.832	-0.116	1.701	0.000	2.142			



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Job No

1

Sheet No

423

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	9.656	-857.999	2.954	-0.409	-0.010	-16.823			
		4:KOMBINASI	0.685	5.03E 3	-0.215	5.530	0.001	14.289			
		5:KOMB B. MA	1.211	2.82E 3	3.007	2.931	-0.010	-7.328			
	14807	1:BEBAN MATI	16.700	-2.22E 3	0.025	-2.340	-0.000	18.213			
		2:BEBAN HIDL	-12.954	-636.832	0.116	-1.701	0.001	4.103			
		3:BEBAN GEM	-9.656	857.999	-2.954	0.409	-0.019	8.409			
		4:KOMBINASI	-0.685	-3.68E 3	0.215	-5.530	0.001	28.420			
		5:KOMB B. MA	-1.211	-1.7E 3	-3.007	-2.931	-0.019	29.504			
21992	14805	1:BEBAN MATI	-36.590	3.38E 3	-0.455	-0.263	0.002	10.901			
		2:BEBAN HIDL	10.800	1.4E 3	-0.235	0.004	0.001	4.770			
		3:BEBAN GEM	-237.543	-804.636	19.236	-0.495	-0.090	-15.776			
		4:KOMBINASI	-26.627	6.29E 3	-0.922	-0.309	0.005	20.713			
		5:KOMB B. MA	-279.529	3.37E 3	19.602	-0.781	-0.092	-2.802			
	14810	1:BEBAN MATI	36.590	-3.08E 3	0.455	0.263	0.002	20.753			
		2:BEBAN HIDL	-10.800	-1.4E 3	0.235	-0.004	0.001	8.915			
		3:BEBAN GEM	237.543	804.636	-19.236	0.495	-0.098	7.885			
		4:KOMBINASI	26.627	-5.93E 3	0.922	0.309	0.004	39.168			
		5:KOMB B. MA	279.529	-3.07E 3	-19.602	0.781	-0.100	34.382			
21993	14807	1:BEBAN MATI	-19.016	1.75E 3	-0.140	1.225	0.001	-19.066			
		2:BEBAN HIDL	10.524	327.302	-0.031	0.884	-0.000	-4.438			
		3:BEBAN GEM	191.687	-834.897	3.924	-0.029	-0.009	-8.154			
		4:KOMBINASI	-5.980	2.63E 3	-0.217	2.884	0.001	-29.980			
		5:KOMB B. MA	188.571	1.07E 3	3.962	1.725	-0.009	-30.291			
	14601	1:BEBAN MATI	19.016	-625.904	0.140	-1.225	0.001	30.722			
		2:BEBAN HIDL	-10.524	-327.302	0.031	-0.884	0.000	7.648			
		3:BEBAN GEM	-191.687	834.897	-3.924	0.029	-0.030	-0.034			
		4:KOMBINASI	5.980	-1.27E 3	0.217	-2.884	0.002	49.103			
		5:KOMB B. MA	-188.571	54.357	-3.962	-1.725	-0.030	35.275			
21994	14810	1:BEBAN MATI	-35.498	1.96E 3	-0.304	-0.169	0.002	-21.807			
		2:BEBAN HIDL	10.859	778.235	-0.204	0.005	0.001	-9.275			
		3:BEBAN GEM	-158.900	-753.851	17.714	-0.286	-0.076	-7.564			
		4:KOMBINASI	-25.223	3.6E 3	-0.691	-0.195	0.003	-41.009			
		5:KOMB B. MA	-195.828	1.64E 3	18.173	-0.466	-0.078	-35.315			
	14617	1:BEBAN MATI	35.498	-1.66E 3	0.304	0.169	0.001	39.566			
		2:BEBAN HIDL	-10.859	-778.235	0.204	-0.005	0.001	16.907			
		3:BEBAN GEM	158.900	753.851	-17.714	0.286	-0.097	0.172			
		4:KOMBINASI	25.223	-3.24E 3	0.691	0.195	0.003	74.531			
		5:KOMB B. MA	195.828	-1.34E 3	-18.173	0.466	-0.100	49.891			
21995	14811	1:BEBAN MATI	3.424	359.454	0.001	-0.001	-0.000	-8.882			
		2:BEBAN HIDL	0.444	134.765	0.022	0.000	-0.000	-4.316			
		3:BEBAN GEM	-35.794	-29.219	-3.803	-0.103	0.024	-0.602			
		4:KOMBINASI	4.819	646.969	0.036	-0.001	-0.000	-17.564			
		5:KOMB B. MA	-33.893	409.633	-3.979	-0.108	0.025	-12.103			
	14812	1:BEBAN MATI	-3.424	-128.803	-0.001	0.001	0.000	11.755			
		2:BEBAN HIDL	-0.444	-134.765	-0.022	-0.000	-0.000	5.902			
		3:BEBAN GEM	35.794	29.219	3.803	0.103	0.021	0.258			
		4:KOMBINASI	-4.819	-370.187	-0.036	0.001	-0.000	23.549			
		5:KOMB B. MA	33.893	-178.982	3.979	0.108	0.022	15.567			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 424	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
21996	14812	1:BEBAN MATI	4.968	-563.749	-0.018	-0.001	0.000	-11.608			
		2:BEBAN HIDL	1.449	-316.865	0.023	-0.000	-0.000	-5.856			
		3:BEBAN GEM	-49.637	-29.556	-5.321	0.085	0.031	-0.214			
		4:KOMBINASI	8.281	-1.18E 3	0.015	-0.001	-0.000	-23.299			
		5:KOMB B. MA	-46.282	-784.902	-5.591	0.089	0.033	-15.346			
	14813	1:BEBAN MATI	-4.968	794.401	0.018	0.001	0.000	3.617			
		2:BEBAN HIDL	-1.449	316.865	-0.023	0.000	-0.000	2.127			
		3:BEBAN GEM	49.637	29.556	5.321	-0.085	0.031	-0.134			
		4:KOMBINASI	-8.281	1.46E 3	-0.015	0.001	-0.000	7.744			
		5:KOMB B. MA	46.282	1.02E 3	5.591	-0.089	0.033	4.752			
21997	14813	1:BEBAN MATI	6.553	-1.12E 3	-0.032	-0.003	0.000	-1.827			
		2:BEBAN HIDL	2.306	-580.721	0.034	-0.001	-0.000	-1.249			
		3:BEBAN GEM	-59.821	-0.972	-7.889	0.055	0.046	0.181			
		4:KOMBINASI	11.553	-2.28E 3	0.016	-0.005	-0.000	-4.190			
		5:KOMB B. MA	-54.876	-1.47E 3	-8.295	0.054	0.049	-2.386			
	14617	1:BEBAN MATI	-6.553	1.35E 3	0.032	0.003	0.000	-12.731			
		2:BEBAN HIDL	-2.306	580.721	-0.034	0.001	-0.000	-5.585			
		3:BEBAN GEM	59.821	0.972	7.889	-0.055	0.046	-0.192			
		4:KOMBINASI	-11.553	2.55E 3	-0.016	0.005	-0.000	-24.214			
		5:KOMB B. MA	54.876	1.7E 3	8.295	-0.054	0.049	-16.284			
21998	14815	1:BEBAN MATI	-20.845	-2.24E 3	-0.053	-2.336	0.000	-18.018			
		2:BEBAN HIDL	9.464	-640.656	0.096	-1.699	-0.001	-4.063			
		3:BEBAN GEM	479.263	-863.905	1.378	0.631	0.003	8.391			
		4:KOMBINASI	-9.871	-3.71E 3	0.091	-5.522	-0.001	-28.123			
		5:KOMB B. MA	488.060	-3.53E 3	1.452	-2.693	0.003	-11.645			
	14820	1:BEBAN MATI	20.845	3.36E 3	0.053	2.336	0.000	-9.440			
		2:BEBAN HIDL	-9.464	640.656	-0.096	1.699	-0.000	-2.219			
		3:BEBAN GEM	-479.263	863.905	-1.378	-0.631	-0.017	-16.863			
		4:KOMBINASI	9.871	5.06E 3	-0.091	5.522	0.000	-14.879			
		5:KOMB B. MA	-488.060	4.65E 3	-1.452	2.693	-0.017	-28.477			
21999	14818	1:BEBAN MATI	-32.670	-3.09E 3	0.035	0.283	-0.000	-20.602			
		2:BEBAN HIDL	11.017	-1.4E 3	-0.126	0.007	0.001	-8.856			
		3:BEBAN GEM	11.755	-808.197	12.059	0.504	-0.054	7.836			
		4:KOMBINASI	-21.577	-5.95E 3	-0.160	0.350	0.001	-38.892			
		5:KOMB B. MA	-13.718	-4.78E 3	12.621	0.816	-0.056	-17.688			
	14823	1:BEBAN MATI	32.670	3.39E 3	-0.035	-0.283	-0.000	-11.171			
		2:BEBAN HIDL	-11.017	1.4E 3	0.126	-0.007	0.001	-4.869			
		3:BEBAN GEM	-11.755	808.197	-12.059	-0.504	-0.065	-15.762			
		4:KOMBINASI	21.577	6.31E 3	0.160	-0.350	0.001	-21.195			
		5:KOMB B. MA	13.718	5.08E 3	-12.621	-0.816	-0.068	-30.642			
22000	14820	1:BEBAN MATI	-21.585	-3.76E 3	-0.230	-3.914	0.001	10.900			
		2:BEBAN HIDL	12.284	-846.007	1.270	-2.352	-0.006	2.925			
		3:BEBAN GEM	654.917	-952.840	5.175	0.374	0.007	16.825			
		4:KOMBINASI	-6.248	-5.86E 3	1.755	-8.460	-0.008	17.761			
		5:KOMB B. MA	673.448	-5.26E 3	5.965	-4.933	0.005	30.322			
	14557	1:BEBAN MATI	21.585	4.88E 3	0.230	3.914	0.001	-53.261			
	2:BEBAN HIDL	-12.284	846.007	-1.270	2.352	-0.007	-11.222				
	3:BEBAN GEM	-654.917	952.840	-5.175	-0.374	-0.058	-26.169				



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 425	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	6.248	7.21E 3	-1.755	8.460	-0.009	-81.868			
		5:KOMB B. MA	-673.448	6.39E 3	-5.965	4.933	-0.063	-87.472			
22001	14823	1:BEBAN MATI	-31.532	-4.57E 3	0.119	0.260	-0.001	12.658			
		2:BEBAN HIDL	10.893	-1.95E 3	-0.272	-0.014	0.001	5.652			
		3:BEBAN GEM	176.378	-1.01E 3	12.433	0.842	-0.047	15.914			
		4:KOMBINASI	-20.408	-8.61E 3	-0.292	0.290	0.001	24.232			
		5:KOMB B. MA	160.202	-6.8E 3	13.011	1.136	-0.049	32.758			
	14559	1:BEBAN MATI	31.532	4.87E 3	-0.119	-0.260	-0.001	-58.972			
		2:BEBAN HIDL	-10.893	1.95E 3	0.272	0.014	0.001	-24.801			
		3:BEBAN GEM	-176.378	1.01E 3	-12.433	-0.842	-0.075	-25.777			
		4:KOMBINASI	20.408	8.97E 3	0.292	-0.290	0.001	-110.448			
		5:KOMB B. MA	-160.202	7.1E 3	-13.011	-1.136	-0.079	-100.918			
22002	14824	1:BEBAN MATI	4.622	1.97E 3	-0.068	0.046	0.000	-13.212			
		2:BEBAN HIDL	10.048	485.067	0.032	-0.009	-0.000	-4.218			
		3:BEBAN GEM	-82.215	-318.393	-9.374	0.676	0.063	-4.388			
		4:KOMBINASI	21.623	3.14E 3	-0.031	0.040	0.000	-22.603			
		5:KOMB B. MA	-75.675	1.93E 3	-9.892	0.750	0.067	-20.349			
	14825	1:BEBAN MATI	-4.622	-623.667	0.068	-0.046	0.000	28.497			
		2:BEBAN HIDL	-10.048	-485.067	-0.032	0.009	-0.000	9.926			
		3:BEBAN GEM	82.215	318.393	9.374	-0.676	0.047	0.641			
		4:KOMBINASI	-21.623	-1.52E 3	0.031	-0.040	0.000	50.078			
		5:KOMB B. MA	75.675	-580.394	9.892	-0.750	0.050	35.125			
22003	14825	1:BEBAN MATI	6.012	-888.796	-0.126	0.012	0.001	-28.394			
		2:BEBAN HIDL	7.545	-486.775	0.036	-0.000	-0.000	-9.878			
		3:BEBAN GEM	-30.536	-317.842	-4.386	-0.593	0.033	-0.503			
		4:KOMBINASI	19.286	-1.85E 3	-0.094	0.014	0.000	-49.877			
		5:KOMB B. MA	-21.524	-1.51E 3	-4.710	-0.611	0.035	-34.848			
	14826	1:BEBAN MATI	-6.012	2.24E 3	0.126	-0.012	0.001	9.989			
		2:BEBAN HIDL	-7.545	486.775	-0.036	0.000	-0.000	4.149			
		3:BEBAN GEM	30.536	317.842	4.386	0.593	0.019	-3.238			
		4:KOMBINASI	-19.286	3.47E 3	0.094	-0.014	0.001	18.626			
		5:KOMB B. MA	21.524	2.86E 3	4.710	0.611	0.021	9.079			
22004	14826	1:BEBAN MATI	7.035	-3.52E 3	-0.214	-0.029	0.001	-8.353			
		2:BEBAN HIDL	7.291	-1.26E 3	0.065	0.015	-0.000	-3.421			
		3:BEBAN GEM	36.532	-394.339	2.824	-2.071	-0.023	3.299			
		4:KOMBINASI	20.108	-6.23E 3	-0.153	-0.012	0.001	-15.497			
		5:KOMB B. MA	49.769	-4.69E 3	2.790	-2.195	-0.023	-6.942			
	14559	1:BEBAN MATI	-7.035	4.87E 3	0.214	0.029	0.001	-40.981			
		2:BEBAN HIDL	-7.291	1.26E 3	-0.065	-0.015	-0.000	-11.374			
		3:BEBAN GEM	-36.532	394.339	-2.824	2.071	-0.010	-7.940			
		4:KOMBINASI	-20.108	7.85E 3	0.153	0.012	0.001	-67.375			
		5:KOMB B. MA	-49.769	6.04E 3	-2.790	2.195	-0.010	-56.142			
22005	14828	1:BEBAN MATI	-11.831	3.39E 3	-0.048	2.102	0.000	8.781			
		2:BEBAN HIDL	8.681	660.499	-0.106	1.713	0.000	2.234			
		3:BEBAN GEM	178.098	-858.184	1.953	-0.418	-0.008	-17.066			
		4:KOMBINASI	-0.308	5.12E 3	-0.227	5.263	0.001	14.112			
		5:KOMB B. MA	180.381	2.88E 3	1.939	2.690	-0.007	-7.799			
	14833	1:BEBAN MATI	11.831	-2.26E 3	0.048	-2.102	-0.000	18.914			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 426	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-8.681	-660.499	0.106	-1.713	0.001	4.243			
		3:BEBAN GEM	-178.098	858.184	-1.953	0.418	-0.012	8.651			
		4:KOMBINASI	0.308	-3.77E 3	0.227	-5.263	0.001	29.486			
		5:KOMB B. MA	-180.381	-1.76E 3	-1.939	-2.690	-0.012	30.543			
22006	14831	1:BEBAN MATI	-29.629	3.38E 3	0.151	-0.303	-0.001	10.039			
		2:BEBAN HIDL	11.032	1.43E 3	-0.009	-0.011	0.000	4.909			
		3:BEBAN GEM	-161.498	-805.764	16.181	-0.506	-0.078	-16.021			
		4:KOMBINASI	-17.904	6.34E 3	0.167	-0.381	-0.001	19.901			
		5:KOMB B. MA	-192.583	3.39E 3	17.136	-0.841	-0.082	-3.838			
	14836	1:BEBAN MATI	29.629	-3.08E 3	-0.151	0.303	-0.001	21.590			
		2:BEBAN HIDL	-11.032	-1.43E 3	0.009	0.011	0.000	9.144			
		3:BEBAN GEM	161.498	805.764	-16.181	0.506	-0.081	8.119			
		4:KOMBINASI	17.904	-5.98E 3	-0.167	0.381	-0.001	40.539			
		5:KOMB B. MA	192.583	-3.09E 3	-17.136	0.841	-0.086	35.602			
22007	14833	1:BEBAN MATI	-10.233	1.79E 3	-0.089	0.957	0.001	-19.734			
		2:BEBAN HIDL	7.107	350.533	-0.012	0.893	-0.000	-4.585			
		3:BEBAN GEM	349.583	-834.996	3.345	-0.034	-0.007	-8.393			
		4:KOMBINASI	-0.907	2.71E 3	-0.126	2.579	0.001	-31.016			
		5:KOMB B. MA	361.094	1.12E 3	3.416	1.458	-0.007	-31.298			
	14603	1:BEBAN MATI	10.233	-665.960	0.089	-0.957	0.000	31.783			
		2:BEBAN HIDL	-7.107	-350.533	0.012	-0.893	0.000	8.022			
		3:BEBAN GEM	-349.583	834.996	-3.345	0.034	-0.026	0.205			
		4:KOMBINASI	0.907	-1.36E 3	0.126	-2.579	0.001	50.975			
		5:KOMB B. MA	-361.094	0.466	-3.416	-1.458	-0.027	36.811			
22008	14836	1:BEBAN MATI	-28.904	1.96E 3	0.216	-0.198	-0.001	-22.659			
		2:BEBAN HIDL	11.190	818.800	-0.055	-0.004	0.000	-9.523			
		3:BEBAN GEM	-45.609	-754.298	17.257	-0.292	-0.073	-7.798			
		4:KOMBINASI	-16.781	3.66E 3	0.171	-0.244	-0.001	-42.429			
		5:KOMB B. MA	-70.079	1.66E 3	18.302	-0.507	-0.078	-36.561			
	14616	1:BEBAN MATI	28.904	-1.66E 3	-0.216	0.198	-0.001	40.392			
		2:BEBAN HIDL	-11.190	-818.800	0.055	0.004	0.000	17.553			
		3:BEBAN GEM	45.609	754.298	-17.257	0.292	-0.096	0.400			
		4:KOMBINASI	16.781	-3.3E 3	-0.171	0.244	-0.001	76.556			
		5:KOMB B. MA	70.079	-1.36E 3	-18.302	0.507	-0.102	51.344			
22009	14837	1:BEBAN MATI	0.859	357.210	-0.097	0.086	0.001	-8.583			
		2:BEBAN HIDL	0.424	137.552	0.020	-0.005	-0.000	-4.326			
		3:BEBAN GEM	-34.186	-29.369	-4.758	-0.102	0.029	-0.612			
		4:KOMBINASI	1.710	648.735	-0.084	0.095	0.000	-17.222			
		5:KOMB B. MA	-34.782	408.904	-5.081	-0.024	0.030	-11.822			
	14838	1:BEBAN MATI	-0.859	-126.558	0.097	-0.086	0.001	11.430			
		2:BEBAN HIDL	-0.424	-137.552	-0.020	0.005	-0.000	5.945			
		3:BEBAN GEM	34.186	29.369	4.758	0.102	0.027	0.267			
		4:KOMBINASI	-1.710	-371.953	0.084	-0.095	0.001	23.227			
		5:KOMB B. MA	34.782	-178.252	5.081	0.024	0.029	15.277			
22010	14838	1:BEBAN MATI	0.749	-547.988	-0.072	-0.007	0.000	-11.289			
		2:BEBAN HIDL	1.141	-318.100	0.026	0.006	-0.000	-5.901			
		3:BEBAN GEM	-40.508	-30.352	-6.462	0.088	0.037	-0.222			
		4:KOMBINASI	2.724	-1.17E 3	-0.044	0.002	0.000	-22.988			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 427	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-41.100	-770.718	-6.841	0.090	0.039	-15.063			
	14839	1:BEBAN MATI	-0.749	778.640	0.072	0.007	0.000	3.484			
		2:BEBAN HIDL	-1.141	318.100	-0.026	-0.006	-0.000	2.157			
		3:BEBAN GEM	40.508	30.352	6.462	-0.088	0.039	-0.135			
		4:KOMBINASI	-2.724	1.44E 3	0.044	-0.002	0.000	7.632			
		5:KOMB B. MA	41.100	1E 3	6.841	-0.090	0.041	4.636			
22011	14839	1:BEBAN MATI	0.728	-1.11E 3	-0.076	-0.030	0.000	-1.724			
		2:BEBAN HIDL	1.657	-582.402	0.043	0.010	-0.000	-1.274			
		3:BEBAN GEM	-48.119	-1.396	-8.767	0.057	0.052	0.184			
		4:KOMBINASI	3.525	-2.26E 3	-0.022	-0.019	0.000	-4.108			
		5:KOMB B. MA	-48.802	-1.46E 3	-9.255	0.037	0.054	-2.296			
	14616	1:BEBAN MATI	-0.728	1.34E 3	0.076	0.030	0.001	-12.639			
		2:BEBAN HIDL	-1.657	582.402	-0.043	-0.010	-0.000	-5.579			
		3:BEBAN GEM	48.119	1.396	8.767	-0.057	0.052	-0.200			
		4:KOMBINASI	-3.525	2.53E 3	0.022	0.019	0.000	-24.093			
		5:KOMB B. MA	48.802	1.69E 3	9.255	-0.037	0.055	-16.197			
22012	14841	1:BEBAN MATI	-8.431	-2.2E 3	-0.353	-2.778	0.003	-19.323			
		2:BEBAN HIDL	7.649	-626.844	0.142	-1.763	-0.001	-4.644			
		3:BEBAN GEM	648.522	-865.550	1.093	0.634	0.006	8.156			
		4:KOMBINASI	2.121	-3.65E 3	-0.196	-6.155	0.001	-30.619			
		5:KOMB B. MA	677.106	-3.49E 3	0.880	-3.170	0.008	-13.546			
	14846	1:BEBAN MATI	8.431	3.33E 3	0.353	2.778	0.001	-7.793			
		2:BEBAN HIDL	-7.649	626.844	-0.142	1.763	-0.000	-1.503			
		3:BEBAN GEM	-648.522	865.550	-1.093	-0.634	-0.017	-16.644			
		4:KOMBINASI	-2.121	5E 3	0.196	6.155	0.000	-11.757			
		5:KOMB B. MA	-677.106	4.61E 3	-0.880	3.170	-0.017	-26.171			
22013	14844	1:BEBAN MATI	-29.227	-3.09E 3	0.382	0.309	-0.002	-21.632			
		2:BEBAN HIDL	11.489	-1.37E 3	-0.106	0.006	0.000	-9.961			
		3:BEBAN GEM	183.895	-811.601	12.166	0.515	-0.054	7.612			
		4:KOMBINASI	-16.690	-5.89E 3	0.289	0.380	-0.001	-41.896			
		5:KOMB B. MA	170.756	-4.76E 3	13.092	0.853	-0.058	-19.616			
	14849	1:BEBAN MATI	29.227	3.39E 3	-0.382	-0.309	-0.002	-10.108			
		2:BEBAN HIDL	-11.489	1.37E 3	0.106	-0.006	0.001	-3.427			
		3:BEBAN GEM	-183.895	811.601	-12.166	-0.515	-0.066	-15.571			
		4:KOMBINASI	16.690	6.25E 3	-0.289	-0.380	-0.001	-17.614			
		5:KOMB B. MA	-170.756	5.06E 3	-13.092	-0.853	-0.071	-28.514			
22014	14846	1:BEBAN MATI	-15.799	-3.69E 3	-4.181	-4.042	0.019	9.342			
		2:BEBAN HIDL	11.730	-851.285	1.460	-2.483	-0.006	2.204			
		3:BEBAN GEM	838.664	-958.206	6.903	0.371	0.004	16.602			
		4:KOMBINASI	-0.192	-5.79E 3	-2.682	-8.824	0.013	14.736			
		5:KOMB B. MA	871.835	-5.2E 3	3.943	-5.143	0.020	28.096			
	14534	1:BEBAN MATI	15.799	4.81E 3	4.181	4.042	0.022	-51.006			
		2:BEBAN HIDL	-11.730	851.285	-1.460	2.483	-0.008	-10.552			
		3:BEBAN GEM	-838.664	958.206	-6.903	-0.371	-0.072	-25.999			
		4:KOMBINASI	0.192	7.14E 3	2.682	8.824	0.013	-78.091			
		5:KOMB B. MA	-871.835	6.33E 3	-3.943	5.143	-0.059	-84.636			
22015	14849	1:BEBAN MATI	-32.874	-4.47E 3	0.666	0.296	-0.003	11.668			
		2:BEBAN HIDL	12.520	-1.95E 3	-0.249	-0.020	0.001	4.164			



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Job No

1

Sheet No

428

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	370.862	-1.02E 3	11.142	0.857	-0.039	15.718			
		4:KOMBINASI	-19.418	-8.49E 3	0.401	0.322	-0.002	20.665			
		5:KOMB B. MA	364.043	-6.71E 3	12.216	1.183	-0.044	30.670			
	14536	1:BEBAN MATI	32.874	4.77E 3	-0.666	-0.296	-0.003	-56.993			
		2:BEBAN HIDL	-12.520	1.95E 3	0.249	0.020	0.001	-23.318			
		3:BEBAN GEM	-370.862	1.02E 3	-11.142	-0.857	-0.070	-25.692			
		4:KOMBINASI	19.418	8.85E 3	-0.401	-0.322	-0.002	-105.701			
		5:KOMB B. MA	-364.043	7.01E 3	-12.216	-1.183	-0.076	-97.961			
22016	14851	1:BEBAN MATI	-30.337	3.62E 3	0.534	-0.280	-0.005	-9.065			
		2:BEBAN HIDL	4.128	944.948	0.077	-0.182	-0.001	-4.353			
		3:BEBAN GEM	-938.933	-724.161	37.644	-0.336	-0.273	-10.630			
		4:KOMBINASI	-29.800	5.86E 3	0.763	-0.628	-0.007	-17.842			
		5:KOMB B. MA	-1.01E 3	3.43E 3	40.105	-0.742	-0.291	-22.838			
	14632	1:BEBAN MATI	30.337	-1.93E 3	-0.534	0.280	-0.003	49.899			
		2:BEBAN HIDL	-4.128	-944.948	-0.077	0.182	-0.000	18.253			
		3:BEBAN GEM	938.933	724.161	-37.644	0.336	-0.281	-0.023			
		4:KOMBINASI	29.800	-3.83E 3	-0.763	0.628	-0.005	89.083			
		5:KOMB B. MA	1.01E 3	-1.74E 3	-40.105	0.742	-0.299	60.827			
22017	14852	1:BEBAN MATI	-2.100	702.048	-0.000	0.000	0.000	-2.009			
		2:BEBAN HIDL	4.153	170.631	-0.000	0.000	0.000	-1.630			
		3:BEBAN GEM	-1.03E 3	-83.438	3.373	0.093	-0.024	-1.427			
		4:KOMBINASI	4.124	1.12E 3	-0.000	0.000	0.000	-5.018			
		5:KOMB B. MA	-1.08E 3	716.817	3.541	0.098	-0.025	-4.485			
	14678	1:BEBAN MATI	2.100	-413.734	0.000	-0.000	0.000	10.215			
		2:BEBAN HIDL	-4.153	-170.631	0.000	-0.000	0.000	4.140			
		3:BEBAN GEM	1.03E 3	83.438	-3.373	-0.093	-0.025	0.199			
		4:KOMBINASI	-4.124	-769.490	0.000	-0.000	0.000	18.882			
		5:KOMB B. MA	1.08E 3	-428.502	-3.541	-0.098	-0.027	12.909			
22018	14854	1:BEBAN MATI	-30.337	3.62E 3	-0.534	0.280	0.005	-9.065			
		2:BEBAN HIDL	4.128	944.947	-0.077	0.182	0.001	-4.353			
		3:BEBAN GEM	-907.851	-722.143	-19.934	-0.351	0.141	-10.629			
		4:KOMBINASI	-29.800	5.86E 3	-0.763	0.628	0.007	-17.842			
		5:KOMB B. MA	-981.104	3.43E 3	-21.510	0.021	0.153	-22.837			
	14637	1:BEBAN MATI	30.337	-1.93E 3	0.534	-0.280	0.003	49.899			
		2:BEBAN HIDL	-4.128	-944.947	0.077	-0.182	0.000	18.253			
		3:BEBAN GEM	907.851	722.143	19.934	0.351	0.152	0.006			
		4:KOMBINASI	29.800	-3.83E 3	0.763	-0.628	0.005	89.083			
		5:KOMB B. MA	981.104	-1.74E 3	21.510	-0.021	0.163	60.857			
22019	14855	1:BEBAN MATI	-0.287	536.435	-0.014	-0.118	-0.000	-2.661			
		2:BEBAN HIDL	2.560	172.572	-0.001	0.009	-0.000	-1.480			
		3:BEBAN GEM	849.872	-22.404	-6.304	-0.326	0.030	-0.351			
		4:KOMBINASI	3.750	919.837	-0.019	-0.127	-0.000	-5.561			
		5:KOMB B. MA	893.614	616.455	-6.634	-0.455	0.031	-3.918			
	14678	1:BEBAN MATI	0.287	-248.121	0.014	0.118	0.000	8.431			
		2:BEBAN HIDL	-2.560	-172.572	0.001	-0.009	0.000	4.019			
		3:BEBAN GEM	-849.872	22.404	6.304	0.326	0.063	0.022			
		4:KOMBINASI	-3.750	-573.860	0.019	0.127	0.000	16.548			
		5:KOMB B. MA	-893.614	-328.140	6.634	0.455	0.066	10.866			



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Job No 1	Sheet No 429	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22020	14856	1:BEBAN MATI	1.795	-962.008	0.042	0.107	-0.000	-1.500			
		2:BEBAN HIDL	2.758	-533.307	-0.002	-0.024	0.000	-0.920			
		3:BEBAN GEM	725.378	9.391	5.525	0.253	-0.044	0.485			
		4:KOMBINASI	6.566	-2.01E 3	0.047	0.090	-0.000	-3.272			
		5:KOMB B. MA	765.096	-1.27E 3	5.842	0.359	-0.046	-1.543			
14637	14637	1:BEBAN MATI	-1.795	1.25E 3	-0.042	-0.107	-0.000	-14.771			
		2:BEBAN HIDL	-2.758	533.307	0.002	0.024	0.000	-6.925			
		3:BEBAN GEM	-725.378	-9.391	-5.525	-0.253	-0.038	-0.347			
		4:KOMBINASI	-6.566	2.35E 3	-0.047	-0.090	-0.000	-28.806			
		5:KOMB B. MA	-765.096	1.56E 3	-5.842	-0.359	-0.040	-19.291			
22021	14858	1:BEBAN MATI	-31.417	-5.15E 3	0.102	0.113	-0.001	-10.582			
		2:BEBAN HIDL	4.363	-1.89E 3	-0.234	0.072	0.002	-3.105			
		3:BEBAN GEM	-1.19E 3	-985.820	65.999	0.775	-0.457	10.844			
		4:KOMBINASI	-30.720	-9.2E 3	-0.252	0.251	0.002	-17.668			
		5:KOMB B. MA	-1.28E 3	-7.32E 3	69.261	0.970	-0.480	-1.060			
14569	14569	1:BEBAN MATI	31.417	6.84E 3	-0.102	-0.113	-0.001	-77.568			
		2:BEBAN HIDL	-4.363	1.89E 3	0.234	-0.072	0.002	-24.682			
		3:BEBAN GEM	1.19E 3	985.820	-65.999	-0.775	-0.514	-25.345			
		4:KOMBINASI	30.720	11.2E 3	0.252	-0.251	0.002	-132.573			
		5:KOMB B. MA	1.28E 3	9.01E 3	-69.261	-0.970	-0.539	-118.989			
22022	14859	1:BEBAN MATI	-10.880	-1.02E 3	-0.000	-0.000	0.000	-2.279			
		2:BEBAN HIDL	4.191	-531.470	-0.000	-0.000	0.000	-1.036			
		3:BEBAN GEM	-2.07E 3	37.014	8.137	-0.070	-0.058	1.599			
		4:KOMBINASI	-6.351	-2.07E 3	-0.000	-0.000	0.000	-4.393			
		5:KOMB B. MA	-2.18E 3	-1.3E 3	8.543	-0.074	-0.061	-1.221			
14657	14657	1:BEBAN MATI	10.880	1.31E 3	0.000	0.000	0.000	-14.838			
		2:BEBAN HIDL	-4.191	531.470	0.000	0.000	0.000	-6.782			
		3:BEBAN GEM	2.07E 3	-37.014	-8.137	0.070	-0.062	-1.055			
		4:KOMBINASI	6.351	2.42E 3	0.000	0.000	0.000	-28.656			
		5:KOMB B. MA	2.18E 3	1.59E 3	-8.543	0.074	-0.065	-20.015			
22023	14861	1:BEBAN MATI	-31.417	-5.15E 3	-0.102	-0.113	0.001	-10.582			
		2:BEBAN HIDL	4.363	-1.89E 3	0.234	-0.072	-0.002	-3.105			
		3:BEBAN GEM	-1.06E 3	-981.328	-38.676	0.698	0.267	10.784			
		4:KOMBINASI	-30.720	-9.2E 3	0.252	-0.251	-0.002	-17.668			
		5:KOMB B. MA	-1.15E 3	-7.31E 3	-40.571	0.577	0.280	-1.123			
14572	14572	1:BEBAN MATI	31.417	6.84E 3	0.102	0.113	0.001	-77.568			
		2:BEBAN HIDL	-4.363	1.89E 3	-0.234	0.072	-0.002	-24.682			
		3:BEBAN GEM	1.06E 3	981.328	38.676	-0.698	0.302	-25.219			
		4:KOMBINASI	30.720	11.2E 3	-0.252	0.251	-0.002	-132.573			
		5:KOMB B. MA	1.15E 3	9E 3	40.571	-0.577	0.317	-118.857			
22024	14862	1:BEBAN MATI	-1.927	3.5E 3	0.032	-0.066	-0.001	-10.895			
		2:BEBAN HIDL	2.114	928.176	0.007	0.001	-0.000	-3.498			
		3:BEBAN GEM	1.61E 3	-202.981	-18.853	1.244	0.051	-2.941			
		4:KOMBINASI	1.070	5.69E 3	0.049	-0.078	-0.001	-18.671			
		5:KOMB B. MA	1.69E 3	3.84E 3	-19.760	1.241	0.053	-16.082			
14657	14657	1:BEBAN MATI	1.927	-1.81E 3	-0.032	0.066	0.000	49.980			
		2:BEBAN HIDL	-2.114	-928.176	-0.007	-0.001	-0.000	17.151			
		3:BEBAN GEM	-1.61E 3	202.981	18.853	-1.244	0.227	-0.045			



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Job No 1	Sheet No 430	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-1.070	-3.66E 3	-0.049	0.078	0.000	87.418			
		5:KOMB B. MA	-1.69E 3	-2.16E 3	19.760	-1.241	0.238	60.224			
22025	14863	1:BEBAN MATI	-2.640	-5.19E 3	-0.243	0.128	0.002	-9.223			
		2:BEBAN HIDL	-0.035	-1.83E 3	-0.028	-0.010	0.000	-2.792			
		3:BEBAN GEM	1.37E 3	-271.734	46.297	-2.579	-0.339	3.009			
		4:KOMBINASI	-3.225	-9.15E 3	-0.336	0.138	0.003	-15.535			
		5:KOMB B. MA	1.43E 3	-6.57E 3	48.352	-2.586	-0.354	-7.739			
	14572	1:BEBAN MATI	2.640	6.88E 3	0.243	-0.128	0.002	-79.526			
		2:BEBAN HIDL	0.035	1.83E 3	0.028	0.010	0.000	-24.062			
		3:BEBAN GEM	-1.37E 3	271.734	-46.297	2.579	-0.342	-7.006			
		4:KOMBINASI	3.225	11.2E 3	0.336	-0.138	0.002	-133.930			
		5:KOMB B. MA	-1.43E 3	8.26E 3	-48.352	2.586	-0.357	-101.320			
22026	14865	1:BEBAN MATI	-21.136	3.55E 3	0.268	-0.059	-0.002	-11.956			
		2:BEBAN HIDL	5.140	938.989	0.106	-0.013	-0.001	-3.621			
		3:BEBAN GEM	-413.105	-722.431	8.207	-0.349	-0.135	-10.612			
		4:KOMBINASI	-17.139	5.77E 3	0.492	-0.093	-0.004	-20.141			
		5:KOMB B. MA	-451.812	3.36E 3	8.949	-0.434	-0.144	-25.271			
	14631	1:BEBAN MATI	21.136	-1.86E 3	-0.268	0.059	-0.002	51.799			
		2:BEBAN HIDL	-5.140	-938.989	-0.106	0.013	-0.001	17.434			
		3:BEBAN GEM	413.105	722.431	-8.207	0.349	0.014	-0.015			
		4:KOMBINASI	17.139	-3.74E 3	-0.492	0.093	-0.003	90.053			
		5:KOMB B. MA	451.812	-1.67E 3	-8.949	0.434	0.013	62.243			
22027	14866	1:BEBAN MATI	-14.433	585.309	-0.000	0.000	0.000	-3.259			
		2:BEBAN HIDL	3.687	170.463	-0.000	0.000	0.000	-1.565			
		3:BEBAN GEM	-5.38E 3	-85.146	49.269	0.091	-0.310	-1.523			
		4:KOMBINASI	-11.421	975.112	-0.000	0.000	0.000	-6.414			
		5:KOMB B. MA	-5.66E 3	598.183	51.732	0.095	-0.326	-5.797			
	14668	1:BEBAN MATI	14.433	-296.995	0.000	-0.000	0.000	9.748			
		2:BEBAN HIDL	-3.687	-170.463	0.000	-0.000	-0.000	4.072			
		3:BEBAN GEM	5.38E 3	85.146	-49.269	-0.091	-0.415	0.270			
		4:KOMBINASI	11.421	-629.134	0.000	-0.000	0.000	18.214			
		5:KOMB B. MA	5.66E 3	-309.869	-51.732	-0.095	-0.435	12.475			
22028	14868	1:BEBAN MATI	-21.136	3.55E 3	-0.268	0.059	0.002	-11.956			
		2:BEBAN HIDL	5.140	938.988	-0.106	0.013	0.001	-3.621			
		3:BEBAN GEM	-914.048	-722.407	19.967	-0.359	-0.126	-10.584			
		4:KOMBINASI	-17.139	5.77E 3	-0.492	0.092	0.004	-20.141			
		5:KOMB B. MA	-977.802	3.36E 3	20.633	-0.309	-0.129	-25.242			
	14636	1:BEBAN MATI	21.136	-1.86E 3	0.268	-0.059	0.002	51.799			
		2:BEBAN HIDL	-5.140	-938.988	0.106	-0.013	0.001	17.434			
		3:BEBAN GEM	914.048	722.407	-19.967	0.359	-0.168	-0.042			
		4:KOMBINASI	17.139	-3.74E 3	0.492	-0.092	0.003	90.053			
		5:KOMB B. MA	977.802	-1.67E 3	-20.633	0.309	-0.174	62.215			
22029	14869	1:BEBAN MATI	0.398	606.646	-0.005	-0.006	-0.000	-2.671			
		2:BEBAN HIDL	4.902	170.973	0.012	-0.001	-0.000	-1.503			
		3:BEBAN GEM	1.89E 3	-22.873	-49.335	-0.322	0.412	-0.416			
		4:KOMBINASI	8.320	1E 3	0.014	-0.009	-0.000	-5.611			
		5:KOMB B. MA	1.99E 3	685.213	-51.799	-0.345	0.433	-4.010			
	14668	1:BEBAN MATI	-0.398	-318.332	0.005	0.006	0.000	9.475			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 431	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-4.902	-170.973	-0.012	0.001	-0.000	4.018			
		3:BEBAN GEM	-1.89E 3	22.873	49.335	0.322	0.313	0.079			
		4:KOMBINASI	-8.320	-655.555	-0.014	0.009	-0.000	17.799			
		5:KOMB B. MA	-1.99E 3	-396.899	51.799	0.345	0.329	11.969			
22030	14870	1:BEBAN MATI	0.627	-1.03E 3	0.002	0.005	-0.000	-1.375			
		2:BEBAN HIDL	5.176	-528.931	-0.031	0.002	0.000	-0.935			
		3:BEBAN GEM	485.908	11.278	72.895	0.250	-0.528	0.422			
		4:KOMBINASI	9.034	-2.09E 3	-0.047	0.009	0.000	-3.147			
		5:KOMB B. MA	513.936	-1.34E 3	76.524	0.269	-0.554	-1.494			
	14636	1:BEBAN MATI	-0.627	1.32E 3	-0.002	-0.005	0.000	-15.940			
		2:BEBAN HIDL	-5.176	528.931	0.031	-0.002	0.000	-6.845			
		3:BEBAN GEM	-485.908	-11.278	-72.895	-0.250	-0.545	-0.256			
		4:KOMBINASI	-9.034	2.43E 3	0.047	-0.009	0.000	-30.080			
		5:KOMB B. MA	-513.936	1.63E 3	-76.524	-0.269	-0.572	-20.316			
22031	14872	1:BEBAN MATI	-22.639	-5.31E 3	0.034	0.138	-0.000	-9.974			
		2:BEBAN HIDL	5.246	-1.84E 3	-0.165	0.046	0.001	-2.894			
		3:BEBAN GEM	1.11E 3	-979.786	-50.973	0.740	0.476	10.715			
		4:KOMBINASI	-18.773	-9.32E 3	-0.223	0.239	0.002	-16.600			
		5:KOMB B. MA	1.15E 3	-7.44E 3	-53.587	0.942	0.501	-0.460			
	14568	1:BEBAN MATI	22.639	7E 3	-0.034	-0.138	-0.000	-80.538			
		2:BEBAN HIDL	-5.246	1.84E 3	0.165	-0.046	0.001	-24.223			
		3:BEBAN GEM	-1.11E 3	979.786	50.973	-0.740	0.274	-25.127			
		4:KOMBINASI	18.773	11.3E 3	0.223	-0.239	0.002	-135.402			
		5:KOMB B. MA	-1.15E 3	9.13E 3	53.587	-0.942	0.288	-121.455			
22032	14873	1:BEBAN MATI	-15.650	-1.01E 3	-0.000	-0.000	0.000	-1.878			
		2:BEBAN HIDL	4.380	-529.321	0.000	-0.000	-0.000	-0.983			
		3:BEBAN GEM	12.1E 3	36.224	-138.885	-0.072	0.968	1.551			
		4:KOMBINASI	-11.772	-2.06E 3	-0.000	-0.000	0.000	-3.827			
		5:KOMB B. MA	12.7E 3	-1.29E 3	-145.829	-0.075	1.017	-0.839			
	14660	1:BEBAN MATI	15.650	1.3E 3	0.000	0.000	0.000	-15.122			
		2:BEBAN HIDL	-4.380	529.321	-0.000	0.000	0.000	-6.803			
		3:BEBAN GEM	-12.1E 3	-36.224	138.885	0.072	1.075	-1.018			
		4:KOMBINASI	11.772	2.41E 3	0.000	0.000	0.000	-29.030			
		5:KOMB B. MA	-12.7E 3	1.58E 3	145.829	0.075	1.128	-20.272			
22033	14875	1:BEBAN MATI	-22.639	-5.31E 3	-0.034	-0.138	0.000	-9.974			
		2:BEBAN HIDL	5.246	-1.84E 3	0.165	-0.046	-0.001	-2.894			
		3:BEBAN GEM	166.273	-974.507	42.540	0.745	-0.332	10.689			
		4:KOMBINASI	-18.773	-9.32E 3	0.223	-0.239	-0.002	-16.600			
		5:KOMB B. MA	155.095	-7.44E 3	44.732	0.617	-0.350	-0.487			
	14571	1:BEBAN MATI	22.639	7E 3	0.034	0.138	0.000	-80.538			
		2:BEBAN HIDL	-5.246	1.84E 3	-0.165	0.046	-0.001	-24.223			
		3:BEBAN GEM	-166.273	974.507	-42.540	-0.745	-0.293	-25.024			
		4:KOMBINASI	18.773	11.3E 3	-0.223	0.239	-0.002	-135.402			
		5:KOMB B. MA	-155.095	9.13E 3	-44.732	-0.617	-0.308	-121.347			
22034	14876	1:BEBAN MATI	-4.069	3.52E 3	-0.029	0.059	0.000	-10.960			
		2:BEBAN HIDL	6.798	934.473	0.038	-0.013	-0.000	-3.544			
		3:BEBAN GEM	-1.9E 3	-203.660	-249.329	1.256	1.610	-2.987			
		4:KOMBINASI	5.994	5.72E 3	0.025	0.050	-0.000	-18.822			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 432	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-2E 3	3.87E 3	-261.802	1.370	1.690	-16.222			
	14660	1:BEBAN MATI	4.069	-1.83E 3	0.029	-0.059	0.000	50.365			
		2:BEBAN HIDL	-6.798	-934.473	-0.038	0.013	-0.000	17.290			
		3:BEBAN GEM	1.9E 3	203.660	249.329	-1.256	2.058	-0.009			
		4:KOMBINASI	-5.994	-3.7E 3	-0.025	-0.050	-0.000	88.102			
		5:KOMB B. MA	2E 3	-2.18E 3	261.802	-1.370	2.161	60.729			
22035	14877	1:BEBAN MATI	-4.412	-5.22E 3	0.115	-0.120	-0.001	-9.270			
		2:BEBAN HIDL	5.485	-1.83E 3	-0.114	0.025	0.001	-2.831			
		3:BEBAN GEM	1.79E 3	-276.136	250.326	-2.597	-1.789	3.015			
		4:KOMBINASI	3.483	-9.2E 3	-0.044	-0.103	0.000	-15.653			
		5:KOMB B. MA	1.88E 3	-6.61E 3	262.890	-2.831	-1.879	-7.803			
	14571	1:BEBAN MATI	4.412	6.91E 3	-0.115	0.120	-0.001	-79.938			
		2:BEBAN HIDL	-5.485	1.83E 3	0.114	-0.025	0.001	-24.145			
		3:BEBAN GEM	-1.79E 3	276.136	-250.326	2.597	-1.893	-7.077			
		4:KOMBINASI	-3.483	11.2E 3	0.044	0.103	0.000	-134.558			
		5:KOMB B. MA	-1.88E 3	8.3E 3	-262.890	2.831	-1.988	-101.856			
22036	14879	1:BEBAN MATI	-26.419	3.48E 3	0.061	-0.044	-0.000	-12.862			
		2:BEBAN HIDL	10.024	972.803	0.001	-0.017	-0.000	-3.919			
		3:BEBAN GEM	1.53E 3	-725.026	27.634	-0.357	-0.195	-10.784			
		4:KOMBINASI	-15.665	5.74E 3	0.075	-0.081	-0.001	-21.706			
		5:KOMB B. MA	1.58E 3	3.3E 3	29.078	-0.430	-0.205	-26.537			
	14630	1:BEBAN MATI	26.419	-1.79E 3	-0.061	0.044	-0.000	51.671			
		2:BEBAN HIDL	-10.024	-972.803	-0.001	0.017	0.000	18.229			
		3:BEBAN GEM	-1.53E 3	725.026	-27.634	0.357	-0.211	0.119			
		4:KOMBINASI	15.665	-3.71E 3	-0.075	0.081	-0.000	91.172			
		5:KOMB B. MA	-1.58E 3	-1.62E 3	-29.078	0.430	-0.222	62.733			
22037	14880	1:BEBAN MATI	-16.331	639.753	0.000	0.000	-0.000	-3.906			
		2:BEBAN HIDL	4.729	187.170	0.000	0.000	-0.000	-1.729			
		3:BEBAN GEM	3.41E 3	-84.848	-15.089	0.091	0.120	-1.583			
		4:KOMBINASI	-12.030	1.07E 3	0.000	0.000	-0.000	-7.454			
		5:KOMB B. MA	3.57E 3	662.965	-15.843	0.096	0.126	-6.606			
	14671	1:BEBAN MATI	16.331	-351.439	-0.000	-0.000	-0.000	11.197			
		2:BEBAN HIDL	-4.729	-187.170	-0.000	-0.000	-0.000	4.482			
		3:BEBAN GEM	-3.41E 3	84.848	15.089	-0.091	0.102	0.335			
		4:KOMBINASI	12.030	-721.199	-0.000	-0.000	-0.000	20.608			
		5:KOMB B. MA	-3.57E 3	-374.651	15.843	-0.096	0.107	14.237			
22038	14882	1:BEBAN MATI	-26.419	3.48E 3	-0.061	0.044	0.000	-12.862			
		2:BEBAN HIDL	10.024	972.801	-0.001	0.017	0.000	-3.919			
		3:BEBAN GEM	1.59E 3	-724.893	-73.599	-0.358	0.520	-10.749			
		4:KOMBINASI	-15.665	5.74E 3	-0.075	0.081	0.001	-21.706			
		5:KOMB B. MA	1.64E 3	3.3E 3	-77.341	-0.321	0.547	-26.500			
	14635	1:BEBAN MATI	26.419	-1.79E 3	0.061	-0.044	0.000	51.671			
		2:BEBAN HIDL	-10.024	-972.801	0.001	-0.017	-0.000	18.229			
		3:BEBAN GEM	-1.59E 3	724.893	73.599	0.358	0.562	0.086			
		4:KOMBINASI	15.665	-3.71E 3	0.075	-0.081	0.000	91.172			
		5:KOMB B. MA	-1.64E 3	-1.62E 3	77.341	0.321	0.591	62.698			
22039	14883	1:BEBAN MATI	-5.733	543.149	0.002	0.157	-0.000	-2.648			
		2:BEBAN HIDL	5.882	175.137	0.004	0.009	-0.000	-1.523			



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Job No

1

Sheet No

433

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1E 3	-24.630	-10.342	-0.319	0.042	-0.413			
		4:KOMBINASI	2.532	931.998	0.008	0.203	-0.000	-5.614			
		5:KOMB B. MA	-1.05E 3	622.370	-10.855	-0.172	0.044	-3.996			
	14671	1:BEBAN MATI	5.733	-254.835	-0.002	-0.157	0.000	8.517			
		2:BEBAN HIDL	-5.882	-175.137	-0.004	-0.009	-0.000	4.099			
		3:BEBAN GEM	1E 3	24.630	10.342	0.319	0.110	0.051			
		4:KOMBINASI	-2.532	-586.020	-0.008	-0.203	0.000	16.779			
		5:KOMB B. MA	1.05E 3	-334.055	10.855	0.172	0.116	11.030			
22040	14884	1:BEBAN MATI	-5.675	-966.868	0.000	-0.156	-0.000	-1.446			
		2:BEBAN HIDL	5.451	-533.549	-0.009	-0.004	0.000	-0.938			
		3:BEBAN GEM	-568.348	13.071	15.527	0.246	-0.105	0.427			
		4:KOMBINASI	1.911	-2.01E 3	-0.014	-0.193	0.000	-3.236			
		5:KOMB B. MA	-599.170	-1.27E 3	16.298	0.101	-0.110	-1.561			
	14635	1:BEBAN MATI	5.675	1.26E 3	-0.000	0.156	0.000	-14.897			
		2:BEBAN HIDL	-5.451	533.549	0.009	0.004	0.000	-6.911			
		3:BEBAN GEM	568.348	-13.071	-15.527	-0.246	-0.124	-0.235			
		4:KOMBINASI	-1.911	2.36E 3	0.014	0.193	0.000	-28.933			
		5:KOMB B. MA	599.170	1.56E 3	-16.298	-0.101	-0.130	-19.290			
22041	14886	1:BEBAN MATI	-24.716	-5.12E 3	0.105	0.124	-0.001	-10.029			
		2:BEBAN HIDL	16.046	-1.84E 3	-0.147	0.039	0.001	-4.019			
		3:BEBAN GEM	1.9E 3	-978.442	29.379	0.751	-0.223	10.588			
		4:KOMBINASI	-3.985	-9.09E 3	-0.110	0.212	0.001	-18.465			
		5:KOMB B. MA	1.98E 3	-7.25E 3	30.864	0.937	-0.235	-1.323			
	14542	1:BEBAN MATI	24.716	6.8E 3	-0.105	-0.124	-0.001	-77.636			
		2:BEBAN HIDL	-16.046	1.84E 3	0.147	-0.039	0.001	-23.079			
		3:BEBAN GEM	-1.9E 3	978.442	-29.379	-0.751	-0.209	-24.981			
		4:KOMBINASI	3.985	11.1E 3	0.110	-0.212	0.001	-130.090			
		5:KOMB B. MA	-1.98E 3	8.94E 3	-30.864	-0.937	-0.219	-117.714			
22042	14887	1:BEBAN MATI	-17.297	-1.11E 3	0.000	0.000	-0.000	-2.809			
		2:BEBAN HIDL	4.454	-497.029	-0.000	0.000	-0.000	-1.903			
		3:BEBAN GEM	1.79E 3	28.502	-5.320	-0.072	0.039	1.518			
		4:KOMBINASI	-13.631	-2.13E 3	0.000	0.000	-0.000	-6.416			
		5:KOMB B. MA	1.86E 3	-1.38E 3	-5.586	-0.075	0.041	-2.357			
	14663	1:BEBAN MATI	17.297	1.4E 3	-0.000	-0.000	-0.000	-15.712			
		2:BEBAN HIDL	-4.454	497.029	0.000	-0.000	0.000	-5.408			
		3:BEBAN GEM	-1.79E 3	-28.502	5.320	0.072	0.039	-1.099			
		4:KOMBINASI	13.631	2.48E 3	-0.000	-0.000	-0.000	-27.508			
		5:KOMB B. MA	-1.86E 3	1.67E 3	5.586	0.075	0.041	-20.111			
22043	14889	1:BEBAN MATI	-24.716	-5.12E 3	-0.105	-0.124	0.001	-10.029			
		2:BEBAN HIDL	16.046	-1.84E 3	0.147	-0.039	-0.001	-4.019			
		3:BEBAN GEM	1.97E 3	-972.665	-56.411	0.749	0.422	10.562			
		4:KOMBINASI	-3.985	-9.09E 3	0.110	-0.212	-0.001	-18.465			
		5:KOMB B. MA	2.06E 3	-7.24E 3	-59.248	0.639	0.444	-1.350			
	14544	1:BEBAN MATI	24.716	6.8E 3	0.105	0.124	0.001	-77.636			
		2:BEBAN HIDL	-16.046	1.84E 3	-0.147	0.039	-0.001	-23.079			
		3:BEBAN GEM	-1.97E 3	972.665	56.411	-0.749	0.407	-24.870			
		4:KOMBINASI	3.985	11.1E 3	-0.110	0.212	-0.001	-130.090			
		5:KOMB B. MA	-2.06E 3	8.93E 3	59.248	-0.639	0.428	-117.597			



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Job No 1	Sheet No 434	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22044	14890	1:BEBAN MATI	-13.947	2.34E 3	-0.027	0.484	0.000	-7.898			
		2:BEBAN HIDL	7.918	810.049	-0.104	0.231	0.001	-3.231			
		3:BEBAN GEM	-1.42E 3	-211.856	-8.614	1.199	0.026	-2.998			
		4:KOMBINASI	-4.068	4.11E 3	-0.199	0.950	0.002	-14.648			
		5:KOMB B. MA	-1.5E 3	2.61E 3	-9.134	1.882	0.028	-12.985			
14663	14890	1:BEBAN MATI	13.947	-1.89E 3	0.027	-0.484	0.000	39.073			
		2:BEBAN HIDL	-7.918	-810.049	0.104	-0.231	0.001	15.147			
		3:BEBAN GEM	1.42E 3	211.856	8.614	-1.199	0.101	-0.119			
		4:KOMBINASI	4.068	-3.57E 3	0.199	-0.950	0.001	71.123			
		5:KOMB B. MA	1.5E 3	-2.16E 3	9.134	-1.882	0.106	48.037			
22045	14891	1:BEBAN MATI	-13.674	-4.07E 3	0.087	-1.162	-0.001	-6.623			
		2:BEBAN HIDL	6.820	-1.63E 3	0.399	-0.464	-0.003	-2.559			
		3:BEBAN GEM	-1.13E 3	-263.594	25.175	-2.599	-0.196	3.092			
		4:KOMBINASI	-5.498	-7.5E 3	0.742	-2.136	-0.006	-12.043			
		5:KOMB B. MA	-1.19E 3	-5.33E 3	26.759	-4.170	-0.208	-4.912			
14544	14891	1:BEBAN MATI	13.674	4.52E 3	-0.087	1.162	-0.001	-56.621			
		2:BEBAN HIDL	-6.820	1.63E 3	-0.399	0.464	-0.003	-21.400			
		3:BEBAN GEM	1.13E 3	263.594	-25.175	2.599	-0.174	-6.970			
		4:KOMBINASI	5.498	8.04E 3	-0.742	2.136	-0.005	-102.186			
		5:KOMB B. MA	1.19E 3	5.78E 3	-26.759	4.170	-0.185	-76.779			
22046	14892	1:BEBAN MATI	59.513	2.05E 3	-0.455	1.519	0.003	-0.716			
		2:BEBAN HIDL	-2.014	252.479	0.032	0.045	-0.000	-0.029			
		3:BEBAN GEM	1.5E 3	-56.181	-6.579	0.448	0.039	-1.290			
		4:KOMBINASI	68.193	2.86E 3	-0.495	1.894	0.003	-0.905			
		5:KOMB B. MA	1.63E 3	2.14E 3	-7.344	2.016	0.043	-2.088			
14608	14892	1:BEBAN MATI	-59.513	-520.227	0.455	-1.519	0.004	19.591			
		2:BEBAN HIDL	2.014	-252.479	-0.032	-0.045	-0.000	3.743			
		3:BEBAN GEM	-1.5E 3	56.181	6.579	-0.448	0.058	0.464			
		4:KOMBINASI	-68.193	-1.03E 3	0.495	-1.894	0.004	29.497			
		5:KOMB B. MA	-1.63E 3	-612.725	7.344	-2.016	0.065	22.324			
22047	14894	1:BEBAN MATI	-12.670	-444.670	10.259	-1.949	-0.027	-6.704			
		2:BEBAN HIDL	17.244	-159.279	0.159	-0.256	-0.003	-2.539			
		3:BEBAN GEM	-835.278	-2.15E 3	535.948	-0.218	-1.385	1.143			
		4:KOMBINASI	12.386	-788.450	12.566	-2.749	-0.037	-12.107			
		5:KOMB B. MA	-879.365	-2.8E 3	573.100	-2.331	-1.483	-7.028			
14772	14894	1:BEBAN MATI	12.670	1.01E 3	-10.259	1.949	-0.023	3.144			
		2:BEBAN HIDL	-17.244	159.279	-0.159	0.256	0.002	1.758			
		3:BEBAN GEM	835.278	2.15E 3	-535.948	0.218	-1.243	-11.692			
		4:KOMBINASI	-12.386	1.46E 3	-12.566	2.749	-0.024	6.586			
		5:KOMB B. MA	879.365	3.36E 3	-573.100	2.331	-1.327	-8.078			
22048	14895	1:BEBAN MATI	-12.472	-829.402	-0.320	-1.277	0.002	3.237			
		2:BEBAN HIDL	-3.525	-340.867	-0.024	-0.224	0.000	-0.817			
		3:BEBAN GEM	-106.011	9.987	7.381	0.001	-0.056	0.925			
		4:KOMBINASI	-20.606	-1.54E 3	-0.423	-1.891	0.003	2.576			
		5:KOMB B. MA	-125.898	-1.02E 3	7.416	-1.411	-0.056	3.718			
14655	14895	1:BEBAN MATI	12.472	1.12E 3	0.320	1.277	0.002	-17.558			
		2:BEBAN HIDL	3.525	340.867	0.024	0.224	0.000	-4.197			
		3:BEBAN GEM	106.011	-9.987	-7.381	-0.001	-0.052	-0.778			



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Job No 1	Sheet No 435	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	20.606	1.89E 3	0.423	1.891	0.003	-27.784			
		5:KOMB B. MA	125.898	1.31E 3	-7.416	1.411	-0.053	-20.893			
22049	14896	1:BEBAN MATI	52.612	-1.54E 3	-1.252	-2.708	0.009	-10.757			
		2:BEBAN HIDL	5.997	-455.768	-0.267	-0.053	0.002	-0.703			
		3:BEBAN GEM	2.15E 3	39.519	-23.154	0.261	0.119	0.945			
		4:KOMBINASI	72.730	-2.58E 3	-1.930	-3.333	0.014	-14.034			
		5:KOMB B. MA	2.31E 3	-1.77E 3	-25.724	-2.465	0.135	-10.187			
	14633	1:BEBAN MATI	-52.612	3.07E 3	1.252	2.708	0.009	-23.162			
		2:BEBAN HIDL	-5.997	455.768	0.267	0.053	0.002	-6.001			
		3:BEBAN GEM	-2.15E 3	-39.519	23.154	-0.261	0.222	-0.364			
		4:KOMBINASI	-72.730	4.41E 3	1.930	3.333	0.014	-37.396			
		5:KOMB B. MA	-2.31E 3	3.3E 3	25.724	2.465	0.243	-27.144			
22050	14898	1:BEBAN MATI	38.167	2.53E 3	-1.301	1.045	0.009	-10.255			
		2:BEBAN HIDL	22.654	796.575	-0.294	-0.335	0.003	-4.436			
		3:BEBAN GEM	398.672	-261.237	-28.800	0.945	0.191	-4.082			
		4:KOMBINASI	82.047	4.31E 3	-2.032	0.718	0.015	-19.405			
		5:KOMB B. MA	470.365	2.73E 3	-31.718	1.836	0.212	-17.204			
	14655	1:BEBAN MATI	-38.167	-2.08E 3	1.301	-1.045	0.010	44.148			
		2:BEBAN HIDL	-22.654	-796.575	0.294	0.335	0.002	16.154			
		3:BEBAN GEM	-398.672	261.237	28.800	-0.945	0.232	0.240			
		4:KOMBINASI	-82.047	-3.77E 3	2.032	-0.718	0.015	78.824			
		5:KOMB B. MA	-470.365	-2.28E 3	31.718	-1.836	0.255	54.092			
22051	14899	1:BEBAN MATI	52.759	-4.42E 3	2.073	1.080	-0.017	-11.278			
		2:BEBAN HIDL	13.307	-1.67E 3	-0.018	0.932	0.000	-3.425			
		3:BEBAN GEM	1.04E 3	-339.799	-6.074	-2.679	0.008	3.703			
		4:KOMBINASI	84.602	-7.98E 3	2.458	2.788	-0.020	-19.014			
		5:KOMB B. MA	1.16E 3	-5.78E 3	-4.316	-1.173	-0.008	-9.445			
	14570	1:BEBAN MATI	-52.759	4.87E 3	-2.073	-1.080	-0.014	-57.045			
		2:BEBAN HIDL	-13.307	1.67E 3	0.018	-0.932	0.000	-21.185			
		3:BEBAN GEM	-1.04E 3	339.799	6.074	2.679	0.081	-8.702			
		4:KOMBINASI	-84.602	8.52E 3	-2.458	-2.788	-0.016	-102.351			
		5:KOMB B. MA	-1.16E 3	6.23E 3	4.316	1.173	0.071	-78.893			
22052	14901	1:BEBAN MATI	-114.189	2.36E 3	-0.326	2.644	0.002	-9.697			
		2:BEBAN HIDL	-22.926	360.638	-0.371	1.365	0.003	-2.649			
		3:BEBAN GEM	-1.29E 3	-808.820	9.274	0.031	-0.107	-11.345			
		4:KOMBINASI	-173.710	3.41E 3	-0.984	5.356	0.007	-15.875			
		5:KOMB B. MA	-1.48E 3	1.73E 3	9.189	3.495	-0.109	-23.199			
	14628	1:BEBAN MATI	114.189	-674.688	0.326	-2.644	0.003	32.037			
		2:BEBAN HIDL	22.926	-360.638	0.371	-1.365	0.002	7.954			
		3:BEBAN GEM	1.29E 3	808.820	-9.274	-0.031	-0.030	-0.552			
		4:KOMBINASI	173.710	-1.39E 3	0.984	-5.356	0.008	51.170			
		5:KOMB B. MA	1.48E 3	-41.810	-9.189	-3.495	-0.027	36.229			
22053	14902	1:BEBAN MATI	-15.678	693.399	0.167	-0.058	-0.001	-3.692			
		2:BEBAN HIDL	-0.255	136.727	-0.062	0.016	0.000	-2.865			
		3:BEBAN GEM	-144.172	-89.056	25.706	0.149	-0.192	-1.488			
		4:KOMBINASI	-19.222	1.05E 3	0.101	-0.043	-0.001	-9.015			
		5:KOMB B. MA	-167.212	681.927	27.122	0.108	-0.203	-6.974			
	14676	1:BEBAN MATI	15.678	-405.085	-0.167	0.058	-0.001	11.771			



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Job No 1	Sheet No 436	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	0.255	-136.727	0.062	-0.016	0.001	4.877			
		3:BEBAN GEM	144.172	89.056	-25.706	-0.149	-0.186	0.178			
		4:KOMBINASI	19.222	-704.866	-0.101	0.043	-0.000	21.928			
		5:KOMB B. MA	167.212	-393.613	-27.122	-0.108	-0.196	14.884			
22054	14904	1:BEBAN MATI	-0.538	278.400	-0.221	-0.161	0.002	-9.680			
		2:BEBAN HIDL	0.645	58.360	0.030	-0.005	-0.000	-4.874			
		3:BEBAN GEM	128.531	-32.175	-15.774	-0.359	0.115	-0.621			
		4:KOMBINASI	0.387	427.456	-0.218	-0.202	0.002	-19.415			
		5:KOMB B. MA	134.806	279.632	-16.766	-0.541	0.122	-13.257			
	14676	1:BEBAN MATI	0.538	9.914	0.221	0.161	0.002	11.655			
		2:BEBAN HIDL	-0.645	-58.360	-0.030	0.005	-0.000	5.733			
		3:BEBAN GEM	-128.531	32.175	15.774	0.359	0.117	0.148			
		4:KOMBINASI	-0.387	-81.479	0.218	0.202	0.002	23.159			
		5:KOMB B. MA	-134.806	8.682	16.766	0.541	0.125	15.250			
22055	14905	1:BEBAN MATI	1.559	-1.05E 3	-0.069	0.241	0.000	-2.691			
		2:BEBAN HIDL	2.744	-579.969	0.018	0.023	-0.000	-1.495			
		3:BEBAN GEM	469.113	4.822	-18.100	0.216	0.126	0.507			
		4:KOMBINASI	6.261	-2.19E 3	-0.055	0.327	0.000	-5.622			
		5:KOMB B. MA	495.773	-1.39E 3	-19.064	0.482	0.132	-3.056			
	14632	1:BEBAN MATI	-1.559	1.34E 3	0.069	-0.241	0.001	-14.903			
		2:BEBAN HIDL	-2.744	579.969	-0.018	-0.023	-0.000	-7.036			
		3:BEBAN GEM	-469.113	-4.822	18.100	-0.216	0.141	-0.436			
		4:KOMBINASI	-6.261	2.54E 3	0.055	-0.327	0.000	-29.142			
		5:KOMB B. MA	-495.773	1.68E 3	19.064	-0.482	0.148	-19.583			
22056	14907	1:BEBAN MATI	-90.698	-3.32E 3	0.666	-4.957	-0.006	-5.064			
		2:BEBAN HIDL	-29.128	-896.088	1.417	-2.588	-0.011	0.031			
		3:BEBAN GEM	1.64E 3	-934.509	71.525	0.212	-0.427	12.387			
		4:KOMBINASI	-155.443	-5.42E 3	3.066	-10.090	-0.025	-6.027			
		5:KOMB B. MA	1.61E 3	-4.84E 3	76.617	-6.288	-0.461	7.962			
	14566	1:BEBAN MATI	90.698	5.01E 3	-0.666	4.957	-0.003	-56.183			
		2:BEBAN HIDL	29.128	896.088	-1.417	2.588	-0.010	-13.212			
		3:BEBAN GEM	-1.64E 3	934.509	-71.525	-0.212	-0.625	-26.134			
		4:KOMBINASI	155.443	7.44E 3	-3.066	10.090	-0.020	-88.560			
		5:KOMB B. MA	-1.61E 3	6.53E 3	-76.617	6.288	-0.666	-91.552			
22057	14908	1:BEBAN MATI	-21.570	-1.07E 3	0.325	-0.089	-0.002	-2.457			
		2:BEBAN HIDL	0.103	-558.503	0.079	-0.062	-0.001	-1.058			
		3:BEBAN GEM	-187.917	32.958	25.687	-0.052	-0.183	1.733			
		4:KOMBINASI	-25.720	-2.18E 3	0.516	-0.205	-0.004	-4.641			
		5:KOMB B. MA	-218.821	-1.38E 3	27.344	-0.181	-0.195	-1.272			
	14658	1:BEBAN MATI	21.570	1.36E 3	-0.325	0.089	-0.002	-15.474			
		2:BEBAN HIDL	-0.103	558.503	-0.079	0.062	-0.001	-7.158			
		3:BEBAN GEM	187.917	-32.958	-25.687	0.052	-0.194	-1.248			
		4:KOMBINASI	25.720	2.53E 3	-0.516	0.205	-0.004	-30.022			
		5:KOMB B. MA	218.821	1.66E 3	-27.344	0.181	-0.207	-21.080			
22058	14910	1:BEBAN MATI	16.647	3.41E 3	0.104	0.389	-0.001	-18.204			
		2:BEBAN HIDL	17.704	911.043	0.447	0.328	-0.004	-6.076			
		3:BEBAN GEM	566.679	-201.350	-50.337	1.295	0.370	-3.030			
		4:KOMBINASI	48.302	5.55E 3	0.840	0.990	-0.007	-31.566			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 437	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	622.282	3.74E 3	-52.482	1.945	0.385	-25.031			
	14658	1:BEBAN MATI	-16.647	-1.72E 3	-0.104	-0.389	-0.001	55.946			
		2:BEBAN HIDL	-17.704	-911.043	-0.447	-0.328	-0.003	19.477			
		3:BEBAN GEM	-566.679	201.350	50.337	-1.295	0.370	0.068			
		4:KOMBINASI	-48.302	-3.52E 3	-0.840	-0.990	-0.005	98.299			
		5:KOMB B. MA	-622.282	-2.06E 3	52.482	-1.945	0.387	67.704			
22059	14911	1:BEBAN MATI	8.132	-5.45E 3	-0.618	0.158	0.004	-11.482			
		2:BEBAN HIDL	14.065	-1.93E 3	0.030	-0.027	-0.000	-3.727			
		3:BEBAN GEM	681.729	-283.546	-44.802	-2.625	0.331	3.069			
		4:KOMBINASI	32.263	-9.62E 3	-0.693	0.146	0.005	-19.742			
		5:KOMB B. MA	732.386	-6.9E 3	-47.642	-2.614	0.352	-10.496			
	14569	1:BEBAN MATI	-8.132	7.14E 3	0.618	-0.158	0.005	-81.115			
		2:BEBAN HIDL	-14.065	1.93E 3	-0.030	0.027	-0.000	-24.615			
		3:BEBAN GEM	-681.729	283.546	44.802	2.625	0.328	-7.240			
		4:KOMBINASI	-32.263	11.6E 3	0.693	-0.146	0.005	-136.722			
		5:KOMB B. MA	-732.386	8.59E 3	47.642	2.614	0.349	-103.486			
22060	14913	1:BEBAN MATI	-13.342	3.06E 3	-0.435	0.454	0.004	-12.580			
		2:BEBAN HIDL	14.791	762.521	-0.226	0.071	0.002	-4.471			
		3:BEBAN GEM	775.476	-767.210	11.689	-0.129	-0.073	-11.415			
		4:KOMBINASI	7.654	4.9E 3	-0.882	0.658	0.008	-22.250			
		5:KOMB B. MA	809.782	2.72E 3	11.704	0.361	-0.072	-27.248			
	14627	1:BEBAN MATI	13.342	-1.38E 3	0.435	-0.454	0.003	45.224			
		2:BEBAN HIDL	-14.791	-762.521	0.226	-0.071	0.001	15.688			
		3:BEBAN GEM	-775.476	767.210	-11.689	0.129	-0.098	0.129			
		4:KOMBINASI	-7.654	-2.87E 3	0.882	-0.658	0.005	79.369			
		5:KOMB B. MA	-809.782	-1.03E 3	-11.704	-0.361	-0.100	54.772			
22061	14914	1:BEBAN MATI	-20.210	609.949	0.142	-0.018	-0.001	-3.377			
		2:BEBAN HIDL	2.769	179.546	0.012	-0.016	-0.000	-1.601			
		3:BEBAN GEM	185.718	-81.349	7.133	0.086	-0.049	-1.487			
		4:KOMBINASI	-19.822	1.02E 3	0.190	-0.048	-0.002	-6.614			
		5:KOMB B. MA	176.455	632.260	7.639	0.062	-0.052	-5.899			
	14669	1:BEBAN MATI	20.210	-321.635	-0.142	0.018	-0.001	10.229			
		2:BEBAN HIDL	-2.769	-179.546	-0.012	0.016	0.000	4.242			
		3:BEBAN GEM	-185.718	81.349	-7.133	-0.086	-0.056	0.291			
		4:KOMBINASI	19.822	-673.235	-0.190	0.048	-0.001	19.062			
		5:KOMB B. MA	-176.455	-343.945	-7.639	-0.062	-0.060	13.079			
22062	14916	1:BEBAN MATI	3.727	456.038	-0.012	0.024	0.000	-7.163			
		2:BEBAN HIDL	3.852	123.415	0.081	0.012	-0.001	-2.921			
		3:BEBAN GEM	-372.467	-27.908	-26.776	-0.326	0.191	-0.429			
		4:KOMBINASI	10.635	744.710	0.115	0.048	-0.001	-13.268			
		5:KOMB B. MA	-385.052	500.784	-28.078	-0.311	0.200	-9.365			
	14669	1:BEBAN MATI	-3.727	-167.724	0.012	-0.024	-0.000	11.750			
		2:BEBAN HIDL	-3.852	-123.415	-0.081	-0.012	-0.001	4.736			
		3:BEBAN GEM	372.467	27.908	26.776	0.326	0.203	0.018			
		4:KOMBINASI	-10.635	-398.732	-0.115	-0.048	-0.001	21.678			
		5:KOMB B. MA	385.052	-212.470	28.078	0.311	0.213	14.611			
22063	14917	1:BEBAN MATI	1.854	-1.1E 3	-0.011	0.009	-0.000	-2.280			
		2:BEBAN HIDL	5.544	-550.076	0.057	0.003	-0.000	-1.230			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-693.244	10.434	-60.366	0.251	0.418	0.490			
		4:KOMBINASI	11.096	-2.2E 3	0.078	0.015	-0.001	-4.703			
		5:KOMB B. MA	-722.726	-1.42E 3	-63.361	0.274	0.439	-2.503			
	14631	1:BEBAN MATI	-1.854	1.39E 3	0.011	-0.009	0.000	-16.003			
		2:BEBAN HIDL	-5.544	550.076	-0.057	-0.003	-0.000	-6.862			
		3:BEBAN GEM	693.244	-10.434	60.366	-0.251	0.470	-0.336			
		4:KOMBINASI	-11.096	2.54E 3	-0.078	-0.015	-0.000	-30.183			
		5:KOMB B. MA	722.726	1.71E 3	63.361	-0.274	0.493	-20.473			
22064	14919	1:BEBAN MATI	-16.947	-4.61E 3	-0.140	-2.138	0.001	-9.222			
		2:BEBAN HIDL	13.179	-1.64E 3	0.450	-0.640	-0.004	-2.821			
		3:BEBAN GEM	620.731	-955.821	19.474	0.597	-0.130	11.237			
		4:KOMBINASI	0.749	-8.16E 3	0.552	-3.590	-0.004	-15.581			
		5:KOMB B. MA	642.728	-6.6E 3	20.578	-1.896	-0.138	0.884			
	14565	1:BEBAN MATI	16.947	6.3E 3	0.140	2.138	0.001	-71.073			
		2:BEBAN HIDL	-13.179	1.64E 3	-0.450	0.640	-0.003	-21.307			
		3:BEBAN GEM	-620.731	955.821	-19.474	-0.597	-0.156	-25.297			
		4:KOMBINASI	-0.749	10.2E 3	-0.552	3.590	-0.004	-119.378			
		5:KOMB B. MA	-642.728	8.29E 3	-20.578	1.896	-0.165	-110.419			
22065	14920	1:BEBAN MATI	-16.636	-1.04E 3	0.016	-0.004	-0.000	-1.893			
		2:BEBAN HIDL	4.699	-538.506	-0.051	0.002	0.000	-1.001			
		3:BEBAN GEM	347.642	35.234	3.096	-0.071	-0.012	1.563			
		4:KOMBINASI	-12.445	-2.11E 3	-0.063	-0.001	0.000	-3.872			
		5:KOMB B. MA	351.207	-1.32E 3	3.236	-0.077	-0.012	-0.852			
	14661	1:BEBAN MATI	16.636	1.33E 3	-0.016	0.004	-0.000	-15.497			
		2:BEBAN HIDL	-4.699	538.506	0.051	-0.002	0.000	-6.921			
		3:BEBAN GEM	-347.642	-35.234	-3.096	0.071	-0.034	-1.045			
		4:KOMBINASI	12.445	2.45E 3	0.063	0.001	0.000	-29.670			
		5:KOMB B. MA	-351.207	1.61E 3	-3.236	0.077	-0.036	-20.747			
22066	14922	1:BEBAN MATI	-2.123	3.4E 3	-0.172	0.088	0.001	-17.486			
		2:BEBAN HIDL	12.852	895.419	0.061	-0.024	-0.000	-5.662			
		3:BEBAN GEM	-570.486	-205.670	-42.810	1.277	0.312	-2.964			
		4:KOMBINASI	18.016	5.52E 3	-0.109	0.068	0.001	-30.044			
		5:KOMB B. MA	-593.422	3.72E 3	-45.086	1.414	0.329	-23.997			
	14661	1:BEBAN MATI	2.123	-1.71E 3	0.172	-0.088	0.001	55.120			
		2:BEBAN HIDL	-12.852	-895.419	-0.061	0.024	-0.001	18.834			
		3:BEBAN GEM	570.486	205.670	42.810	-1.277	0.318	-0.061			
		4:KOMBINASI	-18.016	-3.49E 3	0.109	-0.068	0.001	96.279			
		5:KOMB B. MA	593.422	-2.04E 3	45.086	-1.414	0.334	66.356			
22067	14923	1:BEBAN MATI	-1.068	-5.44E 3	0.062	-0.141	-0.001	-10.881			
		2:BEBAN HIDL	12.544	-1.91E 3	-0.001	0.015	0.000	-3.357			
		3:BEBAN GEM	-675.794	-281.337	-65.805	-2.598	0.471	3.153			
		4:KOMBINASI	18.789	-9.58E 3	0.073	-0.146	-0.001	-18.429			
		5:KOMB B. MA	-703.125	-6.88E 3	-69.034	-2.861	0.494	-9.585			
	14568	1:BEBAN MATI	1.068	7.13E 3	-0.062	0.141	-0.000	-81.603			
		2:BEBAN HIDL	-12.544	1.91E 3	0.001	-0.015	-0.000	-24.688			
		3:BEBAN GEM	675.794	281.337	65.805	2.598	0.497	-7.292			
		4:KOMBINASI	-18.789	11.6E 3	-0.073	0.146	-0.000	-137.426			
		5:KOMB B. MA	703.125	8.57E 3	69.034	2.861	0.522	-104.073			



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Job No 1	Sheet No 439	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22068	14925	1:BEBAN MATI	-25.835	3.09E 3	-0.005	0.300	0.000	-11.291			
		2:BEBAN HIDL	9.854	829.608	-0.265	0.160	0.002	-3.412			
		3:BEBAN GEM	103.401	-765.197	20.421	-0.146	-0.151	-11.440			
		4:KOMBINASI	-15.235	5.04E 3	-0.430	0.616	0.004	-19.008			
		5:KOMB B. MA	88.648	2.79E 3	21.277	0.242	-0.158	-25.350			
	14626	1:BEBAN MATI	25.835	-1.41E 3	0.005	-0.300	-0.000	44.400			
		2:BEBAN HIDL	-9.854	-829.608	0.265	-0.160	0.002	15.615			
		3:BEBAN GEM	-103.401	765.197	-20.421	0.146	-0.149	0.184			
		4:KOMBINASI	15.235	-3.02E 3	0.430	-0.616	0.003	78.264			
		5:KOMB B. MA	-88.648	-1.1E 3	-21.277	-0.242	-0.155	53.962			
22069	14926	1:BEBAN MATI	-16.751	661.739	-0.002	0.016	0.000	-3.935			
		2:BEBAN HIDL	5.872	193.613	-0.051	0.010	0.000	-1.724			
		3:BEBAN GEM	346.427	-84.055	5.982	0.091	-0.044	-1.605			
		4:KOMBINASI	-10.707	1.1E 3	-0.084	0.034	0.001	-7.481			
		5:KOMB B. MA	350.520	689.650	6.249	0.118	-0.046	-6.655			
	14672	1:BEBAN MATI	16.751	-373.425	0.002	-0.016	-0.000	11.549			
		2:BEBAN HIDL	-5.872	-193.613	0.051	-0.010	0.000	4.572			
		3:BEBAN GEM	-346.427	84.055	-5.982	-0.091	-0.044	0.369			
		4:KOMBINASI	10.707	-757.890	0.084	-0.034	0.001	21.174			
		5:KOMB B. MA	-350.520	-401.335	-6.249	-0.118	-0.046	14.680			
22070	14928	1:BEBAN MATI	-4.351	402.882	-0.069	0.190	0.000	-6.741			
		2:BEBAN HIDL	4.354	129.246	0.029	0.014	-0.000	-2.914			
		3:BEBAN GEM	-255.462	-29.732	-16.227	-0.327	0.116	-0.452			
		4:KOMBINASI	1.745	690.252	-0.036	0.250	0.000	-12.752			
		5:KOMB B. MA	-269.973	449.211	-17.089	-0.145	0.122	-8.964			
	14672	1:BEBAN MATI	4.351	-114.567	0.069	-0.190	0.001	10.546			
		2:BEBAN HIDL	-4.354	-129.246	-0.029	-0.014	-0.000	4.815			
		3:BEBAN GEM	255.462	29.732	16.227	0.327	0.123	0.015			
		4:KOMBINASI	-1.745	-344.274	0.036	-0.250	0.000	20.360			
		5:KOMB B. MA	269.973	-160.896	17.089	0.145	0.129	13.451			
22071	14929	1:BEBAN MATI	-5.559	-1.02E 3	-0.000	-0.165	-0.000	-2.231			
		2:BEBAN HIDL	5.278	-553.743	0.031	-0.004	-0.000	-1.216			
		3:BEBAN GEM	-427.010	11.465	-17.688	0.246	0.134	0.493			
		4:KOMBINASI	1.774	-2.12E 3	0.049	-0.204	-0.000	-4.623			
		5:KOMB B. MA	-450.753	-1.34E 3	-18.554	0.091	0.141	-2.443			
	14630	1:BEBAN MATI	5.559	1.31E 3	0.000	0.165	0.000	-14.957			
		2:BEBAN HIDL	-5.278	553.743	-0.031	0.004	-0.000	-6.929			
		3:BEBAN GEM	427.010	-11.465	17.688	-0.246	0.126	-0.324			
		4:KOMBINASI	-1.774	2.46E 3	-0.049	0.204	-0.000	-29.035			
		5:KOMB B. MA	450.753	1.63E 3	18.554	-0.091	0.132	-19.455			
22072	14931	1:BEBAN MATI	-25.056	-4.44E 3	-0.819	-2.162	0.006	-9.352			
		2:BEBAN HIDL	13.523	-1.61E 3	0.381	-0.700	-0.003	-3.644			
		3:BEBAN GEM	232.252	-953.404	17.522	0.612	-0.123	11.093			
		4:KOMBINASI	-8.431	-7.89E 3	-0.373	-3.714	0.003	-17.053			
		5:KOMB B. MA	226.922	-6.4E 3	17.807	-1.939	-0.125	0.109			
	14540	1:BEBAN MATI	25.056	6.12E 3	0.819	2.162	0.006	-68.319			
		2:BEBAN HIDL	-13.523	1.61E 3	-0.381	0.700	-0.003	-19.975			
		3:BEBAN GEM	-232.252	953.404	-17.522	-0.612	-0.134	-25.117			



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Job No 1	Sheet No 440	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	8.431	9.92E 3	0.373	3.714	0.003	-113.943			
		5:KOMB B. MA	-226.922	8.09E 3	-17.807	1.939	-0.137	-106.677			
22073	14932	1:BEBAN MATI	-16.246	-1.14E 3	0.017	-0.013	-0.000	-2.719			
		2:BEBAN HIDL	5.059	-503.162	-0.017	-0.010	0.000	-1.871			
		3:BEBAN GEM	360.474	26.827	10.645	-0.069	-0.077	1.533			
		4:KOMBINASI	-11.400	-2.17E 3	-0.006	-0.031	0.000	-6.256			
		5:KOMB B. MA	365.287	-1.41E 3	11.185	-0.091	-0.081	-2.232			
	14664	1:BEBAN MATI	16.246	1.43E 3	-0.017	0.013	-0.000	-16.178			
		2:BEBAN HIDL	-5.059	503.162	0.017	0.010	0.000	-5.531			
		3:BEBAN GEM	-360.474	-26.827	-10.645	0.069	-0.079	-1.138			
		4:KOMBINASI	11.400	2.52E 3	0.006	0.031	0.000	-28.263			
		5:KOMB B. MA	-365.287	1.7E 3	-11.185	0.091	-0.083	-20.692			
22074	14934	1:BEBAN MATI	-21.768	2.27E 3	-0.090	0.566	0.000	-12.978			
		2:BEBAN HIDL	12.712	777.600	-0.003	0.269	0.000	-5.162			
		3:BEBAN GEM	-716.304	-214.129	-25.689	1.219	0.187	-3.008			
		4:KOMBINASI	-5.783	3.97E 3	-0.112	1.109	0.001	-23.832			
		5:KOMB B. MA	-766.261	2.52E 3	-27.065	2.007	0.197	-19.233			
	14664	1:BEBAN MATI	21.768	-1.82E 3	0.090	-0.566	0.001	43.105			
		2:BEBAN HIDL	-12.712	-777.600	0.003	-0.269	-0.000	16.600			
		3:BEBAN GEM	716.304	214.129	25.689	-1.219	0.191	-0.142			
		4:KOMBINASI	5.783	-3.43E 3	0.112	-1.109	0.001	78.287			
		5:KOMB B. MA	766.261	-2.06E 3	27.065	-2.007	0.201	52.917			
22075	14935	1:BEBAN MATI	-18.350	-4.27E 3	-0.007	-1.155	-0.000	-7.959			
		2:BEBAN HIDL	12.736	-1.7E 3	0.446	-0.454	-0.003	-3.032			
		3:BEBAN GEM	-995.923	-270.237	-5.301	-2.607	0.024	3.228			
		4:KOMBINASI	-1.641	-7.84E 3	0.705	-2.112	-0.006	-14.402			
		5:KOMB B. MA	-1.06E 3	-5.57E 3	-5.306	-4.165	0.023	-6.389			
	14542	1:BEBAN MATI	18.350	4.72E 3	0.007	1.155	0.000	-58.110			
		2:BEBAN HIDL	-12.736	1.7E 3	-0.446	0.454	-0.003	-21.954			
		3:BEBAN GEM	995.923	270.237	5.301	2.607	0.054	-7.203			
		4:KOMBINASI	1.641	8.38E 3	-0.705	2.112	-0.005	-104.859			
		5:KOMB B. MA	1.06E 3	6.02E 3	5.306	4.165	0.055	-78.845			
22076	14936	1:BEBAN MATI	2.775	-248.028	-0.714	2.234	0.004	-0.065			
		2:BEBAN HIDL	-31.811	-279.626	-0.501	0.977	0.005	1.630			
		3:BEBAN GEM	1.07E 3	-484.655	-69.247	-0.831	0.590	0.174			
		4:KOMBINASI	-47.567	-745.036	-1.658	4.244	0.013	2.530			
		5:KOMB B. MA	1.11E 3	-924.692	-73.723	1.948	0.627	1.096			
	14566	1:BEBAN MATI	-2.775	2.27E 3	0.714	-2.234	0.008	-22.191			
		2:BEBAN HIDL	31.811	279.626	0.501	-0.977	0.004	-6.566			
		3:BEBAN GEM	-1.07E 3	484.655	69.247	0.831	0.632	-8.729			
		4:KOMBINASI	47.567	3.18E 3	1.658	-4.244	0.017	-37.135			
		5:KOMB B. MA	-1.11E 3	2.95E 3	73.723	-1.948	0.675	-35.296			
22077	14938	1:BEBAN MATI	-8.286	2.45E 3	3.740	-1.586	-0.011	-8.643			
		2:BEBAN HIDL	20.593	960.399	-0.978	-0.902	0.002	-3.669			
		3:BEBAN GEM	-220.272	-795.939	-13.883	-0.204	0.071	-11.880			
		4:KOMBINASI	23.006	4.48E 3	2.922	-3.345	-0.011	-16.241			
		5:KOMB B. MA	-227.216	2.19E 3	-11.425	-2.341	0.065	-23.318			
	15028	1:BEBAN MATI	8.286	-2.3E 3	-3.740	1.586	-0.007	20.287			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

441

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-20.593	-960.399	0.978	0.902	0.003	8.378			
		3:BEBAN GEM	220.272	795.939	13.883	0.204	-0.003	7.977			
		4:KOMBINASI	-23.006	-4.3E 3	-2.922	3.345	-0.003	37.748			
		5:KOMB B. MA	227.216	-2.04E 3	11.425	2.341	-0.009	33.689			
22078	14939	1:BEBAN MATI	1.804	-214.039	-0.111	0.004	0.001	1.392			
		2:BEBAN HIDL	1.799	-253.149	0.056	0.004	-0.000	-0.076			
		3:BEBAN GEM	-207.804	-1.100	-19.663	-0.079	0.168	0.068			
		4:KOMBINASI	5.043	-661.885	-0.044	0.011	0.000	1.549			
		5:KOMB B. MA	-215.310	-367.083	-20.724	-0.076	0.177	1.417			
	14627	1:BEBAN MATI	-1.804	560.016	0.111	-0.004	0.001	-8.224			
		2:BEBAN HIDL	-1.799	253.149	-0.056	-0.004	-0.001	-4.393			
		3:BEBAN GEM	207.804	1.100	19.663	0.079	0.179	-0.087			
		4:KOMBINASI	-5.043	1.08E 3	0.044	-0.011	0.001	-16.897			
		5:KOMB B. MA	215.310	713.061	20.724	0.076	0.189	-10.951			
22079	14941	1:BEBAN MATI	-17.862	-3.33E 3	0.391	-1.269	-0.000	-5.864			
		2:BEBAN HIDL	12.720	-1.4E 3	0.033	-0.127	0.001	-2.405			
		3:BEBAN GEM	560.449	-863.148	-3.770	0.215	0.027	11.804			
		4:KOMBINASI	-1.084	-6.25E 3	0.522	-1.726	0.001	-10.883			
		5:KOMB B. MA	578.241	-5.08E 3	-3.548	-1.120	0.029	5.088			
	15039	1:BEBAN MATI	17.862	3.48E 3	-0.391	1.269	-0.001	-10.847			
		2:BEBAN HIDL	-12.720	1.4E 3	-0.033	0.127	-0.001	-4.480			
		3:BEBAN GEM	-560.449	863.148	3.770	-0.215	-0.009	-16.037			
		4:KOMBINASI	1.084	6.43E 3	-0.522	1.726	-0.003	-20.185			
		5:KOMB B. MA	-578.241	5.23E 3	3.548	1.120	-0.011	-30.373			
22080	14942	1:BEBAN MATI	-1.070	-803.546	-0.099	0.005	0.001	-6.700			
		2:BEBAN HIDL	-11.912	-552.879	0.130	0.003	-0.001	-1.831			
		3:BEBAN GEM	-282.274	-473.430	-22.638	-1.272	0.193	0.071			
		4:KOMBINASI	-20.343	-1.85E 3	0.089	0.011	-0.001	-10.969			
		5:KOMB B. MA	-304.604	-1.63E 3	-23.790	-1.329	0.203	-7.724			
	14565	1:BEBAN MATI	1.070	2.83E 3	0.099	-0.005	0.001	-25.362			
		2:BEBAN HIDL	11.912	552.879	-0.130	-0.003	-0.001	-7.929			
		3:BEBAN GEM	282.274	473.430	22.638	1.272	0.206	-8.428			
		4:KOMBINASI	20.343	4.28E 3	-0.089	-0.011	-0.001	-43.120			
		5:KOMB B. MA	304.604	3.66E 3	23.790	1.329	0.217	-38.968			
22081	14944	1:BEBAN MATI	-24.177	2.54E 3	-0.992	-1.708	0.003	-6.769			
		2:BEBAN HIDL	7.515	1.03E 3	1.745	-1.024	-0.005	-2.434			
		3:BEBAN GEM	397.364	-788.801	-19.899	-0.173	0.051	-11.916			
		4:KOMBINASI	-16.987	4.71E 3	1.602	-3.688	-0.005	-12.017			
		5:KOMB B. MA	397.565	2.34E 3	-20.839	-2.505	0.053	-20.741			
	15050	1:BEBAN MATI	24.177	-2.39E 3	0.992	1.708	0.002	18.879			
		2:BEBAN HIDL	-7.515	-1.03E 3	-1.745	1.024	-0.003	7.503			
		3:BEBAN GEM	-397.364	788.801	19.899	0.173	0.047	8.048			
		4:KOMBINASI	16.987	-4.53E 3	-1.602	3.688	-0.003	34.660			
		5:KOMB B. MA	-397.565	-2.19E 3	20.839	2.505	0.049	31.832			
22082	14945	1:BEBAN MATI	-2.426	-210.025	-0.071	0.074	0.001	0.865			
		2:BEBAN HIDL	2.748	-256.302	0.037	0.013	-0.000	-0.110			
		3:BEBAN GEM	-178.962	0.890	-11.150	-0.075	0.096	0.080			
		4:KOMBINASI	1.485	-662.114	-0.026	0.110	0.000	0.862			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 442	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-188.687	-362.872	-11.757	0.003	0.102	0.883			
	14626	1:BEBAN MATI	2.426	556.003	0.071	-0.074	0.001	-7.626			
		2:BEBAN HIDL	-2.748	256.302	-0.037	-0.013	-0.000	-4.414			
		3:BEBAN GEM	178.962	-0.890	11.150	0.075	0.100	-0.065			
		4:KOMBINASI	-1.485	1.08E 3	0.026	-0.110	0.000	-16.214			
		5:KOMB B. MA	188.687	708.850	11.757	-0.003	0.106	-10.342			
22083	14947	1:BEBAN MATI	-29.970	-3.25E 3	-1.192	-0.920	0.003	-6.342			
		2:BEBAN HIDL	7.341	-1.35E 3	1.109	-0.130	-0.002	-3.299			
		3:BEBAN GEM	689.033	-862.316	-118.225	0.221	0.339	11.560			
		4:KOMBINASI	-24.219	-6.07E 3	0.344	-1.312	-0.001	-12.889			
		5:KOMB B. MA	697.920	-4.97E 3	-124.663	-0.766	0.357	3.817			
	15061	1:BEBAN MATI	29.970	3.4E 3	1.192	0.920	0.003	-9.986			
		2:BEBAN HIDL	-7.341	1.35E 3	-1.109	0.130	-0.003	-3.335			
		3:BEBAN GEM	-689.033	862.316	118.225	-0.221	0.241	-15.789			
		4:KOMBINASI	24.219	6.25E 3	-0.344	1.312	-0.001	-17.319			
		5:KOMB B. MA	-697.920	5.12E 3	124.663	0.766	0.254	-28.565			
22084	14948	1:BEBAN MATI	13.275	-804.110	-0.002	-0.395	-0.000	-4.338			
		2:BEBAN HIDL	-8.410	-500.787	0.166	-0.179	-0.002	-1.675			
		3:BEBAN GEM	-429.099	-451.776	-15.105	-1.378	0.121	0.171			
		4:KOMBINASI	2.474	-1.77E 3	0.262	-0.761	-0.003	-7.886			
		5:KOMB B. MA	-442.325	-1.58E 3	-15.764	-1.949	0.126	-5.164			
	14540	1:BEBAN MATI	-13.275	1.34E 3	0.002	0.395	0.000	-14.627			
		2:BEBAN HIDL	8.410	500.787	-0.166	0.179	-0.001	-7.165			
		3:BEBAN GEM	429.099	451.776	15.105	1.378	0.146	-8.146			
		4:KOMBINASI	-2.474	2.41E 3	-0.262	0.761	-0.002	-29.016			
		5:KOMB B. MA	442.325	2.12E 3	15.764	1.949	0.153	-27.479			
22085	14949	1:BEBAN MATI	-22.735	1.76E 3	-1.336	-1.216	0.009	-5.501			
		2:BEBAN HIDL	-2.897	245.393	0.466	-0.809	-0.003	-1.561			
		3:BEBAN GEM	-330.812	-319.345	-5.296	0.474	0.045	-3.976			
		4:KOMBINASI	-31.917	2.5E 3	-0.858	-2.754	0.006	-9.098			
		5:KOMB B. MA	-371.826	1.57E 3	-6.617	-1.205	0.054	-10.613			
	14951	1:BEBAN MATI	22.735	-405.538	1.336	1.216	0.007	18.219			
		2:BEBAN HIDL	2.897	-245.393	-0.466	0.809	-0.003	4.449			
		3:BEBAN GEM	330.812	319.345	5.296	-0.474	0.018	0.218			
		4:KOMBINASI	31.917	-879.274	0.858	2.754	0.004	28.980			
		5:KOMB B. MA	371.826	-217.461	6.617	1.205	0.024	21.117			
22086	14951	1:BEBAN MATI	-27.449	-291.342	0.730	1.862	-0.004	-18.176			
		2:BEBAN HIDL	-4.102	-214.506	-0.471	1.102	0.003	-4.427			
		3:BEBAN GEM	-323.125	-315.946	1.793	-0.597	0.006	-0.145			
		4:KOMBINASI	-39.503	-692.820	0.123	3.998	-0.000	-28.894			
		5:KOMB B. MA	-369.192	-751.789	2.330	1.897	0.004	-20.984			
	14953	1:BEBAN MATI	27.449	1.64E 3	-0.730	-1.862	-0.005	6.802			
		2:BEBAN HIDL	4.102	214.506	0.471	-1.102	0.003	1.903			
		3:BEBAN GEM	323.125	315.946	-1.793	0.597	-0.027	-3.573			
		4:KOMBINASI	39.503	2.31E 3	-0.123	-3.998	-0.001	11.206			
		5:KOMB B. MA	369.192	2.1E 3	-2.330	-1.897	-0.031	4.191			
22087	14953	1:BEBAN MATI	-52.220	-2.14E 3	5.181	4.593	-0.030	-5.318			
		2:BEBAN HIDL	3.245	-534.020	-2.882	2.613	0.017	-1.165			



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Job No 1	Sheet No 443	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-331.987	-377.742	19.647	-1.598	-0.101	3.361			
		4:KOMBINASI	-57.472	-3.43E 3	1.606	9.693	-0.009	-8.245			
		5:KOMB B. MA	-398.859	-2.86E 3	24.082	4.483	-0.126	-2.487			
	14537	1:BEBAN MATI	52.220	3.49E 3	-5.181	-4.593	-0.031	-27.841			
		2:BEBAN HIDL	-3.245	534.020	2.882	-2.613	0.017	-5.120			
		3:BEBAN GEM	331.987	377.742	-19.647	1.598	-0.130	-7.806			
		4:KOMBINASI	57.472	5.05E 3	-1.606	-9.693	-0.010	-41.601			
		5:KOMB B. MA	398.859	4.21E 3	-24.082	-4.483	-0.157	-39.110			
22088	14955	1:BEBAN MATI	-77.871	3.37E 3	9.685	-1.227	-0.009	10.471			
		2:BEBAN HIDL	46.346	1.46E 3	3.738	-0.739	-0.005	4.560			
		3:BEBAN GEM	-423.026	-1.06E 3	98.583	-1.385	-0.039	-21.783			
		4:KOMBINASI	-19.291	6.39E 3	17.602	-2.654	-0.019	19.862			
		5:KOMB B. MA	-494.241	3.14E 3	115.439	-3.125	-0.053	-9.665			
	14720	1:BEBAN MATI	77.871	-3.3E 3	-9.685	1.227	-0.014	-2.296			
		2:BEBAN HIDL	-46.346	-1.46E 3	-3.738	0.739	-0.004	-0.974			
		3:BEBAN GEM	423.026	1.06E 3	-98.583	1.385	-0.203	19.180			
		4:KOMBINASI	19.291	-6.3E 3	-17.602	2.654	-0.024	-4.313			
		5:KOMB B. MA	494.241	-3.06E 3	-115.439	3.125	-0.230	17.259			
22089	14959	1:BEBAN MATI	-47.266	2.08E 3	5.583	-1.475	-0.013	-11.619			
		2:BEBAN HIDL	33.228	897.982	1.859	-0.694	-0.005	-5.225			
		3:BEBAN GEM	-171.618	-926.141	27.274	-0.685	-0.027	-14.054			
		4:KOMBINASI	-3.555	3.93E 3	9.674	-2.880	-0.023	-22.303			
		5:KOMB B. MA	-207.528	1.64E 3	35.336	-2.611	-0.044	-29.510			
	14725	1:BEBAN MATI	47.266	-1.93E 3	-5.583	1.475	-0.015	21.432			
		2:BEBAN HIDL	-33.228	-897.982	-1.859	0.694	-0.005	9.628			
		3:BEBAN GEM	171.618	926.141	-27.274	0.685	-0.107	9.513			
		4:KOMBINASI	3.555	-3.75E 3	-9.674	2.880	-0.025	41.123			
		5:KOMB B. MA	207.528	-1.49E 3	-35.336	2.611	-0.129	37.197			
22090	14963	1:BEBAN MATI	-32.196	1.05E 3	1.672	-1.073	-0.007	-25.763			
		2:BEBAN HIDL	26.695	432.699	0.382	-0.558	-0.002	-11.462			
		3:BEBAN GEM	49.108	-849.973	9.569	-0.171	-0.013	-6.899			
		4:KOMBINASI	4.076	1.96E 3	2.616	-2.180	-0.011	-49.254			
		5:KOMB B. MA	35.384	419.386	11.948	-1.587	-0.022	-39.884			
	14624	1:BEBAN MATI	32.196	-826.993	-1.672	1.073	-0.005	32.673			
		2:BEBAN HIDL	-26.695	-432.699	-0.382	0.558	-0.001	14.644			
		3:BEBAN GEM	-49.108	849.973	-9.569	0.171	-0.057	0.648			
		4:KOMBINASI	-4.076	-1.68E 3	-2.616	2.180	-0.008	62.639			
		5:KOMB B. MA	-35.384	-194.141	-11.948	1.587	-0.066	42.140			
22091	14964	1:BEBAN MATI	-4.996	736.736	0.373	0.124	-0.002	-2.962			
		2:BEBAN HIDL	0.401	292.297	0.056	0.034	-0.000	-1.716			
		3:BEBAN GEM	124.884	-18.958	-0.507	-0.094	0.005	-0.394			
		4:KOMBINASI	-5.354	1.35E 3	0.537	0.203	-0.003	-6.299			
		5:KOMB B. MA	126.372	892.208	-0.126	0.046	0.003	-4.405			
	14965	1:BEBAN MATI	4.996	-506.084	-0.373	-0.124	-0.002	10.275			
		2:BEBAN HIDL	-0.401	-292.297	-0.056	-0.034	-0.000	5.155			
		3:BEBAN GEM	-124.884	18.958	0.507	0.094	0.001	0.171			
		4:KOMBINASI	5.354	-1.07E 3	-0.537	-0.203	-0.003	20.578			
		5:KOMB B. MA	-126.372	-661.557	0.126	-0.046	-0.001	13.548			



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Job No 1	Sheet No 444	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22092	14965	1:BEBAN MATI	-10.311	-224.681	0.371	-0.041	-0.002	-10.399			
		2:BEBAN HIDL	-0.972	-178.031	0.057	0.005	-0.000	-5.206			
		3:BEBAN GEM	124.883	-22.004	-1.510	0.056	0.013	-0.139			
		4:KOMBINASI	-13.928	-554.467	0.536	-0.040	-0.003	-20.809			
		5:KOMB B. MA	120.233	-354.603	-1.180	0.022	0.011	-13.669			
	14966	1:BEBAN MATI	10.311	455.332	-0.371	0.041	-0.002	6.398			
		2:BEBAN HIDL	0.972	178.031	-0.057	-0.005	-0.000	3.111			
		3:BEBAN GEM	-124.883	22.004	1.510	-0.056	0.005	-0.120			
		4:KOMBINASI	13.928	831.248	-0.536	0.040	-0.003	12.655			
		5:KOMB B. MA	-120.233	585.255	1.180	-0.022	0.003	8.139			
22093	14966	1:BEBAN MATI	-16.998	-749.261	0.520	-0.098	-0.003	-4.652			
		2:BEBAN HIDL	-4.011	-421.702	0.066	0.002	-0.000	-2.203			
		3:BEBAN GEM	123.433	5.925	-1.800	0.001	0.022	0.172			
		4:KOMBINASI	-26.815	-1.57E 3	0.729	-0.115	-0.004	-9.107			
		5:KOMB B. MA	110.200	-996.060	-1.330	-0.096	0.021	-5.793			
	14624	1:BEBAN MATI	16.998	979.912	-0.520	0.098	-0.004	-5.523			
		2:BEBAN HIDL	4.011	421.702	-0.066	-0.002	-0.000	-2.759			
		3:BEBAN GEM	-123.433	-5.925	1.800	-0.001	-0.001	-0.103			
		4:KOMBINASI	26.815	1.85E 3	-0.729	0.115	-0.005	-11.042			
		5:KOMB B. MA	-110.200	1.23E 3	1.330	0.096	-0.005	-7.286			
22094	14970	1:BEBAN MATI	-5.847	-1.75E 3	12.259	2.543	-0.010	-22.913			
		2:BEBAN HIDL	29.332	-748.217	3.999	1.147	-0.004	-10.504			
		3:BEBAN GEM	156.266	-783.247	-197.957	0.778	0.222	5.381			
		4:KOMBINASI	39.915	-3.29E 3	21.108	4.886	-0.018	-44.303			
		5:KOMB B. MA	175.832	-3.02E 3	-193.197	4.047	0.221	-23.566			
	14766	1:BEBAN MATI	5.847	1.82E 3	-12.259	-2.543	-0.020	18.537			
		2:BEBAN HIDL	-29.332	748.217	-3.999	-1.147	-0.006	8.670			
		3:BEBAN GEM	-156.266	783.247	197.957	-0.778	0.263	-7.301			
		4:KOMBINASI	-39.915	3.38E 3	-21.108	-4.886	-0.034	36.116			
		5:KOMB B. MA	-175.832	3.09E 3	193.197	-4.047	0.252	16.073			
22095	14974	1:BEBAN MATI	-2.540	-2.73E 3	2.407	2.968	-0.007	-6.609			
		2:BEBAN HIDL	35.300	-1.2E 3	2.245	1.313	-0.006	-3.578			
		3:BEBAN GEM	461.215	-851.747	-162.004	0.955	0.396	11.703			
		4:KOMBINASI	53.432	-5.2E 3	6.480	5.663	-0.017	-13.655			
		5:KOMB B. MA	502.916	-4.34E 3	-166.350	4.758	0.406	3.533			
	14770	1:BEBAN MATI	2.540	2.88E 3	-2.407	-2.968	-0.005	-7.123			
		2:BEBAN HIDL	-35.300	1.2E 3	-2.245	-1.313	-0.005	-2.328			
		3:BEBAN GEM	-461.215	851.747	162.004	-0.955	0.399	-15.880			
		4:KOMBINASI	-53.432	5.38E 3	-6.480	-5.663	-0.015	-12.272			
		5:KOMB B. MA	-502.916	4.49E 3	166.350	-4.758	0.410	-25.193			
22096	14978	1:BEBAN MATI	1.009	-3.77E 3	-5.083	2.480	0.011	16.942			
		2:BEBAN HIDL	50.110	-1.65E 3	-2.052	1.055	0.005	6.611			
		3:BEBAN GEM	879.064	-1.03E 3	-105.762	1.183	0.358	18.433			
		4:KOMBINASI	81.387	-7.17E 3	-9.382	4.664	0.021	30.908			
		5:KOMB B. MA	954.093	-5.84E 3	-117.364	4.355	0.390	40.263			
	14564	1:BEBAN MATI	-1.009	3.99E 3	5.083	-2.480	0.027	-45.494			
		2:BEBAN HIDL	-50.110	1.65E 3	2.052	-1.055	0.010	-18.760			
		3:BEBAN GEM	-879.064	1.03E 3	105.762	-1.183	0.420	-25.981			



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Job No

1

Sheet No

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Rev

Part

1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-81.387	7.44E 3	9.382	-4.664	0.048	-84.608			
		5:KOMB B. MA	-954.093	6.06E 3	117.364	-4.355	0.474	-84.029			
22097	14979	1:BEBAN MATI	10.440	1.21E 3	0.833	0.360	-0.005	-8.000			
		2:BEBAN HIDL	5.047	487.580	0.178	0.198	-0.001	-3.806			
		3:BEBAN GEM	631.609	-302.245	-14.453	0.606	0.091	-3.498			
		4:KOMBINASI	20.603	2.23E 3	1.285	0.749	-0.007	-15.689			
		5:KOMB B. MA	676.658	1.18E 3	-14.236	1.116	0.090	-13.956			
	14980	1:BEBAN MATI	-10.440	-848.752	-0.833	-0.360	-0.005	20.108			
		2:BEBAN HIDL	-5.047	-487.580	-0.178	-0.198	-0.001	9.544			
		3:BEBAN GEM	-631.609	302.245	14.453	-0.606	0.079	-0.059			
		4:KOMBINASI	-20.603	-1.8E 3	-1.285	-0.749	-0.008	39.400			
		5:KOMB B. MA	-676.658	-823.942	14.236	-1.116	0.078	25.773			
22098	14980	1:BEBAN MATI	17.141	-888.524	1.559	0.377	-0.008	-20.150			
		2:BEBAN HIDL	8.195	-477.702	0.935	0.215	-0.005	-9.570			
		3:BEBAN GEM	955.890	-315.129	-6.923	-0.686	0.038	0.207			
		4:KOMBINASI	33.681	-1.83E 3	3.367	0.797	-0.018	-39.491			
		5:KOMB B. MA	1.03E 3	-1.51E 3	-5.149	-0.214	0.029	-25.674			
	14981	1:BEBAN MATI	-17.141	1.25E 3	-1.559	-0.377	-0.010	7.573			
		2:BEBAN HIDL	-8.195	477.702	-0.935	-0.215	-0.006	3.948			
		3:BEBAN GEM	-955.890	315.129	6.923	0.686	0.043	-3.915			
		4:KOMBINASI	-33.681	2.26E 3	-3.367	-0.797	-0.022	15.404			
		5:KOMB B. MA	-1.03E 3	1.87E 3	5.149	0.214	0.032	5.831			
22099	14981	1:BEBAN MATI	34.088	-2.83E 3	3.331	0.374	-0.023	-6.365			
		2:BEBAN HIDL	18.539	-1.3E 3	2.813	0.205	-0.017	-3.272			
		3:BEBAN GEM	1.53E 3	-374.408	4.450	-2.240	-0.039	3.988			
		4:KOMBINASI	70.568	-5.48E 3	8.498	0.778	-0.055	-12.873			
		5:KOMB B. MA	1.66E 3	-4E 3	9.691	-1.854	-0.075	-4.142			
	14564	1:BEBAN MATI	-34.088	3.19E 3	-3.331	-0.374	-0.016	-29.027			
		2:BEBAN HIDL	-18.539	1.3E 3	-2.813	-0.205	-0.016	-12.071			
		3:BEBAN GEM	-1.53E 3	374.408	-4.450	2.240	-0.013	-8.394			
		4:KOMBINASI	-70.568	5.91E 3	-8.498	-0.778	-0.045	-54.147			
		5:KOMB B. MA	-1.66E 3	4.36E 3	-9.691	1.854	-0.040	-45.083			
22100	14982	1:BEBAN MATI	-4.966	1.12E 3	-0.170	0.322	0.001	-6.222			
		2:BEBAN HIDL	4.731	447.911	0.023	0.167	-0.000	-2.994			
		3:BEBAN GEM	-308.428	-308.652	-20.332	0.634	0.127	-3.553			
		4:KOMBINASI	1.611	2.06E 3	-0.168	0.654	0.001	-12.256			
		5:KOMB B. MA	-325.977	1.06E 3	-21.506	1.088	0.134	-11.749			
	14984	1:BEBAN MATI	4.966	-759.188	0.170	-0.322	0.001	17.277			
		2:BEBAN HIDL	-4.731	-447.911	-0.023	-0.167	-0.000	8.265			
		3:BEBAN GEM	308.428	308.652	20.332	-0.634	0.112	-0.080			
		4:KOMBINASI	-1.611	-1.63E 3	0.168	-0.654	0.001	33.956			
		5:KOMB B. MA	325.977	-703.850	21.506	-1.088	0.119	22.152			
22101	14984	1:BEBAN MATI	-5.989	-804.355	-0.322	-0.417	0.002	-17.286			
		2:BEBAN HIDL	6.387	-430.811	0.107	-0.230	-0.001	-8.280			
		3:BEBAN GEM	-327.180	-301.927	-15.153	-0.640	0.092	0.213			
		4:KOMBINASI	3.032	-1.65E 3	-0.215	-0.869	0.001	-33.991			
		5:KOMB B. MA	-345.695	-1.38E 3	-16.168	-1.227	0.098	-22.031			
	14986	1:BEBAN MATI	5.989	1.16E 3	0.322	0.417	0.002	5.700			



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Job No 1	Sheet No 446	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-6.387	430.811	-0.107	0.230	-0.001	3.210			
		3:BEBAN GEM	327.180	301.927	15.153	0.640	0.087	-3.766			
		4:KOMBINASI	-3.032	2.09E 3	0.215	0.869	0.001	11.976			
		5:KOMB B. MA	345.695	1.74E 3	16.168	1.227	0.093	3.672			
22102	14986	1:BEBAN MATI	-8.453	-2.58E 3	-0.742	-1.021	0.004	-4.624			
		2:BEBAN HIDL	9.957	-1.19E 3	0.239	-0.531	-0.001	-2.625			
		3:BEBAN GEM	-351.094	-347.160	-4.577	-2.228	0.022	3.817			
		4:KOMBINASI	5.788	-5E 3	-0.507	-2.076	0.003	-9.749			
		5:KOMB B. MA	-371.128	-3.66E 3	-5.404	-3.679	0.026	-2.192			
	14538	1:BEBAN MATI	8.453	2.94E 3	0.742	1.021	0.005	-27.853			
		2:BEBAN HIDL	-9.957	1.19E 3	-0.239	0.531	-0.001	-11.398			
		3:BEBAN GEM	351.094	347.160	4.577	2.228	0.032	-7.902			
		4:KOMBINASI	-5.788	5.43E 3	0.507	2.076	0.003	-51.659			
		5:KOMB B. MA	371.128	4.02E 3	5.404	3.679	0.037	-42.988			
22103	14988	1:BEBAN MATI	-28.590	1.99E 3	-0.012	-0.301	0.000	-2.983			
		2:BEBAN HIDL	6.606	710.770	0.088	-0.170	-0.001	-1.656			
		3:BEBAN GEM	-27.289	-1.18E 3	23.378	-0.407	-0.133	-12.518			
		4:KOMBINASI	-23.738	3.53E 3	0.127	-0.633	-0.001	-6.230			
		5:KOMB B. MA	-53.280	1.18E 3	24.588	-0.830	-0.140	-17.121			
	14620	1:BEBAN MATI	28.590	-1.63E 3	0.012	0.301	-0.000	24.337			
		2:BEBAN HIDL	-6.606	-710.770	-0.088	0.170	-0.000	10.021			
		3:BEBAN GEM	27.289	1.18E 3	-23.378	0.407	-0.142	-1.425			
		4:KOMBINASI	23.738	-3.1E 3	-0.127	0.633	-0.001	45.238			
		5:KOMB B. MA	53.280	-816.775	-24.588	0.830	-0.149	28.854			
22104	14989	1:BEBAN MATI	-3.750	573.784	-0.141	-0.143	0.001	-2.241			
		2:BEBAN HIDL	3.429	212.367	0.025	-0.027	-0.000	-1.274			
		3:BEBAN GEM	-301.352	-47.294	-6.188	-0.134	0.035	-0.495			
		4:KOMBINASI	0.987	1.03E 3	-0.129	-0.215	0.001	-4.727			
		5:KOMB B. MA	-318.111	651.546	-6.624	-0.300	0.038	-3.525			
	14990	1:BEBAN MATI	3.750	-343.133	0.141	0.143	0.001	7.636			
		2:BEBAN HIDL	-3.429	-212.367	-0.025	0.027	-0.000	3.773			
		3:BEBAN GEM	301.352	47.294	6.188	0.134	0.038	-0.062			
		4:KOMBINASI	-0.987	-751.547	0.129	0.215	0.001	15.200			
		5:KOMB B. MA	318.111	-420.894	6.624	0.300	0.040	9.835			
22105	14990	1:BEBAN MATI	-5.309	-282.467	-0.127	0.097	0.001	-7.645			
		2:BEBAN HIDL	3.067	-166.248	0.019	0.002	-0.000	-3.782			
		3:BEBAN GEM	-380.739	-43.600	-8.789	0.149	0.048	0.066			
		4:KOMBINASI	-1.463	-604.957	-0.122	0.120	0.001	-15.225			
		5:KOMB B. MA	-403.244	-427.996	-9.344	0.254	0.051	-9.844			
	14991	1:BEBAN MATI	5.309	513.118	0.127	-0.097	0.001	2.963			
		2:BEBAN HIDL	-3.067	166.248	-0.019	-0.002	-0.000	1.826			
		3:BEBAN GEM	380.739	43.600	8.789	-0.149	0.055	-0.579			
		4:KOMBINASI	1.463	881.739	0.122	-0.120	0.001	6.477			
		5:KOMB B. MA	403.244	658.648	9.344	-0.254	0.059	3.450			
22106	14991	1:BEBAN MATI	-4.194	-871.330	-0.242	0.149	0.001	-1.682			
		2:BEBAN HIDL	2.604	-432.751	0.067	0.005	-0.000	-1.165			
		3:BEBAN GEM	-461.801	-1.532	-12.795	0.084	0.073	0.587			
		4:KOMBINASI	-0.867	-1.74E 3	-0.182	0.186	0.001	-3.881			



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Job No 1	Sheet No 447	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-487.523	-1.13E 3	-13.637	0.240	0.077	-1.764			
	14620	1:BEBAN MATI	4.194	1.1E 3	0.242	-0.149	0.002	-9.929			
		2:BEBAN HIDL	-2.604	432.751	-0.067	-0.005	-0.000	-3.928			
		3:BEBAN GEM	461.801	1.532	12.795	-0.084	0.078	-0.605			
		4:KOMBINASI	0.867	2.01E 3	0.182	-0.186	0.001	-18.200			
		5:KOMB B. MA	487.523	1.36E 3	13.637	-0.240	0.083	-12.921			
22107	14995	1:BEBAN MATI	-63.205	-2.82E 3	-0.694	0.777	0.005	-7.531			
		2:BEBAN HIDL	13.414	-1.18E 3	-0.215	0.648	0.002	-2.816			
		3:BEBAN GEM	478.710	-1.36E 3	1.896	0.802	0.038	16.467			
		4:KOMBINASI	-54.384	-5.27E 3	-1.176	1.969	0.009	-13.542			
		5:KOMB B. MA	447.489	-4.96E 3	1.168	2.008	0.046	8.070			
	14585	1:BEBAN MATI	63.205	3.19E 3	0.694	-0.777	0.003	-27.830			
		2:BEBAN HIDL	-13.414	1.18E 3	0.215	-0.648	0.001	-11.031			
		3:BEBAN GEM	-478.710	1.36E 3	-1.896	-0.802	-0.060	-32.470			
		4:KOMBINASI	54.384	5.7E 3	1.176	-1.969	0.005	-51.045			
		5:KOMB B. MA	-447.489	5.32E 3	-1.168	-2.008	-0.060	-68.543			
22108	14996	1:BEBAN MATI	7.996	1.62E 3	0.503	0.718	-0.003	-5.103			
		2:BEBAN HIDL	7.691	194.430	-0.091	0.553	0.000	-1.363			
		3:BEBAN GEM	-572.535	-335.722	0.315	0.674	-0.000	-4.279			
		4:KOMBINASI	21.901	2.26E 3	0.457	1.747	-0.002	-8.305			
		5:KOMB B. MA	-588.551	1.39E 3	0.779	1.758	-0.003	-10.414			
	14997	1:BEBAN MATI	-7.996	-272.705	-0.503	-0.718	-0.003	16.258			
		2:BEBAN HIDL	-7.691	-194.430	0.091	-0.553	0.001	3.651			
		3:BEBAN GEM	572.535	335.722	-0.315	-0.674	-0.003	0.328			
		4:KOMBINASI	-21.901	-638.335	-0.457	-1.747	-0.003	25.352			
		5:KOMB B. MA	588.551	-36.856	-0.779	-1.758	-0.006	18.794			
22109	14997	1:BEBAN MATI	8.797	-287.975	-0.306	-0.919	0.002	-16.247			
		2:BEBAN HIDL	9.209	-196.572	0.131	-0.678	-0.001	-3.644			
		3:BEBAN GEM	-682.506	-332.509	3.453	-0.428	-0.020	-0.278			
		4:KOMBINASI	25.292	-660.085	-0.158	-2.188	0.001	-25.327			
		5:KOMB B. MA	-702.308	-755.053	3.398	-1.776	-0.019	-18.726			
	14998	1:BEBAN MATI	-8.797	1.64E 3	0.306	0.919	0.001	4.912			
		2:BEBAN HIDL	-9.209	196.572	-0.131	0.678	-0.001	1.331			
		3:BEBAN GEM	682.506	332.509	-3.453	0.428	-0.021	-3.634			
		4:KOMBINASI	-25.292	2.28E 3	0.158	2.188	0.000	8.025			
		5:KOMB B. MA	702.308	2.11E 3	-3.398	1.776	-0.021	1.895			
22110	14998	1:BEBAN MATI	1.470	-2.12E 3	-3.175	-2.530	0.019	-3.870			
		2:BEBAN HIDL	15.510	-507.723	1.096	-1.664	-0.006	-0.796			
		3:BEBAN GEM	-748.071	-369.661	21.078	-1.961	-0.112	3.944			
		4:KOMBINASI	26.580	-3.36E 3	-2.057	-5.699	0.014	-5.918			
		5:KOMB B. MA	-774.698	-2.81E 3	19.614	-5.588	-0.102	-0.207			
	14585	1:BEBAN MATI	-1.470	3.47E 3	3.175	2.530	0.018	-29.031			
		2:BEBAN HIDL	-15.510	507.723	-1.096	1.664	-0.007	-5.179			
		3:BEBAN GEM	748.071	369.661	-21.078	1.961	-0.136	-8.294			
		4:KOMBINASI	-26.580	4.98E 3	2.057	5.699	0.010	-43.123			
		5:KOMB B. MA	774.698	4.16E 3	-19.614	5.588	-0.129	-40.847			
22111	15002	1:BEBAN MATI	-123.598	1.89E 3	-0.024	-3.705	0.001	9.074			
		2:BEBAN HIDL	-29.372	642.637	0.051	-1.803	0.000	3.428			



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Job No

1

Sheet No

448

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-51.755	-853.088	11.724	-0.602	-0.051	-16.682			
		4:KOMBINASI	-195.313	3.3E 3	0.054	-7.331	0.002	16.373			
		5:KOMB B. MA	-195.564	1.38E 3	12.317	-5.419	-0.052	-6.386			
	15006	1:BEBAN MATI	123.598	-1.59E 3	0.024	3.705	-0.001	8.017			
		2:BEBAN HIDL	29.372	-642.637	-0.051	1.803	-0.001	2.875			
		3:BEBAN GEM	51.755	853.088	-11.724	0.602	-0.064	8.316			
		4:KOMBINASI	195.313	-2.94E 3	-0.054	7.331	-0.002	14.220			
		5:KOMB B. MA	195.564	-1.08E 3	-12.317	5.419	-0.068	18.474			
22112	15006	1:BEBAN MATI	-115.152	1.03E 3	0.210	-2.121	-0.000	-8.891			
		2:BEBAN HIDL	-24.270	328.617	-0.029	-0.940	0.001	-3.224			
		3:BEBAN GEM	-383.808	-837.866	8.922	-0.644	-0.033	-8.302			
		4:KOMBINASI	-177.015	1.76E 3	0.205	-4.049	0.000	-15.827			
		5:KOMB B. MA	-532.713	347.232	9.560	-3.362	-0.034	-19.542			
	14623	1:BEBAN MATI	115.152	-729.494	-0.210	2.121	-0.002	17.518			
		2:BEBAN HIDL	24.270	-328.617	0.029	0.940	-0.000	6.446			
		3:BEBAN GEM	383.808	837.866	-8.922	0.644	-0.055	0.085			
		4:KOMBINASI	177.015	-1.4E 3	-0.205	4.049	-0.002	31.335			
		5:KOMB B. MA	532.713	-46.904	-9.560	3.362	-0.059	21.475			
22113	15007	1:BEBAN MATI	-0.339	760.170	0.085	-0.050	-0.000	-3.784			
		2:BEBAN HIDL	-1.164	309.333	0.068	-0.001	-0.000	-2.146			
		3:BEBAN GEM	15.990	-29.106	-9.376	-0.087	0.056	-0.286			
		4:KOMBINASI	-2.270	1.41E 3	0.211	-0.062	-0.001	-7.974			
		5:KOMB B. MA	15.752	915.209	-9.719	-0.142	0.058	-5.372			
	15008	1:BEBAN MATI	0.339	-529.519	-0.085	0.050	-0.001	11.373			
		2:BEBAN HIDL	1.164	-309.333	-0.068	0.001	-0.000	5.786			
		3:BEBAN GEM	-15.990	29.106	9.376	0.087	0.054	-0.057			
		4:KOMBINASI	2.270	-1.13E 3	-0.211	0.062	-0.001	22.905			
		5:KOMB B. MA	-15.752	-684.557	9.719	0.142	0.056	14.785			
22114	15008	1:BEBAN MATI	1.993	-156.713	0.065	0.045	-0.000	-11.454			
		2:BEBAN HIDL	-0.924	-138.999	0.051	-0.003	-0.000	-5.822			
		3:BEBAN GEM	20.320	-30.334	-6.029	0.105	0.028	0.100			
		4:KOMBINASI	0.913	-410.454	0.159	0.050	-0.001	-23.059			
		5:KOMB B. MA	22.774	-271.963	-6.235	0.154	0.029	-14.842			
	15009	1:BEBAN MATI	-1.993	387.364	-0.065	-0.045	-0.000	8.252			
		2:BEBAN HIDL	0.924	138.999	-0.051	0.003	-0.000	4.186			
		3:BEBAN GEM	-20.320	30.334	6.029	-0.105	0.043	-0.457			
		4:KOMBINASI	-0.913	687.236	-0.159	-0.050	-0.001	16.601			
		5:KOMB B. MA	-22.774	502.615	6.235	-0.154	0.045	10.284			
22115	15009	1:BEBAN MATI	5.041	-722.820	0.079	0.072	-0.000	-6.800			
		2:BEBAN HIDL	0.383	-404.648	0.064	-0.007	-0.000	-3.429			
		3:BEBAN GEM	26.910	-1.389	-7.018	0.123	0.023	0.505			
		4:KOMBINASI	6.662	-1.51E 3	0.197	0.075	-0.001	-13.646			
		5:KOMB B. MA	33.526	-967.067	-7.252	0.196	0.024	-8.327			
	14623	1:BEBAN MATI	-5.041	953.471	-0.079	-0.072	-0.001	-3.064			
		2:BEBAN HIDL	-0.383	404.648	-0.064	0.007	-0.001	-1.333			
		3:BEBAN GEM	-26.910	1.389	7.018	-0.123	0.059	-0.521			
		4:KOMBINASI	-6.662	1.79E 3	-0.197	-0.075	-0.002	-5.809			
		5:KOMB B. MA	-33.526	1.2E 3	7.252	-0.196	0.061	-4.411			



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Job No 1	Sheet No 449	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22116	15013	1:BEBAN MATI	-113.180	-1.52E 3	-0.103	3.696	0.002	-8.785			
		2:BEBAN HIDL	-20.467	-645.974	-0.222	1.877	0.002	-2.827			
		3:BEBAN GEM	-1.04E 3	-852.504	11.763	0.292	-0.051	8.295			
		4:KOMBINASI	-168.564	-2.86E 3	-0.478	7.439	0.004	-15.065			
		5:KOMB B. MA	-1.22E 3	-2.81E 3	12.115	5.129	-0.051	-1.771			
	15017	1:BEBAN MATI	113.180	1.83E 3	0.103	-3.696	-0.001	-7.642			
		2:BEBAN HIDL	20.467	645.974	0.222	-1.877	0.001	-3.508			
		3:BEBAN GEM	1.04E 3	852.504	-11.763	-0.292	-0.065	-16.655			
		4:KOMBINASI	168.564	3.22E 3	0.478	-7.439	0.000	-14.783			
		5:KOMB B. MA	1.22E 3	3.11E 3	-12.115	-5.129	-0.068	-27.235			
22117	15017	1:BEBAN MATI	-118.174	-2.26E 3	-1.893	5.581	0.011	9.124			
		2:BEBAN HIDL	-18.187	-856.535	-2.982	2.586	0.012	4.246			
		3:BEBAN GEM	-1.63E 3	-933.382	118.873	1.030	-0.438	16.890			
		4:KOMBINASI	-170.908	-4.08E 3	-7.043	10.834	0.033	17.743			
		5:KOMB B. MA	-1.84E 3	-3.75E 3	121.134	8.214	-0.442	29.406			
	14563	1:BEBAN MATI	118.174	2.56E 3	1.893	-5.581	0.008	-32.755			
		2:BEBAN HIDL	18.187	856.535	2.982	-2.586	0.017	-12.646			
		3:BEBAN GEM	1.63E 3	933.382	-118.873	-1.030	-0.728	-26.044			
		4:KOMBINASI	170.908	4.44E 3	7.043	-10.834	0.036	-59.540			
		5:KOMB B. MA	1.84E 3	4.05E 3	-121.134	-8.214	-0.746	-67.689			
22118	15018	1:BEBAN MATI	21.350	2.06E 3	-0.159	-0.391	0.001	-9.197			
		2:BEBAN HIDL	9.927	477.266	-0.033	-0.203	0.000	-3.695			
		3:BEBAN GEM	-414.137	-296.958	-19.389	0.613	0.122	-3.596			
		4:KOMBINASI	41.503	3.23E 3	-0.243	-0.794	0.002	-16.947			
		5:KOMB B. MA	-407.538	2.03E 3	-20.537	0.131	0.130	-15.189			
	15019	1:BEBAN MATI	-21.350	-706.007	0.159	0.391	0.001	25.451			
		2:BEBAN HIDL	-9.927	-477.266	0.033	0.203	0.000	9.311			
		3:BEBAN GEM	414.137	296.958	19.389	-0.613	0.106	0.102			
		4:KOMBINASI	-41.503	-1.61E 3	0.243	0.794	0.001	45.439			
		5:KOMB B. MA	407.538	-680.561	20.537	-0.131	0.112	31.144			
22119	15019	1:BEBAN MATI	29.186	-749.756	-0.844	-0.625	0.005	-25.500			
		2:BEBAN HIDL	14.711	-480.215	-0.553	-0.306	0.003	-9.341			
		3:BEBAN GEM	-519.744	-295.133	-13.360	-0.630	0.081	0.028			
		4:KOMBINASI	58.561	-1.67E 3	-1.897	-1.240	0.010	-45.545			
		5:KOMB B. MA	-507.719	-1.35E 3	-15.203	-1.471	0.091	-31.075			
	15020	1:BEBAN MATI	-29.186	2.1E 3	0.844	0.625	0.005	8.731			
		2:BEBAN HIDL	-14.711	480.215	0.553	0.306	0.004	3.690			
		3:BEBAN GEM	519.744	295.133	13.360	0.630	0.076	-3.501			
		4:KOMBINASI	-58.561	3.29E 3	1.897	1.240	0.012	16.381			
		5:KOMB B. MA	507.719	2.7E 3	15.203	1.471	0.087	7.269			
22120	15020	1:BEBAN MATI	46.838	-3.48E 3	-2.377	-0.756	0.017	-7.363			
		2:BEBAN HIDL	25.916	-1.31E 3	-2.312	-0.345	0.013	-3.070			
		3:BEBAN GEM	-768.095	-366.534	7.425	-2.151	-0.003	3.560			
		4:KOMBINASI	97.672	-6.28E 3	-6.552	-1.459	0.042	-13.747			
		5:KOMB B. MA	-744.112	-4.65E 3	4.032	-3.222	0.022	-5.467			
	14563	1:BEBAN MATI	-46.838	4.83E 3	2.377	0.756	0.011	-41.583			
	2:BEBAN HIDL	-25.916	1.31E 3	2.312	0.345	0.014	-12.346				
	3:BEBAN GEM	768.095	366.534	-7.425	2.151	-0.085	-7.873				



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

450

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-97.672	7.9E 3	6.552	1.459	0.035	-69.653			
		5:KOMB B. MA	744.112	6.01E 3	-4.032	3.222	-0.069	-57.257			
22121	15024	1:BEBAN MATI	-35.753	3.38E 3	0.355	1.790	0.000	7.966			
		2:BEBAN HIDL	32.167	1.35E 3	2.494	0.362	-0.004	3.166			
		3:BEBAN GEM	-2E 3	-842.915	49.474	-0.911	-0.145	-16.301			
		4:KOMBINASI	8.563	6.22E 3	4.416	2.727	-0.006	14.625			
		5:KOMB B. MA	-2.12E 3	3.31E 3	53.799	1.050	-0.154	-7.250			
	14938	1:BEBAN MATI	35.753	-3.23E 3	-0.355	-1.790	-0.002	8.233			
		2:BEBAN HIDL	-32.167	-1.35E 3	-2.494	-0.362	-0.008	3.472			
		3:BEBAN GEM	2E 3	842.915	-49.474	0.911	-0.097	12.168			
		4:KOMBINASI	-8.563	-6.04E 3	-4.416	-2.727	-0.016	15.435			
		5:KOMB B. MA	2.12E 3	-3.16E 3	-53.799	-1.050	-0.109	23.092			
22122	15028	1:BEBAN MATI	-26.239	1.79E 3	0.335	0.636	-0.001	-20.724			
		2:BEBAN HIDL	20.755	675.594	-0.045	0.131	0.000	-8.556			
		3:BEBAN GEM	-990.149	-772.175	20.981	-0.347	-0.095	-7.931			
		4:KOMBINASI	1.721	3.23E 3	0.330	0.973	-0.001	-38.559			
		5:KOMB B. MA	-1.05E 3	1.39E 3	22.338	0.350	-0.100	-34.185			
	14622	1:BEBAN MATI	26.239	-1.49E 3	-0.335	-0.636	-0.002	36.838			
		2:BEBAN HIDL	-20.755	-675.594	0.045	-0.131	0.000	15.182			
		3:BEBAN GEM	990.149	772.175	-20.981	0.347	-0.111	0.359			
		4:KOMBINASI	-1.721	-2.87E 3	-0.330	-0.973	-0.002	68.496			
		5:KOMB B. MA	1.05E 3	-1.09E 3	-22.338	-0.350	-0.119	46.324			
22123	15029	1:BEBAN MATI	8.718	650.801	-0.176	-0.021	0.001	-2.577			
		2:BEBAN HIDL	2.274	263.151	0.017	-0.009	-0.000	-1.549			
		3:BEBAN GEM	-36.504	-26.279	-11.692	-0.091	0.069	-0.309			
		4:KOMBINASI	14.100	1.2E 3	-0.184	-0.040	0.001	-5.571			
		5:KOMB B. MA	-28.247	781.099	-12.442	-0.123	0.074	-3.831			
	15030	1:BEBAN MATI	-8.718	-420.150	0.176	0.021	0.001	8.878			
		2:BEBAN HIDL	-2.274	-263.151	-0.017	0.009	-0.000	4.646			
		3:BEBAN GEM	36.504	26.279	11.692	0.091	0.068	0.000			
		4:KOMBINASI	-14.100	-925.221	0.184	0.040	0.001	18.088			
		5:KOMB B. MA	28.247	-550.448	12.442	0.123	0.073	11.666			
22124	15030	1:BEBAN MATI	8.202	-352.349	-0.219	-0.031	0.001	-8.898			
		2:BEBAN HIDL	1.201	-206.975	0.052	-0.015	-0.000	-4.664			
		3:BEBAN GEM	-6.066	-27.369	-16.920	0.093	0.097	0.041			
		4:KOMBINASI	11.764	-753.979	-0.181	-0.062	0.001	-18.140			
		5:KOMB B. MA	2.553	-505.271	-17.954	0.057	0.103	-11.653			
	15031	1:BEBAN MATI	-8.202	583.001	0.219	0.031	0.001	3.394			
		2:BEBAN HIDL	-1.201	206.975	-0.052	0.015	-0.000	2.228			
		3:BEBAN GEM	6.066	27.369	16.920	-0.093	0.102	-0.363			
		4:KOMBINASI	-11.764	1.03E 3	0.181	0.062	0.001	7.638			
		5:KOMB B. MA	-2.553	735.923	17.954	-0.057	0.109	4.350			
22125	15031	1:BEBAN MATI	6.753	-1.01E 3	-0.300	-0.040	0.002	-1.859			
		2:BEBAN HIDL	0.068	-503.489	0.083	-0.021	-0.001	-1.463			
		3:BEBAN GEM	20.659	-1.551	-27.140	0.078	0.163	0.405			
		4:KOMBINASI	8.212	-2.02E 3	-0.228	-0.081	0.001	-4.571			
		5:KOMB B. MA	28.486	-1.32E 3	-28.747	0.030	0.173	-2.312			
	14622	1:BEBAN MATI	-6.753	1.24E 3	0.300	0.040	0.002	-11.414			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 451	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-0.068	503.489	-0.083	0.021	-0.000	-4.462			
		3:BEBAN GEM	-20.659	1.551	27.140	-0.078	0.156	-0.423			
		4:KOMBINASI	-8.212	2.3E 3	0.228	0.081	0.002	-20.837			
		5:KOMB B. MA	-28.486	1.55E 3	28.747	-0.030	0.166	-14.536			
22126	15035	1:BEBAN MATI	-29.857	-2.45E 3	-0.096	1.793	-0.000	-18.656			
		2:BEBAN HIDL	19.184	-1.03E 3	-1.205	1.017	0.002	-7.629			
		3:BEBAN GEM	-1.05E 3	-813.823	75.527	0.529	-0.176	7.919			
		4:KOMBINASI	-5.133	-4.59E 3	-2.042	3.779	0.003	-34.594			
		5:KOMB B. MA	-1.12E 3	-3.93E 3	78.484	2.959	-0.184	-14.919			
	14941	1:BEBAN MATI	29.857	2.6E 3	0.096	-1.793	0.001	6.255			
		2:BEBAN HIDL	-19.184	1.03E 3	1.205	-1.017	0.004	2.575			
		3:BEBAN GEM	1.05E 3	813.823	-75.527	-0.529	-0.194	-11.909			
		4:KOMBINASI	5.133	4.77E 3	2.042	-3.779	0.007	11.626			
		5:KOMB B. MA	1.12E 3	4.08E 3	-78.484	-2.959	-0.201	-4.705			
22127	15039	1:BEBAN MATI	-23.656	-4E 3	-0.164	1.437	0.001	11.724			
		2:BEBAN HIDL	17.995	-1.64E 3	-0.759	0.880	0.003	4.983			
		3:BEBAN GEM	-216.672	-945.070	43.856	0.976	-0.180	16.271			
		4:KOMBINASI	0.405	-7.43E 3	-1.412	3.132	0.007	22.042			
		5:KOMB B. MA	-240.365	-5.98E 3	45.429	2.990	-0.186	31.799			
	14562	1:BEBAN MATI	23.656	4.3E 3	0.164	-1.437	0.001	-52.453			
		2:BEBAN HIDL	-17.995	1.64E 3	0.759	-0.880	0.004	-21.099			
		3:BEBAN GEM	216.672	945.070	-43.856	-0.976	-0.250	-25.539			
		4:KOMBINASI	-0.405	7.79E 3	1.412	-3.132	0.007	-96.703			
		5:KOMB B. MA	240.365	6.28E 3	-45.429	-2.990	-0.259	-91.929			
22128	15040	1:BEBAN MATI	9.094	2.06E 3	-0.158	0.029	0.001	-8.104			
		2:BEBAN HIDL	3.407	482.801	0.100	0.009	-0.001	-3.202			
		3:BEBAN GEM	-52.051	-302.523	-23.051	0.631	0.147	-3.641			
		4:KOMBINASI	16.365	3.25E 3	-0.030	0.049	0.000	-14.848			
		5:KOMB B. MA	-43.515	2.04E 3	-24.302	0.696	0.155	-13.848			
	15041	1:BEBAN MATI	-9.094	-712.810	0.158	-0.029	0.001	24.438			
		2:BEBAN HIDL	-3.407	-482.801	-0.100	-0.009	-0.001	8.884			
		3:BEBAN GEM	52.051	302.523	23.051	-0.631	0.124	0.081			
		4:KOMBINASI	-16.365	-1.63E 3	0.030	-0.049	0.000	43.539			
		5:KOMB B. MA	43.515	-684.841	24.302	-0.696	0.131	29.853			
22129	15041	1:BEBAN MATI	9.573	-712.289	-0.135	-0.006	0.001	-24.456			
		2:BEBAN HIDL	4.647	-465.241	0.170	0.017	-0.001	-8.901			
		3:BEBAN GEM	-24.001	-301.317	-20.863	-0.611	0.126	0.050			
		4:KOMBINASI	18.922	-1.6E 3	0.109	0.019	-0.001	-43.589			
		5:KOMB B. MA	-12.840	-1.31E 3	-21.940	-0.638	0.132	-29.744			
	15042	1:BEBAN MATI	-9.573	2.06E 3	0.135	0.006	0.001	8.129			
		2:BEBAN HIDL	-4.647	465.241	-0.170	-0.017	-0.001	3.426			
		3:BEBAN GEM	24.001	301.317	20.863	0.611	0.120	-3.596			
		4:KOMBINASI	-18.922	3.22E 3	-0.109	-0.019	-0.001	15.236			
		5:KOMB B. MA	12.840	2.66E 3	21.940	0.638	0.126	6.408			
22130	15042	1:BEBAN MATI	11.479	-3.38E 3	-0.146	-0.057	0.001	-6.716			
		2:BEBAN HIDL	8.151	-1.28E 3	0.387	0.020	-0.002	-2.798			
		3:BEBAN GEM	-21.590	-372.529	-21.705	-2.113	0.124	3.658			
		4:KOMBINASI	26.816	-6.1E 3	0.444	-0.035	-0.003	-12.536			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 452	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-6.300	-4.54E 3	-22.705	-2.263	0.130	-4.554			
	14562	1:BEBAN MATI	-11.479	4.73E 3	0.146	0.057	0.001	-41.009			
		2:BEBAN HIDL	-8.151	1.28E 3	-0.387	-0.020	-0.002	-12.236			
		3:BEBAN GEM	21.590	372.529	21.705	2.113	0.131	-8.042			
		4:KOMBINASI	-26.816	7.72E 3	-0.444	0.035	-0.002	-68.789			
		5:KOMB B. MA	6.300	5.89E 3	22.705	2.263	0.138	-56.795			
22131	15046	1:BEBAN MATI	-35.059	3.42E 3	1.862	1.316	-0.004	10.070			
		2:BEBAN HIDL	12.100	1.41E 3	-1.135	0.127	0.003	4.638			
		3:BEBAN GEM	-1.01E 3	-852.711	108.532	-0.977	-0.231	-16.339			
		4:KOMBINASI	-22.710	6.36E 3	0.418	1.782	0.000	19.504			
		5:KOMB B. MA	-1.09E 3	3.37E 3	115.140	0.366	-0.245	-4.304			
	14944	1:BEBAN MATI	35.059	-3.27E 3	-1.862	-1.316	-0.005	6.344			
		2:BEBAN HIDL	-12.100	-1.41E 3	1.135	-0.127	0.002	2.264			
		3:BEBAN GEM	1.01E 3	852.711	-108.532	0.977	-0.301	12.158			
		4:KOMBINASI	22.710	-6.18E 3	-0.418	-1.782	-0.002	11.235			
		5:KOMB B. MA	1.09E 3	-3.22E 3	-115.140	-0.366	-0.320	20.468			
22132	15050	1:BEBAN MATI	-29.982	1.88E 3	0.568	0.553	-0.003	-19.363			
		2:BEBAN HIDL	10.507	745.747	-0.437	0.032	0.002	-7.717			
		3:BEBAN GEM	-354.701	-764.385	41.499	-0.322	-0.185	-8.001			
		4:KOMBINASI	-19.167	3.45E 3	-0.018	0.714	0.000	-35.582			
		5:KOMB B. MA	-396.113	1.52E 3	43.880	0.234	-0.196	-32.394			
	14621	1:BEBAN MATI	29.982	-1.58E 3	-0.568	-0.553	-0.003	36.324			
		2:BEBAN HIDL	-10.507	-745.747	0.437	-0.032	0.002	15.030			
		3:BEBAN GEM	354.701	764.385	-41.499	0.322	-0.222	0.505			
		4:KOMBINASI	19.167	-3.09E 3	0.018	-0.714	-0.000	67.637			
		5:KOMB B. MA	396.113	-1.22E 3	-43.880	-0.234	-0.235	45.873			
22133	15051	1:BEBAN MATI	0.652	638.624	-0.067	0.028	0.000	-2.508			
		2:BEBAN HIDL	1.726	263.686	0.052	-0.007	-0.000	-1.570			
		3:BEBAN GEM	-65.001	-26.600	-11.154	-0.095	0.066	-0.317			
		4:KOMBINASI	3.544	1.19E 3	0.003	0.023	-0.000	-5.523			
		5:KOMB B. MA	-66.564	768.905	-11.747	-0.076	0.070	-3.783			
	15052	1:BEBAN MATI	-0.652	-407.972	0.067	-0.028	0.000	8.667			
		2:BEBAN HIDL	-1.726	-263.686	-0.052	0.007	-0.000	4.673			
		3:BEBAN GEM	65.001	26.600	11.154	0.095	0.065	0.004			
		4:KOMBINASI	-3.544	-911.465	-0.003	-0.023	0.000	17.877			
		5:KOMB B. MA	66.564	-538.254	11.747	0.076	0.068	11.475			
22134	15052	1:BEBAN MATI	0.351	-345.745	-0.070	-0.044	0.000	-8.677			
		2:BEBAN HIDL	1.812	-210.180	0.062	0.007	-0.000	-4.687			
		3:BEBAN GEM	-91.263	-28.504	-14.048	0.091	0.079	0.039			
		4:KOMBINASI	3.321	-751.182	0.015	-0.042	-0.000	-17.911			
		5:KOMB B. MA	-94.387	-501.782	-14.783	0.056	0.083	-11.448			
	15053	1:BEBAN MATI	-0.351	576.396	0.070	0.044	0.000	3.251			
		2:BEBAN HIDL	-1.812	210.180	-0.062	-0.007	-0.000	2.213			
		3:BEBAN GEM	91.263	28.504	14.048	-0.091	0.087	-0.374			
		4:KOMBINASI	-3.321	1.03E 3	-0.015	0.042	-0.000	7.443			
		5:KOMB B. MA	94.387	732.433	14.783	-0.056	0.091	4.186			
22135	15053	1:BEBAN MATI	-0.598	-999.596	-0.117	-0.067	0.001	-1.725			
		2:BEBAN HIDL	2.537	-506.408	0.089	0.012	-0.001	-1.433			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 453	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-157.458	-3.246	-19.975	0.074	0.117	0.417			
		4:KOMBINASI	3.341	-2.01E 3	0.003	-0.062	-0.000	-4.363			
		5:KOMB B. MA	-164.406	-1.31E 3	-21.037	0.018	0.123	-2.147			
	14621	1:BEBAN MATI	0.598	1.23E 3	0.117	0.067	0.001	-11.395			
		2:BEBAN HIDL	-2.537	506.408	-0.089	-0.012	-0.001	-4.527			
		3:BEBAN GEM	157.458	3.246	19.975	-0.074	0.118	-0.456			
		4:KOMBINASI	-3.341	2.29E 3	-0.003	0.062	0.000	-20.917			
		5:KOMB B. MA	164.406	1.54E 3	21.037	-0.018	0.124	-14.590			
22136	15057	1:BEBAN MATI	-34.348	-2.39E 3	2.470	1.849	-0.005	-18.932			
		2:BEBAN HIDL	12.340	-972.629	-2.211	1.044	0.004	-8.204			
		3:BEBAN GEM	-563.345	-810.063	182.170	0.557	-0.403	7.704			
		4:KOMBINASI	-21.473	-4.43E 3	-0.574	3.888	0.001	-35.844			
		5:KOMB B. MA	-618.456	-3.83E 3	192.421	3.060	-0.426	-15.765			
	14947	1:BEBAN MATI	34.348	2.54E 3	-2.470	-1.849	-0.007	6.824			
		2:BEBAN HIDL	-12.340	972.629	2.211	-1.044	0.006	3.435			
		3:BEBAN GEM	563.345	810.063	-182.170	-0.557	-0.490	-11.676			
		4:KOMBINASI	21.473	4.61E 3	0.574	-3.888	0.002	13.685			
		5:KOMB B. MA	618.456	3.98E 3	-192.421	-3.060	-0.518	-3.374			
22137	15061	1:BEBAN MATI	-36.847	-3.89E 3	0.879	1.407	-0.004	10.904			
		2:BEBAN HIDL	11.812	-1.61E 3	-0.900	0.944	0.004	3.812			
		3:BEBAN GEM	87.076	-947.535	63.428	0.997	-0.289	16.023			
		4:KOMBINASI	-25.317	-7.25E 3	-0.386	3.199	0.002	19.183			
		5:KOMB B. MA	61.670	-5.85E 3	66.938	3.020	-0.305	30.015			
	14538	1:BEBAN MATI	36.847	4.19E 3	-0.879	-1.407	-0.004	-50.521			
		2:BEBAN HIDL	-11.812	1.61E 3	0.900	-0.944	0.005	-19.620			
		3:BEBAN GEM	-87.076	947.535	-63.428	-0.997	-0.333	-25.315			
		4:KOMBINASI	25.317	7.61E 3	0.386	-3.199	0.002	-92.018			
		5:KOMB B. MA	-61.670	6.15E 3	-66.938	-3.020	-0.351	-88.874			
22138	15063	1:BEBAN MATI	-21.377	2.84E 3	0.629	0.935	-0.004	-3.416			
		2:BEBAN HIDL	5.467	686.283	-0.341	0.253	0.002	-1.273			
		3:BEBAN GEM	-288.428	-1.1E 3	25.188	-0.286	-0.147	-12.825			
		4:KOMBINASI	-16.904	4.51E 3	0.210	1.526	-0.001	-6.135			
		5:KOMB B. MA	-320.946	2.1E 3	26.873	0.787	-0.156	-17.645			
	14625	1:BEBAN MATI	21.377	-1.49E 3	-0.629	-0.935	-0.004	28.890			
		2:BEBAN HIDL	-5.467	-686.283	0.341	-0.253	0.002	9.349			
		3:BEBAN GEM	288.428	1.1E 3	-25.188	0.286	-0.150	-0.133			
		4:KOMBINASI	16.904	-2.89E 3	-0.210	-1.526	-0.001	49.625			
		5:KOMB B. MA	320.946	-745.034	-26.873	-0.787	-0.160	34.359			
22139	15064	1:BEBAN MATI	-10.562	-244.542	0.016	-0.089	-0.000	0.505			
		2:BEBAN HIDL	4.075	-242.169	0.047	-0.041	-0.000	-0.333			
		3:BEBAN GEM	-541.899	2.526	-9.846	-0.013	0.079	0.160			
		4:KOMBINASI	-6.156	-680.920	0.093	-0.172	-0.001	0.074			
		5:KOMB B. MA	-577.112	-387.190	-10.295	-0.127	0.083	0.474			
	14625	1:BEBAN MATI	10.562	590.519	-0.016	0.089	-0.000	-7.875			
		2:BEBAN HIDL	-4.075	242.169	-0.047	0.041	-0.000	-3.942			
		3:BEBAN GEM	541.899	-2.526	9.846	0.013	0.095	-0.116			
		4:KOMBINASI	6.156	1.1E 3	-0.093	0.172	-0.001	-15.758			
		5:KOMB B. MA	577.112	733.168	10.295	0.127	0.099	-10.362			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 454	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22140	15066	1:BEBAN MATI	-8.215	-3.55E 3	0.754	-1.176	-0.004	-7.596			
		2:BEBAN HIDL	9.774	-1.25E 3	0.619	-0.186	-0.004	-1.229			
		3:BEBAN GEM	-462.764	-1.24E 3	3.807	0.595	-0.065	13.176			
		4:KOMBINASI	5.780	-6.25E 3	1.896	-1.710	-0.012	-11.083			
		5:KOMB B. MA	-488.253	-5.59E 3	5.123	-0.664	-0.075	5.501			
14586	14586	1:BEBAN MATI	8.215	4.9E 3	-0.754	1.176	-0.005	-42.095			
		2:BEBAN HIDL	-9.774	1.25E 3	-0.619	0.186	-0.003	-13.426			
		3:BEBAN GEM	462.764	1.24E 3	-3.807	-0.595	0.020	-27.733			
		4:KOMBINASI	-5.780	7.87E 3	-1.896	1.710	-0.011	-71.996			
		5:KOMB B. MA	488.253	6.94E 3	-5.123	0.664	0.014	-79.270			
22141	15067	1:BEBAN MATI	-27.685	-156.681	0.409	-1.669	-0.004	-1.788			
		2:BEBAN HIDL	-7.188	-211.222	0.256	-1.070	-0.003	0.947			
		3:BEBAN GEM	-2.29E 3	-650.471	-49.302	-0.357	0.383	-0.157			
		4:KOMBINASI	-44.724	-525.972	0.901	-3.715	-0.009	-0.631			
		5:KOMB B. MA	-2.44E 3	-966.408	-51.205	-2.686	0.396	-1.384			
14586	14586	1:BEBAN MATI	27.685	2.18E 3	-0.409	1.669	-0.003	-18.856			
		2:BEBAN HIDL	7.188	211.222	-0.256	1.070	-0.002	-4.675			
		3:BEBAN GEM	2.29E 3	650.471	49.302	0.357	0.487	-11.325			
		4:KOMBINASI	44.724	2.96E 3	-0.901	3.715	-0.007	-30.107			
		5:KOMB B. MA	2.44E 3	2.99E 3	51.205	2.686	0.508	-33.553			
22142	15069	1:BEBAN MATI	-18.359	653.381	0.101	0.013	-0.001	2.029			
		2:BEBAN HIDL	5.381	154.738	-0.034	0.011	0.000	0.300			
		3:BEBAN GEM	369.349	-86.169	13.504	0.095	-0.081	-1.216			
		4:KOMBINASI	-13.422	1.03E 3	0.068	0.033	-0.000	2.914			
		5:KOMB B. MA	372.686	655.747	14.260	0.120	-0.086	0.932			
14675	14675	1:BEBAN MATI	18.359	-422.730	-0.101	-0.013	-0.001	4.303			
		2:BEBAN HIDL	-5.381	-154.738	0.034	-0.011	0.000	1.521			
		3:BEBAN GEM	-369.349	86.169	-13.504	-0.095	-0.078	0.202			
		4:KOMBINASI	13.422	-754.857	-0.068	-0.033	-0.000	7.597			
		5:KOMB B. MA	-372.686	-425.096	-14.260	-0.120	-0.082	5.427			
22143	15071	1:BEBAN MATI	-24.290	3.2E 3	-0.012	-0.050	0.000	-2.596			
		2:BEBAN HIDL	-0.637	782.159	-0.018	-0.018	0.000	-0.791			
		3:BEBAN GEM	1.29E 3	-1.05E 3	28.159	-0.444	-0.174	-12.346			
		4:KOMBINASI	-30.167	5.1E 3	-0.043	-0.088	0.000	-4.381			
		5:KOMB B. MA	1.33E 3	2.57E 3	29.544	-0.527	-0.183	-16.034			
14629	14629	1:BEBAN MATI	24.290	-1.85E 3	0.012	0.050	0.000	32.365			
		2:BEBAN HIDL	0.637	-782.159	0.018	0.018	0.000	9.996			
		3:BEBAN GEM	-1.29E 3	1.05E 3	-28.159	0.444	-0.157	-0.041			
		4:KOMBINASI	30.167	-3.48E 3	0.043	0.088	0.000	54.831			
		5:KOMB B. MA	-1.33E 3	-1.22E 3	-29.544	0.527	-0.165	38.319			
22144	15072	1:BEBAN MATI	-10.555	424.866	-0.036	-0.216	0.000	-6.369			
		2:BEBAN HIDL	5.070	103.323	0.011	-0.046	-0.000	-2.716			
		3:BEBAN GEM	-685.790	-42.808	-7.787	-0.316	0.054	-0.585			
		4:KOMBINASI	-4.554	675.156	-0.025	-0.333	0.000	-11.988			
		5:KOMB B. MA	-727.592	441.911	-8.206	-0.576	0.057	-8.613			
14675	14675	1:BEBAN MATI	10.555	-136.551	0.036	0.216	0.000	10.498			
		2:BEBAN HIDL	-5.070	-103.323	-0.011	0.046	-0.000	4.236			
		3:BEBAN GEM	685.790	42.808	7.787	0.316	0.061	-0.045			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 455	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	4.554	-329.178	0.025	0.333	0.000	19.375			
		5:KOMB B. MA	727.592	-153.597	8.206	0.576	0.064	12.993			
22145	15073	1:BEBAN MATI	-12.763	-1.01E 3	-0.012	0.160	0.000	-1.740			
		2:BEBAN HIDL	7.216	-506.318	0.004	0.001	-0.000	-1.058			
		3:BEBAN GEM	-831.020	20.533	-5.660	0.268	0.037	0.676			
		4:KOMBINASI	-3.770	-2.02E 3	-0.007	0.195	0.000	-3.781			
		5:KOMB B. MA	-881.005	-1.29E 3	-5.952	0.443	0.039	-1.665			
	14629	1:BEBAN MATI	12.763	1.3E 3	0.012	-0.160	0.000	-15.251			
		2:BEBAN HIDL	-7.216	506.318	-0.004	-0.001	-0.000	-6.390			
		3:BEBAN GEM	831.020	-20.533	5.660	-0.268	0.046	-0.374			
		4:KOMBINASI	3.770	2.37E 3	0.007	-0.195	0.000	-28.525			
		5:KOMB B. MA	881.005	1.58E 3	5.952	-0.443	0.048	-19.477			
22146	15075	1:BEBAN MATI	-20.158	-580.864	0.057	0.130	-0.000	-1.199			
		2:BEBAN HIDL	4.271	-353.143	-0.110	0.068	0.001	0.527			
		3:BEBAN GEM	313.448	2.477	17.293	-0.075	-0.106	1.407			
		4:KOMBINASI	-17.357	-1.26E 3	-0.108	0.264	0.001	-0.596			
		5:KOMB B. MA	311.525	-790.149	18.148	0.092	-0.112	0.594			
	14607	1:BEBAN MATI	20.158	811.516	-0.057	-0.130	-0.000	-6.994			
		2:BEBAN HIDL	-4.271	353.143	0.110	-0.068	0.001	-4.683			
		3:BEBAN GEM	-313.448	-2.477	-17.293	0.075	-0.097	-1.377			
		4:KOMBINASI	17.357	1.54E 3	0.108	-0.264	0.001	-15.885			
		5:KOMB B. MA	-311.525	1.02E 3	-18.148	-0.092	-0.102	-11.250			
22147	15077	1:BEBAN MATI	-8.159	-4.14E 3	-0.146	0.117	0.001	-6.256			
		2:BEBAN HIDL	-5.366	-1.44E 3	-0.346	0.043	0.002	0.100			
		3:BEBAN GEM	1.31E 3	-1.29E 3	17.909	0.828	-0.110	12.553			
		4:KOMBINASI	-18.376	-7.27E 3	-0.729	0.210	0.004	-7.348			
		5:KOMB B. MA	1.37E 3	-6.36E 3	18.450	1.012	-0.113	6.985			
	14587	1:BEBAN MATI	8.159	5.49E 3	0.146	-0.117	0.001	-50.375			
		2:BEBAN HIDL	5.366	1.44E 3	0.346	-0.043	0.002	-17.055			
		3:BEBAN GEM	-1.31E 3	1.29E 3	-17.909	-0.828	-0.101	-27.743			
		4:KOMBINASI	18.376	8.89E 3	0.729	-0.210	0.004	-87.738			
		5:KOMB B. MA	-1.37E 3	7.71E 3	-18.450	-1.012	-0.104	-89.738			
22148	15078	1:BEBAN MATI	-22.099	2.75E 3	-0.284	0.137	0.002	-17.488			
		2:BEBAN HIDL	16.417	690.746	-0.043	0.161	0.000	-6.626			
		3:BEBAN GEM	-1.48E 3	-192.941	-23.598	1.064	0.181	-2.963			
		4:KOMBINASI	-0.252	4.4E 3	-0.410	0.423	0.003	-31.586			
		5:KOMB B. MA	-1.57E 3	2.96E 3	-25.088	1.352	0.193	-24.575			
	14607	1:BEBAN MATI	22.099	-1.06E 3	0.284	-0.137	0.002	45.502			
		2:BEBAN HIDL	-16.417	-690.746	0.043	-0.161	0.000	16.786			
		3:BEBAN GEM	1.48E 3	192.941	23.598	-1.064	0.166	0.125			
		4:KOMBINASI	0.252	-2.38E 3	0.410	-0.423	0.003	81.460			
		5:KOMB B. MA	1.57E 3	-1.27E 3	25.088	-1.352	0.176	55.705			
22149	15079	1:BEBAN MATI	-20.279	-4.6E 3	1.139	1.219	-0.009	-10.353			
		2:BEBAN HIDL	14.717	-1.77E 3	-0.531	0.831	0.004	-3.686			
		3:BEBAN GEM	-1.26E 3	-308.464	-2.672	-2.504	0.002	3.231			
		4:KOMBINASI	-0.788	-8.35E 3	0.519	2.792	-0.004	-18.321			
		5:KOMB B. MA	-1.33E 3	-5.99E 3	-1.984	-0.911	-0.004	-9.172			
	14587	1:BEBAN MATI	20.279	6.29E 3	-1.139	-1.219	-0.008	-69.755			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 456	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-14.717	1.77E 3	0.531	-0.831	0.004	-22.322			
		3:BEBAN GEM	1.26E 3	308.464	2.672	2.504	0.037	-7.768			
		4:KOMBINASI	0.788	10.4E 3	-0.519	-2.792	-0.004	-119.422			
		5:KOMB B. MA	1.33E 3	7.67E 3	1.984	0.911	0.033	-91.306			
22150	15081	1:BEBAN MATI	-18.598	615.212	-0.000	0.000	0.000	2.196			
		2:BEBAN HIDL	4.514	142.554	0.000	0.000	-0.000	0.389			
		3:BEBAN GEM	1.19E 3	-87.771	-3.052	0.099	0.018	-1.209			
		4:KOMBINASI	-15.095	966.341	0.000	0.000	0.000	3.258			
		5:KOMB B. MA	1.23E 3	608.585	-3.205	0.104	0.019	1.160			
	14674	1:BEBAN MATI	18.598	-384.561	0.000	-0.000	0.000	3.686			
		2:BEBAN HIDL	-4.514	-142.554	-0.000	-0.000	-0.000	1.289			
		3:BEBAN GEM	-1.19E 3	87.771	3.052	-0.099	0.018	0.176			
		4:KOMBINASI	15.095	-689.559	-0.000	-0.000	-0.000	6.486			
		5:KOMB B. MA	-1.23E 3	-377.933	3.205	-0.104	0.019	4.644			
22151	15083	1:BEBAN MATI	-24.290	3.2E 3	0.012	0.050	-0.000	-2.596			
		2:BEBAN HIDL	-0.637	782.159	0.018	0.018	-0.000	-0.791			
		3:BEBAN GEM	1.34E 3	-1.05E 3	-39.037	-0.447	0.235	-12.315			
		4:KOMBINASI	-30.167	5.1E 3	0.043	0.088	-0.000	-4.381			
		5:KOMB B. MA	1.38E 3	2.57E 3	-40.966	-0.408	0.247	-16.001			
	14634	1:BEBAN MATI	24.290	-1.85E 3	-0.012	-0.050	-0.000	32.365			
		2:BEBAN HIDL	0.637	-782.159	-0.018	-0.018	-0.000	9.996			
		3:BEBAN GEM	-1.34E 3	1.05E 3	39.037	0.447	0.224	-0.055			
		4:KOMBINASI	30.167	-3.48E 3	-0.043	-0.088	-0.000	54.831			
		5:KOMB B. MA	-1.38E 3	-1.22E 3	40.966	0.408	0.235	38.305			
22152	15084	1:BEBAN MATI	-11.948	559.281	-0.024	-0.139	0.000	-2.910			
		2:BEBAN HIDL	5.546	148.079	0.003	-0.010	-0.000	-1.516			
		3:BEBAN GEM	-925.772	-37.329	-1.805	-0.318	0.003	-0.558			
		4:KOMBINASI	-5.464	908.064	-0.024	-0.184	0.000	-5.917			
		5:KOMB B. MA	-980.680	608.933	-1.917	-0.480	0.003	-4.406			
	14674	1:BEBAN MATI	11.948	-270.967	0.024	0.139	0.000	9.016			
		2:BEBAN HIDL	-5.546	-148.079	-0.003	0.010	-0.000	3.694			
		3:BEBAN GEM	925.772	37.329	1.805	0.318	0.023	0.009			
		4:KOMBINASI	5.464	-562.086	0.024	0.184	0.000	16.730			
		5:KOMB B. MA	980.680	-320.619	1.917	0.480	0.025	11.242			
22153	15085	1:BEBAN MATI	-12.895	-965.904	0.065	0.166	-0.000	-1.145			
		2:BEBAN HIDL	6.816	-489.460	-0.008	0.006	0.000	-0.834			
		3:BEBAN GEM	-883.694	21.467	6.949	0.269	-0.052	0.604			
		4:KOMBINASI	-4.568	-1.94E 3	0.066	0.209	-0.000	-2.708			
		5:KOMB B. MA	-936.684	-1.24E 3	7.357	0.452	-0.055	-1.011			
	14634	1:BEBAN MATI	12.895	1.25E 3	-0.065	-0.166	-0.000	-15.184			
		2:BEBAN HIDL	-6.816	489.460	0.008	-0.006	0.000	-6.366			
		3:BEBAN GEM	883.694	-21.467	-6.949	-0.269	-0.050	-0.289			
		4:KOMBINASI	4.568	2.29E 3	-0.066	-0.209	-0.001	-28.407			
		5:KOMB B. MA	936.684	1.53E 3	-7.357	-0.452	-0.053	-19.307			
22154	15087	1:BEBAN MATI	-18.808	-544.750	-0.000	-0.000	0.000	-1.049			
		2:BEBAN HIDL	5.002	-338.946	0.000	-0.000	-0.000	0.607			
		3:BEBAN GEM	735.863	4.473	-2.066	-0.075	0.011	1.390			
		4:KOMBINASI	-14.566	-1.2E 3	0.000	-0.000	-0.000	-0.287			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 457	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	756.849	-743.421	-2.170	-0.079	0.012	0.775			
	14665	1:BEBAN MATI	18.808	775.402	0.000	0.000	0.000	-6.719			
		2:BEBAN HIDL	-5.002	338.946	-0.000	0.000	-0.000	-4.596			
		3:BEBAN GEM	-735.863	-4.473	2.066	0.075	0.013	-1.337			
		4:KOMBINASI	14.566	1.47E 3	-0.000	0.000	-0.000	-15.417			
		5:KOMB B. MA	-756.849	974.073	2.170	0.079	0.014	-10.881			
22155	15089	1:BEBAN MATI	-8.159	-4.14E 3	0.146	-0.117	-0.001	-6.256			
		2:BEBAN HIDL	-5.366	-1.44E 3	0.346	-0.043	-0.002	0.100			
		3:BEBAN GEM	1.35E 3	-1.28E 3	-35.785	0.829	0.211	12.514			
		4:KOMBINASI	-18.376	-7.27E 3	0.729	-0.210	-0.004	-7.348			
		5:KOMB B. MA	1.4E 3	-6.35E 3	-37.220	0.727	0.220	6.944			
	14588	1:BEBAN MATI	8.159	5.49E 3	-0.146	0.117	-0.001	-50.375			
		2:BEBAN HIDL	5.366	1.44E 3	-0.346	0.043	-0.002	-17.055			
		3:BEBAN GEM	-1.35E 3	1.28E 3	35.785	-0.829	0.210	-27.631			
		4:KOMBINASI	18.376	8.89E 3	-0.729	0.210	-0.004	-87.738			
		5:KOMB B. MA	-1.4E 3	7.7E 3	37.220	-0.727	0.218	-89.621			
22156	15090	1:BEBAN MATI	-25.539	2.86E 3	-0.116	0.423	0.001	-10.649			
		2:BEBAN HIDL	7.139	730.979	0.106	0.385	-0.001	-3.906			
		3:BEBAN GEM	-1.41E 3	-197.919	-13.963	1.033	0.098	-3.179			
		4:KOMBINASI	-19.224	4.6E 3	0.030	1.123	-0.000	-19.028			
		5:KOMB B. MA	-1.5E 3	3.09E 3	-14.714	1.738	0.103	-16.330			
	14665	1:BEBAN MATI	25.539	-1.17E 3	0.116	-0.423	0.000	40.343			
		2:BEBAN HIDL	-7.139	-730.979	-0.106	-0.385	-0.001	14.659			
		3:BEBAN GEM	1.41E 3	197.919	13.963	-1.033	0.108	0.267			
		4:KOMBINASI	19.224	-2.58E 3	-0.030	-1.123	-0.000	71.865			
		5:KOMB B. MA	1.5E 3	-1.41E 3	14.714	-1.738	0.113	49.419			
22157	15091	1:BEBAN MATI	-25.166	-4.39E 3	1.314	1.308	-0.010	-8.476			
		2:BEBAN HIDL	5.296	-1.68E 3	-0.607	0.869	0.005	-2.880			
		3:BEBAN GEM	-1.3E 3	-306.404	25.534	-2.500	-0.201	3.068			
		4:KOMBINASI	-21.726	-7.96E 3	0.605	2.961	-0.005	-14.780			
		5:KOMB B. MA	-1.39E 3	-5.72E 3	27.760	-0.795	-0.218	-6.983			
	14588	1:BEBAN MATI	25.166	6.08E 3	-1.314	-1.308	-0.009	-68.538			
		2:BEBAN HIDL	-5.296	1.68E 3	0.607	-0.869	0.004	-21.894			
		3:BEBAN GEM	1.3E 3	306.404	-25.534	2.500	-0.175	-7.576			
		4:KOMBINASI	21.726	9.99E 3	-0.605	-2.961	-0.004	-117.276			
		5:KOMB B. MA	1.39E 3	7.41E 3	-27.760	0.795	-0.190	-89.629			
22158	15092	1:BEBAN MATI	-143.366	-2.1E 3	-4.077	-8.151	0.028	-4.665			
		2:BEBAN HIDL	24.013	-897.574	0.849	-4.256	-0.006	-2.967			
		3:BEBAN GEM	576.762	-1E 3	15.451	0.469	-0.057	15.502			
		4:KOMBINASI	-133.618	-3.95E 3	-3.534	-16.590	0.024	-10.345			
		5:KOMB B. MA	476.641	-3.69E 3	12.656	-10.211	-0.036	9.833			
	14593	1:BEBAN MATI	143.366	2.55E 3	4.077	8.151	0.032	-29.520			
		2:BEBAN HIDL	-24.013	897.574	-0.849	4.256	-0.006	-10.236			
		3:BEBAN GEM	-576.762	1E 3	-15.451	-0.469	-0.170	-30.258			
		4:KOMBINASI	133.618	4.5E 3	3.534	16.590	0.028	-51.802			
		5:KOMB B. MA	-476.641	4.14E 3	-12.656	10.211	-0.150	-67.433			
22159	15094	1:BEBAN MATI	-53.899	1.01E 3	0.728	3.458	-0.006	-9.279			
		2:BEBAN HIDL	14.203	323.424	-0.126	1.944	0.001	-4.482			



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Job No 1	Sheet No 458	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-422.347	-272.114	12.112	0.664	-0.081	-4.582			
		4:KOMBINASI	-41.954	1.73E 3	0.673	7.260	-0.005	-18.307			
		5:KOMB B. MA	-488.841	920.562	13.371	5.322	-0.090	-16.780			
	15100	1:BEBAN MATI	53.899	-561.736	-0.728	-3.458	-0.005	20.856			
		2:BEBAN HIDL	-14.203	-323.424	0.126	-1.944	0.001	9.240			
		3:BEBAN GEM	422.347	272.114	-12.112	-0.664	-0.097	0.579			
		4:KOMBINASI	41.954	-1.19E 3	-0.673	-7.260	-0.005	39.810			
		5:KOMB B. MA	488.841	-470.071	-13.371	-5.322	-0.106	27.008			
22160	15095	1:BEBAN MATI	-88.761	-646.353	-1.013	-3.570	0.007	-20.096			
		2:BEBAN HIDL	13.399	-332.921	0.176	-1.789	-0.001	-9.250			
		3:BEBAN GEM	250.180	-927.603	10.501	0.686	-0.056	1.898			
		4:KOMBINASI	-85.075	-1.31E 3	-0.933	-7.146	0.006	-38.915			
		5:KOMB B. MA	181.967	-1.82E 3	10.120	-3.923	-0.052	-23.653			
	15092	1:BEBAN MATI	88.761	1.1E 3	1.013	3.570	0.008	7.275			
		2:BEBAN HIDL	-13.399	332.921	-0.176	1.789	-0.001	4.353			
		3:BEBAN GEM	-250.180	927.603	-10.501	-0.686	-0.099	-15.543			
		4:KOMBINASI	85.075	1.85E 3	0.933	7.146	0.008	15.694			
		5:KOMB B. MA	-181.967	2.27E 3	-10.120	3.923	-0.097	-6.434			
22161	15097	1:BEBAN MATI	-72.865	1.11E 3	-0.147	2.523	0.001	-7.153			
		2:BEBAN HIDL	11.573	426.028	-0.172	1.680	0.001	-2.944			
		3:BEBAN GEM	-255.272	-931.391	21.456	0.365	-0.164	-11.907			
		4:KOMBINASI	-68.922	2.01E 3	-0.452	5.714	0.004	-13.294			
		5:KOMB B. MA	-333.958	383.886	22.278	3.914	-0.170	-21.422			
	15095	1:BEBAN MATI	72.865	-655.738	0.147	-2.523	0.001	20.112			
		2:BEBAN HIDL	-11.573	-426.028	0.172	-1.680	0.001	9.211			
		3:BEBAN GEM	255.272	931.391	-21.456	-0.365	-0.151	-1.793			
		4:KOMBINASI	68.922	-1.47E 3	0.452	-5.714	0.003	38.872			
		5:KOMB B. MA	333.958	66.606	-22.278	-3.914	-0.157	23.756			
22162	15100	1:BEBAN MATI	-43.559	-739.570	-0.887	-2.668	0.006	-20.838			
		2:BEBAN HIDL	12.528	-429.405	0.316	-1.447	-0.002	-9.240			
		3:BEBAN GEM	-591.699	-264.148	15.339	-0.436	-0.113	-0.544			
		4:KOMBINASI	-32.226	-1.57E 3	-0.558	-5.517	0.004	-39.789			
		5:KOMB B. MA	-657.326	-1.27E 3	15.409	-3.994	-0.114	-26.952			
	15104	1:BEBAN MATI	43.559	1.19E 3	0.887	2.668	0.007	6.645			
		2:BEBAN HIDL	-12.528	429.405	-0.316	1.447	-0.003	2.923			
		3:BEBAN GEM	591.699	264.148	-15.339	0.436	-0.112	-3.342			
		4:KOMBINASI	32.226	2.12E 3	0.558	5.517	0.004	12.652			
		5:KOMB B. MA	657.326	1.73E 3	-15.409	3.994	-0.113	4.890			
22163	15104	1:BEBAN MATI	-65.439	-2E 3	-5.497	-6.769	0.041	-3.995			
		2:BEBAN HIDL	21.217	-890.057	1.901	-3.543	-0.014	-1.486			
		3:BEBAN GEM	-739.313	-276.930	20.770	-1.937	-0.163	3.723			
		4:KOMBINASI	-44.579	-3.82E 3	-3.555	-13.792	0.026	-7.173			
		5:KOMB B. MA	-828.987	-2.82E 3	17.452	-10.929	-0.139	-0.978			
	14594	1:BEBAN MATI	65.439	2.45E 3	5.497	6.769	0.040	-28.733			
		2:BEBAN HIDL	-21.217	890.057	-1.901	3.543	-0.014	-11.606			
		3:BEBAN GEM	739.313	276.930	-20.770	1.937	-0.143	-7.797			
		4:KOMBINASI	44.579	4.36E 3	3.555	13.792	0.026	-53.050			
		5:KOMB B. MA	828.987	3.27E 3	-17.452	10.929	-0.118	-43.884			



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Job No 1	Sheet No 459	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22164	15107	1:BEBAN MATI	-139.535	-4.23E 3	0.136	0.100	-0.002	-13.441			
		2:BEBAN HIDL	47.222	-2.06E 3	-0.083	0.035	0.001	-8.057			
		3:BEBAN GEM	511.756	-986.626	11.273	0.683	-0.067	14.317			
		4:KOMBINASI	-91.887	-8.38E 3	0.030	0.177	-0.000	-29.021			
		5:KOMB B. MA	426.142	-6.51E 3	11.923	0.838	-0.071	-3.243			
14594	15107	1:BEBAN MATI	139.535	4.68E 3	-0.136	-0.100	-0.000	-52.116			
		2:BEBAN HIDL	-47.222	2.06E 3	0.083	-0.035	0.000	-22.289			
		3:BEBAN GEM	-511.756	986.626	-11.273	-0.683	-0.099	-28.830			
		4:KOMBINASI	91.887	8.92E 3	-0.030	-0.177	0.000	-98.201			
		5:KOMB B. MA	-426.142	6.96E 3	-11.923	-0.838	-0.104	-95.761			
22165	15108	1:BEBAN MATI	-83.912	-1.37E 3	0.054	0.072	-0.000	-38.703			
		2:BEBAN HIDL	28.213	-728.804	-0.031	0.021	0.000	-19.801			
		3:BEBAN GEM	486.936	-817.991	12.381	0.186	-0.086	2.072			
		4:KOMBINASI	-55.553	-2.81E 3	0.015	0.119	-0.000	-78.125			
		5:KOMB B. MA	444.299	-2.67E 3	13.036	0.279	-0.090	-48.408			
	15107	1:BEBAN MATI	83.912	1.82E 3	-0.054	-0.072	-0.000	15.232			
		2:BEBAN HIDL	-28.213	728.804	0.031	-0.021	0.000	9.081			
		3:BEBAN GEM	-486.936	817.991	-12.381	-0.186	-0.096	-14.104			
		4:KOMBINASI	55.553	3.35E 3	-0.015	-0.119	-0.000	32.807			
		5:KOMB B. MA	-444.299	3.12E 3	-13.036	-0.279	-0.102	5.871			
22166	15109	1:BEBAN MATI	-67.532	1.82E 3	-0.022	-0.005	0.000	-14.964			
		2:BEBAN HIDL	22.488	856.369	0.045	-0.014	-0.000	-7.095			
		3:BEBAN GEM	546.915	-827.434	13.643	-0.173	-0.100	-10.524			
		4:KOMBINASI	-45.058	3.56E 3	0.046	-0.028	-0.000	-29.309			
		5:KOMB B. MA	520.222	1.47E 3	14.330	-0.195	-0.105	-30.271			
	15108	1:BEBAN MATI	67.532	-1.37E 3	0.022	0.005	0.000	38.470			
		2:BEBAN HIDL	-22.488	-856.369	-0.045	0.014	-0.000	19.692			
		3:BEBAN GEM	-546.915	827.434	-13.643	0.173	-0.100	-1.648			
		4:KOMBINASI	45.058	-3.02E 3	-0.046	0.028	-0.000	77.672			
		5:KOMB B. MA	-520.222	-1.02E 3	-14.330	0.195	-0.105	48.556			
22167	15111	1:BEBAN MATI	-22.960	1.07E 3	0.907	2.845	-0.007	-5.335			
		2:BEBAN HIDL	3.964	362.941	-0.302	1.586	0.002	-2.296			
		3:BEBAN GEM	-1.23E 3	-242.760	0.405	0.644	-0.020	-3.680			
		4:KOMBINASI	-21.210	1.87E 3	0.605	5.952	-0.005	-10.077			
		5:KOMB B. MA	-1.31E 3	1.04E 3	1.152	4.473	-0.027	-10.577			
	14614	1:BEBAN MATI	22.960	-623.526	-0.907	-2.845	-0.006	17.821			
		2:BEBAN HIDL	-3.964	-362.941	0.302	-1.586	0.002	7.635			
		3:BEBAN GEM	1.23E 3	242.760	-0.405	-0.644	0.014	0.109			
		4:KOMBINASI	21.210	-1.33E 3	-0.605	-5.952	-0.004	33.601			
		5:KOMB B. MA	1.31E 3	-586.393	-1.152	-4.473	0.010	22.516			
22168	15118	1:BEBAN MATI	-47.087	-1.87E 3	-5.388	-6.791	0.040	-2.684			
		2:BEBAN HIDL	11.222	-817.214	1.767	-3.601	-0.013	-0.847			
		3:BEBAN GEM	-927.824	-250.126	9.060	-1.947	-0.074	3.786			
		4:KOMBINASI	-38.549	-3.55E 3	-3.638	-13.912	0.027	-4.576			
		5:KOMB B. MA	-1.01E 3	-2.62E 3	5.185	-10.997	-0.045	0.783			
	14595	1:BEBAN MATI	47.087	2.32E 3	5.388	6.791	0.039	-28.161			
		2:BEBAN HIDL	-11.222	817.214	-1.767	3.601	-0.013	-11.174			
		3:BEBAN GEM	927.824	250.126	-9.060	1.947	-0.059	-7.465			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	38.549	4.09E 3	3.638	13.912	0.026	-51.672			
		5:KOMB B. MA	1.01E 3	3.08E 3	-5.185	10.997	-0.031	-42.704			
22169	15121	1:BEBAN MATI	-139.535	-4.23E 3	-0.136	-0.100	0.002	-13.441			
		2:BEBAN HIDL	47.222	-2.06E 3	0.083	-0.035	-0.001	-8.057			
		3:BEBAN GEM	512.079	-980.794	-17.151	0.691	0.117	14.333			
		4:KOMBINASI	-91.887	-8.38E 3	-0.030	-0.177	0.000	-29.021			
		5:KOMB B. MA	426.481	-6.5E 3	-18.094	0.604	0.124	-3.226			
	14595	1:BEBAN MATI	139.535	4.68E 3	0.136	0.100	0.000	-52.116			
		2:BEBAN HIDL	-47.222	2.06E 3	-0.083	0.035	-0.000	-22.289			
		3:BEBAN GEM	-512.079	980.794	17.151	-0.691	0.135	-28.761			
		4:KOMBINASI	91.887	8.92E 3	0.030	0.177	-0.000	-98.201			
		5:KOMB B. MA	-426.481	6.95E 3	18.094	-0.604	0.142	-95.688			
22170	15122	1:BEBAN MATI	-83.912	-1.37E 3	-0.054	-0.072	0.000	-38.703			
		2:BEBAN HIDL	28.213	-728.804	0.031	-0.021	-0.000	-19.801			
		3:BEBAN GEM	497.965	-816.710	-16.086	0.190	0.110	2.102			
		4:KOMBINASI	-55.553	-2.81E 3	-0.015	-0.119	0.000	-78.125			
		5:KOMB B. MA	455.879	-2.67E 3	-16.926	0.115	0.116	-48.377			
	15121	1:BEBAN MATI	83.912	1.82E 3	0.054	0.072	0.000	15.232			
		2:BEBAN HIDL	-28.213	728.804	-0.031	0.021	-0.000	9.081			
		3:BEBAN GEM	-497.965	816.710	16.086	-0.190	0.126	-14.115			
		4:KOMBINASI	55.553	3.35E 3	0.015	0.119	0.000	32.807			
		5:KOMB B. MA	-455.879	3.12E 3	16.926	-0.115	0.133	5.859			
22171	15123	1:BEBAN MATI	-67.532	1.82E 3	0.022	0.005	-0.000	-14.964			
		2:BEBAN HIDL	22.488	856.369	-0.045	0.014	0.000	-7.095			
		3:BEBAN GEM	568.998	-828.715	-15.510	-0.173	0.113	-10.514			
		4:KOMBINASI	-45.058	3.56E 3	-0.046	0.028	0.000	-29.309			
		5:KOMB B. MA	543.409	1.47E 3	-16.291	-0.168	0.118	-30.260			
	15122	1:BEBAN MATI	67.532	-1.37E 3	-0.022	-0.005	-0.000	38.470			
		2:BEBAN HIDL	-22.488	-856.369	0.045	-0.014	0.000	19.692			
		3:BEBAN GEM	-568.998	828.715	15.510	0.173	0.115	-1.677			
		4:KOMBINASI	45.058	-3.02E 3	0.046	-0.028	0.000	77.672			
		5:KOMB B. MA	-543.409	-1.02E 3	16.291	0.168	0.121	48.525			
22172	15125	1:BEBAN MATI	-43.559	1.19E 3	0.887	2.668	-0.007	-6.645			
		2:BEBAN HIDL	12.528	429.405	-0.316	1.447	0.003	-2.923			
		3:BEBAN GEM	-564.782	-264.146	-15.502	0.613	0.113	-3.641			
		4:KOMBINASI	-32.226	2.12E 3	0.558	5.517	-0.004	-12.652			
		5:KOMB B. MA	-629.063	1.17E 3	-15.580	4.180	0.114	-12.222			
	15130	1:BEBAN MATI	43.559	-739.570	-0.887	-2.668	-0.006	20.838			
		2:BEBAN HIDL	-12.528	-429.405	0.316	-1.447	0.002	9.240			
		3:BEBAN GEM	564.782	264.146	15.502	-0.613	0.115	-0.245			
		4:KOMBINASI	32.226	-1.57E 3	-0.558	-5.517	-0.004	39.789			
		5:KOMB B. MA	629.063	-719.860	15.580	-4.180	0.116	26.124			
22173	15128	1:BEBAN MATI	-20.821	3.06E 3	0.109	0.605	-0.000	-12.627			
		2:BEBAN HIDL	13.946	808.601	0.082	0.484	-0.001	-4.750			
		3:BEBAN GEM	-1.42E 3	-209.994	12.136	1.016	-0.086	-3.248			
		4:KOMBINASI	-2.671	4.96E 3	0.262	1.501	-0.002	-22.753			
		5:KOMB B. MA	-1.5E 3	3.32E 3	12.901	1.962	-0.091	-18.887			
	14609	1:BEBAN MATI	20.821	-1.37E 3	-0.109	-0.605	-0.001	45.209			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-13.946	-808.601	-0.082	-0.484	-0.000	16.645			
		3:BEBAN GEM	1.42E 3	209.994	-12.136	-1.016	-0.092	0.159			
		4:KOMBINASI	2.671	-2.94E 3	-0.262	-1.501	-0.002	80.882			
		5:KOMB B. MA	1.5E 3	-1.64E 3	-12.901	-1.962	-0.098	55.362			
22174	15130	1:BEBAN MATI	-53.899	-561.735	-0.728	-3.458	0.005	-20.856			
		2:BEBAN HIDL	14.203	-323.424	0.126	-1.944	-0.001	-9.240			
		3:BEBAN GEM	-251.930	-257.488	-12.425	-0.488	0.106	0.299			
		4:KOMBINASI	-41.954	-1.19E 3	-0.673	-7.260	0.005	-39.810			
		5:KOMB B. MA	-309.903	-1.03E 3	-13.700	-5.137	0.116	-26.086			
	15134	1:BEBAN MATI	53.899	1.01E 3	0.728	3.458	0.006	9.279			
		2:BEBAN HIDL	-14.203	323.424	-0.126	1.944	-0.001	4.482			
		3:BEBAN GEM	251.930	257.488	12.425	0.488	0.077	-4.086			
		4:KOMBINASI	41.954	1.73E 3	0.673	7.260	0.005	18.307			
		5:KOMB B. MA	309.903	1.48E 3	13.700	5.137	0.086	7.678			
22175	15134	1:BEBAN MATI	-100.025	-2.02E 3	-3.926	-8.209	0.031	-6.689			
		2:BEBAN HIDL	25.211	-881.344	0.805	-4.353	-0.006	-3.051			
		3:BEBAN GEM	-3.405	-274.955	-2.064	-2.030	0.011	4.480			
		4:KOMBINASI	-79.692	-3.83E 3	-3.423	-16.816	0.028	-12.909			
		5:KOMB B. MA	-88.474	-2.83E 3	-5.610	-12.952	0.039	-3.816			
	14596	1:BEBAN MATI	100.025	2.47E 3	3.926	8.209	0.027	-26.294			
		2:BEBAN HIDL	-25.211	881.344	-0.805	4.353	-0.006	-9.914			
		3:BEBAN GEM	3.405	274.955	2.064	2.030	0.019	-8.524			
		4:KOMBINASI	79.692	4.37E 3	3.423	16.816	0.023	-47.414			
		5:KOMB B. MA	88.474	3.28E 3	5.610	12.952	0.043	-41.192			
22176	15137	1:BEBAN MATI	-27.494	-4.53E 3	1.151	2.146	-0.010	-15.758			
		2:BEBAN HIDL	25.259	-1.76E 3	0.065	1.413	-0.000	-5.794			
		3:BEBAN GEM	-1.85E 3	-299.340	31.746	-2.660	-0.235	3.369			
		4:KOMBINASI	7.422	-8.26E 3	1.485	4.836	-0.012	-28.181			
		5:KOMB B. MA	-1.95E 3	-5.9E 3	34.524	0.201	-0.257	-15.698			
	14589	1:BEBAN MATI	27.494	6.22E 3	-1.151	-2.146	-0.007	-63.339			
		2:BEBAN HIDL	-25.259	1.76E 3	-0.065	-1.413	-0.001	-20.096			
		3:BEBAN GEM	1.85E 3	299.340	-31.746	2.660	-0.232	-7.772			
		4:KOMBINASI	-7.422	10.3E 3	-1.485	-4.836	-0.010	-108.161			
		5:KOMB B. MA	1.95E 3	7.59E 3	-34.524	-0.201	-0.251	-83.558			
22177	15138	1:BEBAN MATI	-143.366	-2.1E 3	4.077	8.151	-0.028	-4.665			
		2:BEBAN HIDL	24.013	-897.574	-0.849	4.256	0.006	-2.967			
		3:BEBAN GEM	491.167	-947.347	-18.607	0.877	0.100	14.987			
		4:KOMBINASI	-133.618	-3.95E 3	3.534	16.590	-0.024	-10.345			
		5:KOMB B. MA	386.767	-3.63E 3	-15.969	11.625	0.081	9.292			
	14596	1:BEBAN MATI	143.366	2.55E 3	-4.077	-8.151	-0.032	-29.520			
		2:BEBAN HIDL	-24.013	897.574	0.849	-4.256	0.006	-10.236			
		3:BEBAN GEM	-491.167	947.347	18.607	-0.877	0.173	-28.923			
		4:KOMBINASI	133.618	4.5E 3	-3.534	-16.590	-0.028	-51.802			
		5:KOMB B. MA	-386.767	4.08E 3	15.969	-11.625	0.154	-66.031			
22178	15139	1:BEBAN MATI	-88.761	-646.353	1.013	3.570	-0.007	-20.096			
		2:BEBAN HIDL	13.399	-332.921	-0.176	1.789	0.001	-9.250			
		3:BEBAN GEM	105.722	-880.306	-11.997	-0.077	0.066	1.804			
		4:KOMBINASI	-85.075	-1.31E 3	0.933	7.146	-0.006	-38.915			



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Job No

1

Sheet No

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Rev

Part

1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	30.287	-1.77E 3	-11.690	4.563	0.064	-23.752			
	15138	1:BEBAN MATI	88.761	1.1E 3	-1.013	-3.570	-0.008	7.275			
		2:BEBAN HIDL	-13.399	332.921	0.176	-1.789	0.001	4.353			
		3:BEBAN GEM	-105.722	880.306	11.997	0.077	0.110	-14.753			
		4:KOMBINASI	85.075	1.85E 3	-0.933	-7.146	-0.008	15.694			
		5:KOMB B. MA	-30.287	2.22E 3	11.690	-4.563	0.108	-5.604			
22179	15140	1:BEBAN MATI	-72.865	1.11E 3	0.147	-2.523	-0.001	-7.153			
		2:BEBAN HIDL	11.573	426.028	0.172	-1.680	-0.001	-2.944			
		3:BEBAN GEM	-488.361	-886.410	-22.499	-0.347	0.175	-11.418			
		4:KOMBINASI	-68.922	2.01E 3	0.452	-5.714	-0.004	-13.294			
		5:KOMB B. MA	-578.701	431.115	-23.374	-3.895	0.182	-20.908			
	15139	1:BEBAN MATI	72.865	-655.737	-0.147	2.523	-0.001	20.112			
		2:BEBAN HIDL	-11.573	-426.028	-0.172	1.680	-0.001	9.211			
		3:BEBAN GEM	488.361	886.410	22.499	0.347	0.156	-1.621			
		4:KOMBINASI	68.922	-1.47E 3	-0.452	5.714	-0.003	38.872			
		5:KOMB B. MA	578.701	19.377	23.374	3.895	0.162	23.936			
22180	15141	1:BEBAN MATI	20.491	-2.2E 3	-0.903	4.837	0.010	-7.478			
		2:BEBAN HIDL	4.944	-568.076	-0.730	2.819	0.006	-1.325			
		3:BEBAN GEM	269.717	-392.583	7.653	-1.708	-0.101	4.640			
		4:KOMBINASI	32.499	-3.55E 3	-2.252	10.315	0.022	-11.093			
		5:KOMB B. MA	306.660	-2.95E 3	6.695	4.735	-0.093	-3.402			
	14551	1:BEBAN MATI	-20.491	3.55E 3	0.903	-4.837	0.001	-26.373			
		2:BEBAN HIDL	-4.944	568.076	0.730	-2.819	0.002	-5.360			
		3:BEBAN GEM	-269.717	392.583	-7.653	1.708	0.011	-9.260			
		4:KOMBINASI	-32.499	5.17E 3	2.252	-10.315	0.005	-40.224			
		5:KOMB B. MA	-306.660	4.3E 3	-6.695	-4.735	0.014	-39.311			
22181	15143	1:BEBAN MATI	49.266	3.65E 3	-0.024	-3.255	-0.001	11.282			
		2:BEBAN HIDL	26.771	747.673	0.423	-2.446	-0.002	2.678			
		3:BEBAN GEM	-548.970	-941.981	-7.977	-0.603	0.048	-22.053			
		4:KOMBINASI	101.954	5.58E 3	0.647	-7.819	-0.004	17.824			
		5:KOMB B. MA	-511.090	3.11E 3	-8.147	-5.356	0.049	-10.266			
	15150	1:BEBAN MATI	-49.266	-2.81E 3	0.024	3.255	0.001	12.495			
		2:BEBAN HIDL	-26.771	-747.673	-0.423	2.446	-0.001	2.821			
		3:BEBAN GEM	548.970	941.981	7.977	0.603	0.010	15.125			
		4:KOMBINASI	-101.954	-4.57E 3	-0.647	7.819	-0.001	19.508			
		5:KOMB B. MA	511.090	-2.27E 3	8.147	5.356	0.011	30.069			
22182	15144	1:BEBAN MATI	9.535	-256.515	-0.515	1.643	0.002	-19.734			
		2:BEBAN HIDL	-0.048	-223.051	-0.215	1.339	0.002	-4.710			
		3:BEBAN GEM	220.618	-348.157	2.523	-0.665	-0.024	0.727			
		4:KOMBINASI	11.365	-664.699	-0.962	4.114	0.005	-31.217			
		5:KOMB B. MA	241.155	-755.910	2.006	1.748	-0.022	-21.797			
	15141	1:BEBAN MATI	-9.535	1.61E 3	0.515	-1.643	0.004	8.769			
		2:BEBAN HIDL	0.048	223.051	0.215	-1.339	0.001	2.086			
		3:BEBAN GEM	-220.618	348.157	-2.523	0.665	-0.006	-4.824			
		4:KOMBINASI	-11.365	2.29E 3	0.962	-4.114	0.006	13.860			
		5:KOMB B. MA	-241.155	2.11E 3	-2.006	-1.748	-0.002	4.955			
22183	15146	1:BEBAN MATI	0.031	1.8E 3	-1.320	-1.590	0.009	-6.425			
		2:BEBAN HIDL	1.128	241.975	0.499	-0.591	-0.003	-1.928			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	115.135	-351.407	-4.493	0.403	0.026	-3.474			
		4:KOMBINASI	1.842	2.55E 3	-0.787	-2.853	0.006	-10.795			
		5:KOMB B. MA	121.599	1.58E 3	-5.739	-1.521	0.035	-11.230			
	15144	1:BEBAN MATI	-0.031	-454.448	1.320	1.590	0.007	19.719			
		2:BEBAN HIDL	-1.128	-241.975	-0.499	0.591	-0.003	4.776			
		3:BEBAN GEM	-115.135	351.407	4.493	-0.403	0.026	-0.662			
		4:KOMBINASI	-1.842	-932.498	0.787	2.853	0.004	31.304			
		5:KOMB B. MA	-121.599	-230.656	5.739	1.521	0.033	21.890			
22184	15148	1:BEBAN MATI	-100.061	3.88E 3	-0.041	0.217	-0.001	14.111			
		2:BEBAN HIDL	39.904	1.66E 3	0.025	-0.063	-0.000	6.034			
		3:BEBAN GEM	-333.303	-900.068	3.639	-0.616	-0.014	-21.173			
		4:KOMBINASI	-56.226	7.3E 3	-0.009	0.160	-0.001	26.587			
		5:KOMB B. MA	-426.086	3.92E 3	3.795	-0.468	-0.015	-4.500			
	15153	1:BEBAN MATI	100.061	-3.65E 3	0.041	-0.217	0.001	13.563			
		2:BEBAN HIDL	-39.904	-1.66E 3	-0.025	0.063	-0.000	6.147			
		3:BEBAN GEM	333.303	900.068	-3.639	0.616	-0.013	14.553			
		4:KOMBINASI	56.226	-7.03E 3	0.009	-0.160	0.001	26.111			
		5:KOMB B. MA	426.086	-3.7E 3	-3.795	0.468	-0.012	32.531			
22185	15150	1:BEBAN MATI	39.684	2.4E 3	-0.296	-1.918	0.000	-13.528			
		2:BEBAN HIDL	21.845	477.685	0.305	-1.613	-0.001	-3.230			
		3:BEBAN GEM	-485.714	-913.534	-5.953	-0.683	0.032	-15.096			
		4:KOMBINASI	82.573	3.64E 3	0.133	-4.882	-0.001	-21.402			
		5:KOMB B. MA	-457.208	1.73E 3	-6.364	-3.603	0.033	-31.317			
	15155	1:BEBAN MATI	-39.684	-1.56E 3	0.296	1.918	0.002	28.075			
		2:BEBAN HIDL	-21.845	-477.685	-0.305	1.613	-0.001	6.744			
		3:BEBAN GEM	485.714	913.534	5.953	0.683	0.012	8.377			
		4:KOMBINASI	-82.573	-2.63E 3	-0.133	4.882	0.000	44.480			
		5:KOMB B. MA	457.208	-883.256	6.364	3.603	0.013	40.917			
22186	15153	1:BEBAN MATI	-77.207	2.59E 3	0.032	0.183	-0.001	-14.737			
		2:BEBAN HIDL	30.246	1.07E 3	0.024	-0.043	-0.000	-6.556			
		3:BEBAN GEM	-280.081	-832.207	3.116	-0.438	-0.008	-14.208			
		4:KOMBINASI	-44.254	4.82E 3	0.077	0.150	-0.001	-28.174			
		5:KOMB B. MA	-353.144	2.36E 3	3.318	-0.303	-0.009	-33.589			
	15158	1:BEBAN MATI	77.207	-2.36E 3	-0.032	-0.183	0.000	32.957			
		2:BEBAN HIDL	-30.246	-1.07E 3	-0.024	0.043	-0.000	14.443			
		3:BEBAN GEM	280.081	832.207	-3.116	0.438	-0.015	8.087			
		4:KOMBINASI	44.254	-4.55E 3	-0.077	-0.150	0.000	62.657			
		5:KOMB B. MA	353.144	-2.13E 3	-3.318	0.303	-0.015	50.115			
22187	15155	1:BEBAN MATI	31.761	1.17E 3	-0.119	-0.974	-0.000	-28.787			
		2:BEBAN HIDL	19.184	221.781	0.152	-0.911	-0.000	-7.056			
		3:BEBAN GEM	-445.050	-913.218	-2.870	-0.654	0.021	-8.311			
		4:KOMBINASI	68.808	1.76E 3	0.100	-2.627	-0.001	-45.835			
		5:KOMB B. MA	-424.031	343.994	-3.041	-2.207	0.022	-41.748			
	14600	1:BEBAN MATI	-31.761	-325.808	0.119	0.974	0.001	34.287			
		2:BEBAN HIDL	-19.184	-221.781	-0.152	0.911	-0.001	8.687			
		3:BEBAN GEM	445.050	913.218	2.870	0.654	0.000	1.595			
		4:KOMBINASI	-68.808	-745.820	-0.100	2.627	0.000	55.045			
		5:KOMB B. MA	424.031	500.002	3.041	2.207	0.001	41.174			



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Job No 1	Sheet No 464	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22188	15158	1:BEBAN MATI	-64.468	1.45E 3	0.503	0.114	-0.002	-34.162			
		2:BEBAN HIDL	24.756	579.174	0.009	-0.033	-0.000	-14.898			
		3:BEBAN GEM	-258.920	-810.470	5.679	-0.282	-0.011	-7.677			
		4:KOMBINASI	-37.752	2.66E 3	0.617	0.084	-0.002	-64.830			
		5:KOMB B. MA	-321.481	943.192	6.471	-0.202	-0.013	-51.161			
	14652	1:BEBAN MATI	64.468	-1.22E 3	-0.503	-0.114	-0.002	43.974			
		2:BEBAN HIDL	-24.756	-579.174	-0.009	0.033	0.000	19.157			
		3:BEBAN GEM	258.920	810.470	-5.679	0.282	-0.031	1.716			
		4:KOMBINASI	37.752	-2.39E 3	-0.617	-0.084	-0.002	83.420			
		5:KOMB B. MA	321.481	-717.946	-6.471	0.202	-0.034	57.270			
22189	15159	1:BEBAN MATI	-1.440	-647.680	-0.344	-0.144	0.001	-7.011			
		2:BEBAN HIDL	-0.297	-392.540	-0.027	0.010	0.000	-3.415			
		3:BEBAN GEM	32.400	1.118	0.862	0.103	-0.003	0.657			
		4:KOMBINASI	-2.204	-1.41E 3	-0.456	-0.157	0.002	-13.877			
		5:KOMB B. MA	32.401	-882.030	0.545	-0.030	-0.001	-8.370			
	14600	1:BEBAN MATI	1.440	878.332	0.344	0.144	0.003	-1.968			
		2:BEBAN HIDL	0.297	392.540	0.027	-0.010	0.000	-1.204			
		3:BEBAN GEM	-32.400	-1.118	-0.862	-0.103	-0.007	-0.644			
		4:KOMBINASI	2.204	1.68E 3	0.456	0.157	0.003	-4.289			
		5:KOMB B. MA	-32.401	1.11E 3	-0.545	0.030	-0.005	-3.367			
22190	15160	1:BEBAN MATI	-1.029	-130.107	-0.339	-0.070	0.002	-11.431			
		2:BEBAN HIDL	0.844	-143.095	-0.009	0.012	0.000	-5.955			
		3:BEBAN GEM	55.877	-31.201	-0.243	0.089	-0.000	0.220			
		4:KOMBINASI	0.116	-385.081	-0.421	-0.065	0.002	-23.245			
		5:KOMB B. MA	58.148	-248.726	-0.600	0.030	0.002	-14.773			
	15159	1:BEBAN MATI	1.029	360.759	0.339	0.070	0.002	8.542			
		2:BEBAN HIDL	-0.844	143.095	0.009	-0.012	-0.000	4.271			
		3:BEBAN GEM	-55.877	31.201	0.243	-0.089	0.003	-0.587			
		4:KOMBINASI	-0.116	661.864	0.421	0.065	0.003	17.085			
		5:KOMB B. MA	-58.148	479.378	0.600	-0.030	0.005	10.489			
22191	15161	1:BEBAN MATI	0.273	794.921	-0.426	0.110	0.003	-3.248			
		2:BEBAN HIDL	0.943	320.758	-0.002	0.038	0.000	-2.106			
		3:BEBAN GEM	92.850	-26.709	-0.949	-0.077	0.005	-0.134			
		4:KOMBINASI	1.837	1.47E 3	-0.514	0.192	0.003	-7.268			
		5:KOMB B. MA	98.331	959.331	-1.424	0.052	0.007	-4.653			
	15160	1:BEBAN MATI	-0.273	-564.269	0.426	-0.110	0.002	11.246			
		2:BEBAN HIDL	-0.943	-320.758	0.002	-0.038	-0.000	5.881			
		3:BEBAN GEM	-92.850	26.709	0.949	0.077	0.006	-0.180			
		4:KOMBINASI	-1.837	-1.19E 3	0.514	-0.192	0.003	22.904			
		5:KOMB B. MA	-98.331	-728.679	1.424	-0.052	0.009	14.585			
22192	15163	1:BEBAN MATI	13.857	-1.96E 3	0.100	2.164	-0.002	-24.768			
		2:BEBAN HIDL	18.276	-568.743	-0.026	1.337	0.000	-6.025			
		3:BEBAN GEM	-336.572	-905.526	-3.832	0.234	0.021	5.305			
		4:KOMBINASI	45.871	-3.26E 3	0.079	4.735	-0.002	-39.360			
		5:KOMB B. MA	-328.578	-3.25E 3	-3.939	3.211	0.020	-22.812			
	15168	1:BEBAN MATI	-13.857	2.8E 3	-0.100	-2.164	0.001	7.276			
		2:BEBAN HIDL	-18.276	568.743	0.026	-1.337	-0.000	1.842			
		3:BEBAN GEM	336.572	905.526	3.832	-0.234	0.007	-11.965			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 465	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-45.871	4.27E 3	-0.079	-4.735	0.001	11.677			
		5:KOMB B. MA	328.578	4.09E 3	3.939	-3.211	0.009	-4.183			
22193	15166	1:BEBAN MATI	-53.070	-2.83E 3	0.019	-0.159	-0.001	-29.009			
		2:BEBAN HIDL	19.528	-1.24E 3	-0.130	0.037	0.000	-12.929			
		3:BEBAN GEM	-235.628	-832.900	-3.109	0.425	0.020	5.005			
		4:KOMBINASI	-32.439	-5.39E 3	-0.185	-0.130	0.000	-55.497			
		5:KOMB B. MA	-288.762	-4.45E 3	-3.324	0.310	0.020	-31.511			
	15171	1:BEBAN MATI	53.070	3.06E 3	-0.019	0.159	0.000	7.335			
		2:BEBAN HIDL	-19.528	1.24E 3	0.130	-0.037	0.001	3.801			
		3:BEBAN GEM	235.628	832.900	3.109	-0.425	0.003	-11.131			
		4:KOMBINASI	32.439	5.66E 3	0.185	0.130	0.001	14.883			
		5:KOMB B. MA	288.762	4.68E 3	3.324	-0.310	0.004	-2.072			
22194	15168	1:BEBAN MATI	1.941	-3.13E 3	0.273	3.109	-0.004	-6.133			
		2:BEBAN HIDL	19.537	-798.359	-0.067	2.021	0.001	-1.407			
		3:BEBAN GEM	-247.979	-933.437	-4.910	0.635	0.023	12.270			
		4:KOMBINASI	33.588	-5.03E 3	0.221	6.964	-0.003	-9.611			
		5:KOMB B. MA	-246.715	-4.59E 3	-4.922	4.988	0.021	5.906			
	15173	1:BEBAN MATI	-1.941	3.97E 3	-0.273	-3.109	0.002	-19.983			
		2:BEBAN HIDL	-19.537	798.359	0.067	-2.021	-0.000	-4.465			
		3:BEBAN GEM	247.979	933.437	4.910	-0.635	0.013	-19.135			
		4:KOMBINASI	-33.588	6.04E 3	-0.221	-6.964	0.002	-31.123			
		5:KOMB B. MA	246.715	5.43E 3	4.922	-4.988	0.015	-42.754			
22195	15171	1:BEBAN MATI	-51.262	-3.95E 3	-0.040	-0.164	0.000	-6.028			
		2:BEBAN HIDL	18.825	-1.75E 3	-0.146	0.055	0.001	-3.248			
		3:BEBAN GEM	-189.678	-915.314	-6.405	0.594	0.033	11.470			
		4:KOMBINASI	-31.396	-7.54E 3	-0.282	-0.108	0.001	-12.431			
		5:KOMB B. MA	-239.129	-5.96E 3	-6.853	0.493	0.036	4.066			
	15176	1:BEBAN MATI	51.262	4.17E 3	0.040	0.164	-0.000	-23.824			
		2:BEBAN HIDL	-18.825	1.75E 3	0.146	-0.055	0.001	-9.640			
		3:BEBAN GEM	189.678	915.314	6.405	-0.594	0.014	-18.202			
		4:KOMBINASI	31.396	7.81E 3	0.282	0.108	0.001	-44.013			
		5:KOMB B. MA	239.129	6.18E 3	6.853	-0.493	0.015	-48.720			
22196	15173	1:BEBAN MATI	-22.041	-4.19E 3	8.429	4.092	-0.024	21.407			
		2:BEBAN HIDL	23.829	-926.570	-1.916	2.494	0.005	5.021			
		3:BEBAN GEM	-93.869	-1.01E 3	-26.069	1.323	0.059	19.443			
		4:KOMBINASI	11.677	-6.51E 3	7.049	8.900	-0.020	33.722			
		5:KOMB B. MA	-106.306	-5.81E 3	-20.093	6.978	0.041	44.835			
	14554	1:BEBAN MATI	22.041	5.03E 3	-8.429	-4.092	-0.038	-55.335			
		2:BEBAN HIDL	-23.829	926.570	1.916	-2.494	0.009	-11.836			
		3:BEBAN GEM	93.869	1.01E 3	26.069	-1.323	0.133	-26.909			
		4:KOMBINASI	-11.677	7.52E 3	-7.049	-8.900	-0.032	-85.340			
		5:KOMB B. MA	106.306	6.66E 3	20.093	-6.978	0.107	-90.691			
22197	15176	1:BEBAN MATI	-52.227	-4.97E 3	-0.153	-0.147	0.002	25.160			
		2:BEBAN HIDL	19.583	-2.17E 3	-0.144	0.073	0.001	10.217			
		3:BEBAN GEM	-82.384	-1.11E 3	-19.833	0.898	0.074	18.402			
		4:KOMBINASI	-31.340	-9.45E 3	-0.414	-0.060	0.003	46.539			
		5:KOMB B. MA	-126.981	-7.45E 3	-21.064	0.839	0.080	50.612			
	14582	1:BEBAN MATI	52.227	5.2E 3	0.153	0.147	-0.001	-62.563			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

466

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-19.583	2.17E 3	0.144	-0.073	0.001	-26.208			
		3:BEBAN GEM	82.384	1.11E 3	19.833	-0.898	0.072	-26.590			
		4:KOMBINASI	31.340	9.72E 3	0.414	0.060	0.000	-117.008			
		5:KOMB B. MA	126.981	7.67E 3	21.064	-0.839	0.075	-106.207			
22198	15177	1:BEBAN MATI	-75.455	-2.93E 3	-0.349	-0.052	0.002	-9.068			
		2:BEBAN HIDL	15.043	-1.34E 3	0.005	-0.043	-0.000	-3.539			
		3:BEBAN GEM	185.059	-390.762	15.100	-2.248	-0.108	4.422			
		4:KOMBINASI	-66.478	-5.66E 3	-0.411	-0.132	0.002	-16.545			
		5:KOMB B. MA	127.883	-4.14E 3	15.509	-2.439	-0.112	-6.548			
	14554	1:BEBAN MATI	75.455	3.29E 3	0.349	0.052	0.002	-27.537			
		2:BEBAN HIDL	-15.043	1.34E 3	-0.005	0.043	0.000	-12.197			
		3:BEBAN GEM	-185.059	390.762	-15.100	2.248	-0.070	-9.021			
		4:KOMBINASI	66.478	6.09E 3	0.411	0.132	0.003	-52.560			
		5:KOMB B. MA	-127.883	4.5E 3	-15.509	2.439	-0.071	-44.327			
22199	15178	1:BEBAN MATI	-41.265	-810.819	-0.334	-0.016	0.002	-21.606			
		2:BEBAN HIDL	7.502	-485.898	-0.003	-0.025	0.000	-9.910			
		3:BEBAN GEM	177.070	-320.582	7.402	-0.672	-0.039	0.594			
		4:KOMBINASI	-37.514	-1.75E 3	-0.406	-0.059	0.002	-41.783			
		5:KOMB B. MA	149.160	-1.44E 3	7.436	-0.736	-0.039	-26.929			
	15177	1:BEBAN MATI	41.265	1.17E 3	0.334	0.016	0.002	9.944			
		2:BEBAN HIDL	-7.502	485.898	0.003	0.025	0.000	4.192			
		3:BEBAN GEM	-177.070	320.582	-7.402	0.672	-0.049	-4.366			
		4:KOMBINASI	37.514	2.18E 3	0.406	0.059	0.003	18.640			
		5:KOMB B. MA	-149.160	1.8E 3	-7.436	0.736	-0.049	7.875			
22200	15179	1:BEBAN MATI	-26.142	1.32E 3	-0.136	0.053	0.001	-8.107			
		2:BEBAN HIDL	4.254	483.340	-0.110	-0.001	0.001	-4.196			
		3:BEBAN GEM	210.076	-309.074	-0.144	0.603	0.005	-3.196			
		4:KOMBINASI	-24.564	2.36E 3	-0.339	0.062	0.002	-16.442			
		5:KOMB B. MA	196.990	1.29E 3	-0.354	0.686	0.007	-13.981			
	15178	1:BEBAN MATI	26.142	-961.950	0.136	-0.053	0.001	21.548			
		2:BEBAN HIDL	-4.254	-483.340	0.110	0.001	0.001	9.884			
		3:BEBAN GEM	-210.076	309.074	0.144	-0.603	-0.004	-0.441			
		4:KOMBINASI	24.564	-1.93E 3	0.339	-0.062	0.002	41.672			
		5:KOMB B. MA	-196.990	-927.426	0.354	-0.686	-0.003	27.016			
22201	15180	1:BEBAN MATI	-28.224	-988.323	5.378	0.707	-0.031	-6.097			
		2:BEBAN HIDL	7.676	-229.690	-2.712	0.406	0.016	-1.379			
		3:BEBAN GEM	-167.691	-401.050	19.169	-1.474	-0.098	1.205			
		4:KOMBINASI	-21.587	-1.55E 3	2.115	1.498	-0.012	-9.523			
		5:KOMB B. MA	-199.694	-1.55E 3	23.878	-0.597	-0.124	-5.659			
	14547	1:BEBAN MATI	28.224	2.34E 3	-5.378	-0.707	-0.033	-13.479			
		2:BEBAN HIDL	-7.676	229.690	2.712	-0.406	0.016	-1.324			
		3:BEBAN GEM	167.691	401.050	-19.169	1.474	-0.128	-5.924			
		4:KOMBINASI	21.587	3.17E 3	-2.115	-1.498	-0.013	-18.294			
		5:KOMB B. MA	199.694	2.9E 3	-23.878	0.597	-0.157	-20.494			
22202	15182	1:BEBAN MATI	-59.263	2.71E 3	6.588	3.437	-0.017	2.171			
		2:BEBAN HIDL	36.201	1.17E 3	1.673	1.695	-0.005	0.870			
		3:BEBAN GEM	-259.726	-840.860	-28.071	-0.901	0.098	-18.581			
		4:KOMBINASI	-13.195	5.12E 3	10.583	6.837	-0.027	3.997			



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Job No 1	Sheet No 467	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-310.255	2.53E 3	-21.883	3.508	0.083	-16.817			
	15363	1:BEBAN MATI	59.263	-2.56E 3	-6.588	-3.437	-0.016	10.736			
		2:BEBAN HIDL	-36.201	-1.17E 3	-1.673	-1.695	-0.003	4.873			
		3:BEBAN GEM	259.726	840.860	28.071	0.901	0.040	14.458			
		4:KOMBINASI	13.195	-4.94E 3	-10.583	-6.837	-0.024	20.680			
		5:KOMB B. MA	310.255	-2.38E 3	21.883	-3.508	0.024	28.841			
22203	15183	1:BEBAN MATI	-8.162	773.241	0.323	-1.008	-0.002	-5.389			
		2:BEBAN HIDL	-2.524	60.343	-0.467	-0.679	0.003	-0.902			
		3:BEBAN GEM	-101.112	-345.845	-2.400	-0.385	0.027	-2.721			
		4:KOMBINASI	-13.833	1.02E 3	-0.360	-2.296	0.002	-7.909			
		5:KOMB B. MA	-115.844	446.309	-2.477	-1.820	0.028	-8.786			
	15180	1:BEBAN MATI	8.162	577.150	-0.323	1.008	-0.002	6.543			
		2:BEBAN HIDL	2.524	-60.343	0.467	0.679	0.003	1.612			
		3:BEBAN GEM	101.112	345.845	2.400	0.385	0.002	-1.349			
		4:KOMBINASI	13.833	596.032	0.360	2.296	0.002	10.430			
		5:KOMB B. MA	115.844	904.082	2.477	1.820	0.001	6.093			
22204	15185	1:BEBAN MATI	-33.740	1.03E 3	-0.369	-1.526	0.002	-2.901			
		2:BEBAN HIDL	-2.777	112.778	-0.132	-0.024	0.000	-0.417			
		3:BEBAN GEM	-692.387	-2.23E 3	-1.101	0.333	-0.021	-14.817			
		4:KOMBINASI	-44.931	1.42E 3	-0.654	-1.870	0.003	-4.149			
		5:KOMB B. MA	-762.413	-1.25E 3	-1.604	-1.191	-0.020	-18.710			
	15189	1:BEBAN MATI	33.740	94.439	0.369	1.526	0.001	7.493			
		2:BEBAN HIDL	2.777	-112.778	0.132	0.024	0.001	1.523			
		3:BEBAN GEM	692.387	2.23E 3	1.101	-0.333	0.032	-7.097			
		4:KOMBINASI	44.931	-67.118	0.654	1.870	0.003	11.429			
		5:KOMB B. MA	762.413	2.37E 3	1.604	1.191	0.035	0.955			
22205	15187	1:BEBAN MATI	-42.472	1.57E 3	16.291	2.582	-0.024	-21.284			
		2:BEBAN HIDL	26.717	674.369	3.063	1.357	-0.005	-9.504			
		3:BEBAN GEM	-157.585	-777.599	-141.716	-0.769	0.275	-10.075			
		4:KOMBINASI	-8.219	2.96E 3	24.450	5.271	-0.037	-40.747			
		5:KOMB B. MA	-191.906	1.15E 3	-130.673	2.590	0.261	-37.565			
	15367	1:BEBAN MATI	42.472	-1.49E 3	-16.291	-2.582	-0.016	25.032			
		2:BEBAN HIDL	-26.717	-674.369	-3.063	-1.357	-0.003	11.157			
		3:BEBAN GEM	157.585	777.599	141.716	0.769	0.073	8.168			
		4:KOMBINASI	8.219	-2.87E 3	-24.450	-5.271	-0.023	47.890			
		5:KOMB B. MA	191.906	-1.08E 3	130.673	-2.590	0.059	40.303			
22206	15189	1:BEBAN MATI	-54.663	-521.067	-11.123	-3.904	0.045	-6.726			
		2:BEBAN HIDL	1.170	-169.804	-0.001	-1.246	0.000	-1.261			
		3:BEBAN GEM	-629.275	-2.39E 3	-11.606	-0.099	-0.083	7.367			
		4:KOMBINASI	-63.723	-896.966	-13.350	-6.679	0.054	-10.089			
		5:KOMB B. MA	-714.699	-3.14E 3	-23.310	-4.755	-0.042	0.253			
	14598	1:BEBAN MATI	54.663	1.65E 3	11.123	3.904	0.065	-3.902			
		2:BEBAN HIDL	-1.170	169.804	0.001	1.246	-0.000	-0.404			
		3:BEBAN GEM	629.275	2.39E 3	11.606	0.099	0.197	-30.844			
		4:KOMBINASI	63.723	2.25E 3	13.350	6.679	0.077	-5.328			
		5:KOMB B. MA	714.699	4.26E 3	23.310	4.755	0.271	-36.530			
22207	15190	1:BEBAN MATI	-24.848	-316.901	-0.255	0.039	0.002	-1.491			
		2:BEBAN HIDL	-4.086	-248.874	-0.110	-0.015	0.001	-1.025			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

468

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	329.279	-60.870	-1.791	0.422	0.025	-0.302			
		4:KOMBINASI	-36.355	-778.479	-0.481	0.023	0.003	-3.429			
		5:KOMB B. MA	318.443	-530.138	-2.201	0.473	0.029	-2.423			
	14647	1:BEBAN MATI	24.848	547.552	0.255	-0.039	0.001	-3.595			
		2:BEBAN HIDL	4.086	248.874	0.110	0.015	0.001	-1.904			
		3:BEBAN GEM	-329.279	60.870	1.791	-0.422	-0.004	-0.414			
		4:KOMBINASI	36.355	1.06E 3	0.481	-0.023	0.002	-7.360			
		5:KOMB B. MA	-318.443	760.790	2.201	-0.473	-0.003	-5.173			
22208	15191	1:BEBAN MATI	-38.107	521.099	-0.471	0.136	0.003	2.600			
		2:BEBAN HIDL	-2.017	139.737	-0.096	0.028	0.000	0.167			
		3:BEBAN GEM	444.429	-103.641	-9.436	0.878	0.076	-1.644			
		4:KOMBINASI	-48.956	848.899	-0.719	0.207	0.005	3.387			
		5:KOMB B. MA	427.333	496.119	-10.437	1.075	0.083	0.974			
	15190	1:BEBAN MATI	38.107	-290.448	0.471	-0.136	0.002	2.175			
		2:BEBAN HIDL	2.017	-139.737	0.096	-0.028	0.001	1.477			
		3:BEBAN GEM	-444.429	103.641	9.436	-0.878	0.035	0.424			
		4:KOMBINASI	48.956	-572.117	0.719	-0.207	0.004	4.974			
		5:KOMB B. MA	-427.333	-265.468	10.437	-1.075	0.040	3.507			
22209	15192	1:BEBAN MATI	-60.802	-2.79E 3	0.444	-1.109	-0.003	-8.779			
		2:BEBAN HIDL	17.734	-1.26E 3	-0.026	-0.588	-0.000	-3.396			
		3:BEBAN GEM	104.696	-359.357	20.084	-2.338	-0.130	4.601			
		4:KOMBINASI	-44.588	-5.35E 3	0.491	-2.272	-0.003	-15.968			
		5:KOMB B. MA	59.770	-3.92E 3	21.517	-3.917	-0.139	-5.985			
	14552	1:BEBAN MATI	60.802	3.15E 3	-0.444	1.109	-0.003	-26.137			
		2:BEBAN HIDL	-17.734	1.26E 3	0.026	0.588	0.000	-11.389			
		3:BEBAN GEM	-104.696	359.357	-20.084	2.338	-0.107	-8.830			
		4:KOMBINASI	44.588	5.79E 3	-0.491	2.272	-0.002	-49.587			
		5:KOMB B. MA	-59.770	4.28E 3	-21.517	3.917	-0.114	-42.243			
22210	15194	1:BEBAN MATI	-6.790	2.19E 3	-0.539	-1.831	0.003	-3.457			
		2:BEBAN HIDL	3.154	374.674	0.083	-0.861	-0.000	-0.928			
		3:BEBAN GEM	165.209	-1.28E 3	-3.167	-0.746	0.011	-13.373			
		4:KOMBINASI	-3.101	3.22E 3	-0.513	-3.575	0.003	-5.633			
		5:KOMB B. MA	168.572	1.07E 3	-3.814	-3.132	0.015	-18.055			
	14606	1:BEBAN MATI	6.790	-835.674	0.539	1.831	0.003	21.237			
		2:BEBAN HIDL	-3.154	-374.674	-0.083	0.861	-0.001	5.337			
		3:BEBAN GEM	-165.209	1.28E 3	3.167	0.746	0.026	-1.682			
		4:KOMBINASI	3.101	-1.6E 3	0.513	3.575	0.003	34.023			
		5:KOMB B. MA	-168.572	282.844	3.814	3.132	0.030	22.673			
22211	15195	1:BEBAN MATI	-34.500	-750.649	0.220	-0.448	-0.001	-20.489			
		2:BEBAN HIDL	10.632	-450.602	-0.025	-0.313	0.000	-9.266			
		3:BEBAN GEM	21.924	-316.940	12.305	-0.679	-0.065	0.802			
		4:KOMBINASI	-24.388	-1.62E 3	0.223	-1.038	-0.001	-39.412			
		5:KOMB B. MA	-5.100	-1.35E 3	13.125	-1.348	-0.069	-25.207			
	15192	1:BEBAN MATI	34.500	1.11E 3	-0.220	0.448	-0.002	9.535			
		2:BEBAN HIDL	-10.632	450.602	0.025	0.313	0.000	3.963			
		3:BEBAN GEM	-21.924	316.940	-12.305	0.679	-0.080	-4.532			
		4:KOMBINASI	24.388	2.05E 3	-0.223	1.038	-0.002	17.783			
		5:KOMB B. MA	5.100	1.71E 3	-13.125	1.348	-0.085	7.155			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 469	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22212	15197	1:BEBAN MATI	-22.068	1.27E 3	0.341	0.318	-0.002	-7.585			
		2:BEBAN HIDL	7.993	455.970	-0.096	0.076	0.001	-3.855			
		3:BEBAN GEM	-45.324	-321.196	8.704	0.597	-0.046	-3.116			
		4:KOMBINASI	-13.693	2.25E 3	0.255	0.505	-0.002	-15.270			
		5:KOMB B. MA	-64.863	1.21E 3	9.422	0.992	-0.051	-13.170			
15195	15195	1:BEBAN MATI	22.068	-910.500	-0.341	-0.318	-0.002	20.420			
		2:BEBAN HIDL	-7.993	-455.970	0.096	-0.076	0.001	9.221			
		3:BEBAN GEM	45.324	321.196	-8.704	-0.597	-0.056	-0.663			
		4:KOMBINASI	13.693	-1.82E 3	-0.255	-0.505	-0.001	39.257			
		5:KOMB B. MA	64.863	-846.826	-9.422	-0.992	-0.060	25.256			
22213	15199	1:BEBAN MATI	-28.867	2.28E 3	-0.242	0.164	0.001	-3.183			
		2:BEBAN HIDL	7.926	869.951	0.010	0.033	0.000	-1.787			
		3:BEBAN GEM	-13.361	-1.18E 3	-15.203	-0.445	0.079	-12.125			
		4:KOMBINASI	-21.959	4.13E 3	-0.273	0.251	0.001	-6.679			
		5:KOMB B. MA	-38.141	1.57E 3	-16.198	-0.283	0.084	-16.987			
14648	14648	1:BEBAN MATI	28.867	-1.92E 3	0.242	-0.164	0.002	27.951			
		2:BEBAN HIDL	-7.926	-869.951	-0.010	-0.033	-0.000	12.024			
		3:BEBAN GEM	13.361	1.18E 3	15.203	0.445	0.100	-1.712			
		4:KOMBINASI	21.959	-3.7E 3	0.273	-0.251	0.002	52.780			
		5:KOMB B. MA	38.141	-1.21E 3	16.198	0.283	0.107	33.368			
22214	15200	1:BEBAN MATI	-1.071	-594.717	0.124	0.181	-0.000	-5.755			
		2:BEBAN HIDL	0.543	-345.734	0.009	-0.032	-0.000	-2.686			
		3:BEBAN GEM	-20.510	5.968	3.980	0.111	-0.017	0.865			
		4:KOMBINASI	-0.417	-1.27E 3	0.162	0.166	-0.000	-11.203			
		5:KOMB B. MA	-22.282	-795.891	4.308	0.279	-0.018	-6.458			
14606	14606	1:BEBAN MATI	1.071	825.368	-0.124	-0.181	-0.001	-2.601			
		2:BEBAN HIDL	-0.543	345.734	-0.009	0.032	-0.000	-1.383			
		3:BEBAN GEM	20.510	-5.968	-3.980	-0.111	-0.029	-0.795			
		4:KOMBINASI	0.417	1.54E 3	-0.162	-0.166	-0.002	-5.334			
		5:KOMB B. MA	22.282	1.03E 3	-4.308	-0.279	-0.032	-4.266			
22215	15201	1:BEBAN MATI	-2.150	-105.641	0.225	0.097	-0.001	-9.443			
		2:BEBAN HIDL	1.518	-103.644	-0.022	-0.032	0.000	-4.549			
		3:BEBAN GEM	-35.770	-45.945	3.161	0.153	-0.020	0.306			
		4:KOMBINASI	-0.152	-292.600	0.236	0.065	-0.001	-18.610			
		5:KOMB B. MA	-38.798	-216.069	3.531	0.238	-0.022	-11.851			
15200	15200	1:BEBAN MATI	2.150	336.293	-0.225	-0.097	-0.001	6.842			
		2:BEBAN HIDL	-1.518	103.644	0.022	0.032	0.000	3.329			
		3:BEBAN GEM	35.770	45.945	-3.161	-0.153	-0.018	-0.846			
		4:KOMBINASI	0.152	569.382	-0.236	-0.065	-0.001	13.538			
		5:KOMB B. MA	38.798	446.721	-3.531	-0.238	-0.020	7.951			
22216	15202	1:BEBAN MATI	-1.167	668.270	0.427	-0.156	-0.002	-2.816			
		2:BEBAN HIDL	2.565	248.550	-0.044	-0.052	0.000	-1.601			
		3:BEBAN GEM	-60.627	-51.733	4.446	-0.124	-0.028	-0.310			
		4:KOMBINASI	2.703	1.2E 3	0.443	-0.271	-0.003	-5.941			
		5:KOMB B. MA	-63.286	763.080	5.069	-0.317	-0.031	-4.103			
15201	15201	1:BEBAN MATI	1.167	-437.618	-0.427	0.156	-0.003	9.323			
		2:BEBAN HIDL	-2.565	-248.550	0.044	0.052	0.000	4.526			
		3:BEBAN GEM	60.627	51.733	-4.446	0.124	-0.025	-0.299			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

470

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-2.703	-922.821	-0.443	0.271	-0.003	18.430			
		5:KOMB B. MA	63.286	-532.428	-5.069	0.317	-0.028	11.726			
22217	15204	1:BEBAN MATI	14.010	-2.33E 3	-1.341	3.187	0.009	-7.339			
		2:BEBAN HIDL	8.038	-591.276	-0.491	1.982	0.003	-1.321			
		3:BEBAN GEM	592.781	-1.34E 3	-17.044	1.034	0.064	17.016			
		4:KOMBINASI	29.673	-3.75E 3	-2.395	6.996	0.016	-10.920			
		5:KOMB B. MA	641.253	-4.09E 3	-19.532	5.462	0.078	9.735			
	14592	1:BEBAN MATI	-14.010	3.68E 3	1.341	-3.187	0.007	-28.056			
		2:BEBAN HIDL	-8.038	591.276	0.491	-1.982	0.003	-5.637			
		3:BEBAN GEM	-592.781	1.34E 3	17.044	-1.034	0.137	-32.761			
		4:KOMBINASI	-29.673	5.37E 3	2.395	-6.996	0.013	-42.686			
		5:KOMB B. MA	-641.253	5.44E 3	19.532	-5.462	0.152	-65.837			
22218	15207	1:BEBAN MATI	-82.119	-3.18E 3	-0.333	-0.261	0.002	-8.141			
		2:BEBAN HIDL	17.925	-1.37E 3	-0.010	-0.013	0.000	-3.214			
		3:BEBAN GEM	414.461	-1.33E 3	-11.897	0.912	0.065	16.164			
		4:KOMBINASI	-69.863	-6E 3	-0.415	-0.333	0.003	-14.913			
		5:KOMB B. MA	363.820	-5.39E 3	-12.831	0.689	0.070	6.902			
	14591	1:BEBAN MATI	82.119	3.54E 3	0.333	0.261	0.002	-31.379			
		2:BEBAN HIDL	-17.925	1.37E 3	0.010	0.013	-0.000	-12.898			
		3:BEBAN GEM	-414.461	1.33E 3	11.897	-0.912	0.075	-31.775			
		4:KOMBINASI	69.863	6.44E 3	0.415	0.333	0.002	-58.292			
		5:KOMB B. MA	-363.820	5.75E 3	12.831	-0.689	0.081	-72.481			
22219	15208	1:BEBAN MATI	45.581	-2.14E 3	1.276	-3.034	-0.005	-7.540			
		2:BEBAN HIDL	10.113	-528.907	0.419	-1.908	-0.002	-1.345			
		3:BEBAN GEM	71.940	-395.282	14.529	-2.062	-0.108	4.858			
		4:KOMBINASI	70.878	-3.42E 3	2.201	-6.694	-0.010	-11.201			
		5:KOMB B. MA	127.186	-2.88E 3	16.783	-6.344	-0.120	-3.246			
	14592	1:BEBAN MATI	-45.581	3.49E 3	-1.276	3.034	-0.010	-25.621			
		2:BEBAN HIDL	-10.113	528.907	-0.419	1.908	-0.003	-4.879			
		3:BEBAN GEM	-71.940	395.282	-14.529	2.062	-0.063	-9.510			
		4:KOMBINASI	-70.878	5.04E 3	-2.201	6.694	-0.016	-38.551			
		5:KOMB B. MA	-127.186	4.23E 3	-16.783	6.344	-0.077	-38.534			
22220	15209	1:BEBAN MATI	29.288	-203.387	0.187	-0.941	0.000	-18.830			
		2:BEBAN HIDL	5.887	-194.829	0.064	-0.883	-0.000	-4.211			
		3:BEBAN GEM	-50.808	-351.237	0.870	-0.476	-0.005	0.401			
		4:KOMBINASI	44.564	-555.791	0.327	-2.542	-0.001	-29.333			
		5:KOMB B. MA	-20.529	-689.084	1.139	-1.971	-0.006	-20.935			
	15208	1:BEBAN MATI	-29.288	1.55E 3	-0.187	0.941	-0.002	8.490			
		2:BEBAN HIDL	-5.887	194.829	-0.064	0.883	-0.000	1.918			
		3:BEBAN GEM	50.808	351.237	-0.870	0.476	-0.005	-4.535			
		4:KOMBINASI	-44.564	2.18E 3	-0.327	2.542	-0.003	13.258			
		5:KOMB B. MA	20.529	2.04E 3	-1.139	1.971	-0.008	4.880			
22221	15210	1:BEBAN MATI	14.327	1.75E 3	0.553	0.967	-0.003	-6.169			
		2:BEBAN HIDL	4.959	212.991	-0.088	0.447	0.000	-1.725			
		3:BEBAN GEM	-128.894	-352.978	-3.702	0.643	0.023	-3.817			
		4:KOMBINASI	25.127	2.44E 3	0.523	1.875	-0.003	-10.164			
		5:KOMB B. MA	-118.037	1.5E 3	-3.387	1.910	0.021	-11.212			
	15209	1:BEBAN MATI	-14.327	-397.389	-0.553	-0.967	-0.003	18.792			



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Job No 1	Sheet No 471	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-4.959	-212.991	0.088	-0.447	0.001	4.232			
		3:BEBAN GEM	128.894	352.978	3.702	-0.643	0.021	-0.337			
		4:KOMBINASI	-25.127	-817.652	-0.523	-1.875	-0.003	29.321			
		5:KOMB B. MA	118.037	-154.557	3.387	-1.910	0.019	20.977			
22222	15212	1:BEBAN MATI	-28.710	-2.18E 3	6.211	-1.429	-0.015	-18.586			
		2:BEBAN HIDL	27.994	-971.739	2.910	-0.459	-0.008	-8.723			
		3:BEBAN GEM	113.173	-915.012	-190.658	0.634	0.510	6.589			
		4:KOMBINASI	10.338	-4.17E 3	12.108	-2.448	-0.031	-36.259			
		5:KOMB B. MA	106.918	-3.72E 3	-192.234	-1.038	0.515	-16.901			
	15378	1:BEBAN MATI	28.710	2.33E 3	-6.211	1.429	-0.015	7.537			
		2:BEBAN HIDL	-27.994	971.739	-2.910	0.459	-0.006	3.958			
		3:BEBAN GEM	-113.173	915.012	190.658	-0.634	0.425	-11.076			
		4:KOMBINASI	-10.338	4.35E 3	-12.108	2.448	-0.028	15.377			
		5:KOMB B. MA	-106.918	3.87E 3	192.234	1.038	0.428	-1.718			
22223	15214	1:BEBAN MATI	-56.704	879.776	10.566	-4.243	-0.019	-3.846			
		2:BEBAN HIDL	10.204	257.071	-2.340	-1.917	0.003	-1.115			
		3:BEBAN GEM	-1.79E 3	-2.23E 3	708.940	-0.183	-1.491	-9.997			
		4:KOMBINASI	-51.719	1.47E 3	8.936	-8.159	-0.018	-6.398			
		5:KOMB B. MA	-1.93E 3	-1.3E 3	753.550	-5.586	-1.583	-15.011			
	15298	1:BEBAN MATI	56.704	-317.112	-10.566	4.243	-0.033	6.780			
		2:BEBAN HIDL	-10.204	-257.071	2.340	1.917	0.008	2.375			
		3:BEBAN GEM	1.79E 3	2.23E 3	-708.940	0.183	-1.985	-0.916			
		4:KOMBINASI	51.719	-791.848	-8.936	8.159	-0.026	11.936			
		5:KOMB B. MA	1.93E 3	1.87E 3	-753.550	5.586	-2.112	7.243			
22224	15216	1:BEBAN MATI	-36.419	-3.39E 3	10.245	-0.961	-0.015	7.515			
		2:BEBAN HIDL	33.731	-1.49E 3	9.760	-0.321	-0.018	2.535			
		3:BEBAN GEM	350.581	-1.05E 3	-561.638	1.276	0.919	16.178			
		4:KOMBINASI	10.266	-6.45E 3	27.910	-1.667	-0.048	13.074			
		5:KOMB B. MA	351.930	-5.39E 3	-573.619	0.186	0.939	26.024			
	15382	1:BEBAN MATI	36.419	3.47E 3	-10.245	0.961	-0.010	-15.927			
		2:BEBAN HIDL	-33.731	1.49E 3	-9.760	0.321	-0.006	-6.181			
		3:BEBAN GEM	-350.581	1.05E 3	561.638	-1.276	0.458	-18.762			
		4:KOMBINASI	-10.266	6.54E 3	-27.910	1.667	-0.021	-29.002			
		5:KOMB B. MA	-351.930	5.47E 3	573.619	-0.186	0.467	-39.336			
22225	15218	1:BEBAN MATI	-29.887	-1.47E 3	-1.371	-0.744	0.002	-2.917			
		2:BEBAN HIDL	20.516	-420.949	-2.679	-0.978	0.012	-1.534			
		3:BEBAN GEM	-1.37E 3	-2.2E 3	92.037	0.323	-0.599	12.129			
		4:KOMBINASI	-3.038	-2.44E 3	-5.932	-2.457	0.022	-5.954			
		5:KOMB B. MA	-1.46E 3	-4.03E 3	93.660	-0.992	-0.619	8.899			
	14576	1:BEBAN MATI	29.887	2.6E 3	1.371	0.744	0.011	-17.020			
		2:BEBAN HIDL	-20.516	420.949	2.679	0.978	0.014	-2.594			
		3:BEBAN GEM	1.37E 3	2.2E 3	-92.037	-0.323	-0.303	-33.691			
		4:KOMBINASI	3.038	3.79E 3	5.932	2.457	0.036	-24.575			
		5:KOMB B. MA	1.46E 3	5.16E 3	-93.660	0.992	-0.299	-53.952			
22226	15219	1:BEBAN MATI	-6.190	-579.940	0.959	-0.883	-0.002	4.138			
		2:BEBAN HIDL	-37.796	-180.561	2.356	-0.640	-0.015	1.475			
		3:BEBAN GEM	2.24E 3	-650.131	78.219	-1.644	-0.345	3.329			
		4:KOMBINASI	-67.901	-984.826	4.921	-2.084	-0.026	7.325			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 472	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	2.32E 3	-1.37E 3	84.503	-2.993	-0.373	8.518			
	14579	1:BEBAN MATI	6.190	940.334	-0.959	0.883	-0.009	-13.083			
		2:BEBAN HIDL	37.796	180.561	-2.356	0.640	-0.013	-3.600			
		3:BEBAN GEM	-2.24E 3	650.131	-78.219	1.644	-0.575	-10.980			
		4:KOMBINASI	67.901	1.42E 3	-4.921	2.084	-0.032	-21.459			
		5:KOMB B. MA	-2.32E 3	1.73E 3	-84.503	2.993	-0.621	-26.772			
22227	15220	1:BEBAN MATI	8.744	332.241	0.319	1.741	0.000	5.636			
		2:BEBAN HIDL	-35.565	129.796	0.165	0.637	-0.001	2.766			
		3:BEBAN GEM	1.84E 3	-622.907	25.385	-0.234	-0.119	-4.295			
		4:KOMBINASI	-46.411	606.363	0.648	3.108	-0.001	11.189			
		5:KOMB B. MA	1.92E 3	-243.934	27.073	1.877	-0.126	2.786			
	15219	1:BEBAN MATI	-8.744	28.151	-0.319	-1.741	-0.004	-3.847			
		2:BEBAN HIDL	35.565	-129.796	-0.165	-0.637	-0.001	-1.238			
		3:BEBAN GEM	-1.84E 3	622.907	-25.385	0.234	-0.179	-3.035			
		4:KOMBINASI	46.411	-173.892	-0.648	-3.108	-0.006	-6.598			
		5:KOMB B. MA	-1.92E 3	604.326	-27.073	-1.877	-0.193	-7.777			
22228	15222	1:BEBAN MATI	-2.733	3.38E 3	-0.373	-2.735	0.001	10.155			
		2:BEBAN HIDL	16.598	641.450	0.070	-1.712	-0.000	2.252			
		3:BEBAN GEM	-675.831	-846.484	-1.074	-0.620	0.015	-16.451			
		4:KOMBINASI	23.278	5.08E 3	-0.335	-6.022	0.001	15.790			
		5:KOMB B. MA	-702.397	2.87E 3	-1.459	-4.414	0.016	-5.767			
	15227	1:BEBAN MATI	2.733	-2.25E 3	0.373	2.735	0.003	17.432			
		2:BEBAN HIDL	-16.598	-641.450	-0.070	1.712	-0.000	4.038			
		3:BEBAN GEM	675.831	846.484	1.074	0.620	-0.004	8.150			
		4:KOMBINASI	-23.278	-3.73E 3	0.335	6.022	0.003	27.380			
		5:KOMB B. MA	702.397	-1.75E 3	1.459	4.414	-0.002	28.412			
22229	15225	1:BEBAN MATI	-32.797	3.49E 3	0.601	0.259	-0.003	13.108			
		2:BEBAN HIDL	9.839	1.42E 3	0.047	0.025	-0.000	5.070			
		3:BEBAN GEM	-500.664	-794.833	-10.977	-0.505	0.058	-15.449			
		4:KOMBINASI	-23.613	6.46E 3	0.796	0.352	-0.005	23.842			
		5:KOMB B. MA	-552.590	3.51E 3	-10.897	-0.256	0.057	-0.071			
	15230	1:BEBAN MATI	32.797	-3.19E 3	-0.601	-0.259	-0.003	19.669			
		2:BEBAN HIDL	-9.839	-1.42E 3	-0.047	-0.025	-0.000	8.831			
		3:BEBAN GEM	500.664	794.833	10.977	0.505	0.050	7.654			
		4:KOMBINASI	23.613	-6.1E 3	-0.796	-0.352	-0.003	37.732			
		5:KOMB B. MA	552.590	-3.21E 3	10.897	0.256	0.050	33.004			
22230	15227	1:BEBAN MATI	-3.122	1.78E 3	-0.075	-1.665	-0.000	-18.337			
		2:BEBAN HIDL	15.231	331.659	-0.039	-0.893	0.000	-4.377			
		3:BEBAN GEM	-527.381	-831.368	-0.204	-0.643	0.004	-8.140			
		4:KOMBINASI	20.624	2.67E 3	-0.153	-3.427	-0.000	-29.007			
		5:KOMB B. MA	-547.733	1.11E 3	-0.313	-2.876	0.004	-29.510			
	14612	1:BEBAN MATI	3.122	-656.846	0.075	1.665	0.001	30.296			
		2:BEBAN HIDL	-15.231	-331.659	0.039	0.893	0.000	7.629			
		3:BEBAN GEM	527.381	831.368	0.204	0.643	-0.002	-0.013			
		4:KOMBINASI	-20.624	-1.32E 3	0.153	3.427	0.002	48.562			
		5:KOMB B. MA	547.733	17.095	0.313	2.876	-0.001	34.860			
22231	15230	1:BEBAN MATI	-34.648	2.07E 3	0.472	0.170	-0.003	-20.709			
		2:BEBAN HIDL	10.370	799.246	0.108	0.014	-0.001	-9.213			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-394.308	-743.962	-15.755	-0.294	0.072	-7.337			
		4:KOMBINASI	-24.986	3.77E 3	0.740	0.227	-0.004	-39.590			
		5:KOMB B. MA	-442.450	1.77E 3	-16.006	-0.130	0.072	-33.940			
	14651	1:BEBAN MATI	34.648	-1.77E 3	-0.472	-0.170	-0.002	39.577			
		2:BEBAN HIDL	-10.370	-799.246	-0.108	-0.014	-0.000	17.051			
		3:BEBAN GEM	394.308	743.962	15.755	0.294	0.083	0.041			
		4:KOMBINASI	24.986	-3.41E 3	-0.740	-0.227	-0.003	74.774			
		5:KOMB B. MA	442.450	-1.47E 3	16.006	0.130	0.085	49.851			
22232	15231	1:BEBAN MATI	0.266	-671.063	-0.126	0.155	0.001	-7.208			
		2:BEBAN HIDL	-0.925	-406.142	-0.039	0.001	0.000	-3.570			
		3:BEBAN GEM	33.804	3.899	4.634	0.109	-0.021	0.657			
		4:KOMBINASI	-1.162	-1.46E 3	-0.213	0.188	0.001	-14.361			
		5:KOMB B. MA	35.205	-910.654	4.716	0.271	-0.022	-8.660			
	14612	1:BEBAN MATI	-0.266	901.715	0.126	-0.155	0.001	-2.046			
		2:BEBAN HIDL	0.925	406.142	0.039	-0.001	0.000	-1.210			
		3:BEBAN GEM	-33.804	-3.899	-4.634	-0.109	-0.033	-0.611			
		4:KOMBINASI	1.162	1.73E 3	0.213	-0.188	0.001	-4.392			
		5:KOMB B. MA	-35.205	1.14E 3	-4.716	-0.271	-0.034	-3.414			
22233	15232	1:BEBAN MATI	-0.007	-124.264	-0.103	0.094	0.001	-11.329			
		2:BEBAN HIDL	-0.767	-136.735	-0.044	0.000	0.000	-5.922			
		3:BEBAN GEM	45.504	-29.011	4.614	0.099	-0.027	0.266			
		4:KOMBINASI	-1.235	-367.893	-0.194	0.113	0.001	-23.070			
		5:KOMB B. MA	47.312	-236.766	4.715	0.198	-0.027	-14.603			
	15231	1:BEBAN MATI	0.007	354.916	0.103	-0.094	0.001	8.509			
		2:BEBAN HIDL	0.767	136.735	0.044	-0.000	0.000	4.313			
		3:BEBAN GEM	-45.504	29.011	-4.614	-0.099	-0.027	-0.607			
		4:KOMBINASI	1.235	644.675	0.194	-0.113	0.001	17.112			
		5:KOMB B. MA	-47.312	467.418	-4.715	-0.198	-0.028	10.460			
22234	15233	1:BEBAN MATI	-0.705	769.204	-0.082	-0.032	0.001	-3.498			
		2:BEBAN HIDL	-0.321	313.139	-0.057	-0.002	0.000	-2.194			
		3:BEBAN GEM	55.061	-29.473	6.009	-0.086	-0.037	-0.125			
		4:KOMBINASI	-1.359	1.42E 3	-0.190	-0.041	0.001	-7.707			
		5:KOMB B. MA	56.917	926.140	6.193	-0.123	-0.038	-4.946			
	15232	1:BEBAN MATI	0.705	-538.552	0.082	0.032	0.000	11.193			
		2:BEBAN HIDL	0.321	-313.139	0.057	0.002	0.000	5.879			
		3:BEBAN GEM	-55.061	29.473	-6.009	0.086	-0.034	-0.222			
		4:KOMBINASI	1.359	-1.15E 3	0.190	0.041	0.001	22.837			
		5:KOMB B. MA	-56.917	-695.488	-6.193	0.123	-0.035	14.487			
22235	15235	1:BEBAN MATI	-9.791	-2.2E 3	0.033	2.119	-0.001	-18.257			
		2:BEBAN HIDL	13.802	-638.519	-0.101	1.714	0.001	-4.074			
		3:BEBAN GEM	-203.795	-839.859	-2.446	0.423	0.009	8.309			
		4:KOMBINASI	10.334	-3.66E 3	-0.122	5.284	0.000	-28.427			
		5:KOMB B. MA	-215.495	-3.47E 3	-2.596	3.591	0.009	-11.976			
	15240	1:BEBAN MATI	9.791	3.33E 3	-0.033	-2.119	0.000	-8.843			
		2:BEBAN HIDL	-13.802	638.519	0.101	-1.714	0.000	-2.187			
		3:BEBAN GEM	203.795	839.859	2.446	-0.423	0.015	-16.546			
		4:KOMBINASI	-10.334	5.01E 3	0.122	-5.284	0.001	-14.111			
		5:KOMB B. MA	215.495	4.59E 3	2.596	-3.591	0.016	-27.528			



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Job No 1	Sheet No 474	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22236	15238	1:BEBAN MATI	-37.662	-3.06E 3	0.286	-0.236	-0.002	-21.144			
		2:BEBAN HIDL	8.633	-1.41E 3	0.230	-0.020	-0.001	-8.923			
		3:BEBAN GEM	-220.650	-793.021	-16.903	0.513	0.078	7.823			
		4:KOMBINASI	-31.381	-5.93E 3	0.712	-0.315	-0.004	-39.649			
		5:KOMB B. MA	-264.164	-4.74E 3	-17.324	0.291	0.079	-18.283			
	15243	1:BEBAN MATI	37.662	3.36E 3	-0.286	0.236	-0.001	-10.356			
		2:BEBAN HIDL	-8.633	1.41E 3	-0.230	0.020	-0.001	-4.898			
		3:BEBAN GEM	220.650	793.021	16.903	-0.513	0.088	-15.600			
		4:KOMBINASI	31.381	6.29E 3	-0.712	0.315	-0.003	-20.264			
		5:KOMB B. MA	264.164	5.04E 3	17.324	-0.291	0.091	-29.674			
22237	15240	1:BEBAN MATI	-14.411	-3.72E 3	0.441	3.717	-0.002	10.258			
		2:BEBAN HIDL	15.438	-844.506	-1.148	2.370	0.005	2.895			
		3:BEBAN GEM	26.021	-918.675	-20.045	1.194	0.062	16.811			
		4:KOMBINASI	7.407	-5.82E 3	-1.308	8.253	0.006	16.942			
		5:KOMB B. MA	22.173	-5.19E 3	-21.295	6.393	0.067	29.646			
	14556	1:BEBAN MATI	14.411	4.85E 3	-0.441	-3.717	-0.002	-52.283			
		2:BEBAN HIDL	-15.438	844.506	1.148	-2.370	0.006	-11.177			
		3:BEBAN GEM	-26.021	918.675	20.045	-1.194	0.134	-25.820			
		4:KOMBINASI	-7.407	7.17E 3	1.308	-8.253	0.007	-80.622			
		5:KOMB B. MA	-22.173	6.32E 3	21.295	-6.393	0.142	-86.100			
22238	15243	1:BEBAN MATI	-38.802	-4.53E 3	0.115	-0.276	-0.000	11.856			
		2:BEBAN HIDL	6.863	-1.96E 3	0.281	-0.027	-0.001	5.694			
		3:BEBAN GEM	-85.915	-983.821	-26.304	0.855	0.117	15.749			
		4:KOMBINASI	-35.581	-8.57E 3	0.587	-0.376	-0.003	23.339			
		5:KOMB B. MA	-124.894	-6.74E 3	-27.336	0.605	0.122	31.809			
	14581	1:BEBAN MATI	38.802	4.83E 3	-0.115	0.276	-0.001	-57.768			
		2:BEBAN HIDL	-6.863	1.96E 3	-0.281	0.027	-0.001	-24.914			
		3:BEBAN GEM	85.915	983.821	26.304	-0.855	0.141	-25.397			
		4:KOMBINASI	35.581	8.93E 3	-0.587	0.376	-0.003	-109.183			
		5:KOMB B. MA	124.894	7.04E 3	27.336	-0.605	0.146	-99.383			
22239	15244	1:BEBAN MATI	-0.377	-3.56E 3	-0.151	0.064	0.001	-12.117			
		2:BEBAN HIDL	15.363	-1.34E 3	-0.135	-0.010	0.001	-3.609			
		3:BEBAN GEM	148.577	-390.254	15.811	-2.209	-0.107	4.476			
		4:KOMBINASI	24.128	-6.42E 3	-0.396	0.061	0.002	-20.315			
		5:KOMB B. MA	164.847	-4.77E 3	16.370	-2.261	-0.111	-9.583			
	14556	1:BEBAN MATI	0.377	4.91E 3	0.151	-0.064	0.001	-37.664			
		2:BEBAN HIDL	-15.363	1.34E 3	0.135	0.010	0.001	-12.200			
		3:BEBAN GEM	-148.577	390.254	-15.811	2.209	-0.079	-9.069			
		4:KOMBINASI	-24.128	8.04E 3	0.396	-0.061	0.002	-64.716			
		5:KOMB B. MA	-164.847	6.12E 3	-16.370	2.261	-0.081	-54.506			
22240	15245	1:BEBAN MATI	2.028	-627.743	-0.144	0.026	0.001	-28.500			
		2:BEBAN HIDL	8.625	-486.711	-0.088	-0.006	0.000	-9.936			
		3:BEBAN GEM	90.067	-319.307	7.675	-0.655	-0.037	0.643			
		4:KOMBINASI	16.233	-1.53E 3	-0.313	0.022	0.002	-50.097			
		5:KOMB B. MA	101.773	-1.26E 3	7.862	-0.665	-0.038	-33.787			
	15244	1:BEBAN MATI	-2.028	1.98E 3	0.144	-0.026	0.001	13.167			
		2:BEBAN HIDL	-8.625	486.711	0.088	0.006	0.001	4.208			
		3:BEBAN GEM	-90.067	319.307	-7.675	0.655	-0.053	-4.400			



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Job No 1	Sheet No 475	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-16.233	3.15E 3	0.313	-0.022	0.002	22.534			
		5:KOMB B. MA	-101.773	2.61E 3	-7.862	0.665	-0.054	11.072			
22241	15246	1:BEBAN MATI	3.393	2.23E 3	-0.139	-0.002	0.001	-10.081			
		2:BEBAN HIDL	6.229	483.967	-0.053	0.002	0.000	-4.193			
		3:BEBAN GEM	45.286	-318.933	1.639	0.587	-0.003	-3.249			
		4:KOMBINASI	14.038	3.45E 3	-0.252	0.001	0.001	-18.806			
		5:KOMB B. MA	54.681	2.19E 3	1.550	0.616	-0.003	-16.008			
	15245	1:BEBAN MATI	-3.393	-881.365	0.139	0.002	0.001	28.399			
		2:BEBAN HIDL	-6.229	-483.967	0.053	-0.002	0.000	9.888			
		3:BEBAN GEM	-45.286	318.933	-1.639	-0.587	-0.016	-0.504			
		4:KOMBINASI	-14.038	-1.83E 3	0.252	-0.001	0.001	49.900			
		5:KOMB B. MA	-54.681	-836.865	-1.550	-0.616	-0.016	33.802			
22242	15248	1:BEBAN MATI	-16.700	3.34E 3	0.025	-2.340	-0.000	9.051			
		2:BEBAN HIDL	12.954	636.832	0.116	-1.701	-0.000	2.142			
		3:BEBAN GEM	-512.274	-846.338	-1.951	-0.628	0.014	-16.534			
		4:KOMBINASI	0.685	5.03E 3	0.215	-5.530	-0.001	14.289			
		5:KOMB B. MA	-546.816	2.84E 3	-1.954	-4.020	0.015	-7.024			
	15253	1:BEBAN MATI	16.700	-2.22E 3	-0.025	2.340	0.000	18.213			
		2:BEBAN HIDL	-12.954	-636.832	-0.116	1.701	-0.001	4.103			
		3:BEBAN GEM	512.274	846.338	1.951	0.628	0.005	8.234			
		4:KOMBINASI	-0.685	-3.68E 3	-0.215	5.530	-0.001	28.420			
		5:KOMB B. MA	546.816	-1.71E 3	1.954	4.020	0.005	29.320			
22243	15251	1:BEBAN MATI	-36.590	3.38E 3	0.455	0.263	-0.002	10.901			
		2:BEBAN HIDL	10.800	1.4E 3	0.235	-0.004	-0.001	4.770			
		3:BEBAN GEM	-510.705	-794.652	-11.777	-0.509	0.059	-15.533			
		4:KOMBINASI	-26.627	6.29E 3	0.922	0.309	-0.005	20.713			
		5:KOMB B. MA	-566.350	3.38E 3	-11.770	-0.274	0.059	-2.547			
	15256	1:BEBAN MATI	36.590	-3.08E 3	-0.455	-0.263	-0.002	20.753			
		2:BEBAN HIDL	-10.800	-1.4E 3	-0.235	0.004	-0.001	8.915			
		3:BEBAN GEM	510.705	794.652	11.777	0.509	0.056	7.740			
		4:KOMBINASI	26.627	-5.93E 3	-0.922	-0.309	-0.004	39.168			
		5:KOMB B. MA	566.350	-3.08E 3	11.770	0.274	0.056	34.229			
22244	15253	1:BEBAN MATI	-19.016	1.75E 3	0.140	-1.225	-0.001	-19.066			
		2:BEBAN HIDL	10.524	327.301	0.031	-0.884	0.000	-4.438			
		3:BEBAN GEM	-386.262	-831.651	-1.011	-0.647	0.008	-8.226			
		4:KOMBINASI	-5.980	2.63E 3	0.217	-2.884	-0.001	-29.980			
		5:KOMB B. MA	-418.276	1.07E 3	-0.904	-2.435	0.008	-30.366			
	14602	1:BEBAN MATI	19.016	-625.904	-0.140	1.225	-0.001	30.722			
		2:BEBAN HIDL	-10.524	-327.301	-0.031	0.884	-0.000	7.648			
		3:BEBAN GEM	386.262	831.651	1.011	0.647	0.002	0.070			
		4:KOMBINASI	5.980	-1.27E 3	-0.217	2.884	-0.002	49.103			
		5:KOMB B. MA	418.276	50.948	0.904	2.435	0.001	35.384			
22245	15256	1:BEBAN MATI	-35.498	1.96E 3	0.304	0.169	-0.002	-21.807			
		2:BEBAN HIDL	10.859	778.236	0.204	-0.005	-0.001	-9.275			
		3:BEBAN GEM	-436.253	-743.992	-13.211	-0.299	0.064	-7.421			
		4:KOMBINASI	-25.223	3.6E 3	0.691	0.195	-0.003	-41.009			
		5:KOMB B. MA	-487.048	1.65E 3	-13.445	-0.149	0.065	-35.164			
	14650	1:BEBAN MATI	35.498	-1.66E 3	-0.304	-0.169	-0.001	39.566			



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Job No 1	Sheet No 476	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-10.859	-778.236	-0.204	0.005	-0.001	16.907			
		3:BEBAN GEM	436.253	743.992	13.211	0.299	0.065	0.125			
		4:KOMBINASI	25.223	-3.24E 3	-0.691	-0.195	-0.003	74.531			
		5:KOMB B. MA	487.048	-1.35E 3	13.445	0.149	0.066	49.841			
22246	15257	1:BEBAN MATI	1.951	-687.673	-0.025	0.000	0.000	-7.556			
		2:BEBAN HIDL	-0.294	-405.235	-0.031	-0.000	0.000	-3.574			
		3:BEBAN GEM	30.679	3.563	3.646	0.109	-0.016	0.659			
		4:KOMBINASI	1.870	-1.47E 3	-0.079	0.000	0.000	-14.786			
		5:KOMB B. MA	33.987	-927.073	3.784	0.115	-0.016	-9.009			
	14602	1:BEBAN MATI	-1.951	918.325	0.025	-0.000	0.000	-1.893			
		2:BEBAN HIDL	0.294	405.235	0.031	0.000	0.000	-1.195			
		3:BEBAN GEM	-30.679	-3.563	-3.646	-0.109	-0.027	-0.617			
		4:KOMBINASI	-1.870	1.75E 3	0.079	-0.000	0.001	-4.183			
		5:KOMB B. MA	-33.987	1.16E 3	-3.784	-0.115	-0.028	-3.258			
22247	15258	1:BEBAN MATI	3.424	-128.802	-0.001	0.001	-0.000	-11.755			
		2:BEBAN HIDL	0.444	-134.765	-0.022	-0.000	0.000	-5.902			
		3:BEBAN GEM	55.234	-29.529	3.478	0.099	-0.019	0.261			
		4:KOMBINASI	4.819	-370.187	-0.036	0.001	0.000	-23.549			
		5:KOMB B. MA	61.686	-240.667	3.638	0.105	-0.020	-15.022			
	15257	1:BEBAN MATI	-3.424	359.454	0.001	-0.001	0.000	8.882			
		2:BEBAN HIDL	-0.444	134.765	0.022	0.000	0.000	4.316			
		3:BEBAN GEM	-55.234	29.529	-3.478	-0.099	-0.022	-0.608			
		4:KOMBINASI	-4.819	646.969	0.036	-0.001	0.000	17.564			
		5:KOMB B. MA	-61.686	471.319	-3.638	-0.105	-0.023	10.833			
22248	15259	1:BEBAN MATI	4.968	794.401	0.018	0.001	-0.000	-3.617			
		2:BEBAN HIDL	1.449	316.865	-0.023	0.000	0.000	-2.127			
		3:BEBAN GEM	85.387	-29.625	4.897	-0.085	-0.029	-0.132			
		4:KOMBINASI	8.281	1.46E 3	-0.015	0.001	0.000	-7.744			
		5:KOMB B. MA	95.495	953.414	5.146	-0.088	-0.030	-5.032			
	15258	1:BEBAN MATI	-4.968	-563.749	-0.018	-0.001	-0.000	11.608			
		2:BEBAN HIDL	-1.449	-316.865	0.023	-0.000	0.000	5.856			
		3:BEBAN GEM	-85.387	29.625	-4.897	0.085	-0.029	-0.216			
		4:KOMBINASI	-8.281	-1.18E 3	0.015	-0.001	0.000	23.299			
		5:KOMB B. MA	-95.495	-722.762	-5.146	0.088	-0.030	14.895			
22249	15261	1:BEBAN MATI	-20.845	-2.24E 3	0.053	2.336	-0.000	-18.018			
		2:BEBAN HIDL	9.464	-640.656	-0.096	1.699	0.001	-4.063			
		3:BEBAN GEM	-85.881	-840.530	-2.129	0.426	0.010	8.232			
		4:KOMBINASI	-9.871	-3.71E 3	-0.091	5.522	0.001	-28.123			
		5:KOMB B. MA	-105.341	-3.5E 3	-2.240	3.803	0.011	-11.812			
	15266	1:BEBAN MATI	20.845	3.36E 3	-0.053	-2.336	-0.000	-9.440			
		2:BEBAN HIDL	-9.464	640.656	0.096	-1.699	0.000	-2.219			
		3:BEBAN GEM	85.881	840.530	2.129	-0.426	0.011	-16.475			
		4:KOMBINASI	9.871	5.06E 3	0.091	-5.522	-0.000	-14.879			
		5:KOMB B. MA	105.341	4.63E 3	2.240	-3.803	0.011	-28.070			
22250	15264	1:BEBAN MATI	-32.670	-3.09E 3	-0.035	-0.283	0.000	-20.602			
		2:BEBAN HIDL	11.017	-1.4E 3	0.126	-0.007	-0.001	-8.856			
		3:BEBAN GEM	-260.436	-792.692	-16.526	0.510	0.081	7.730			
		4:KOMBINASI	-21.577	-5.95E 3	0.160	-0.350	-0.001	-38.892			



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Job No 1	Sheet No 477	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-299.518	-4.76E 3	-17.312	0.249	0.084	-17.799			
	15269	1:BEBAN MATI	32.670	3.39E 3	0.035	0.283	0.000	-11.171			
		2:BEBAN HIDL	-11.017	1.4E 3	-0.126	0.007	-0.001	-4.869			
		3:BEBAN GEM	260.436	792.692	16.526	-0.510	0.082	-15.504			
		4:KOMBINASI	21.577	6.31E 3	-0.160	0.350	-0.001	-21.195			
		5:KOMB B. MA	299.518	5.06E 3	17.312	-0.249	0.085	-30.372			
22251	15266	1:BEBAN MATI	-21.585	-3.76E 3	0.230	3.914	-0.001	10.900			
		2:BEBAN HIDL	12.284	-846.007	-1.270	2.352	0.006	2.925			
		3:BEBAN GEM	153.930	-919.686	-20.038	1.199	0.065	16.741			
		4:KOMBINASI	-6.248	-5.86E 3	-1.755	8.460	0.008	17.761			
		5:KOMB B. MA	147.412	-5.23E 3	-21.571	6.584	0.071	30.233			
	14558	1:BEBAN MATI	21.585	4.88E 3	-0.230	-3.914	-0.001	-53.261			
		2:BEBAN HIDL	-12.284	846.007	1.270	-2.352	0.007	-11.222			
		3:BEBAN GEM	-153.930	919.686	20.038	-1.199	0.131	-25.760			
		4:KOMBINASI	6.248	7.21E 3	1.755	-8.460	0.009	-81.868			
		5:KOMB B. MA	-147.412	6.36E 3	21.571	-6.584	0.140	-87.042			
22252	15269	1:BEBAN MATI	-31.532	-4.57E 3	-0.119	-0.260	0.001	12.658			
		2:BEBAN HIDL	10.893	-1.95E 3	0.272	0.014	-0.001	5.652			
		3:BEBAN GEM	-90.188	-984.634	-30.836	0.857	0.138	15.653			
		4:KOMBINASI	-20.408	-8.61E 3	0.292	-0.290	-0.001	24.232			
		5:KOMB B. MA	-119.693	-6.78E 3	-32.334	0.648	0.145	32.484			
	14580	1:BEBAN MATI	31.532	4.87E 3	0.119	0.260	0.001	-58.972			
		2:BEBAN HIDL	-10.893	1.95E 3	-0.272	-0.014	-0.001	-24.801			
		3:BEBAN GEM	90.188	984.634	30.836	-0.857	0.164	-25.309			
		4:KOMBINASI	20.408	8.97E 3	-0.292	0.290	-0.001	-110.448			
		5:KOMB B. MA	119.693	7.08E 3	32.334	-0.648	0.172	-100.427			
22253	15270	1:BEBAN MATI	3.099	-3.56E 3	0.045	-0.081	0.000	-12.167			
		2:BEBAN HIDL	17.258	-1.34E 3	-0.043	0.018	0.000	-3.621			
		3:BEBAN GEM	157.619	-391.466	18.790	-2.218	-0.121	4.493			
		4:KOMBINASI	31.331	-6.42E 3	-0.016	-0.069	0.001	-20.393			
		5:KOMB B. MA	178.953	-4.77E 3	19.748	-2.400	-0.127	-9.621			
	14558	1:BEBAN MATI	-3.099	4.91E 3	-0.045	0.081	-0.001	-37.627			
		2:BEBAN HIDL	-17.258	1.34E 3	0.043	-0.018	0.000	-12.189			
		3:BEBAN GEM	-157.619	391.466	-18.790	2.218	-0.100	-9.100			
		4:KOMBINASI	-31.331	8.04E 3	0.016	0.069	-0.000	-64.654			
		5:KOMB B. MA	-178.953	6.12E 3	-19.748	2.400	-0.105	-54.495			
22254	15271	1:BEBAN MATI	4.622	-623.667	0.068	-0.046	-0.000	-28.497			
		2:BEBAN HIDL	10.048	-485.067	-0.032	0.009	0.000	-9.926			
		3:BEBAN GEM	131.324	-320.324	11.323	-0.659	-0.057	0.647			
		4:KOMBINASI	21.623	-1.52E 3	0.031	-0.040	-0.000	-50.078			
		5:KOMB B. MA	148.541	-1.25E 3	11.937	-0.732	-0.060	-33.773			
	15270	1:BEBAN MATI	-4.622	1.97E 3	-0.068	0.046	-0.000	13.212			
		2:BEBAN HIDL	-10.048	485.067	0.032	-0.009	0.000	4.218			
		3:BEBAN GEM	-131.324	320.324	-11.323	0.659	-0.076	-4.417			
		4:KOMBINASI	-21.623	3.14E 3	-0.031	0.040	-0.000	22.603			
		5:KOMB B. MA	-148.541	2.6E 3	-11.937	0.732	-0.080	11.105			
22255	15272	1:BEBAN MATI	6.012	2.24E 3	0.126	-0.012	-0.001	-9.989			
		2:BEBAN HIDL	7.545	486.775	-0.036	0.000	0.000	-4.149			



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Job No

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Sheet No

478

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	134.133	-319.895	7.075	0.587	-0.035	-3.256			
		4:KOMBINASI	19.286	3.47E 3	0.094	-0.014	-0.001	-18.626			
		5:KOMB B. MA	151.379	2.2E 3	7.533	0.605	-0.037	-15.897			
	15271	1:BEBAN MATI	-6.012	-888.796	-0.126	0.012	-0.001	28.394			
		2:BEBAN HIDL	-7.545	-486.775	0.036	-0.000	0.000	9.878			
		3:BEBAN GEM	-134.133	319.895	-7.075	-0.587	-0.048	-0.509			
		4:KOMBINASI	-19.286	-1.85E 3	-0.094	0.014	-0.000	49.877			
		5:KOMB B. MA	-151.379	-844.972	-7.533	-0.605	-0.051	33.787			
22256	15274	1:BEBAN MATI	-11.831	3.39E 3	0.048	-2.102	-0.000	8.781			
		2:BEBAN HIDL	8.681	660.499	0.106	-1.713	-0.000	2.234			
		3:BEBAN GEM	-287.806	-845.960	-0.114	-0.627	0.006	-16.761			
		4:KOMBINASI	-0.308	5.12E 3	0.227	-5.263	-0.001	14.112			
		5:KOMB B. MA	-308.819	2.89E 3	-0.009	-3.788	0.006	-7.478			
	15279	1:BEBAN MATI	11.831	-2.26E 3	-0.048	2.102	0.000	18.914			
		2:BEBAN HIDL	-8.681	-660.499	-0.106	1.713	-0.001	4.243			
		3:BEBAN GEM	287.806	845.960	0.114	0.627	-0.005	8.465			
		4:KOMBINASI	0.308	-3.77E 3	-0.227	5.263	-0.001	29.486			
		5:KOMB B. MA	308.819	-1.77E 3	0.009	3.788	-0.006	30.349			
22257	15277	1:BEBAN MATI	-29.630	3.38E 3	-0.151	0.303	0.001	10.039			
		2:BEBAN HIDL	11.032	1.43E 3	0.009	0.011	-0.000	4.909			
		3:BEBAN GEM	-386.906	-795.323	-19.265	-0.508	0.097	-15.773			
		4:KOMBINASI	-17.904	6.34E 3	-0.167	0.381	0.001	19.901			
		5:KOMB B. MA	-429.261	3.4E 3	-20.374	-0.224	0.102	-3.578			
	15282	1:BEBAN MATI	29.630	-3.08E 3	0.151	-0.303	0.001	21.590			
		2:BEBAN HIDL	-11.032	-1.43E 3	-0.009	-0.011	-0.000	9.144			
		3:BEBAN GEM	386.906	795.323	19.265	0.508	0.092	7.974			
		4:KOMBINASI	17.904	-5.98E 3	0.167	-0.381	0.001	40.539			
		5:KOMB B. MA	429.261	-3.1E 3	20.374	0.224	0.097	35.449			
22258	15279	1:BEBAN MATI	-10.233	1.79E 3	0.089	-0.957	-0.001	-19.734			
		2:BEBAN HIDL	7.107	350.533	0.012	-0.893	0.000	-4.585			
		3:BEBAN GEM	-96.586	-831.258	-0.863	-0.648	0.003	-8.457			
		4:KOMBINASI	-0.907	2.71E 3	0.126	-2.579	-0.001	-31.016			
		5:KOMB B. MA	-107.383	1.13E 3	-0.810	-2.174	0.003	-31.365			
	14604	1:BEBAN MATI	10.233	-665.960	-0.089	0.957	-0.000	31.783			
		2:BEBAN HIDL	-7.107	-350.533	-0.012	0.893	-0.000	8.022			
		3:BEBAN GEM	96.586	831.258	0.863	0.648	0.005	0.306			
		4:KOMBINASI	0.907	-1.36E 3	-0.126	2.579	-0.001	50.975			
		5:KOMB B. MA	107.383	-3.459	0.810	2.174	0.005	36.917			
22259	15282	1:BEBAN MATI	-28.904	1.96E 3	-0.216	0.198	0.001	-22.659			
		2:BEBAN HIDL	11.190	818.800	0.055	0.004	-0.000	-9.523			
		3:BEBAN GEM	-251.634	-744.144	-23.542	-0.298	0.107	-7.654			
		4:KOMBINASI	-16.781	3.66E 3	-0.171	0.244	0.001	-42.429			
		5:KOMB B. MA	-286.406	1.67E 3	-24.902	-0.112	0.114	-36.410			
	14649	1:BEBAN MATI	28.904	-1.66E 3	0.216	-0.198	0.001	40.392			
		2:BEBAN HIDL	-11.190	-818.800	-0.055	-0.004	-0.000	17.553			
		3:BEBAN GEM	251.634	744.144	23.542	0.298	0.123	0.356			
		4:KOMBINASI	16.781	-3.3E 3	0.171	-0.244	0.001	76.556			
		5:KOMB B. MA	286.406	-1.37E 3	24.902	0.112	0.131	51.298			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 479	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22260	15283	1:BEBAN MATI	0.726	-676.686	0.105	-0.135	-0.001	-7.269			
		2:BEBAN HIDL	-0.152	-408.281	-0.018	0.007	0.000	-3.574			
		3:BEBAN GEM	8.272	3.228	6.537	0.109	-0.031	0.661			
		4:KOMBINASI	0.628	-1.47E 3	0.098	-0.150	-0.001	-14.441			
		5:KOMB B. MA	9.321	-918.265	6.959	-0.016	-0.033	-8.719			
14604	15283	1:BEBAN MATI	-0.726	907.337	-0.105	0.135	-0.001	-2.052			
		2:BEBAN HIDL	0.152	408.281	0.018	-0.007	0.000	-1.231			
		3:BEBAN GEM	-8.272	-3.228	-6.537	-0.109	-0.046	-0.623			
		4:KOMBINASI	-0.628	1.74E 3	-0.098	0.150	-0.001	-4.431			
		5:KOMB B. MA	-9.321	1.15E 3	-6.959	0.016	-0.049	-3.444			
22261	15284	1:BEBAN MATI	0.859	-126.558	0.097	-0.086	-0.001	-11.430			
		2:BEBAN HIDL	0.424	-137.552	-0.020	0.005	0.000	-5.945			
		3:BEBAN GEM	26.200	-29.802	6.880	0.099	-0.039	0.258			
		4:KOMBINASI	1.710	-371.953	0.084	-0.095	-0.001	-23.227			
		5:KOMB B. MA	28.624	-240.382	7.309	0.020	-0.041	-14.726			
	15283	15283	1:BEBAN MATI	-0.859	357.210	-0.097	0.086	-0.001	8.583		
			2:BEBAN HIDL	-0.424	137.552	0.020	-0.005	0.000	4.326		
			3:BEBAN GEM	-26.200	29.802	-6.880	-0.099	-0.042	-0.609		
			4:KOMBINASI	-1.710	648.735	-0.084	0.095	-0.000	17.222		
			5:KOMB B. MA	-28.624	471.033	-7.309	-0.020	-0.045	10.540		
22262	15285	1:BEBAN MATI	0.749	778.640	0.072	0.007	-0.000	-3.484			
		2:BEBAN HIDL	1.141	318.100	-0.026	-0.006	0.000	-2.157			
		3:BEBAN GEM	46.373	-29.186	9.271	-0.088	-0.055	-0.130			
		4:KOMBINASI	2.724	1.44E 3	0.044	-0.002	-0.000	-7.632			
		5:KOMB B. MA	50.125	938.855	9.791	-0.090	-0.058	-4.915			
	15284	15284	1:BEBAN MATI	-0.749	-547.988	-0.072	-0.007	-0.000	11.289		
			2:BEBAN HIDL	-1.141	-318.100	0.026	0.006	0.000	5.901		
			3:BEBAN GEM	-46.373	29.186	-9.271	0.088	-0.054	-0.213		
			4:KOMBINASI	-2.724	-1.17E 3	-0.044	0.002	-0.000	22.988		
			5:KOMB B. MA	-50.125	-708.203	-9.791	0.090	-0.057	14.606		
22263	15287	1:BEBAN MATI	-8.431	-2.2E 3	0.353	2.778	-0.003	-19.323			
		2:BEBAN HIDL	7.648	-626.844	-0.142	1.763	0.001	-4.644			
		3:BEBAN GEM	325.366	-841.424	-1.316	0.433	-0.000	7.995			
		4:KOMBINASI	2.120	-3.65E 3	0.196	6.155	-0.001	-30.619			
		5:KOMB B. MA	337.792	-3.46E 3	-1.114	4.290	-0.002	-13.715			
	15292	15292	1:BEBAN MATI	8.431	3.33E 3	-0.353	-2.778	-0.001	-7.793		
			2:BEBAN HIDL	-7.648	626.844	0.142	-1.763	0.000	-1.503		
			3:BEBAN GEM	-325.366	841.424	1.316	-0.433	0.013	-16.247		
			4:KOMBINASI	-2.120	5E 3	-0.196	-6.155	-0.000	-11.757		
			5:KOMB B. MA	-337.792	4.59E 3	1.114	-4.290	0.013	-25.754		
22264	15290	1:BEBAN MATI	-29.227	-3.09E 3	-0.382	-0.309	0.002	-21.632			
		2:BEBAN HIDL	11.489	-1.37E 3	0.106	-0.006	-0.000	-9.961			
		3:BEBAN GEM	23.579	-796.172	-22.466	0.509	0.104	7.505			
		4:KOMBINASI	-16.690	-5.89E 3	-0.289	-0.380	0.001	-41.896			
		5:KOMB B. MA	2.425	-4.74E 3	-23.908	0.222	0.111	-19.729			
	15295	1:BEBAN MATI	29.227	3.39E 3	0.382	0.309	0.002	-10.108			
	2:BEBAN HIDL	-11.489	1.37E 3	-0.106	0.006	-0.001	-3.427				
	3:BEBAN GEM	-23.579	796.172	22.466	-0.509	0.116	-15.313				



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 480	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	16.690	6.25E 3	0.289	0.380	0.001	-17.614			
		5:KOMB B. MA	-2.425	5.04E 3	23.908	-0.222	0.123	-28.243			
22265	15292	1:BEBAN MATI	-15.799	-3.69E 3	4.181	4.042	-0.019	9.342			
		2:BEBAN HIDL	11.730	-851.285	-1.460	2.483	0.006	2.204			
		3:BEBAN GEM	620.972	-923.909	-24.064	1.214	0.071	16.511			
		4:KOMBINASI	-0.192	-5.79E 3	2.682	8.824	-0.013	14.736			
		5:KOMB B. MA	643.259	-5.17E 3	-21.962	6.807	0.059	28.001			
	14552	1:BEBAN MATI	15.799	4.81E 3	-4.181	-4.042	-0.022	-51.006			
		2:BEBAN HIDL	-11.730	851.285	1.460	-2.483	0.008	-10.552			
		3:BEBAN GEM	-620.972	923.909	24.064	-1.214	0.165	-25.571			
		4:KOMBINASI	0.192	7.14E 3	-2.682	-8.824	-0.013	-78.091			
		5:KOMB B. MA	-643.259	6.29E 3	21.962	-6.807	0.156	-84.187			
22266	15295	1:BEBAN MATI	-32.874	-4.47E 3	-0.666	-0.296	0.003	11.668			
		2:BEBAN HIDL	12.520	-1.95E 3	0.249	0.020	-0.001	4.164			
		3:BEBAN GEM	232.272	-996.036	-37.531	0.854	0.160	15.456			
		4:KOMBINASI	-19.418	-8.49E 3	-0.401	-0.322	0.002	20.665			
		5:KOMB B. MA	218.523	-6.69E 3	-39.924	0.614	0.171	30.396			
	14550	1:BEBAN MATI	32.874	4.77E 3	0.666	0.296	0.003	-56.993			
		2:BEBAN HIDL	-12.520	1.95E 3	-0.249	-0.020	-0.001	-23.318			
		3:BEBAN GEM	-232.272	996.036	37.531	-0.854	0.208	-25.224			
		4:KOMBINASI	19.418	8.85E 3	0.401	0.322	0.002	-105.701			
		5:KOMB B. MA	-218.523	6.99E 3	39.924	-0.614	0.221	-97.469			
22267	15296	1:BEBAN MATI	61.066	-2.47E 3	1.057	-0.947	-0.009	-0.881			
		2:BEBAN HIDL	-7.017	-564.656	-0.020	0.387	0.001	0.309			
		3:BEBAN GEM	1.61E 3	-97.711	7.145	-1.015	-0.096	1.546			
		4:KOMBINASI	62.052	-3.87E 3	1.235	-0.517	-0.009	-0.563			
		5:KOMB B. MA	1.75E 3	-2.91E 3	8.546	-1.780	-0.109	0.927			
	14598	1:BEBAN MATI	-61.066	4E 3	-1.057	0.947	-0.007	-46.722			
		2:BEBAN HIDL	7.017	564.656	0.020	-0.387	-0.000	-8.615			
		3:BEBAN GEM	-1.61E 3	97.711	-7.145	1.015	-0.009	-2.983			
		4:KOMBINASI	-62.052	5.7E 3	-1.235	0.517	-0.009	-69.850			
		5:KOMB B. MA	-1.75E 3	4.44E 3	-8.546	1.780	-0.016	-55.023			
22268	15298	1:BEBAN MATI	-12.670	-444.671	-10.259	1.949	0.027	-6.704			
		2:BEBAN HIDL	17.244	-159.279	-0.159	0.256	0.003	-2.539			
		3:BEBAN GEM	-570.189	-2.2E 3	-736.118	-0.062	1.966	0.969			
		4:KOMBINASI	12.386	-788.451	-12.566	2.749	0.037	-12.107			
		5:KOMB B. MA	-601.022	-2.85E 3	-783.278	2.037	2.093	-7.210			
	15218	1:BEBAN MATI	12.670	1.01E 3	10.259	-1.949	0.023	3.144			
		2:BEBAN HIDL	-17.244	159.279	0.159	-0.256	-0.002	1.758			
		3:BEBAN GEM	570.189	2.2E 3	736.118	0.062	1.643	-11.740			
		4:KOMBINASI	-12.386	1.46E 3	12.566	-2.749	0.024	6.586			
		5:KOMB B. MA	601.022	3.41E 3	783.278	-2.037	1.748	-8.128			
22269	15299	1:BEBAN MATI	-12.472	-829.401	0.320	1.277	-0.002	3.237			
		2:BEBAN HIDL	-3.525	-340.867	0.024	0.224	-0.000	-0.817			
		3:BEBAN GEM	-141.278	37.079	-3.852	-0.023	0.028	0.596			
		4:KOMBINASI	-20.606	-1.54E 3	0.423	1.891	-0.003	2.576			
		5:KOMB B. MA	-162.928	-994.987	-3.711	1.388	0.027	3.373			
	14653	1:BEBAN MATI	12.472	1.12E 3	-0.320	-1.277	-0.002	-17.558			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 481	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	3.525	340.867	-0.024	-0.224	-0.000	-4.197			
		3:BEBAN GEM	141.278	-37.079	3.852	0.023	0.029	-0.051			
		4:KOMBINASI	20.606	1.89E 3	-0.423	-1.891	-0.003	-27.784			
		5:KOMB B. MA	162.928	1.28E 3	3.711	-1.388	0.028	-20.129			
22270	15300	1:BEBAN MATI	55.226	1.33E 3	0.479	0.202	-0.005	-10.264			
		2:BEBAN HIDL	2.802	178.331	0.091	-0.150	-0.001	-0.948			
		3:BEBAN GEM	1.86E 3	-99.504	0.759	-0.569	-0.026	-0.453			
		4:KOMBINASI	70.754	1.88E 3	0.721	0.003	-0.007	-13.833			
		5:KOMB B. MA	2.01E 3	1.33E 3	1.331	-0.486	-0.032	-11.308			
	14610	1:BEBAN MATI	-55.226	198.105	-0.479	-0.202	-0.002	18.572			
		2:BEBAN HIDL	-2.802	-178.331	-0.091	0.150	-0.001	3.571			
		3:BEBAN GEM	-1.86E 3	99.504	-0.759	0.569	0.015	-1.011			
		4:KOMBINASI	-70.754	-47.604	-0.721	-0.003	-0.004	28.000			
		5:KOMB B. MA	-2.01E 3	195.586	-1.331	0.486	0.012	19.653			
22271	15302	1:BEBAN MATI	53.986	-4.19E 3	2.342	1.238	-0.021	-9.096			
		2:BEBAN HIDL	39.285	-1.6E 3	0.947	1.176	-0.007	-3.808			
		3:BEBAN GEM	1.06E 3	-215.653	13.629	-2.483	-0.166	2.090			
		4:KOMBINASI	127.640	-7.59E 3	4.326	3.366	-0.036	-17.008			
		5:KOMB B. MA	1.19E 3	-5.38E 3	17.221	-0.664	-0.199	-9.186			
	14576	1:BEBAN MATI	-53.986	4.64E 3	-2.342	-1.238	-0.014	-55.854			
		2:BEBAN HIDL	-39.285	1.6E 3	-0.947	-1.176	-0.007	-19.772			
		3:BEBAN GEM	-1.06E 3	215.653	-13.629	2.483	-0.035	-5.262			
		4:KOMBINASI	-127.640	8.13E 3	-4.326	-3.366	-0.028	-98.659			
		5:KOMB B. MA	-1.19E 3	5.83E 3	-17.221	0.664	-0.055	-73.242			
22272	15303	1:BEBAN MATI	38.795	2.42E 3	-0.074	-1.523	0.001	-12.457			
		2:BEBAN HIDL	15.251	823.200	0.122	-0.668	-0.001	-4.119			
		3:BEBAN GEM	976.488	-188.688	7.590	1.210	-0.070	-2.389			
		4:KOMBINASI	70.956	4.22E 3	0.107	-2.896	-0.000	-21.540			
		5:KOMB B. MA	1.07E 3	2.72E 3	7.970	-0.653	-0.073	-17.437			
	14653	1:BEBAN MATI	-38.795	-1.97E 3	0.074	1.523	0.000	44.736			
		2:BEBAN HIDL	-15.251	-823.200	-0.122	0.668	-0.001	16.228			
		3:BEBAN GEM	-976.488	188.688	-7.590	-1.210	-0.042	-0.387			
		4:KOMBINASI	-70.956	-3.68E 3	-0.107	2.896	-0.001	79.649			
		5:KOMB B. MA	-1.07E 3	-2.26E 3	-7.970	0.653	-0.045	54.068			
22273	15305	1:BEBAN MATI	-114.189	2.36E 3	0.326	-2.644	-0.002	-9.697			
		2:BEBAN HIDL	-22.926	360.637	0.371	-1.365	-0.003	-2.649			
		3:BEBAN GEM	-1.3E 3	-809.506	-0.576	-0.736	0.034	-11.456			
		4:KOMBINASI	-173.710	3.41E 3	0.984	-5.356	-0.007	-15.875			
		5:KOMB B. MA	-1.49E 3	1.73E 3	-0.057	-4.236	0.032	-23.315			
	14642	1:BEBAN MATI	114.189	-674.687	-0.326	2.644	-0.003	32.037			
		2:BEBAN HIDL	22.926	-360.637	-0.371	1.365	-0.002	7.954			
		3:BEBAN GEM	1.3E 3	809.506	0.576	0.736	-0.025	-0.452			
		4:KOMBINASI	173.710	-1.39E 3	-0.984	5.356	-0.008	51.170			
		5:KOMB B. MA	1.49E 3	-41.088	0.057	4.236	-0.031	36.335			
22274	15306	1:BEBAN MATI	-15.678	693.399	-0.167	0.058	0.001	-3.692			
		2:BEBAN HIDL	-0.255	136.727	0.062	-0.016	-0.000	-2.865			
		3:BEBAN GEM	-131.161	-105.850	-15.229	0.021	0.117	-1.690			
		4:KOMBINASI	-19.222	1.05E 3	-0.101	0.043	0.001	-9.015			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 482	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-153.550	664.292	-16.120	0.071	0.124	-7.186			
	14677	1:BEBAN MATI	15.678	-405.085	0.167	-0.058	0.001	11.771			
		2:BEBAN HIDL	0.255	-136.727	-0.062	0.016	-0.001	4.877			
		3:BEBAN GEM	131.161	105.850	15.229	-0.021	0.107	0.133			
		4:KOMBINASI	19.222	-704.865	0.101	-0.043	0.000	21.928			
		5:KOMB B. MA	153.550	-375.978	16.120	-0.071	0.113	14.837			
22275	15308	1:BEBAN MATI	3.946	-668.371	0.275	0.263	-0.002	-8.737			
		2:BEBAN HIDL	1.361	-394.707	-0.023	0.015	0.000	-4.344			
		3:BEBAN GEM	87.725	-5.336	10.435	0.330	-0.054	0.461			
		4:KOMBINASI	6.913	-1.43E 3	0.294	0.339	-0.002	-17.435			
		5:KOMB B. MA	96.874	-910.798	11.218	0.618	-0.058	-10.859			
	14642	1:BEBAN MATI	-3.946	956.685	-0.275	-0.263	-0.002	-3.215			
		2:BEBAN HIDL	-1.361	394.707	0.023	-0.015	0.000	-1.462			
		3:BEBAN GEM	-87.725	5.336	-10.435	-0.330	-0.100	-0.540			
		4:KOMBINASI	-6.913	1.78E 3	-0.294	-0.339	-0.002	-6.197			
		5:KOMB B. MA	-96.874	1.2E 3	-11.218	-0.618	-0.107	-4.659			
22276	15309	1:BEBAN MATI	-0.901	655.420	0.123	-0.236	-0.001	-4.004			
		2:BEBAN HIDL	2.032	237.912	-0.026	-0.023	0.000	-2.150			
		3:BEBAN GEM	340.763	-15.991	11.643	-0.271	-0.088	-0.453			
		4:KOMBINASI	2.170	1.17E 3	0.106	-0.321	-0.001	-8.244			
		5:KOMB B. MA	358.119	781.376	12.333	-0.535	-0.093	-5.769			
	14677	1:BEBAN MATI	0.901	-367.106	-0.123	0.236	-0.001	11.525			
		2:BEBAN HIDL	-2.032	-237.912	0.026	0.023	0.000	5.649			
		3:BEBAN GEM	-340.763	15.991	-11.643	0.271	-0.083	0.218			
		4:KOMBINASI	-2.170	-821.186	-0.106	0.321	-0.001	22.868			
		5:KOMB B. MA	-358.119	-493.062	-12.333	0.535	-0.088	15.143			
22277	15311	1:BEBAN MATI	-90.698	-3.32E 3	-0.666	4.957	0.006	-5.064			
		2:BEBAN HIDL	-29.128	-896.087	-1.417	2.588	0.011	0.031			
		3:BEBAN GEM	746.018	-919.640	-69.749	0.973	0.480	12.399			
		4:KOMBINASI	-155.443	-5.42E 3	-3.066	10.090	0.025	-6.027			
		5:KOMB B. MA	675.145	-4.82E 3	-74.752	7.532	0.516	7.974			
	14575	1:BEBAN MATI	90.698	5.01E 3	0.666	-4.957	0.003	-56.183			
		2:BEBAN HIDL	29.128	896.087	1.417	-2.588	0.010	-13.212			
		3:BEBAN GEM	-746.018	919.640	69.749	-0.973	0.546	-25.927			
		4:KOMBINASI	155.443	7.44E 3	3.066	-10.090	0.020	-88.560			
		5:KOMB B. MA	-675.145	6.51E 3	74.752	-7.532	0.583	-91.334			
22278	15312	1:BEBAN MATI	-21.570	-1.07E 3	-0.325	0.089	0.002	-2.457			
		2:BEBAN HIDL	0.103	-558.502	-0.079	0.062	0.001	-1.058			
		3:BEBAN GEM	-255.379	36.812	-16.791	-0.082	0.118	1.717			
		4:KOMBINASI	-25.720	-2.18E 3	-0.516	0.205	0.004	-4.641			
		5:KOMB B. MA	-289.656	-1.37E 3	-18.003	0.040	0.127	-1.289			
	14656	1:BEBAN MATI	21.570	1.36E 3	0.325	-0.089	0.002	-15.474			
		2:BEBAN HIDL	-0.103	558.502	0.079	-0.062	0.001	-7.158			
		3:BEBAN GEM	255.379	-36.812	16.791	0.082	0.129	-1.175			
		4:KOMBINASI	25.720	2.53E 3	0.516	-0.205	0.004	-30.022			
		5:KOMB B. MA	289.656	1.66E 3	18.003	-0.040	0.138	-21.003			
22279	15314	1:BEBAN MATI	29.767	-5.25E 3	-0.742	-0.495	0.008	-16.821			
		2:BEBAN HIDL	31.377	-1.87E 3	-1.349	-0.442	0.010	-5.468			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 483	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.51E 3	-281.168	36.925	-2.714	-0.260	2.941			
		4:KOMBINASI	85.923	-9.3E 3	-3.050	-1.301	0.026	-28.934			
		5:KOMB B. MA	1.64E 3	-6.67E 3	37.220	-3.610	-0.259	-17.013			
	14575	1:BEBAN MATI	-29.767	6.94E 3	0.742	0.495	0.003	-72.869			
		2:BEBAN HIDL	-31.377	1.87E 3	1.349	0.442	0.010	-22.074			
		3:BEBAN GEM	-1.51E 3	281.168	-36.925	2.714	-0.283	-7.077			
		4:KOMBINASI	-85.923	11.3E 3	3.050	1.301	0.019	-122.762			
		5:KOMB B. MA	-1.64E 3	8.36E 3	-37.220	3.610	-0.288	-93.545			
22280	15315	1:BEBAN MATI	9.904	3.73E 3	0.282	-0.170	-0.002	-13.291			
		2:BEBAN HIDL	13.236	1.01E 3	-0.121	-0.046	0.001	-4.487			
		3:BEBAN GEM	883.067	-204.931	38.107	1.268	-0.272	-3.114			
		4:KOMBINASI	33.062	6.1E 3	0.144	-0.278	-0.001	-23.128			
		5:KOMB B. MA	945.066	4.12E 3	40.221	1.134	-0.288	-19.253			
	14656	1:BEBAN MATI	-9.904	-2.04E 3	-0.282	0.170	-0.002	55.760			
		2:BEBAN HIDL	-13.236	-1.01E 3	0.121	0.046	0.001	19.408			
		3:BEBAN GEM	-883.067	204.931	-38.107	-1.268	-0.288	0.100			
		4:KOMBINASI	-33.062	-4.07E 3	-0.144	0.278	-0.001	97.964			
		5:KOMB B. MA	-945.066	-2.44E 3	-40.221	-1.134	-0.304	67.509			
22281	15317	1:BEBAN MATI	-13.342	3.06E 3	0.435	-0.454	-0.004	-12.580			
		2:BEBAN HIDL	14.791	762.520	0.226	-0.071	-0.002	-4.471			
		3:BEBAN GEM	170.621	-746.731	-6.224	-0.447	0.041	-11.173			
		4:KOMBINASI	7.654	4.9E 3	0.882	-0.658	-0.008	-22.250			
		5:KOMB B. MA	174.684	2.74E 3	-5.965	-0.966	0.038	-26.994			
	14641	1:BEBAN MATI	13.342	-1.38E 3	-0.435	0.454	-0.003	45.223			
		2:BEBAN HIDL	-14.791	-762.520	-0.226	0.071	-0.001	15.688			
		3:BEBAN GEM	-170.621	746.731	6.224	0.447	0.051	0.188			
		4:KOMBINASI	-7.654	-2.87E 3	-0.882	0.658	-0.005	79.369			
		5:KOMB B. MA	-174.684	-1.05E 3	5.965	0.966	0.050	54.834			
22282	15318	1:BEBAN MATI	-20.210	609.949	-0.142	0.018	0.001	-3.377			
		2:BEBAN HIDL	2.769	179.545	-0.012	0.016	0.000	-1.601			
		3:BEBAN GEM	-187.846	-84.578	-4.694	0.089	0.036	-1.480			
		4:KOMBINASI	-19.822	1.02E 3	-0.190	0.048	0.002	-6.614			
		5:KOMB B. MA	-215.787	628.869	-5.078	0.122	0.039	-5.891			
	14667	1:BEBAN MATI	20.210	-321.635	0.142	-0.018	0.001	10.229			
		2:BEBAN HIDL	-2.769	-179.545	0.012	-0.016	-0.000	4.242			
		3:BEBAN GEM	187.846	84.578	4.694	-0.089	0.034	0.236			
		4:KOMBINASI	19.822	-673.234	0.190	-0.048	0.001	19.062			
		5:KOMB B. MA	215.787	-340.555	5.078	-0.122	0.036	13.021			
22283	15320	1:BEBAN MATI	2.365	-892.316	0.076	-0.032	-0.001	-6.096			
		2:BEBAN HIDL	2.599	-486.866	-0.089	-0.017	0.001	-2.438			
		3:BEBAN GEM	468.787	2.441	18.149	0.284	-0.134	0.481			
		4:KOMBINASI	6.996	-1.85E 3	-0.051	-0.066	0.000	-11.216			
		5:KOMB B. MA	496.151	-1.18E 3	19.079	0.256	-0.140	-7.054			
	14641	1:BEBAN MATI	-2.365	1.18E 3	-0.076	0.032	-0.001	-9.150			
		2:BEBAN HIDL	-2.599	486.866	0.089	0.017	0.001	-4.724			
		3:BEBAN GEM	-468.787	-2.441	-18.149	-0.284	-0.133	-0.445			
		4:KOMBINASI	-6.996	2.2E 3	0.051	0.066	0.000	-18.539			
		5:KOMB B. MA	-496.151	1.47E 3	-19.079	-0.256	-0.140	-12.452			



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Job No 1	Sheet No 484	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22284	15321	1:BEBAN MATI	3.633	687.377	-0.004	-0.022	0.000	-3.658			
		2:BEBAN HIDL	5.591	196.086	-0.074	-0.009	0.001	-1.824			
		3:BEBAN GEM	649.817	-25.647	24.341	-0.321	-0.184	-0.468			
		4:KOMBINASI	13.305	1.14E 3	-0.123	-0.042	0.001	-7.308			
		5:KOMB B. MA	689.296	778.099	25.509	-0.365	-0.193	-5.244			
14667		1:BEBAN MATI	-3.633	-399.063	0.004	0.022	0.000	11.648			
		2:BEBAN HIDL	-5.591	-196.086	0.074	0.009	0.001	4.708			
		3:BEBAN GEM	-649.817	25.647	-24.341	0.321	-0.174	0.091			
		4:KOMBINASI	-13.305	-792.614	0.123	0.042	0.001	21.512			
		5:KOMB B. MA	-689.296	-489.785	-25.509	0.365	-0.182	14.569			
22285	15323	1:BEBAN MATI	-16.947	-4.61E 3	0.140	2.138	-0.001	-9.222			
		2:BEBAN HIDL	13.179	-1.64E 3	-0.450	0.640	0.004	-2.821			
		3:BEBAN GEM	100.194	-931.276	-23.387	0.858	0.172	11.280			
		4:KOMBINASI	0.749	-8.16E 3	-0.552	3.590	0.004	-15.581			
		5:KOMB B. MA	96.164	-6.58E 3	-24.687	3.423	0.181	0.929			
14574		1:BEBAN MATI	16.947	6.3E 3	-0.140	-2.138	-0.001	-71.073			
		2:BEBAN HIDL	-13.179	1.64E 3	0.450	-0.640	0.003	-21.307			
		3:BEBAN GEM	-100.194	931.276	23.387	-0.858	0.172	-24.979			
		4:KOMBINASI	-0.749	10.2E 3	0.552	-3.590	0.004	-119.378			
		5:KOMB B. MA	-96.164	8.26E 3	24.687	-3.423	0.182	-110.085			
22286	15324	1:BEBAN MATI	-16.636	-1.04E 3	-0.016	0.004	0.000	-1.893			
		2:BEBAN HIDL	4.699	-538.505	0.051	-0.002	-0.000	-1.001			
		3:BEBAN GEM	-103.948	38.803	-4.322	-0.067	0.030	1.554			
		4:KOMBINASI	-12.445	-2.11E 3	0.063	0.001	-0.000	-3.872			
		5:KOMB B. MA	-122.962	-1.32E 3	-4.523	-0.068	0.031	-0.862			
14659		1:BEBAN MATI	16.636	1.33E 3	0.016	-0.004	0.000	-15.497			
		2:BEBAN HIDL	-4.699	538.505	-0.051	0.002	-0.000	-6.921			
		3:BEBAN GEM	103.948	-38.803	4.322	0.067	0.034	-0.983			
		4:KOMBINASI	12.445	2.45E 3	-0.063	-0.001	-0.000	-29.670			
		5:KOMB B. MA	122.962	1.61E 3	4.523	0.068	0.036	-20.682			
22287	15326	1:BEBAN MATI	-3.584	-5.21E 3	0.383	-0.174	-0.003	-16.068			
		2:BEBAN HIDL	18.358	-1.83E 3	-0.015	0.028	0.000	-5.039			
		3:BEBAN GEM	817.306	-274.262	58.762	-2.647	-0.436	3.003			
		4:KOMBINASI	25.072	-9.18E 3	0.436	-0.163	-0.003	-27.345			
		5:KOMB B. MA	865.602	-6.6E 3	62.074	-2.936	-0.460	-15.939			
14574		1:BEBAN MATI	3.584	6.9E 3	-0.383	0.174	-0.003	-72.987			
		2:BEBAN HIDL	-18.358	1.83E 3	0.015	-0.028	0.000	-21.881			
		3:BEBAN GEM	-817.306	274.262	-58.762	2.647	-0.429	-7.037			
		4:KOMBINASI	-25.072	11.2E 3	-0.436	0.163	-0.003	-122.593			
		5:KOMB B. MA	-865.602	8.28E 3	-62.074	2.936	-0.453	-93.505			
22288	15327	1:BEBAN MATI	-1.461	3.72E 3	0.046	0.068	-0.000	-12.670			
		2:BEBAN HIDL	11.565	998.403	-0.046	-0.003	0.000	-4.101			
		3:BEBAN GEM	1.1E 3	-209.735	73.943	1.247	-0.560	-3.108			
		4:KOMBINASI	16.751	6.06E 3	-0.018	0.077	0.000	-21.765			
		5:KOMB B. MA	1.16E 3	4.1E 3	77.659	1.376	-0.588	-18.394			
14659		1:BEBAN MATI	1.461	-2.03E 3	-0.046	-0.068	-0.000	54.972			
		2:BEBAN HIDL	-11.565	-998.403	0.046	0.003	0.000	18.788			
		3:BEBAN GEM	-1.1E 3	209.735	-73.943	-1.247	-0.528	0.023			



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Job No 1	Sheet No 485	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-16.751	-4.04E 3	0.018	-0.077	0.000	96.027			
		5:KOMB B. MA	-1.16E 3	-2.41E 3	-77.659	-1.376	-0.554	66.269			
22289	15329	1:BEBAN MATI	-25.835	3.09E 3	0.005	-0.300	-0.000	-11.291			
		2:BEBAN HIDL	9.854	829.606	0.265	-0.160	-0.002	-3.412			
		3:BEBAN GEM	-242.422	-744.930	-22.232	-0.428	0.165	-11.241			
		4:KOMBINASI	-15.235	5.04E 3	0.430	-0.616	-0.004	-19.008			
		5:KOMB B. MA	-274.466	2.81E 3	-23.179	-0.845	0.172	-25.142			
	14640	1:BEBAN MATI	25.835	-1.41E 3	-0.005	0.300	0.000	44.400			
		2:BEBAN HIDL	-9.854	-829.606	-0.265	0.160	-0.002	15.615			
		3:BEBAN GEM	242.422	744.930	22.232	0.428	0.162	0.283			
		4:KOMBINASI	15.235	-3.02E 3	-0.430	0.616	-0.003	78.264			
		5:KOMB B. MA	274.466	-1.12E 3	23.179	0.845	0.169	54.066			
22290	15330	1:BEBAN MATI	-16.751	661.739	0.002	-0.016	-0.000	-3.935			
		2:BEBAN HIDL	5.872	193.612	0.051	-0.010	-0.000	-1.724			
		3:BEBAN GEM	131.964	-86.968	-11.496	0.087	0.083	-1.590			
		4:KOMBINASI	-10.707	1.1E 3	0.084	-0.034	-0.001	-7.481			
		5:KOMB B. MA	125.333	686.590	-12.038	0.070	0.087	-6.639			
	14670	1:BEBAN MATI	16.751	-373.425	-0.002	0.016	0.000	11.549			
		2:BEBAN HIDL	-5.872	-193.612	-0.051	0.010	-0.000	4.572			
		3:BEBAN GEM	-131.964	86.968	11.496	-0.087	0.086	0.311			
		4:KOMBINASI	10.707	-757.890	-0.084	0.034	-0.001	21.174			
		5:KOMB B. MA	-125.333	-398.276	12.038	-0.070	0.090	14.619			
22291	15332	1:BEBAN MATI	-3.655	-831.291	0.101	-0.243	-0.001	-5.728			
		2:BEBAN HIDL	3.404	-491.334	-0.031	-0.015	0.000	-2.392			
		3:BEBAN GEM	212.229	3.023	25.443	0.278	-0.187	0.469			
		4:KOMBINASI	1.060	-1.78E 3	0.072	-0.316	-0.001	-10.700			
		5:KOMB B. MA	221.227	-1.12E 3	26.798	0.040	-0.197	-6.670			
	14640	1:BEBAN MATI	3.655	1.12E 3	-0.101	0.243	-0.001	-8.621			
		2:BEBAN HIDL	-3.404	491.334	0.031	0.015	0.000	-4.836			
		3:BEBAN GEM	-212.229	-3.023	-25.443	-0.278	-0.188	-0.425			
		4:KOMBINASI	-1.060	2.13E 3	-0.072	0.316	-0.001	-18.083			
		5:KOMB B. MA	-221.227	1.41E 3	-26.798	-0.040	-0.198	-11.968			
22292	15333	1:BEBAN MATI	-5.296	616.118	0.023	0.159	-0.000	-3.499			
		2:BEBAN HIDL	5.219	200.745	-0.030	0.008	0.000	-1.823			
		3:BEBAN GEM	113.912	-26.507	27.921	-0.316	-0.205	-0.475			
		4:KOMBINASI	1.996	1.06E 3	-0.021	0.203	0.000	-7.116			
		5:KOMB B. MA	117.444	708.732	29.322	-0.169	-0.215	-5.092			
	14670	1:BEBAN MATI	5.296	-327.803	-0.023	-0.159	-0.000	10.442			
		2:BEBAN HIDL	-5.219	-200.745	0.030	-0.008	0.000	4.776			
		3:BEBAN GEM	-113.912	26.507	-27.921	0.316	-0.206	0.085			
		4:KOMBINASI	-1.996	-714.556	0.021	-0.203	0.000	20.172			
		5:KOMB B. MA	-117.444	-420.418	-29.322	0.169	-0.216	13.397			
22293	15335	1:BEBAN MATI	-25.056	-4.44E 3	0.819	2.162	-0.006	-9.352			
		2:BEBAN HIDL	13.523	-1.61E 3	-0.381	0.700	0.003	-3.644			
		3:BEBAN GEM	19.568	-928.845	-32.531	0.853	0.229	11.112			
		4:KOMBINASI	-8.431	-7.89E 3	0.373	3.714	-0.003	-17.053			
		5:KOMB B. MA	3.604	-6.37E 3	-33.567	3.477	0.236	0.129			
	14546	1:BEBAN MATI	25.056	6.12E 3	-0.819	-2.162	-0.006	-68.319			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 486	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-13.523	1.61E 3	0.381	-0.700	0.003	-19.975			
		3:BEBAN GEM	-19.568	928.845	32.531	-0.853	0.250	-24.775			
		4:KOMBINASI	8.431	9.92E 3	-0.373	-3.714	-0.003	-113.943			
		5:KOMB B. MA	-3.604	8.06E 3	33.567	-3.477	0.258	-106.318			
22294	15336	1:BEBAN MATI	-16.246	-1.14E 3	-0.017	0.013	0.000	-2.719			
		2:BEBAN HIDL	5.059	-503.161	0.017	0.010	-0.000	-1.871			
		3:BEBAN GEM	304.191	30.380	-18.108	-0.069	0.129	1.523			
		4:KOMBINASI	-11.400	-2.17E 3	0.006	0.031	-0.000	-6.256			
		5:KOMB B. MA	306.191	-1.41E 3	-19.021	-0.053	0.135	-2.242			
	14662	1:BEBAN MATI	16.246	1.43E 3	0.017	-0.013	0.000	-16.178			
		2:BEBAN HIDL	-5.059	503.161	-0.017	-0.010	-0.000	-5.531			
		3:BEBAN GEM	-304.191	-30.380	18.108	0.069	0.137	-1.076			
		4:KOMBINASI	11.400	2.52E 3	-0.006	-0.031	-0.000	-28.263			
		5:KOMB B. MA	-306.191	1.7E 3	19.021	0.053	0.144	-20.626			
22295	15338	1:BEBAN MATI	-31.936	-4.13E 3	0.119	-1.218	-0.001	-11.960			
		2:BEBAN HIDL	17.935	-1.64E 3	0.199	-0.490	-0.001	-4.582			
		3:BEBAN GEM	-171.978	-262.281	52.454	-2.638	-0.389	3.052			
		4:KOMBINASI	-9.627	-7.57E 3	0.460	-2.246	-0.003	-21.684			
		5:KOMB B. MA	-201.752	-5.39E 3	55.314	-4.282	-0.410	-11.505			
	14546	1:BEBAN MATI	31.936	4.58E 3	-0.119	1.218	-0.001	-52.102			
		2:BEBAN HIDL	-17.935	1.64E 3	-0.199	0.490	-0.001	-19.485			
		3:BEBAN GEM	171.978	262.281	-52.454	2.638	-0.383	-6.910			
		4:KOMBINASI	9.627	8.11E 3	-0.460	2.246	-0.003	-93.699			
		5:KOMB B. MA	201.752	5.84E 3	-55.314	4.282	-0.403	-71.049			
22296	15339	1:BEBAN MATI	-18.517	2.51E 3	0.039	0.452	-0.000	-9.325			
		2:BEBAN HIDL	11.703	871.380	-0.151	0.213	0.001	-3.738			
		3:BEBAN GEM	-663.859	-216.877	25.538	1.195	-0.183	-3.131			
		4:KOMBINASI	-3.496	4.41E 3	-0.195	0.883	0.002	-17.171			
		5:KOMB B. MA	-708.547	2.81E 3	26.763	1.834	-0.192	-14.856			
	14662	1:BEBAN MATI	18.517	-2.06E 3	-0.039	-0.452	-0.000	42.967			
		2:BEBAN HIDL	-11.703	-871.380	0.151	-0.213	0.001	16.556			
		3:BEBAN GEM	663.859	216.877	-25.538	-1.195	-0.192	-0.059			
		4:KOMBINASI	3.496	-3.87E 3	0.195	-0.883	0.001	78.051			
		5:KOMB B. MA	708.547	-2.36E 3	-26.763	-1.834	-0.201	52.839			
22297	15340	1:BEBAN MATI	-7.945	-518.662	-0.048	2.052	-0.001	0.099			
		2:BEBAN HIDL	-24.186	-183.533	-0.837	0.946	0.008	1.591			
		3:BEBAN GEM	782.773	-491.794	42.474	-0.918	-0.419	0.012			
		4:KOMBINASI	-48.232	-916.048	-1.396	3.975	0.011	2.664			
		5:KOMB B. MA	799.454	-1.15E 3	44.048	1.655	-0.437	1.066			
	14578	1:BEBAN MATI	7.945	2.54E 3	0.048	-2.052	0.002	-27.132			
		2:BEBAN HIDL	24.186	183.533	0.837	-0.946	0.007	-4.831			
		3:BEBAN GEM	-782.773	491.794	-42.474	0.918	-0.331	-8.693			
		4:KOMBINASI	48.232	3.35E 3	1.396	-3.975	0.014	-40.287			
		5:KOMB B. MA	-799.454	3.17E 3	-44.048	-1.655	-0.341	-39.158			
22298	15342	1:BEBAN MATI	-8.286	2.45E 3	-3.740	1.586	0.011	-8.643			
		2:BEBAN HIDL	20.593	960.398	0.978	0.902	-0.002	-3.669			
		3:BEBAN GEM	-374.787	-805.302	-317.372	-0.510	0.852	-11.999			
		4:KOMBINASI	23.006	4.48E 3	-2.922	3.345	0.011	-16.241			



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Job No 1	Sheet No 487	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-389.457	2.18E 3	-336.393	1.591	0.905	-23.443			
	15432	1:BEBAN MATI	8.286	-2.3E 3	3.740	-1.586	0.007	20.287			
		2:BEBAN HIDL	-20.593	-960.398	-0.978	-0.902	-0.003	8.378			
		3:BEBAN GEM	374.787	805.302	317.372	0.510	0.704	8.050			
		4:KOMBINASI	-23.006	-4.3E 3	2.922	-3.345	0.003	37.748			
		5:KOMB B. MA	389.457	-2.03E 3	336.393	-1.591	0.745	33.766			
22299	15343	1:BEBAN MATI	3.542	-385.176	0.123	0.004	-0.001	1.471			
		2:BEBAN HIDL	0.891	-235.889	-0.067	0.003	0.001	-0.134			
		3:BEBAN GEM	496.764	-1.357	14.686	-0.052	-0.128	-0.002			
		4:KOMBINASI	5.676	-839.634	0.040	0.010	-0.001	1.550			
		5:KOMB B. MA	525.679	-528.133	15.502	-0.049	-0.135	1.388			
	14645	1:BEBAN MATI	-3.542	731.153	-0.123	-0.004	-0.001	-11.323			
		2:BEBAN HIDL	-0.891	235.889	0.067	-0.003	0.001	-4.030			
		3:BEBAN GEM	-496.764	1.357	-14.686	0.052	-0.131	-0.022			
		4:KOMBINASI	-5.676	1.25E 3	-0.040	-0.010	-0.000	-20.036			
		5:KOMB B. MA	-525.679	874.110	-15.502	0.049	-0.139	-13.764			
22300	15345	1:BEBAN MATI	-17.862	-3.33E 3	-0.391	1.269	0.000	-5.864			
		2:BEBAN HIDL	12.720	-1.4E 3	-0.033	0.127	-0.001	-2.405			
		3:BEBAN GEM	402.547	-848.809	-295.337	0.981	0.801	11.772			
		4:KOMBINASI	-1.084	-6.25E 3	-0.522	1.726	-0.001	-10.883			
		5:KOMB B. MA	412.444	-5.07E 3	-310.515	2.375	0.841	5.054			
	15443	1:BEBAN MATI	17.862	3.48E 3	0.391	-1.269	0.001	-10.847			
		2:BEBAN HIDL	-12.720	1.4E 3	0.033	-0.127	0.001	-4.480			
		3:BEBAN GEM	-402.547	848.809	295.337	-0.981	0.647	-15.934			
		4:KOMBINASI	1.084	6.43E 3	0.522	-1.726	0.003	-20.185			
		5:KOMB B. MA	-412.444	5.22E 3	310.515	-2.375	0.681	-30.266			
22301	15346	1:BEBAN MATI	-4.025	-976.800	0.242	-0.043	-0.002	-6.323			
		2:BEBAN HIDL	-8.669	-460.600	-0.049	0.004	0.000	-1.897			
		3:BEBAN GEM	679.621	-472.145	34.232	-1.313	-0.304	-0.085			
		4:KOMBINASI	-18.700	-1.91E 3	0.212	-0.046	-0.002	-10.622			
		5:KOMB B. MA	704.376	-1.75E 3	36.156	-1.420	-0.322	-7.551			
	14577	1:BEBAN MATI	4.025	3E 3	-0.242	0.043	-0.002	-28.797			
		2:BEBAN HIDL	8.669	460.600	0.049	-0.004	0.000	-6.234			
		3:BEBAN GEM	-679.621	472.145	-34.232	1.313	-0.300	-8.249			
		4:KOMBINASI	18.700	4.34E 3	-0.212	0.046	-0.002	-44.531			
		5:KOMB B. MA	-704.376	3.77E 3	-36.156	1.420	-0.316	-41.199			
22302	15348	1:BEBAN MATI	-24.177	2.54E 3	0.992	1.708	-0.003	-6.769			
		2:BEBAN HIDL	7.515	1.03E 3	-1.745	1.024	0.005	-2.434			
		3:BEBAN GEM	336.031	-798.474	-210.665	-0.541	0.550	-11.998			
		4:KOMBINASI	-16.988	4.71E 3	-1.602	3.688	0.005	-12.017			
		5:KOMB B. MA	333.165	2.33E 3	-221.254	1.754	0.578	-20.827			
	15454	1:BEBAN MATI	24.177	-2.39E 3	-0.992	-1.708	-0.002	18.879			
		2:BEBAN HIDL	-7.515	-1.03E 3	1.745	-1.024	0.003	7.503			
		3:BEBAN GEM	-336.031	798.474	210.665	0.541	0.483	8.082			
		4:KOMBINASI	16.988	-4.53E 3	1.602	-3.688	0.003	34.660			
		5:KOMB B. MA	-333.165	-2.18E 3	221.254	-1.754	0.507	31.868			
22303	15349	1:BEBAN MATI	-1.393	-404.071	0.055	0.013	-0.001	0.981			
		2:BEBAN HIDL	2.665	-237.950	-0.042	-0.000	0.000	-0.166			



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Job No 1	Sheet No 488	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	202.744	-1.854	16.121	-0.041	-0.143	0.012			
		4:KOMBINASI	2.592	-865.605	-0.000	0.016	-0.000	0.912			
		5:KOMB B. MA	213.086	-548.787	16.957	-0.030	-0.151	0.894			
	14644	1:BEBAN MATI	1.393	750.048	-0.055	-0.013	-0.000	-11.167			
		2:BEBAN HIDL	-2.665	237.950	0.042	0.000	0.000	-4.035			
		3:BEBAN GEM	-202.744	1.854	-16.121	0.041	-0.142	-0.045			
		4:KOMBINASI	-2.592	1.28E 3	0.000	-0.016	0.000	-19.856			
		5:KOMB B. MA	-213.086	894.764	-16.957	0.030	-0.149	-13.635			
22304	15351	1:BEBAN MATI	-29.970	-3.25E 3	1.192	0.920	-0.003	-6.342			
		2:BEBAN HIDL	7.341	-1.35E 3	-1.109	0.130	0.002	-3.299			
		3:BEBAN GEM	829.448	-847.585	-37.883	0.985	0.066	11.558			
		4:KOMBINASI	-24.219	-6.07E 3	-0.344	1.312	0.001	-12.889			
		5:KOMB B. MA	845.355	-4.96E 3	-39.250	2.032	0.068	3.814			
	15465	1:BEBAN MATI	29.970	3.4E 3	-1.192	-0.920	-0.003	-9.986			
		2:BEBAN HIDL	-7.341	1.35E 3	1.109	-0.130	0.003	-3.335			
		3:BEBAN GEM	-829.448	847.585	37.883	-0.985	0.120	-15.714			
		4:KOMBINASI	24.219	6.25E 3	0.344	-1.312	0.001	-17.319			
		5:KOMB B. MA	-845.355	5.11E 3	39.250	-2.032	0.125	-28.486			
22305	15352	1:BEBAN MATI	6.637	-1.02E 3	-0.074	-0.591	0.001	-3.977			
		2:BEBAN HIDL	-5.520	-421.663	-0.053	-0.171	0.000	-1.754			
		3:BEBAN GEM	-112.888	-473.787	35.271	-1.367	-0.317	0.030			
		4:KOMBINASI	-0.868	-1.9E 3	-0.173	-0.983	0.002	-7.579			
		5:KOMB B. MA	-115.207	-1.77E 3	36.929	-2.129	-0.332	-4.998			
	14548	1:BEBAN MATI	-6.637	1.56E 3	0.074	0.591	0.001	-18.800			
		2:BEBAN HIDL	5.520	421.663	0.053	0.171	0.000	-5.689			
		3:BEBAN GEM	112.888	473.787	-35.271	1.367	-0.306	-8.393			
		4:KOMBINASI	0.868	2.55E 3	0.173	0.983	0.001	-31.663			
		5:KOMB B. MA	115.207	2.31E 3	-36.929	2.129	-0.320	-31.026			
22306	15353	1:BEBAN MATI	-42.504	-2.16E 3	7.654	3.844	-0.045	-3.974			
		2:BEBAN HIDL	6.976	-528.305	-2.950	2.277	0.017	-0.821			
		3:BEBAN GEM	47.207	-402.245	18.345	-1.582	-0.114	3.774			
		4:KOMBINASI	-39.843	-3.44E 3	4.465	8.256	-0.026	-6.082			
		5:KOMB B. MA	11.249	-2.9E 3	25.147	3.548	-0.154	-0.504			
	14549	1:BEBAN MATI	42.504	3.51E 3	-7.654	-3.844	-0.046	-29.430			
		2:BEBAN HIDL	-6.976	528.305	2.950	-2.277	0.017	-5.396			
		3:BEBAN GEM	-47.207	402.245	-18.345	1.582	-0.102	-8.507			
		4:KOMBINASI	39.843	5.06E 3	-4.465	-8.256	-0.027	-43.950			
		5:KOMB B. MA	-11.249	4.25E 3	-25.147	-3.548	-0.142	-41.601			
22307	15355	1:BEBAN MATI	-22.735	-405.543	1.336	1.216	-0.007	-18.219			
		2:BEBAN HIDL	-2.897	-245.393	-0.466	0.809	0.003	-4.449			
		3:BEBAN GEM	-32.656	-340.760	3.293	-0.607	-0.013	-0.026			
		4:KOMBINASI	-31.917	-879.281	0.858	2.754	-0.004	-28.980			
		5:KOMB B. MA	-58.762	-910.576	4.514	1.065	-0.019	-20.915			
	15353	1:BEBAN MATI	22.735	1.76E 3	-1.336	-1.216	-0.009	5.501			
		2:BEBAN HIDL	2.897	245.393	0.466	-0.809	0.003	1.561			
		3:BEBAN GEM	32.656	340.760	-3.293	0.607	-0.026	-3.984			
		4:KOMBINASI	31.917	2.5E 3	-0.858	-2.754	-0.006	9.098			
		5:KOMB B. MA	58.762	2.26E 3	-4.514	-1.065	-0.034	2.254			



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Job No 1	Sheet No 489	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22308	15357	1:BEBAN MATI	-27.449	1.64E 3	-0.730	-1.862	0.005	-6.802			
		2:BEBAN HIDL	-4.102	214.505	0.471	-1.102	-0.003	-1.903			
		3:BEBAN GEM	-170.888	-345.627	-4.053	0.456	0.038	-4.172			
		4:KOMBINASI	-39.503	2.31E 3	-0.123	-3.998	0.001	-11.206			
		5:KOMB B. MA	-209.343	1.41E 3	-4.703	-2.045	0.043	-12.324			
	15355	1:BEBAN MATI	27.449	-291.337	0.730	1.862	0.004	18.176			
		2:BEBAN HIDL	4.102	-214.505	-0.471	1.102	-0.003	4.427			
		3:BEBAN GEM	170.888	345.627	4.053	-0.456	0.010	0.104			
		4:KOMBINASI	39.503	-692.812	0.123	3.998	0.000	28.894			
		5:KOMB B. MA	209.343	-57.132	4.703	2.045	0.013	20.942			
22309	15359	1:BEBAN MATI	-77.871	3.37E 3	-9.685	1.227	0.009	10.471			
		2:BEBAN HIDL	46.346	1.46E 3	-3.738	0.739	0.005	4.560			
		3:BEBAN GEM	-264.068	-926.410	4.971	-0.390	-0.054	-20.825			
		4:KOMBINASI	-19.291	6.39E 3	-17.602	2.654	0.019	19.862			
		5:KOMB B. MA	-327.335	3.28E 3	-6.708	1.260	-0.045	-8.659			
	15182	1:BEBAN MATI	77.871	-3.3E 3	9.685	-1.227	0.014	-2.296			
		2:BEBAN HIDL	-46.346	-1.46E 3	3.738	-0.739	0.004	-0.974			
		3:BEBAN GEM	264.068	926.410	-4.971	0.390	0.042	18.554			
		4:KOMBINASI	19.291	-6.3E 3	17.602	-2.654	0.024	-4.313			
		5:KOMB B. MA	327.335	-3.2E 3	6.708	-1.260	0.061	16.602			
22310	15363	1:BEBAN MATI	-47.266	2.08E 3	-5.583	1.475	0.013	-11.619			
		2:BEBAN HIDL	33.228	897.982	-1.859	0.694	0.005	-5.225			
		3:BEBAN GEM	-149.781	-812.800	32.170	-0.472	-0.112	-14.130			
		4:KOMBINASI	-3.555	3.93E 3	-9.674	2.880	0.023	-22.303			
		5:KOMB B. MA	-184.600	1.76E 3	27.080	1.395	-0.102	-29.591			
	15187	1:BEBAN MATI	47.266	-1.93E 3	5.583	-1.475	0.015	21.432			
		2:BEBAN HIDL	-33.228	-897.982	1.859	-0.694	0.005	9.628			
		3:BEBAN GEM	149.781	812.800	-32.170	0.472	-0.046	10.145			
		4:KOMBINASI	3.555	-3.75E 3	9.674	-2.880	0.025	41.123			
		5:KOMB B. MA	184.600	-1.61E 3	-27.080	-1.395	-0.031	37.860			
22311	15367	1:BEBAN MATI	-32.196	1.05E 3	-1.672	1.073	0.007	-25.762			
		2:BEBAN HIDL	26.695	432.699	-0.381	0.558	0.002	-11.462			
		3:BEBAN GEM	-65.435	-758.381	20.706	-0.510	-0.093	-7.844			
		4:KOMBINASI	4.076	1.96E 3	-2.616	2.180	0.011	-49.254			
		5:KOMB B. MA	-84.886	515.557	19.841	0.871	-0.089	-40.875			
	14647	1:BEBAN MATI	32.196	-826.993	1.672	-1.073	0.005	32.673			
		2:BEBAN HIDL	-26.695	-432.699	0.381	-0.558	0.001	14.644			
		3:BEBAN GEM	65.435	758.381	-20.706	0.510	-0.060	2.266			
		4:KOMBINASI	-4.076	-1.68E 3	2.616	-2.180	0.008	62.639			
		5:KOMB B. MA	84.886	-290.312	-19.841	-0.871	-0.057	43.839			
22312	15368	1:BEBAN MATI	0.533	-1.04E 3	-0.373	-0.137	0.002	-0.898			
		2:BEBAN HIDL	-0.140	-534.847	-0.092	-0.035	0.000	-0.674			
		3:BEBAN GEM	183.710	0.601	-2.549	0.051	0.017	0.418			
		4:KOMBINASI	0.415	-2.1E 3	-0.595	-0.221	0.004	-2.155			
		5:KOMB B. MA	193.344	-1.36E 3	-3.105	-0.105	0.021	-0.863			
	14652	1:BEBAN MATI	-0.533	1.27E 3	0.373	0.137	0.002	-12.667			
	2:BEBAN HIDL	0.140	534.847	0.092	0.035	0.001	-5.620				
	3:BEBAN GEM	-183.710	-0.601	2.549	-0.051	0.013	-0.410				



Software licensed to Snow Panther [LZ0]

Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-0.415	2.38E 3	0.595	0.221	0.003	-24.193			
		5:KOMB B. MA	-193.344	1.59E 3	3.105	0.105	0.016	-16.470			
22313	15369	1:BEBAN MATI	-4.996	-506.086	-0.373	-0.124	0.002	-10.275			
		2:BEBAN HIDL	0.401	-292.298	-0.056	-0.034	0.000	-5.155			
		3:BEBAN GEM	222.319	-26.278	-2.869	0.085	0.018	0.050			
		4:KOMBINASI	-5.354	-1.07E 3	-0.537	-0.203	0.003	-20.578			
		5:KOMB B. MA	228.679	-709.057	-3.419	-0.056	0.021	-13.315			
	15368	1:BEBAN MATI	4.996	736.737	0.373	0.124	0.002	2.962			
		2:BEBAN HIDL	-0.401	292.298	0.056	0.034	0.000	1.716			
		3:BEBAN GEM	-222.319	26.278	2.869	-0.085	0.016	-0.360			
		4:KOMBINASI	5.354	1.35E 3	0.537	0.203	0.003	6.299			
		5:KOMB B. MA	-228.679	939.708	3.419	0.056	0.019	3.614			
22314	15370	1:BEBAN MATI	-10.311	455.330	-0.371	0.041	0.002	-6.398			
		2:BEBAN HIDL	-0.972	178.030	-0.057	-0.005	0.000	-3.111			
		3:BEBAN GEM	259.893	-21.129	-3.325	-0.064	0.023	-0.234			
		4:KOMBINASI	-13.928	831.244	-0.536	0.040	0.003	-12.655			
		5:KOMB B. MA	261.994	539.962	-3.896	-0.030	0.026	-8.510			
	15369	1:BEBAN MATI	10.311	-224.678	0.371	-0.041	0.002	10.399			
		2:BEBAN HIDL	0.972	-178.030	0.057	0.005	0.000	5.206			
		3:BEBAN GEM	-259.893	21.129	3.325	0.064	0.016	-0.015			
		4:KOMBINASI	13.928	-554.462	0.536	-0.040	0.003	20.809			
		5:KOMB B. MA	-261.994	-309.310	3.896	0.030	0.019	13.507			
22315	15374	1:BEBAN MATI	-5.847	-1.75E 3	-12.259	-2.543	0.010	-22.913			
		2:BEBAN HIDL	29.332	-748.216	-3.999	-1.147	0.004	-10.504			
		3:BEBAN GEM	86.876	-848.302	360.294	0.058	-0.386	4.142			
		4:KOMBINASI	39.915	-3.29E 3	-21.108	-4.886	0.018	-44.303			
		5:KOMB B. MA	102.973	-3.09E 3	363.651	-3.170	-0.393	-24.867			
	15212	1:BEBAN MATI	5.847	1.82E 3	12.259	2.543	0.020	18.537			
		2:BEBAN HIDL	-29.332	748.216	3.999	1.147	0.006	8.670			
		3:BEBAN GEM	-86.876	848.302	-360.294	-0.058	-0.498	-6.221			
		4:KOMBINASI	-39.915	3.38E 3	21.108	4.886	0.034	36.116			
		5:KOMB B. MA	-102.973	3.16E 3	-363.651	3.170	-0.499	17.207			
22316	15378	1:BEBAN MATI	-2.540	-2.73E 3	-2.407	-2.968	0.007	-6.609			
		2:BEBAN HIDL	35.300	-1.2E 3	-2.245	-1.313	0.006	-3.578			
		3:BEBAN GEM	193.483	-964.577	232.811	0.351	-0.556	11.127			
		4:KOMBINASI	53.432	-5.2E 3	-6.480	-5.663	0.017	-13.655			
		5:KOMB B. MA	221.797	-4.46E 3	240.698	-3.387	-0.574	2.928			
	15216	1:BEBAN MATI	2.540	2.88E 3	2.407	2.968	0.005	-7.123			
		2:BEBAN HIDL	-35.300	1.2E 3	2.245	1.313	0.005	-2.328			
		3:BEBAN GEM	-193.483	964.577	-232.811	-0.351	-0.586	-15.856			
		4:KOMBINASI	-53.432	5.38E 3	6.480	5.663	0.015	-12.272			
		5:KOMB B. MA	-221.797	4.61E 3	-240.698	3.387	-0.606	-25.169			
22317	15382	1:BEBAN MATI	1.009	-3.77E 3	5.083	-2.480	-0.011	16.942			
		2:BEBAN HIDL	50.110	-1.65E 3	2.052	-1.055	-0.005	6.611			
		3:BEBAN GEM	434.160	-1.16E 3	111.435	0.840	-0.370	18.711			
		4:KOMBINASI	81.387	-7.17E 3	9.382	-4.664	-0.021	30.908			
		5:KOMB B. MA	486.943	-5.98E 3	123.321	-2.230	-0.402	40.555			
	14579	1:BEBAN MATI	-1.009	3.99E 3	-5.083	2.480	-0.027	-45.494			



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Job No 1	Sheet No 491	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-50.110	1.65E 3	-2.052	1.055	-0.010	-18.760			
		3:BEBAN GEM	-434.160	1.16E 3	-111.435	-0.840	-0.450	-27.260			
		4:KOMBINASI	-81.387	7.44E 3	-9.382	4.664	-0.048	-84.608			
		5:KOMB B. MA	-486.943	6.21E 3	-123.321	2.230	-0.505	-85.373			
22318	15383	1:BEBAN MATI	8.411	-2.61E 3	-1.150	-0.264	0.007	-6.555			
		2:BEBAN HIDL	4.126	-1.24E 3	0.169	-0.153	-0.001	-3.021			
		3:BEBAN GEM	545.441	-373.871	27.783	-2.084	-0.163	3.801			
		4:KOMBINASI	16.694	-5.12E 3	-1.110	-0.562	0.007	-12.699			
		5:KOMB B. MA	583.600	-3.75E 3	28.124	-2.544	-0.165	-4.377			
	14582	1:BEBAN MATI	-8.411	2.97E 3	1.150	0.264	0.007	-26.274			
		2:BEBAN HIDL	-4.126	1.24E 3	-0.169	0.153	-0.001	-11.595			
		3:BEBAN GEM	-545.441	373.871	-27.783	2.084	-0.164	-8.200			
		4:KOMBINASI	-16.694	5.55E 3	1.110	0.562	0.007	-50.081			
		5:KOMB B. MA	-583.600	4.11E 3	-28.124	2.544	-0.166	-41.841			
22319	15384	1:BEBAN MATI	10.440	-848.755	-0.833	-0.360	0.005	-20.108			
		2:BEBAN HIDL	5.047	-487.581	-0.178	-0.198	0.001	-9.544			
		3:BEBAN GEM	672.136	-299.846	12.188	-0.630	-0.069	0.229			
		4:KOMBINASI	20.603	-1.8E 3	-1.285	-0.749	0.008	-39.400			
		5:KOMB B. MA	719.211	-1.46E 3	11.858	-1.140	-0.067	-25.594			
	15383	1:BEBAN MATI	-10.440	1.21E 3	0.833	0.360	0.005	8.000			
		2:BEBAN HIDL	-5.047	487.581	0.178	0.198	0.001	3.806			
		3:BEBAN GEM	-672.136	299.846	-12.188	0.630	-0.075	-3.758			
		4:KOMBINASI	-20.603	2.23E 3	1.285	0.749	0.007	15.689			
		5:KOMB B. MA	-719.211	1.82E 3	-11.858	1.140	-0.073	6.338			
22320	15385	1:BEBAN MATI	17.141	1.25E 3	-1.559	-0.377	0.010	-7.573			
		2:BEBAN HIDL	8.195	477.700	-0.935	-0.215	0.006	-3.948			
		3:BEBAN GEM	904.554	-286.193	5.935	0.623	-0.041	-3.281			
		4:KOMBINASI	33.681	2.26E 3	-3.367	-0.797	0.022	-15.404			
		5:KOMB B. MA	971.839	1.24E 3	4.111	0.147	-0.029	-13.386			
	15384	1:BEBAN MATI	-17.141	-888.519	1.559	0.377	0.008	20.149			
		2:BEBAN HIDL	-8.195	-477.700	0.935	0.215	0.005	9.570			
		3:BEBAN GEM	-904.554	286.193	-5.935	-0.623	-0.029	-0.087			
		4:KOMBINASI	-33.681	-1.83E 3	3.367	0.797	0.018	39.491			
		5:KOMB B. MA	-971.839	-874.637	-4.111	-0.147	-0.019	25.800			
22321	15386	1:BEBAN MATI	-4.013	-2.47E 3	-0.179	-0.904	0.001	-5.074			
		2:BEBAN HIDL	3.480	-1.18E 3	0.141	-0.459	-0.001	-2.352			
		3:BEBAN GEM	-5.397	-346.040	47.420	-2.175	-0.265	3.842			
		4:KOMBINASI	0.752	-4.85E 3	0.011	-1.819	-0.000	-9.853			
		5:KOMB B. MA	-7.592	-3.54E 3	49.697	-3.464	-0.277	-2.452			
	14550	1:BEBAN MATI	4.013	2.83E 3	0.179	0.904	0.001	-26.119			
		2:BEBAN HIDL	-3.480	1.18E 3	-0.141	0.459	-0.001	-11.479			
		3:BEBAN GEM	5.397	346.040	-47.420	2.175	-0.294	-7.914			
		4:KOMBINASI	-0.752	5.28E 3	-0.011	1.819	-0.000	-49.708			
		5:KOMB B. MA	7.592	3.9E 3	-49.697	3.464	-0.308	-41.316			
22322	15388	1:BEBAN MATI	-4.966	-759.191	0.170	-0.322	-0.001	-17.277			
		2:BEBAN HIDL	4.731	-447.912	-0.023	-0.167	0.000	-8.265			
		3:BEBAN GEM	-98.553	-301.671	28.550	-0.630	-0.160	0.233			
		4:KOMBINASI	1.611	-1.63E 3	0.168	-0.654	-0.001	-33.956			



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Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-105.608	-1.34E 3	30.134	-1.084	-0.169	-21.991			
	15386	1:BEBAN MATI	4.966	1.12E 3	-0.170	0.322	-0.001	6.222			
		2:BEBAN HIDL	-4.731	447.912	0.023	0.167	0.000	2.993			
		3:BEBAN GEM	98.553	301.671	-28.550	0.630	-0.176	-3.783			
		4:KOMBINASI	-1.611	2.06E 3	-0.168	0.654	-0.001	12.256			
		5:KOMB B. MA	105.608	1.71E 3	-30.134	1.084	-0.186	4.046			
22323	15390	1:BEBAN MATI	-5.989	1.16E 3	0.322	0.417	-0.002	-5.700			
		2:BEBAN HIDL	6.387	430.809	-0.107	0.230	0.001	-3.210			
		3:BEBAN GEM	-170.997	-304.728	25.783	0.621	-0.155	-3.485			
		4:KOMBINASI	3.032	2.09E 3	0.215	0.869	-0.001	-11.976			
		5:KOMB B. MA	-181.703	1.1E 3	27.330	1.207	-0.164	-11.286			
	15388	1:BEBAN MATI	5.989	-804.351	-0.322	-0.417	-0.002	17.286			
		2:BEBAN HIDL	-6.387	-430.809	0.107	-0.230	0.001	8.280			
		3:BEBAN GEM	170.997	304.728	-25.783	-0.621	-0.149	-0.101			
		4:KOMBINASI	-3.032	-1.65E 3	-0.215	-0.869	-0.001	33.991			
		5:KOMB B. MA	181.703	-742.872	-27.330	-1.207	-0.158	22.148			
22324	15392	1:BEBAN MATI	-28.590	1.99E 3	0.012	0.301	-0.000	-2.983			
		2:BEBAN HIDL	6.606	710.769	-0.088	0.170	0.001	-1.656			
		3:BEBAN GEM	-94.172	-1.2E 3	-29.208	-0.332	0.164	-12.528			
		4:KOMBINASI	-23.738	3.53E 3	-0.127	0.633	0.001	-6.230			
		5:KOMB B. MA	-123.507	1.16E 3	-30.709	0.055	0.172	-17.131			
	14643	1:BEBAN MATI	28.590	-1.63E 3	-0.012	-0.301	0.000	24.337			
		2:BEBAN HIDL	-6.606	-710.769	0.088	-0.170	0.000	10.021			
		3:BEBAN GEM	94.172	1.2E 3	29.208	0.332	0.180	-1.585			
		4:KOMBINASI	23.738	-3.1E 3	0.127	-0.633	0.001	45.238			
		5:KOMB B. MA	123.507	-801.643	30.709	-0.055	0.190	28.686			
22325	15393	1:BEBAN MATI	-0.111	-938.193	0.113	0.180	-0.001	-0.909			
		2:BEBAN HIDL	2.960	-482.867	-0.014	0.034	0.000	-0.574			
		3:BEBAN GEM	-171.767	10.589	11.073	0.063	-0.058	0.511			
		4:KOMBINASI	4.603	-1.9E 3	0.113	0.269	-0.001	-2.009			
		5:KOMB B. MA	-178.690	-1.22E 3	11.731	0.266	-0.062	-0.716			
	14648	1:BEBAN MATI	0.111	1.17E 3	-0.113	-0.180	-0.000	-11.489			
		2:BEBAN HIDL	-2.960	482.867	0.014	-0.034	0.000	-5.108			
		3:BEBAN GEM	171.767	-10.589	-11.073	-0.063	-0.072	-0.386			
		4:KOMBINASI	-4.603	2.18E 3	-0.113	-0.269	-0.000	-21.960			
		5:KOMB B. MA	178.690	1.45E 3	-11.731	-0.266	-0.076	-14.960			
22326	15394	1:BEBAN MATI	-3.750	-343.135	0.141	0.143	-0.001	-7.636			
		2:BEBAN HIDL	3.429	-212.368	-0.025	0.027	0.000	-3.773			
		3:BEBAN GEM	-234.830	-38.499	10.340	0.133	-0.062	0.048			
		4:KOMBINASI	0.987	-751.550	0.129	0.215	-0.001	-15.200			
		5:KOMB B. MA	-248.263	-510.979	10.983	0.300	-0.065	-9.850			
	15393	1:BEBAN MATI	3.750	573.786	-0.141	-0.143	-0.001	2.241			
		2:BEBAN HIDL	-3.429	212.368	0.025	-0.027	0.000	1.274			
		3:BEBAN GEM	234.830	38.499	-10.340	-0.133	-0.060	-0.501			
		4:KOMBINASI	-0.987	1.03E 3	-0.129	-0.215	-0.001	4.727			
		5:KOMB B. MA	248.263	741.630	-10.983	-0.300	-0.064	2.480			
22327	15395	1:BEBAN MATI	-5.309	513.117	0.127	-0.097	-0.001	-2.963			
		2:BEBAN HIDL	3.067	166.247	-0.019	-0.002	0.000	-1.826			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-303.296	-45.820	13.697	-0.145	-0.085	-0.496			
		4:KOMBINASI	-1.463	881.735	0.122	-0.120	-0.001	-6.477			
		5:KOMB B. MA	-321.929	564.754	14.498	-0.251	-0.090	-4.579			
	15394	1:BEBAN MATI	5.309	-282.465	-0.127	0.097	-0.001	7.645			
		2:BEBAN HIDL	-3.067	-166.247	0.019	0.002	0.000	3.782			
		3:BEBAN GEM	303.296	45.820	-13.697	0.145	-0.076	-0.043			
		4:KOMBINASI	1.463	-604.953	-0.122	0.120	-0.001	15.225			
		5:KOMB B. MA	321.929	-334.102	-14.498	0.251	-0.080	9.868			
22328	15399	1:BEBAN MATI	-63.205	-2.82E 3	0.694	-0.777	-0.005	-7.531			
		2:BEBAN HIDL	13.414	-1.18E 3	0.215	-0.648	-0.002	-2.816			
		3:BEBAN GEM	459.986	-1.34E 3	-12.447	0.946	0.023	16.292			
		4:KOMBINASI	-54.384	-5.27E 3	1.176	-1.969	-0.009	-13.542			
		5:KOMB B. MA	427.828	-4.94E 3	-12.246	-0.172	0.018	7.886			
	14590	1:BEBAN MATI	63.205	3.19E 3	-0.694	0.777	-0.003	-27.830			
		2:BEBAN HIDL	-13.414	1.18E 3	-0.215	0.648	-0.001	-11.031			
		3:BEBAN GEM	-459.986	1.34E 3	12.447	-0.946	0.123	-32.044			
		4:KOMBINASI	54.384	5.7E 3	-1.176	1.969	-0.005	-51.045			
		5:KOMB B. MA	-427.828	5.3E 3	12.246	0.172	0.126	-68.094			
22329	15400	1:BEBAN MATI	-3.377	-2.09E 3	-4.254	-2.307	0.025	-4.082			
		2:BEBAN HIDL	10.368	-491.771	1.006	-1.509	-0.006	-0.841			
		3:BEBAN GEM	-58.349	-383.273	26.548	-1.981	-0.129	4.143			
		4:KOMBINASI	12.536	-3.29E 3	-3.495	-5.183	0.020	-6.244			
		5:KOMB B. MA	-58.423	-2.78E 3	24.224	-5.293	-0.114	-0.236			
	14591	1:BEBAN MATI	3.377	3.44E 3	4.254	2.307	0.025	-28.420			
		2:BEBAN HIDL	-10.368	491.771	-1.006	1.509	-0.006	-4.946			
		3:BEBAN GEM	58.349	383.273	-26.548	1.981	-0.184	-8.654			
		4:KOMBINASI	-12.536	4.91E 3	3.495	5.183	0.021	-42.018			
		5:KOMB B. MA	58.423	4.13E 3	-24.224	5.293	-0.171	-40.474			
22330	15401	1:BEBAN MATI	7.996	-272.710	-0.503	-0.718	0.003	-16.258			
		2:BEBAN HIDL	7.691	-194.431	0.091	-0.553	-0.001	-3.651			
		3:BEBAN GEM	-387.321	-343.705	0.645	-0.455	0.002	-0.217			
		4:KOMBINASI	21.901	-638.341	-0.457	-1.747	0.003	-25.352			
		5:KOMB B. MA	-394.076	-750.259	0.229	-1.529	0.005	-18.677			
	15400	1:BEBAN MATI	-7.996	1.62E 3	0.503	0.718	0.003	5.103			
		2:BEBAN HIDL	-7.691	194.431	-0.091	0.553	-0.000	1.363			
		3:BEBAN GEM	387.321	343.705	-0.645	0.455	-0.009	-3.827			
		4:KOMBINASI	-21.901	2.26E 3	0.457	1.747	0.002	8.305			
		5:KOMB B. MA	394.076	2.1E 3	-0.229	1.529	-0.007	1.902			
22331	15402	1:BEBAN MATI	8.797	1.64E 3	0.306	0.919	-0.001	-4.912			
		2:BEBAN HIDL	9.209	196.571	-0.131	0.678	0.001	-1.331			
		3:BEBAN GEM	-668.599	-344.814	-2.062	0.647	0.010	-4.331			
		4:KOMBINASI	25.292	2.28E 3	0.158	2.188	-0.000	-8.025			
		5:KOMB B. MA	-687.706	1.39E 3	-1.938	2.006	0.010	-10.259			
	15401	1:BEBAN MATI	-8.797	-287.970	-0.306	-0.919	-0.002	16.247			
		2:BEBAN HIDL	-9.209	-196.571	0.131	-0.678	0.001	3.644			
		3:BEBAN GEM	668.599	344.814	2.062	-0.647	0.014	0.273			
		4:KOMBINASI	-25.292	-660.078	-0.158	-2.188	-0.001	25.327			
		5:KOMB B. MA	687.706	-43.858	1.938	-2.006	0.013	18.721			



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Job No 1	Sheet No 494	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22332	15406	1:BEBAN MATI	-123.598	1.89E 3	0.024	3.705	-0.001	9.074			
		2:BEBAN HIDL	-29.372	642.638	-0.051	1.803	-0.000	3.428			
		3:BEBAN GEM	-479.772	-840.548	-7.516	-0.260	0.023	-16.238			
		4:KOMBINASI	-195.313	3.3E 3	-0.054	7.331	-0.002	16.373			
		5:KOMB B. MA	-644.982	1.4E 3	-7.899	4.514	0.023	-5.920			
	15410	1:BEBAN MATI	123.598	-1.59E 3	-0.024	-3.705	0.001	8.017			
		2:BEBAN HIDL	29.372	-642.638	0.051	-1.803	0.001	2.875			
		3:BEBAN GEM	479.772	840.548	7.516	0.260	0.051	7.995			
		4:KOMBINASI	195.313	-2.94E 3	0.054	-7.331	0.002	14.220			
		5:KOMB B. MA	644.982	-1.1E 3	7.899	-4.514	0.055	18.137			
22333	15410	1:BEBAN MATI	-115.152	1.03E 3	-0.210	2.121	0.000	-8.891			
		2:BEBAN HIDL	-24.270	328.617	0.029	0.940	-0.001	-3.224			
		3:BEBAN GEM	-673.091	-818.554	-6.549	0.081	0.017	-7.772			
		4:KOMBINASI	-177.015	1.76E 3	-0.205	4.049	-0.000	-15.827			
		5:KOMB B. MA	-836.460	367.510	-7.069	2.770	0.018	-18.986			
	14646	1:BEBAN MATI	115.152	-729.494	0.210	-2.121	0.002	17.518			
		2:BEBAN HIDL	24.270	-328.617	-0.029	-0.940	0.000	6.446			
		3:BEBAN GEM	673.091	818.554	6.549	-0.081	0.047	-0.255			
		4:KOMBINASI	177.015	-1.4E 3	0.205	-4.049	0.002	31.335			
		5:KOMB B. MA	836.460	-67.182	7.069	-2.770	0.051	21.118			
22334	15411	1:BEBAN MATI	-1.175	-1.1E 3	-0.143	0.062	0.001	-2.096			
		2:BEBAN HIDL	-0.492	-569.912	-0.098	0.001	0.001	-1.281			
		3:BEBAN GEM	62.992	1.199	9.514	0.054	-0.050	0.367			
		4:KOMBINASI	-2.197	-2.23E 3	-0.328	0.076	0.002	-4.566			
		5:KOMB B. MA	64.671	-1.44E 3	9.788	0.119	-0.052	-2.479			
	14651	1:BEBAN MATI	1.175	1.33E 3	0.143	-0.062	0.001	-12.173			
		2:BEBAN HIDL	0.492	569.912	0.098	-0.001	0.001	-5.425			
		3:BEBAN GEM	-62.992	-1.199	-9.514	-0.054	-0.061	-0.353			
		4:KOMBINASI	2.197	2.51E 3	0.328	-0.076	0.002	-23.288			
		5:KOMB B. MA	-64.671	1.67E 3	-9.788	-0.119	-0.063	-15.799			
22335	15412	1:BEBAN MATI	-0.339	-529.521	-0.085	0.050	0.001	-11.372			
		2:BEBAN HIDL	-1.164	-309.334	-0.068	0.001	0.000	-5.786			
		3:BEBAN GEM	52.517	-27.873	5.367	0.080	-0.031	-0.005			
		4:KOMBINASI	-2.270	-1.13E 3	-0.211	0.062	0.001	-22.905			
		5:KOMB B. MA	54.105	-744.388	5.510	0.135	-0.032	-14.849			
	15411	1:BEBAN MATI	0.339	760.172	0.085	-0.050	0.000	3.784			
		2:BEBAN HIDL	1.164	309.334	0.068	-0.001	0.000	2.146			
		3:BEBAN GEM	-52.517	27.873	-5.367	-0.080	-0.032	-0.324			
		4:KOMBINASI	2.270	1.41E 3	0.211	-0.062	0.001	7.974			
		5:KOMB B. MA	-54.105	975.039	-5.510	-0.135	-0.033	4.732			
22336	15413	1:BEBAN MATI	1.993	387.362	-0.065	-0.045	0.000	-8.252			
		2:BEBAN HIDL	-0.924	138.998	-0.051	0.003	0.000	-4.186			
		3:BEBAN GEM	45.119	-30.709	3.414	-0.109	-0.025	-0.409			
		4:KOMBINASI	0.913	687.232	-0.159	-0.050	0.001	-16.601			
		5:KOMB B. MA	48.814	438.517	3.490	-0.158	-0.026	-11.193			
	15412	1:BEBAN MATI	-1.993	-156.710	0.065	0.045	0.000	11.454			
		2:BEBAN HIDL	0.924	-138.998	0.051	-0.003	0.000	5.822			
		3:BEBAN GEM	-45.119	30.709	-3.414	0.109	-0.015	0.047			



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Job No 1	Sheet No 495	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-0.913	-410.449	0.159	0.050	0.001	23.059			
		5:KOMB B. MA	-48.814	-207.865	-3.490	0.158	-0.015	14.996			
22337	15417	1:BEBAN MATI	-113.180	-1.52E 3	0.103	-3.696	-0.002	-8.785			
		2:BEBAN HIDL	-20.467	-645.974	0.222	-1.877	-0.002	-2.827			
		3:BEBAN GEM	-1.03E 3	-838.685	-6.702	0.591	0.018	8.348			
		4:KOMBINASI	-168.564	-2.86E 3	0.478	-7.439	-0.004	-15.065			
		5:KOMB B. MA	-1.21E 3	-2.79E 3	-6.802	-4.202	0.016	-1.715			
	15421	1:BEBAN MATI	113.180	1.83E 3	-0.103	3.696	0.001	-7.642			
		2:BEBAN HIDL	20.467	645.974	-0.222	1.877	-0.001	-3.508			
		3:BEBAN GEM	1.03E 3	838.685	6.702	-0.591	0.048	-16.573			
		4:KOMBINASI	168.564	3.22E 3	-0.478	7.439	-0.000	-14.783			
		5:KOMB B. MA	1.21E 3	3.09E 3	6.802	4.202	0.051	-27.149			
22338	15421	1:BEBAN MATI	-118.174	-2.26E 3	1.893	-5.581	-0.011	9.124			
		2:BEBAN HIDL	-18.187	-856.535	2.982	-2.586	-0.012	4.246			
		3:BEBAN GEM	-1.34E 3	-922.763	-74.458	0.321	0.224	16.546			
		4:KOMBINASI	-170.908	-4.08E 3	7.043	-10.834	-0.033	17.743			
		5:KOMB B. MA	-1.53E 3	-3.74E 3	-74.498	-6.796	0.217	29.045			
	14578	1:BEBAN MATI	118.174	2.56E 3	-1.893	5.581	-0.008	-32.755			
		2:BEBAN HIDL	18.187	856.535	-2.982	2.586	-0.017	-12.646			
		3:BEBAN GEM	1.34E 3	922.763	74.458	-0.321	0.506	-25.596			
		4:KOMBINASI	170.908	4.44E 3	-7.043	10.834	-0.036	-59.540			
		5:KOMB B. MA	1.53E 3	4.04E 3	74.498	6.796	0.514	-67.218			
22339	15422	1:BEBAN MATI	18.558	-3.29E 3	-0.120	0.240	0.001	-7.618			
		2:BEBAN HIDL	7.786	-1.24E 3	-0.255	0.118	0.001	-2.982			
		3:BEBAN GEM	138.476	-381.137	28.767	-2.045	-0.160	3.651			
		4:KOMBINASI	34.726	-5.94E 3	-0.553	0.476	0.003	-13.913			
		5:KOMB B. MA	168.628	-4.43E 3	29.932	-1.837	-0.166	-5.574			
	14581	1:BEBAN MATI	-18.558	4.64E 3	0.120	-0.240	0.001	-39.019			
		2:BEBAN HIDL	-7.786	1.24E 3	0.255	-0.118	0.002	-11.656			
		3:BEBAN GEM	-138.476	381.137	-28.767	2.045	-0.179	-8.137			
		4:KOMBINASI	-34.726	7.56E 3	0.553	-0.476	0.003	-65.473			
		5:KOMB B. MA	-168.628	5.78E 3	-29.932	1.837	-0.186	-54.556			
22340	15423	1:BEBAN MATI	21.350	-706.013	0.159	0.391	-0.001	-25.450			
		2:BEBAN HIDL	9.927	-477.268	0.033	0.203	-0.000	-9.311			
		3:BEBAN GEM	84.284	-304.657	10.515	-0.599	-0.051	0.011			
		4:KOMBINASI	41.503	-1.61E 3	0.243	0.794	-0.001	-45.439			
		5:KOMB B. MA	115.805	-1.31E 3	11.219	-0.116	-0.054	-31.025			
	15422	1:BEBAN MATI	-21.350	2.06E 3	-0.159	-0.391	-0.001	9.196			
		2:BEBAN HIDL	-9.927	477.268	-0.033	-0.203	-0.000	3.695			
		3:BEBAN GEM	-84.284	304.657	-10.515	0.599	-0.073	-3.597			
		4:KOMBINASI	-41.503	3.23E 3	-0.243	-0.794	-0.002	16.947			
		5:KOMB B. MA	-115.805	2.66E 3	-11.219	0.116	-0.078	7.637			
22341	15424	1:BEBAN MATI	29.186	2.1E 3	0.844	0.625	-0.005	-8.731			
		2:BEBAN HIDL	14.711	480.213	0.553	0.306	-0.004	-3.690			
		3:BEBAN GEM	63.115	-303.108	0.637	0.636	0.011	-3.687			
		4:KOMBINASI	58.561	3.29E 3	1.897	1.240	-0.012	-16.381			
		5:KOMB B. MA	104.284	2.07E 3	1.844	1.477	0.004	-14.816			
	15423	1:BEBAN MATI	-29.186	-749.749	-0.844	-0.625	-0.005	25.500			



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Job No 1	Sheet No 496	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-14.711	-480.213	-0.553	-0.306	-0.003	9.341			
		3:BEBAN GEM	-63.115	303.108	-0.637	-0.636	-0.019	0.120			
		4:KOMBINASI	-58.561	-1.67E 3	-1.897	-1.240	-0.010	45.545			
		5:KOMB B. MA	-104.284	-719.614	-1.844	-1.477	-0.026	31.230			
22342	15428	1:BEBAN MATI	-35.753	3.38E 3	-0.355	-1.790	-0.000	7.966			
		2:BEBAN HIDL	32.167	1.35E 3	-2.494	-0.362	0.004	3.166			
		3:BEBAN GEM	-1.75E 3	-836.964	282.793	-0.308	-0.572	-16.032			
		4:KOMBINASI	8.562	6.22E 3	-4.416	-2.727	0.006	14.625			
		5:KOMB B. MA	-1.85E 3	3.31E 3	295.081	-2.330	-0.599	-6.968			
	15342	1:BEBAN MATI	35.753	-3.23E 3	0.355	1.790	0.002	8.233			
		2:BEBAN HIDL	-32.167	-1.35E 3	2.494	0.362	0.008	3.472			
		3:BEBAN GEM	1.75E 3	836.964	-282.793	0.308	-0.815	11.928			
		4:KOMBINASI	-8.562	-6.04E 3	4.416	2.727	0.016	15.435			
		5:KOMB B. MA	1.85E 3	-3.16E 3	-295.081	2.330	-0.848	22.841			
22343	15432	1:BEBAN MATI	-26.239	1.79E 3	-0.335	-0.636	0.001	-20.724			
		2:BEBAN HIDL	20.755	675.594	0.045	-0.131	-0.000	-8.556			
		3:BEBAN GEM	-1.02E 3	-780.283	39.062	-0.141	-0.235	-7.794			
		4:KOMBINASI	1.721	3.23E 3	-0.330	-0.973	0.001	-38.559			
		5:KOMB B. MA	-1.08E 3	1.38E 3	40.707	-0.863	-0.246	-34.041			
	14645	1:BEBAN MATI	26.239	-1.49E 3	0.335	0.636	0.002	36.838			
		2:BEBAN HIDL	-20.755	-675.594	-0.045	0.131	-0.000	15.182			
		3:BEBAN GEM	1.02E 3	780.283	-39.062	0.141	-0.148	0.142			
		4:KOMBINASI	-1.721	-2.87E 3	0.330	0.973	0.002	68.496			
		5:KOMB B. MA	1.08E 3	-1.08E 3	-40.707	0.863	-0.154	46.096			
22344	15433	1:BEBAN MATI	8.124	-1.02E 3	0.128	0.010	-0.001	-0.918			
		2:BEBAN HIDL	2.694	-536.126	-0.021	0.004	0.000	-0.705			
		3:BEBAN GEM	175.021	1.628	10.472	0.060	-0.056	0.365			
		4:KOMBINASI	14.059	-2.09E 3	0.120	0.017	-0.001	-2.230			
		5:KOMB B. MA	193.512	-1.34E 3	11.111	0.074	-0.059	-0.957			
	14650	1:BEBAN MATI	-8.124	1.25E 3	-0.128	-0.010	-0.001	-12.478			
		2:BEBAN HIDL	-2.694	536.126	0.021	-0.004	0.000	-5.604			
		3:BEBAN GEM	-175.021	-1.628	-10.472	-0.060	-0.067	-0.346			
		4:KOMBINASI	-14.059	2.36E 3	-0.120	-0.017	-0.001	-23.940			
		5:KOMB B. MA	-193.512	1.57E 3	-11.111	-0.074	-0.071	-16.204			
22345	15434	1:BEBAN MATI	8.718	-420.152	0.176	0.021	-0.001	-8.878			
		2:BEBAN HIDL	2.274	-263.152	-0.017	0.009	0.000	-4.646			
		3:BEBAN GEM	246.837	-26.770	10.546	0.091	-0.061	0.006			
		4:KOMBINASI	14.100	-925.225	0.184	0.040	-0.001	-18.088			
		5:KOMB B. MA	269.261	-606.151	11.238	0.123	-0.065	-11.659			
	15433	1:BEBAN MATI	-8.718	650.803	-0.176	-0.021	-0.001	2.577			
		2:BEBAN HIDL	-2.274	263.152	0.017	-0.009	0.000	1.549			
		3:BEBAN GEM	-246.837	26.770	-10.546	-0.091	-0.063	-0.321			
		4:KOMBINASI	-14.100	1.2E 3	-0.184	-0.040	-0.001	5.571			
		5:KOMB B. MA	-269.261	836.803	-11.238	-0.123	-0.067	3.169			
22346	15435	1:BEBAN MATI	8.202	582.999	0.219	0.031	-0.001	-3.394			
		2:BEBAN HIDL	1.201	206.974	-0.052	0.015	0.000	-2.228			
		3:BEBAN GEM	358.197	-27.720	14.901	-0.090	-0.090	-0.363			
		4:KOMBINASI	11.764	1.03E 3	0.181	0.062	-0.001	-7.638			



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Job No

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Sheet No

497

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	385.029	678.077	15.835	-0.054	-0.096	-5.112			
	15434	1:BEBAN MATI	-8.202	-352.347	-0.219	-0.031	-0.001	8.898			
		2:BEBAN HIDL	-1.201	-206.974	0.052	-0.015	0.000	4.664			
		3:BEBAN GEM	-358.197	27.720	-14.901	0.090	-0.085	0.036			
		4:KOMBINASI	-11.764	-753.974	-0.181	-0.062	-0.001	18.140			
		5:KOMB B. MA	-385.029	-447.425	-15.835	0.054	-0.091	11.734			
22347	15439	1:BEBAN MATI	-29.857	-2.45E 3	0.096	-1.793	0.000	-18.656			
		2:BEBAN HIDL	19.184	-1.03E 3	1.205	-1.017	-0.002	-7.629			
		3:BEBAN GEM	-1.19E 3	-786.510	214.315	0.194	-0.452	7.669			
		4:KOMBINASI	-5.133	-4.59E 3	2.042	-3.779	-0.003	-34.594			
		5:KOMB B. MA	-1.27E 3	-3.9E 3	225.849	-2.200	-0.475	-15.181			
	15345	1:BEBAN MATI	29.857	2.6E 3	-0.096	1.793	-0.001	6.255			
		2:BEBAN HIDL	-19.184	1.03E 3	-1.205	1.017	-0.004	2.575			
		3:BEBAN GEM	1.19E 3	786.510	-214.315	-0.194	-0.599	-11.526			
		4:KOMBINASI	5.133	4.77E 3	-2.042	3.779	-0.007	11.626			
		5:KOMB B. MA	1.27E 3	4.05E 3	-225.849	2.200	-0.632	-4.302			
22348	15443	1:BEBAN MATI	-23.656	-4E 3	0.164	-1.437	-0.001	11.724			
		2:BEBAN HIDL	17.995	-1.64E 3	0.759	-0.880	-0.003	4.983			
		3:BEBAN GEM	-460.459	-945.085	-1.698	0.608	-0.062	15.872			
		4:KOMBINASI	0.405	-7.43E 3	1.412	-3.132	-0.007	22.042			
		5:KOMB B. MA	-496.341	-5.98E 3	-1.163	-1.326	-0.068	31.380			
	14577	1:BEBAN MATI	23.656	4.3E 3	-0.164	1.437	-0.001	-52.453			
		2:BEBAN HIDL	-17.995	1.64E 3	-0.759	0.880	-0.004	-21.099			
		3:BEBAN GEM	460.459	945.085	1.698	-0.608	0.079	-25.140			
		4:KOMBINASI	-0.405	7.79E 3	-1.412	3.132	-0.007	-96.703			
		5:KOMB B. MA	496.341	6.28E 3	1.163	1.326	0.080	-91.510			
22349	15444	1:BEBAN MATI	8.814	-3.29E 3	0.267	-0.066	-0.001	-6.544			
		2:BEBAN HIDL	2.443	-1.25E 3	-0.092	0.006	0.001	-2.497			
		3:BEBAN GEM	361.193	-381.256	43.983	-2.060	-0.244	3.718			
		4:KOMBINASI	14.485	-5.94E 3	0.174	-0.070	-0.001	-11.848			
		5:KOMB B. MA	389.532	-4.44E 3	46.394	-2.226	-0.258	-4.138			
	14580	1:BEBAN MATI	-8.814	4.64E 3	-0.267	0.066	-0.002	-40.094			
		2:BEBAN HIDL	-2.443	1.25E 3	0.092	-0.006	0.001	-12.204			
		3:BEBAN GEM	-361.193	381.256	-43.983	2.060	-0.273	-8.205			
		4:KOMBINASI	-14.485	7.56E 3	-0.174	0.070	-0.001	-67.639			
		5:KOMB B. MA	-389.532	5.79E 3	-46.394	2.226	-0.288	-56.031			
22350	15445	1:BEBAN MATI	9.094	-712.815	0.158	-0.029	-0.001	-24.438			
		2:BEBAN HIDL	3.407	-482.803	-0.100	-0.009	0.001	-8.884			
		3:BEBAN GEM	377.661	-304.305	26.332	-0.616	-0.144	0.082			
		4:KOMBINASI	16.365	-1.63E 3	0.030	-0.049	-0.000	-43.539			
		5:KOMB B. MA	407.682	-1.32E 3	27.746	-0.681	-0.152	-29.682			
	15444	1:BEBAN MATI	-9.094	2.06E 3	-0.158	0.029	-0.001	8.104			
		2:BEBAN HIDL	-3.407	482.803	0.100	0.009	0.001	3.202			
		3:BEBAN GEM	-377.661	304.305	-26.332	0.616	-0.166	-3.663			
		4:KOMBINASI	-16.365	3.25E 3	-0.030	0.049	-0.000	14.848			
		5:KOMB B. MA	-407.682	2.67E 3	-27.746	0.681	-0.175	6.179			
22351	15446	1:BEBAN MATI	9.573	2.06E 3	0.135	0.006	-0.001	-8.129			
		2:BEBAN HIDL	4.647	465.239	-0.170	-0.017	0.001	-3.426			



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Job No 1	Sheet No 498	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	438.261	-303.061	24.590	0.609	-0.146	-3.616			
		4:KOMBINASI	18.922	3.22E 3	-0.109	-0.019	0.001	-15.236			
		5:KOMB B. MA	472.535	2.02E 3	25.853	0.635	-0.153	-13.981			
	15445	1:BEBAN MATI	-9.573	-712.282	-0.135	-0.006	-0.001	24.456			
		2:BEBAN HIDL	-4.647	-465.239	0.170	0.017	0.001	8.901			
		3:BEBAN GEM	-438.261	303.061	-24.590	-0.609	-0.144	0.050			
		4:KOMBINASI	-18.922	-1.6E 3	0.109	0.019	0.001	43.589			
		5:KOMB B. MA	-472.535	-673.211	-25.853	-0.635	-0.151	29.849			
22352	15450	1:BEBAN MATI	-35.059	3.42E 3	-1.862	-1.316	0.004	10.070			
		2:BEBAN HIDL	12.100	1.41E 3	1.135	-0.127	-0.003	4.638			
		3:BEBAN GEM	-1.33E 3	-847.355	145.167	-0.226	-0.279	-16.042			
		4:KOMBINASI	-22.710	6.36E 3	-0.418	-1.782	-0.000	19.504			
		5:KOMB B. MA	-1.43E 3	3.38E 3	151.244	-1.629	-0.291	-3.992			
	15348	1:BEBAN MATI	35.059	-3.27E 3	1.862	1.316	0.005	6.344			
		2:BEBAN HIDL	-12.100	-1.41E 3	-1.135	0.127	-0.002	2.264			
		3:BEBAN GEM	1.33E 3	847.355	-145.167	0.226	-0.432	11.887			
		4:KOMBINASI	22.710	-6.18E 3	0.418	1.782	0.002	11.235			
		5:KOMB B. MA	1.43E 3	-3.23E 3	-151.244	1.629	-0.450	20.184			
22353	15454	1:BEBAN MATI	-29.982	1.88E 3	-0.568	-0.553	0.003	-19.363			
		2:BEBAN HIDL	10.507	745.746	0.437	-0.032	-0.002	-7.717			
		3:BEBAN GEM	-620.518	-772.833	-1.160	-0.163	-0.034	-7.825			
		4:KOMBINASI	-19.167	3.45E 3	0.018	-0.714	-0.000	-35.582			
		5:KOMB B. MA	-675.221	1.52E 3	-1.524	-0.743	-0.034	-32.209			
	14644	1:BEBAN MATI	29.982	-1.58E 3	0.568	0.553	0.003	36.324			
		2:BEBAN HIDL	-10.507	-745.746	-0.437	0.032	-0.002	15.030			
		3:BEBAN GEM	620.518	772.833	1.160	0.163	0.045	0.246			
		4:KOMBINASI	19.167	-3.09E 3	-0.018	0.714	0.000	67.637			
		5:KOMB B. MA	675.221	-1.22E 3	1.524	0.743	0.049	45.601			
22354	15455	1:BEBAN MATI	0.814	-1.01E 3	0.094	-0.038	-0.001	-0.886			
		2:BEBAN HIDL	1.791	-536.846	-0.051	0.011	0.000	-0.725			
		3:BEBAN GEM	86.836	1.054	17.886	0.061	-0.097	0.369			
		4:KOMBINASI	3.841	-2.07E 3	0.031	-0.027	-0.000	-2.223			
		5:KOMB B. MA	93.065	-1.33E 3	18.844	0.033	-0.103	-0.934			
	14649	1:BEBAN MATI	-0.814	1.24E 3	-0.094	0.038	-0.001	-12.355			
		2:BEBAN HIDL	-1.791	536.846	0.051	-0.011	0.000	-5.592			
		3:BEBAN GEM	-86.836	-1.054	-17.886	-0.061	-0.113	-0.356			
		4:KOMBINASI	-3.841	2.35E 3	-0.031	0.027	-0.000	-23.773			
		5:KOMB B. MA	-93.065	1.56E 3	-18.844	-0.033	-0.119	-16.084			
22355	15456	1:BEBAN MATI	0.652	-407.974	0.067	-0.028	-0.000	-8.667			
		2:BEBAN HIDL	1.726	-263.687	-0.052	0.007	0.000	-4.673			
		3:BEBAN GEM	109.476	-27.334	15.935	0.093	-0.093	0.002			
		4:KOMBINASI	3.544	-911.469	-0.003	-0.023	-0.000	-17.877			
		5:KOMB B. MA	116.637	-594.888	16.767	0.073	-0.098	-11.468			
	15455	1:BEBAN MATI	-0.652	638.626	-0.067	0.028	-0.000	2.508			
		2:BEBAN HIDL	-1.726	263.687	0.052	-0.007	0.000	1.570			
		3:BEBAN GEM	-109.476	27.334	-15.935	-0.093	-0.094	-0.324			
		4:KOMBINASI	-3.544	1.19E 3	0.003	0.023	0.000	5.522			
		5:KOMB B. MA	-116.637	825.539	-16.767	-0.073	-0.099	3.111			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 499	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22356	15457	1:BEBAN MATI	0.351	576.394	0.070	0.044	-0.000	-3.251			
		2:BEBAN HIDL	1.812	210.179	-0.062	-0.007	0.000	-2.213			
		3:BEBAN GEM	140.649	-27.592	19.879	-0.091	-0.124	-0.365			
		4:KOMBINASI	3.321	1.03E 3	-0.015	0.042	0.000	-7.443			
		5:KOMB B. MA	149.121	673.530	20.906	-0.055	-0.130	-4.962			
15456	15456	1:BEBAN MATI	-0.351	-345.742	-0.070	-0.044	-0.000	8.677			
		2:BEBAN HIDL	-1.812	-210.179	0.062	0.007	0.000	4.687			
		3:BEBAN GEM	-140.649	27.592	-19.879	0.091	-0.110	0.040			
		4:KOMBINASI	-3.321	-751.177	0.015	-0.042	0.000	17.911			
		5:KOMB B. MA	-149.121	-442.878	-20.906	0.055	-0.116	11.531			
22357	15461	1:BEBAN MATI	-34.348	-2.39E 3	-2.470	-1.849	0.005	-18.932			
		2:BEBAN HIDL	12.340	-972.629	2.211	-1.044	-0.004	-8.204			
		3:BEBAN GEM	-995.949	-781.977	-35.235	0.172	0.109	7.485			
		4:KOMBINASI	-21.473	-4.43E 3	0.574	-3.888	-0.001	-35.844			
		5:KOMB B. MA	-1.07E 3	-3.8E 3	-38.140	-2.294	0.117	-15.995			
15351	15351	1:BEBAN MATI	34.348	2.54E 3	2.470	1.849	0.007	6.824			
		2:BEBAN HIDL	-12.340	972.629	-2.211	1.044	-0.006	3.435			
		3:BEBAN GEM	995.949	781.977	35.235	-0.172	0.064	-11.319			
		4:KOMBINASI	21.473	4.61E 3	-0.574	3.888	-0.002	13.685			
		5:KOMB B. MA	1.07E 3	3.95E 3	38.140	2.294	0.070	-3.000			
22358	15465	1:BEBAN MATI	-36.847	-3.89E 3	-0.879	-1.407	0.004	10.904			
		2:BEBAN HIDL	11.812	-1.61E 3	0.900	-0.944	-0.004	3.812			
		3:BEBAN GEM	-142.715	-947.715	-61.683	0.600	0.252	15.649			
		4:KOMBINASI	-25.317	-7.25E 3	0.386	-3.199	-0.002	19.183			
		5:KOMB B. MA	-179.611	-5.85E 3	-65.106	-1.344	0.267	29.622			
14548	14548	1:BEBAN MATI	36.847	4.19E 3	0.879	1.407	0.004	-50.521			
		2:BEBAN HIDL	-11.812	1.61E 3	-0.900	0.944	-0.005	-19.620			
		3:BEBAN GEM	142.715	947.715	61.683	-0.600	0.353	-24.943			
		4:KOMBINASI	25.317	7.61E 3	-0.386	3.199	-0.002	-92.018			
		5:KOMB B. MA	179.611	6.15E 3	65.106	1.344	0.372	-88.483			
22359	15467	1:BEBAN MATI	-21.377	2.84E 3	-0.629	-0.935	0.004	-3.416			
		2:BEBAN HIDL	5.467	686.282	0.341	-0.253	-0.002	-1.273			
		3:BEBAN GEM	-471.908	-1.08E 3	-33.793	-0.464	0.193	-12.534			
		4:KOMBINASI	-16.904	4.51E 3	-0.210	-1.526	0.001	-6.135			
		5:KOMB B. MA	-513.600	2.11E 3	-35.907	-1.574	0.205	-17.340			
14639	14639	1:BEBAN MATI	21.377	-1.49E 3	0.629	0.935	0.004	28.890			
		2:BEBAN HIDL	-5.467	-686.282	-0.341	0.253	-0.002	9.349			
		3:BEBAN GEM	471.908	1.08E 3	33.793	0.464	0.204	-0.225			
		4:KOMBINASI	16.904	-2.89E 3	0.210	1.526	0.001	49.625			
		5:KOMB B. MA	513.600	-762.872	35.907	1.574	0.217	34.263			
22360	15468	1:BEBAN MATI	-6.435	-315.906	-0.010	0.102	-0.000	0.478			
		2:BEBAN HIDL	3.210	-209.535	-0.028	0.057	0.000	-0.416			
		3:BEBAN GEM	-447.792	-10.676	14.391	-0.057	-0.127	0.098			
		4:KOMBINASI	-2.587	-714.342	-0.057	0.214	0.000	-0.092			
		5:KOMB B. MA	-474.691	-452.836	15.083	0.077	-0.133	0.331			
14643	14643	1:BEBAN MATI	6.435	661.883	0.010	-0.102	0.000	-9.108			
		2:BEBAN HIDL	-3.210	209.535	0.028	-0.057	0.000	-3.282			
		3:BEBAN GEM	447.792	10.676	-14.391	0.057	-0.127	-0.286			



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Job No

1

Sheet No

500

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	2.587	1.13E 3	0.057	-0.214	0.001	-16.182			
		5:KOMB B. MA	474.691	798.813	-15.083	-0.077	-0.133	-11.378			
22361	15470	1:BEBAN MATI	-8.215	-3.55E 3	-0.754	1.176	0.004	-7.596			
		2:BEBAN HIDL	9.774	-1.25E 3	-0.619	0.186	0.004	-1.229			
		3:BEBAN GEM	-735.307	-1.21E 3	-20.696	1.086	0.160	13.288			
		4:KOMBINASI	5.780	-6.25E 3	-1.896	1.710	0.012	-11.083			
		5:KOMB B. MA	-774.423	-5.57E 3	-22.856	2.428	0.174	5.618			
	14589	1:BEBAN MATI	8.215	4.9E 3	0.754	-1.176	0.005	-42.095			
		2:BEBAN HIDL	-9.774	1.25E 3	0.619	-0.186	0.003	-13.426			
		3:BEBAN GEM	735.307	1.21E 3	20.696	-1.086	0.084	-27.561			
		4:KOMBINASI	-5.780	7.87E 3	1.896	-1.710	0.011	-71.996			
		5:KOMB B. MA	774.423	6.92E 3	22.856	-2.428	0.095	-79.090			
22362	15471	1:BEBAN MATI	-41.222	-443.808	-1.942	-0.682	0.017	-1.757			
		2:BEBAN HIDL	-8.273	-184.048	0.089	-0.218	-0.001	0.779			
		3:BEBAN GEM	-1.29E 3	-375.247	28.336	-1.675	-0.278	-0.048			
		4:KOMBINASI	-62.703	-827.046	-2.188	-1.167	0.019	-0.861			
		5:KOMB B. MA	-1.4E 3	-948.245	27.864	-2.571	-0.275	-1.339			
	14590	1:BEBAN MATI	41.222	2.47E 3	1.942	0.682	0.017	-23.955			
		2:BEBAN HIDL	8.273	184.048	-0.089	0.218	-0.000	-4.028			
		3:BEBAN GEM	1.29E 3	375.247	-28.336	1.675	-0.222	-6.576			
		4:KOMBINASI	62.703	3.26E 3	2.188	1.167	0.020	-35.191			
		5:KOMB B. MA	1.4E 3	2.97E 3	-27.864	2.571	-0.217	-33.277			
22363	15473	1:BEBAN MATI	-18.359	653.381	-0.101	-0.013	0.001	2.029			
		2:BEBAN HIDL	5.381	154.738	0.034	-0.011	-0.000	0.300			
		3:BEBAN GEM	340.704	-89.370	-19.483	0.099	0.116	-1.208			
		4:KOMBINASI	-13.422	1.03E 3	-0.068	-0.033	0.000	2.914			
		5:KOMB B. MA	342.609	652.385	-20.539	0.084	0.123	0.940			
	14673	1:BEBAN MATI	18.359	-422.729	0.101	0.013	0.001	4.303			
		2:BEBAN HIDL	-5.381	-154.738	-0.034	0.011	-0.000	1.521			
		3:BEBAN GEM	-340.704	89.370	19.483	-0.099	0.113	0.157			
		4:KOMBINASI	13.422	-754.856	0.068	0.033	0.000	7.597			
		5:KOMB B. MA	-342.609	-421.733	20.539	-0.084	0.119	5.380			
22364	15475	1:BEBAN MATI	-11.331	-812.417	0.038	0.284	-0.000	-4.890			
		2:BEBAN HIDL	4.465	-441.929	-0.023	0.053	0.000	-2.140			
		3:BEBAN GEM	-504.930	14.008	14.842	0.274	-0.113	0.617			
		4:KOMBINASI	-6.453	-1.68E 3	0.008	0.425	0.000	-9.293			
		5:KOMB B. MA	-538.828	-1.06E 3	15.608	0.604	-0.118	-5.526			
	14639	1:BEBAN MATI	11.331	1.1E 3	-0.038	-0.284	-0.000	-9.181			
		2:BEBAN HIDL	-4.465	441.929	0.023	-0.053	0.000	-4.361			
		3:BEBAN GEM	504.930	-14.008	-14.842	-0.274	-0.106	-0.411			
		4:KOMBINASI	6.453	2.03E 3	-0.008	-0.425	-0.000	-17.994			
		5:KOMB B. MA	538.828	1.35E 3	-15.608	-0.604	-0.111	-12.229			
22365	15476	1:BEBAN MATI	-11.494	612.778	0.027	-0.112	-0.000	-3.584			
		2:BEBAN HIDL	6.324	167.328	-0.005	0.005	0.000	-1.771			
		3:BEBAN GEM	-727.054	-39.034	9.153	-0.318	-0.070	-0.612			
		4:KOMBINASI	-3.675	1E 3	0.025	-0.126	-0.000	-7.135			
		5:KOMB B. MA	-771.106	672.189	9.635	-0.443	-0.074	-5.289			
	14673	1:BEBAN MATI	11.494	-324.464	-0.027	0.112	-0.000	10.478			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 501	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-6.324	-167.328	0.005	-0.005	0.000	4.232			
		3:BEBAN GEM	727.054	39.034	-9.153	0.318	-0.064	0.038			
		4:KOMBINASI	3.675	-657.081	-0.025	0.126	-0.000	19.345			
		5:KOMB B. MA	771.106	-383.875	-9.635	0.443	-0.068	13.057			
22366	15478	1:BEBAN MATI	-20.158	-580.864	-0.057	-0.130	0.000	-1.199			
		2:BEBAN HIDL	4.271	-353.143	0.110	-0.068	-0.001	0.527			
		3:BEBAN GEM	302.777	5.863	-22.104	-0.063	0.133	1.402			
		4:KOMBINASI	-17.357	-1.26E 3	0.108	-0.264	-0.001	-0.596			
		5:KOMB B. MA	300.320	-786.594	-23.199	-0.237	0.140	0.589			
	14609	1:BEBAN MATI	20.158	811.516	0.057	0.130	0.000	-6.994			
		2:BEBAN HIDL	-4.271	353.143	-0.110	0.068	-0.001	-4.683			
		3:BEBAN GEM	-302.777	-5.863	22.104	0.063	0.127	-1.333			
		4:KOMBINASI	17.357	1.54E 3	-0.108	0.264	-0.001	-15.885			
		5:KOMB B. MA	-300.320	1.02E 3	23.199	0.237	0.133	-11.202			
22367	15480	1:BEBAN MATI	991.339	2.11E 3	-61.277	4.460	0.301	19.363			
		2:BEBAN HIDL	238.553	396.391	-15.948	1.449	0.076	4.195			
		3:BEBAN GEM	-351.261	-383.178	17.635	-0.353	-0.101	-12.000			
		4:KOMBINASI	1.57E 3	3.17E 3	-99.049	7.670	0.483	29.948			
		5:KOMB B. MA	765.647	1.95E 3	-52.329	4.958	0.241	9.280			
	15628	1:BEBAN MATI	-991.339	-1.89E 3	61.277	-4.460	0.150	-4.650			
		2:BEBAN HIDL	-238.553	-396.391	15.948	-1.449	0.041	-1.280			
		3:BEBAN GEM	351.261	383.178	-17.635	0.353	-0.029	9.181			
		4:KOMBINASI	-1.57E 3	-2.9E 3	99.049	-7.670	0.245	-7.628			
		5:KOMB B. MA	-765.647	-1.72E 3	52.329	-4.958	0.144	4.222			
22368	15482	1:BEBAN MATI	1.08E 3	3.62E 3	0.742	-0.034	-0.003	32.104			
		2:BEBAN HIDL	373.366	898.946	-0.207	0.005	0.000	9.472			
		3:BEBAN GEM	-254.700	-388.679	8.193	-0.300	-0.030	-11.763			
		4:KOMBINASI	1.9E 3	5.79E 3	0.559	-0.032	-0.004	53.679			
		5:KOMB B. MA	1.04E 3	3.75E 3	9.221	-0.345	-0.034	25.436			
	15633	1:BEBAN MATI	-1.08E 3	-3.4E 3	-0.742	0.034	-0.002	-6.285			
		2:BEBAN HIDL	-373.366	-898.946	0.207	-0.005	0.001	-2.860			
		3:BEBAN GEM	254.700	388.679	-8.193	0.300	-0.031	8.904			
		4:KOMBINASI	-1.9E 3	-5.52E 3	-0.559	0.032	-0.000	-12.117			
		5:KOMB B. MA	-1.04E 3	-3.53E 3	-9.221	0.345	-0.033	1.349			
22369	15484	1:BEBAN MATI	807.259	2.88E 3	25.038	-2.455	-0.086	24.202			
		2:BEBAN HIDL	273.667	678.894	7.670	-0.715	-0.025	6.778			
		3:BEBAN GEM	-232.628	-396.299	19.001	-0.261	-0.085	-11.605			
		4:KOMBINASI	1.41E 3	4.55E 3	42.318	-4.091	-0.144	39.887			
		5:KOMB B. MA	727.200	2.87E 3	49.591	-3.158	-0.190	16.084			
	15902	1:BEBAN MATI	-807.259	-2.66E 3	-25.038	2.455	-0.098	-3.828			
		2:BEBAN HIDL	-273.667	-678.894	-7.670	0.715	-0.031	-1.785			
		3:BEBAN GEM	232.628	396.299	-19.001	0.261	-0.055	8.690			
		4:KOMBINASI	-1.41E 3	-4.28E 3	-42.318	4.091	-0.168	-7.449			
		5:KOMB B. MA	-727.200	-2.65E 3	-49.591	3.158	-0.175	4.226			
22370	15486	1:BEBAN MATI	371.892	1.12E 3	23.810	-0.609	-0.132	8.445			
		2:BEBAN HIDL	91.914	205.460	6.336	-0.213	-0.034	2.070			
		3:BEBAN GEM	-509.838	-791.693	-4.577	-0.032	0.060	-13.556			
		4:KOMBINASI	593.334	1.67E 3	38.709	-1.071	-0.213	13.446			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 502	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-108.289	413.640	22.806	-0.770	-0.089	-4.547			
	15670	1:BEBAN MATI	-371.892	-821.314	-23.810	0.609	-0.102	1.082			
		2:BEBAN HIDL	-91.914	-205.460	-6.336	0.213	-0.028	-0.055			
		3:BEBAN GEM	509.838	791.693	4.577	0.032	-0.015	5.792			
		4:KOMBINASI	-593.334	-1.31E 3	-38.709	1.071	-0.167	1.210			
		5:KOMB B. MA	108.289	-113.312	-22.806	0.770	-0.134	7.130			
22371	15488	1:BEBAN MATI	1.38E 3	2.96E 3	-32.399	1.552	0.280	33.028			
		2:BEBAN HIDL	343.595	583.210	-7.737	0.603	0.069	7.757			
		3:BEBAN GEM	-264.500	-346.373	22.356	-0.517	-0.167	-10.914			
		4:KOMBINASI	2.21E 3	4.49E 3	-51.258	2.828	0.445	52.044			
		5:KOMB B. MA	1.31E 3	2.95E 3	-13.567	1.372	0.145	26.222			
	15679	1:BEBAN MATI	-1.38E 3	-2.51E 3	32.399	-1.552	0.197	7.272			
		2:BEBAN HIDL	-343.595	-583.210	7.737	-0.603	0.045	0.822			
		3:BEBAN GEM	264.500	346.373	-22.356	0.517	-0.162	5.819			
		4:KOMBINASI	-2.21E 3	-3.95E 3	51.258	-2.828	0.309	10.043			
		5:KOMB B. MA	-1.31E 3	-2.5E 3	13.567	-1.372	0.054	13.876			
22372	15490	1:BEBAN MATI	1.38E 3	2.96E 3	32.399	-1.552	-0.280	33.028			
		2:BEBAN HIDL	343.594	583.210	7.737	-0.603	-0.069	7.757			
		3:BEBAN GEM	-364.937	-411.473	-19.472	-0.323	0.160	-11.914			
		4:KOMBINASI	2.21E 3	4.49E 3	51.258	-2.828	-0.445	52.044			
		5:KOMB B. MA	1.21E 3	2.88E 3	16.595	-2.253	-0.153	25.172			
	15683	1:BEBAN MATI	-1.38E 3	-2.51E 3	-32.399	1.552	-0.197	7.272			
		2:BEBAN HIDL	-343.594	-583.210	-7.737	0.603	-0.045	0.822			
		3:BEBAN GEM	364.937	411.473	19.472	0.323	0.127	5.861			
		4:KOMBINASI	-2.21E 3	-3.95E 3	-51.258	2.828	-0.309	10.043			
		5:KOMB B. MA	-1.21E 3	-2.43E 3	-16.595	2.253	-0.091	13.920			
22373	15492	1:BEBAN MATI	371.892	1.12E 3	-23.810	0.609	0.132	8.445			
		2:BEBAN HIDL	91.914	205.460	-6.336	0.213	0.034	2.070			
		3:BEBAN GEM	-395.050	-690.244	9.806	-0.162	-0.081	-12.173			
		4:KOMBINASI	593.333	1.67E 3	-38.709	1.071	0.213	13.446			
		5:KOMB B. MA	12.238	520.161	-17.315	0.566	0.068	-3.094			
	16132	1:BEBAN MATI	-371.892	-821.314	23.810	-0.609	0.102	1.082			
		2:BEBAN HIDL	-91.914	-205.460	6.336	-0.213	0.028	-0.055			
		3:BEBAN GEM	395.050	690.244	-9.806	0.162	-0.016	5.404			
		4:KOMBINASI	-593.333	-1.31E 3	38.709	-1.071	0.167	1.210			
		5:KOMB B. MA	-12.238	-219.833	17.315	-0.566	0.102	6.723			
22374	15494	1:BEBAN MATI	807.259	2.88E 3	-25.038	2.455	0.086	24.202			
		2:BEBAN HIDL	273.667	678.894	-7.670	0.715	0.025	6.778			
		3:BEBAN GEM	-254.530	-361.773	-1.049	-0.461	-0.002	-11.220			
		4:KOMBINASI	1.41E 3	4.55E 3	-42.318	4.091	0.144	39.887			
		5:KOMB B. MA	704.203	2.91E 3	-30.742	2.400	0.099	16.488			
	16306	1:BEBAN MATI	-807.259	-2.66E 3	25.038	-2.455	0.098	-3.828			
		2:BEBAN HIDL	-273.667	-678.894	7.670	-0.715	0.031	-1.785			
		3:BEBAN GEM	254.530	361.773	1.049	0.461	0.010	8.559			
		4:KOMBINASI	-1.41E 3	-4.28E 3	42.318	-4.091	0.168	-7.449			
		5:KOMB B. MA	-704.203	-2.68E 3	30.742	-2.400	0.127	4.088			
22375	15496	1:BEBAN MATI	1.08E 3	3.62E 3	-0.742	0.034	0.003	32.104			
		2:BEBAN HIDL	373.366	898.947	0.207	-0.005	-0.000	9.472			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 503	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-268.256	-376.152	11.231	-0.323	-0.044	-11.565			
		4:KOMBINASI	1.9E 3	5.79E 3	-0.559	0.032	0.004	53.679			
		5:KOMB B. MA	1.03E 3	3.77E 3	11.174	-0.309	-0.043	25.643			
	16095	1:BEBAN MATI	-1.08E 3	-3.4E 3	0.742	-0.034	0.002	-6.285			
		2:BEBAN HIDL	-373.366	-898.947	-0.207	0.005	-0.001	-2.860			
		3:BEBAN GEM	268.256	376.152	-11.231	0.323	-0.039	8.799			
		4:KOMBINASI	-1.9E 3	-5.52E 3	0.559	-0.032	0.000	-12.117			
		5:KOMB B. MA	-1.03E 3	-3.54E 3	-11.174	0.309	-0.039	1.238			
22376	15498	1:BEBAN MATI	991.339	2.11E 3	61.277	-4.460	-0.301	19.363			
		2:BEBAN HIDL	238.553	396.392	15.948	-1.449	-0.076	4.195			
		3:BEBAN GEM	-378.179	-377.784	-8.964	-0.207	0.075	-11.768			
		4:KOMBINASI	1.57E 3	3.17E 3	99.049	-7.670	-0.483	29.948			
		5:KOMB B. MA	737.383	1.95E 3	61.434	-5.547	-0.268	9.523			
	16090	1:BEBAN MATI	-991.339	-1.89E 3	-61.277	4.460	-0.150	-4.650			
		2:BEBAN HIDL	-238.553	-396.392	-15.948	1.449	-0.041	-1.280			
		3:BEBAN GEM	378.179	377.784	8.964	0.207	-0.010	8.990			
		4:KOMBINASI	-1.57E 3	-2.9E 3	-99.049	7.670	-0.245	-7.628			
		5:KOMB B. MA	-737.383	-1.73E 3	-61.434	5.547	-0.184	4.021			
22377	15480	1:BEBAN MATI	459.794	1.38E 3	32.180	-3.950	-0.163	10.180			
		2:BEBAN HIDL	127.016	252.290	8.079	-1.228	-0.042	2.430			
		3:BEBAN GEM	-43.960	-129.543	-7.148	0.534	0.024	-3.308			
		4:KOMBINASI	754.979	2.05E 3	51.544	-6.705	-0.263	16.103			
		5:KOMB B. MA	489.846	1.39E 3	29.523	-4.127	-0.164	8.164			
	15626	1:BEBAN MATI	-459.794	-1.02E 3	-32.180	3.950	-0.215	3.887			
		2:BEBAN HIDL	-127.016	-252.290	-8.079	1.228	-0.053	0.539			
		3:BEBAN GEM	43.960	129.543	7.148	-0.534	0.061	1.784			
		4:KOMBINASI	-754.979	-1.62E 3	-51.544	6.705	-0.343	5.528			
		5:KOMB B. MA	-489.846	-1.03E 3	-29.523	4.127	-0.184	6.084			
22378	15500	1:BEBAN MATI	555.196	2.16E 3	0.138	0.104	-0.004	14.780			
		2:BEBAN HIDL	224.839	577.424	-0.028	-0.016	-0.000	5.579			
		3:BEBAN GEM	-30.008	-125.334	-15.067	0.672	0.075	-3.188			
		4:KOMBINASI	1.03E 3	3.52E 3	0.121	0.099	-0.006	26.664			
		5:KOMB B. MA	658.591	2.38E 3	-15.700	0.800	0.074	14.780			
	15662	1:BEBAN MATI	-555.196	-1.8E 3	-0.138	-0.104	0.003	8.557			
		2:BEBAN HIDL	-224.839	-577.424	0.028	0.016	0.001	1.216			
		3:BEBAN GEM	30.008	125.334	15.067	-0.672	0.103	1.714			
		4:KOMBINASI	-1.03E 3	-3.09E 3	-0.121	-0.099	0.004	12.214			
		5:KOMB B. MA	-658.591	-2.02E 3	15.700	-0.800	0.111	11.086			
22379	15502	1:BEBAN MATI	630.878	2.23E 3	0.864	-0.027	-0.006	16.461			
		2:BEBAN HIDL	221.317	579.469	0.143	0.016	-0.001	5.526			
		3:BEBAN GEM	-76.235	-127.182	-17.110	0.666	0.093	-3.221			
		4:KOMBINASI	1.11E 3	3.61E 3	1.265	-0.007	-0.009	28.595			
		5:KOMB B. MA	683.621	2.45E 3	-17.015	0.682	0.091	16.395			
	15745	1:BEBAN MATI	-630.878	-1.87E 3	-0.864	0.027	-0.004	7.706			
		2:BEBAN HIDL	-221.317	-579.469	-0.143	-0.016	-0.000	1.293			
		3:BEBAN GEM	76.235	127.182	17.110	-0.666	0.109	1.724			
		4:KOMBINASI	-1.11E 3	-3.18E 3	-1.265	0.007	-0.006	11.316			
		5:KOMB B. MA	-683.621	-2.09E 3	17.015	-0.682	0.110	10.293			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 504	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22380	15504	1:BEBAN MATI	632.044	2.22E 3	-0.016	0.033	-0.001	16.299			
		2:BEBAN HIDL	221.014	572.087	0.164	-0.008	-0.001	5.459			
		3:BEBAN GEM	-89.017	-131.748	-15.692	0.677	0.081	-3.300			
		4:KOMBINASI	1.11E 3	3.58E 3	0.244	0.028	-0.003	28.293			
		5:KOMB B. MA	671.184	2.43E 3	-16.394	0.740	0.084	16.109			
15771	15771	1:BEBAN MATI	-632.044	-1.86E 3	0.016	-0.033	0.001	7.712			
		2:BEBAN HIDL	-221.014	-572.087	-0.164	0.008	-0.001	1.273			
		3:BEBAN GEM	89.017	131.748	15.692	-0.677	0.104	1.749			
		4:KOMBINASI	-1.11E 3	-3.15E 3	-0.244	-0.028	-0.000	11.291			
		5:KOMB B. MA	-671.184	-2.07E 3	16.394	-0.740	0.109	10.313			
22381	15481	1:BEBAN MATI	516.627	2.07E 3	-4.347	0.807	0.017	14.054			
		2:BEBAN HIDL	201.737	532.490	-0.930	0.314	0.003	5.089			
		3:BEBAN GEM	-108.406	-142.887	-14.413	0.691	0.069	-3.489			
		4:KOMBINASI	942.731	3.34E 3	-6.705	1.472	0.024	25.008			
		5:KOMB B. MA	523.843	2.24E 3	-20.039	1.721	0.091	13.445			
15693	15693	1:BEBAN MATI	-516.627	-1.71E 3	4.347	-0.807	0.034	8.188			
		2:BEBAN HIDL	-201.737	-532.490	0.930	-0.314	0.008	1.177			
		3:BEBAN GEM	108.406	142.887	14.413	-0.691	0.100	1.807			
		4:KOMBINASI	-942.731	-2.9E 3	6.705	-1.472	0.055	11.708			
		5:KOMB B. MA	-523.843	-1.88E 3	20.039	-1.721	0.145	10.792			
22382	15530	1:BEBAN MATI	453.771	1.35E 3	-23.303	2.682	0.138	9.938			
		2:BEBAN HIDL	110.644	231.644	-5.753	0.874	0.034	2.151			
		3:BEBAN GEM	-182.553	-131.995	-0.722	0.516	-0.032	-3.529			
		4:KOMBINASI	721.557	1.99E 3	-37.169	4.618	0.220	15.368			
		5:KOMB B. MA	328.477	1.35E 3	-27.513	3.749	0.125	7.523			
15709	15709	1:BEBAN MATI	-453.771	-986.120	23.303	-2.682	0.136	3.787			
		2:BEBAN HIDL	-110.644	-231.644	5.753	-0.874	0.034	0.575			
		3:BEBAN GEM	182.553	131.995	0.722	-0.516	0.040	1.976			
		4:KOMBINASI	-721.557	-1.55E 3	37.169	-4.618	0.217	5.464			
		5:KOMB B. MA	-328.477	-986.511	27.513	-3.749	0.199	6.207			
22383	15540	1:BEBAN MATI	629.569	1.86E 3	-23.449	5.930	0.167	15.887			
		2:BEBAN HIDL	212.664	377.072	-7.462	2.081	0.054	4.137			
		3:BEBAN GEM	-196.625	-103.011	5.935	0.533	-0.058	-3.293			
		4:KOMBINASI	1.1E 3	2.83E 3	-40.078	10.446	0.287	25.684			
		5:KOMB B. MA	550.711	1.98E 3	-21.694	7.738	0.139	14.912			
16041	16041	1:BEBAN MATI	-629.569	-1.41E 3	23.449	-5.930	0.178	8.142			
		2:BEBAN HIDL	-212.664	-377.072	7.462	-2.081	0.055	1.410			
		3:BEBAN GEM	196.625	103.011	-5.935	-0.533	-0.029	1.777			
		4:KOMBINASI	-1.1E 3	-2.29E 3	40.078	-10.446	0.302	12.026			
		5:KOMB B. MA	-550.711	-1.53E 3	21.694	-7.738	0.180	10.854			
22384	15546	1:BEBAN MATI	-0.279	889.762	1.106	0.015	-0.008	2.781			
		2:BEBAN HIDL	1.399	216.443	0.092	-0.040	-0.001	0.802			
		3:BEBAN GEM	14.258	1.178	-1.511	-0.023	0.011	-0.260			
		4:KOMBINASI	1.904	1.41E 3	1.475	-0.046	-0.011	4.621			
		5:KOMB B. MA	15.531	1.02E 3	-0.424	-0.034	0.003	2.990			
15644	15644	1:BEBAN MATI	0.279	-659.111	-1.106	-0.015	-0.005	6.333			
		2:BEBAN HIDL	-1.399	-216.443	-0.092	0.040	-0.000	1.745			
		3:BEBAN GEM	-14.258	-1.178	1.511	0.023	0.007	0.273			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 505	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-1.904	-1.14E 3	-1.475	0.046	-0.006	10.391			
		5:KOMB B. MA	-15.531	-790.214	0.424	0.034	0.002	7.667			
22385	15548	1:BEBAN MATI	-10.346	911.663	0.230	0.005	-0.002	2.648			
		2:BEBAN HIDL	-2.211	224.844	0.070	0.002	-0.001	0.797			
		3:BEBAN GEM	-12.334	0.297	-4.548	-0.024	0.033	-0.267			
		4:KOMBINASI	-15.953	1.45E 3	0.388	0.009	-0.003	4.453			
		5:KOMB B. MA	-24.623	1.05E 3	-4.503	-0.019	0.033	2.845			
	15758	1:BEBAN MATI	10.346	-681.011	-0.230	-0.005	-0.001	6.724			
		2:BEBAN HIDL	2.211	-224.844	-0.070	-0.002	-0.000	1.849			
		3:BEBAN GEM	12.334	-0.297	4.548	0.024	0.020	0.271			
		4:KOMBINASI	15.953	-1.18E 3	-0.388	-0.009	-0.002	11.026			
		5:KOMB B. MA	24.623	-816.229	4.503	0.019	0.020	8.117			
22386	15550	1:BEBAN MATI	-7.117	910.086	-0.141	0.019	0.001	2.626			
		2:BEBAN HIDL	-1.030	224.792	0.025	0.001	-0.000	0.828			
		3:BEBAN GEM	-21.635	0.086	-4.387	-0.022	0.031	-0.278			
		4:KOMBINASI	-10.188	1.45E 3	-0.130	0.025	0.001	4.476			
		5:KOMB B. MA	-30.451	1.05E 3	-4.733	-0.004	0.034	2.831			
	15784	1:BEBAN MATI	7.117	-679.435	0.141	-0.019	0.001	6.726			
		2:BEBAN HIDL	1.030	-224.792	-0.025	-0.001	-0.000	1.817			
		3:BEBAN GEM	21.635	-0.086	4.387	0.022	0.020	0.280			
		4:KOMBINASI	10.188	-1.17E 3	0.130	-0.025	0.001	10.979			
		5:KOMB B. MA	30.451	-814.400	4.733	0.004	0.022	8.110			
22387	15552	1:BEBAN MATI	13.833	816.889	-1.532	0.006	0.011	2.927			
		2:BEBAN HIDL	5.381	189.646	-0.287	0.050	0.002	0.866			
		3:BEBAN GEM	-27.708	-2.909	-2.392	-0.023	0.018	-0.379			
		4:KOMBINASI	25.210	1.28E 3	-2.298	0.088	0.017	4.899			
		5:KOMB B. MA	-12.031	927.622	-4.216	0.013	0.031	3.049			
	15701	1:BEBAN MATI	-13.833	-586.237	1.532	-0.006	0.007	5.329			
		2:BEBAN HIDL	-5.381	-189.646	0.287	-0.050	0.002	1.365			
		3:BEBAN GEM	27.708	2.909	2.392	0.023	0.011	0.345			
		4:KOMBINASI	-25.210	-1.01E 3	2.298	-0.088	0.010	8.579			
		5:KOMB B. MA	12.031	-696.970	4.216	-0.013	0.019	6.510			
22388	15555	1:BEBAN MATI	12.610	184.983	-0.358	-0.460	0.002	-0.379			
		2:BEBAN HIDL	4.966	24.410	0.037	-0.046	-0.000	-0.221			
		3:BEBAN GEM	-139.375	-9.911	4.198	-0.125	-0.045	-0.049			
		4:KOMBINASI	23.078	261.036	-0.369	-0.626	0.002	-0.808			
		5:KOMB B. MA	-130.754	189.223	4.073	-0.619	-0.046	-0.563			
	15842	1:BEBAN MATI	-12.610	103.331	0.358	0.460	0.003	0.979			
		2:BEBAN HIDL	-4.966	-24.410	-0.037	0.046	-0.000	0.580			
		3:BEBAN GEM	139.375	9.911	-4.198	0.125	-0.016	-0.097			
		4:KOMBINASI	-23.078	84.942	0.369	0.626	0.004	2.103			
		5:KOMB B. MA	130.754	99.092	-4.073	0.619	-0.014	1.226			
22389	15557	1:BEBAN MATI	12.610	184.983	0.358	0.460	-0.002	-0.379			
		2:BEBAN HIDL	4.966	24.410	-0.037	0.046	0.000	-0.221			
		3:BEBAN GEM	-150.108	-0.172	-2.858	0.110	0.031	0.012			
		4:KOMBINASI	23.078	261.035	0.369	0.626	-0.002	-0.808			
		5:KOMB B. MA	-142.023	199.449	-2.666	0.603	0.031	-0.499			
	16246	1:BEBAN MATI	-12.610	103.331	-0.358	-0.460	-0.003	0.979			



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Job No 1	Sheet No 506	Rev
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-4.966	-24.410	0.037	-0.046	0.000	0.580			
		3:BEBAN GEM	150.108	0.172	2.858	-0.110	0.011	-0.014			
		4:KOMBINASI	-23.078	84.942	-0.369	-0.626	-0.004	2.103			
		5:KOMB B. MA	142.023	88.866	2.666	-0.603	0.008	1.312			
22390	15488	1:BEBAN MATI	618.166	2.12E 3	32.412	-3.864	-0.195	20.087			
		2:BEBAN HIDL	127.549	355.936	7.625	-1.175	-0.044	3.800			
		3:BEBAN GEM	-41.301	-117.428	9.226	0.996	-0.062	-3.308			
		4:KOMBINASI	945.877	3.11E 3	51.094	-6.517	-0.305	30.184			
		5:KOMB B. MA	651.329	2.21E 3	46.675	-3.524	-0.287	18.894			
	15677	1:BEBAN MATI	-618.166	-1.67E 3	-32.412	3.864	-0.281	7.788			
		2:BEBAN HIDL	-127.549	-355.936	-7.625	1.175	-0.068	1.436			
		3:BEBAN GEM	41.301	117.428	-9.226	-0.996	-0.074	1.580			
		4:KOMBINASI	-945.877	-2.57E 3	-51.094	6.517	-0.446	11.643			
		5:KOMB B. MA	-651.329	-1.76E 3	-46.675	3.524	-0.400	10.309			
22391	15558	1:BEBAN MATI	410.620	-572.705	-0.001	-1.589	-0.009	-16.303			
		2:BEBAN HIDL	120.099	-165.956	0.116	-0.528	-0.004	-3.501			
		3:BEBAN GEM	-58.930	-336.258	3.208	0.209	-0.019	0.043			
		4:KOMBINASI	684.903	-952.775	0.183	-2.751	-0.016	-25.166			
		5:KOMB B. MA	420.803	-1.03E 3	3.436	-1.686	-0.030	-18.358			
	15736	1:BEBAN MATI	-410.620	873.033	0.001	1.589	0.009	9.214			
		2:BEBAN HIDL	-120.099	165.956	-0.116	0.528	0.003	1.874			
		3:BEBAN GEM	58.930	336.258	-3.208	-0.209	-0.013	-3.341			
		4:KOMBINASI	-684.903	1.31E 3	-0.183	2.751	0.015	14.055			
		5:KOMB B. MA	-420.803	1.33E 3	-3.436	1.686	-0.003	6.831			
22392	15559	1:BEBAN MATI	410.620	-572.705	0.001	1.589	0.009	-16.303			
		2:BEBAN HIDL	120.099	-165.956	-0.116	0.528	0.004	-3.501			
		3:BEBAN GEM	-325.670	-328.750	-4.348	0.085	0.027	-0.003			
		4:KOMBINASI	684.903	-952.776	-0.183	2.751	0.016	-25.166			
		5:KOMB B. MA	140.726	-1.02E 3	-4.633	1.995	0.040	-18.407			
	16182	1:BEBAN MATI	-410.620	873.033	-0.001	-1.589	-0.009	9.214			
		2:BEBAN HIDL	-120.099	165.956	0.116	-0.528	-0.003	1.874			
		3:BEBAN GEM	325.670	328.750	4.348	-0.085	0.015	-3.221			
		4:KOMBINASI	-684.903	1.31E 3	0.183	-2.751	-0.015	14.055			
		5:KOMB B. MA	-140.726	1.32E 3	4.633	-1.995	0.006	6.957			
22393	15558	1:BEBAN MATI	-17.141	907.206	0.067	-0.031	-0.000	2.543			
		2:BEBAN HIDL	-4.076	225.503	-0.022	0.003	0.000	0.815			
		3:BEBAN GEM	8.271	0.154	-5.613	-0.022	0.040	-0.266			
		4:KOMBINASI	-27.091	1.45E 3	0.045	-0.033	-0.000	4.356			
		5:KOMB B. MA	-10.902	1.04E 3	-5.840	-0.053	0.042	2.753			
	15732	1:BEBAN MATI	17.141	-676.555	-0.067	0.031	-0.001	6.776			
		2:BEBAN HIDL	4.076	-225.503	0.022	-0.003	0.000	1.838			
		3:BEBAN GEM	-8.271	-0.154	5.613	0.022	0.026	0.268			
		4:KOMBINASI	27.091	-1.17E 3	-0.045	0.033	-0.000	11.073			
		5:KOMB B. MA	10.902	-812.018	5.840	0.053	0.027	8.160			
22394	15560	1:BEBAN MATI	325.174	-721.287	-8.319	2.278	0.065	-22.630			
		2:BEBAN HIDL	59.301	-191.172	-2.019	0.683	0.016	-4.503			
		3:BEBAN GEM	112.812	-111.335	-5.080	-0.620	0.029	0.091			
		4:KOMBINASI	485.091	-1.17E 3	-13.213	3.827	0.104	-34.360			



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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	479.208	-952.893	-14.864	2.037	0.105	-25.236			
	15681	1:BEBAN MATI	-325.174	1.17E 3	8.319	-2.278	0.057	8.706			
		2:BEBAN HIDL	-59.301	191.172	2.019	-0.683	0.014	1.691			
		3:BEBAN GEM	-112.812	111.335	5.080	0.620	0.046	-1.728			
		4:KOMBINASI	-485.091	1.71E 3	13.213	-3.827	0.091	13.153			
		5:KOMB B. MA	-479.208	1.4E 3	14.864	-2.037	0.114	7.906			
22395	15561	1:BEBAN MATI	199.959	-453.346	6.035	-2.204	-0.044	-13.583			
		2:BEBAN HIDL	72.359	-162.653	2.161	-0.806	-0.015	-3.458			
		3:BEBAN GEM	-958.254	-96.243	0.321	-0.144	-0.016	-0.069			
		4:KOMBINASI	355.725	-804.260	10.700	-3.934	-0.077	-21.832			
		5:KOMB B. MA	-762.792	-651.993	7.669	-2.838	-0.069	-15.730			
	16065	1:BEBAN MATI	-199.959	903.838	-6.035	2.204	-0.045	3.601			
		2:BEBAN HIDL	-72.359	162.653	-2.161	0.806	-0.016	1.065			
		3:BEBAN GEM	958.254	96.243	-0.321	0.144	0.011	-1.347			
		4:KOMBINASI	-355.725	1.34E 3	-10.700	3.934	-0.080	6.025			
		5:KOMB B. MA	762.792	1.1E 3	-7.669	2.838	-0.044	2.826			
22396	15560	1:BEBAN MATI	28.348	930.227	0.000	-0.000	-0.000	3.324			
		2:BEBAN HIDL	7.795	198.571	0.000	-0.000	-0.000	0.902			
		3:BEBAN GEM	-111.108	-0.206	1.212	0.029	-0.010	-1.105			
		4:KOMBINASI	46.490	1.43E 3	0.000	-0.000	-0.000	5.431			
		5:KOMB B. MA	-83.638	1.05E 3	1.273	0.030	-0.011	2.705			
	15680	1:BEBAN MATI	-28.348	-641.912	-0.000	0.000	-0.000	8.239			
		2:BEBAN HIDL	-7.795	-198.571	-0.000	0.000	-0.000	2.019			
		3:BEBAN GEM	111.108	0.206	-1.212	-0.029	-0.008	1.102			
		4:KOMBINASI	-46.490	-1.09E 3	-0.000	0.000	-0.000	13.118			
		5:KOMB B. MA	83.638	-760.838	-1.273	-0.030	-0.008	10.608			
22397	15500	1:BEBAN MATI	549.418	2.12E 3	-41.449	3.230	0.220	25.553			
		2:BEBAN HIDL	172.238	368.191	-16.362	1.155	0.087	4.714			
		3:BEBAN GEM	-598.775	-355.364	19.406	-0.338	-0.137	-10.183			
		4:KOMBINASI	934.883	3.13E 3	-75.919	5.724	0.404	38.206			
		5:KOMB B. MA	24.048	1.97E 3	-30.890	3.568	0.129	17.690			
	15723	1:BEBAN MATI	-549.418	-1.82E 3	41.449	-3.230	0.186	-6.255			
		2:BEBAN HIDL	-172.238	-368.191	16.362	-1.155	0.073	-1.103			
		3:BEBAN GEM	598.775	355.364	-19.406	0.338	-0.053	6.698			
		4:KOMBINASI	-934.883	-2.77E 3	75.919	-5.724	0.341	-9.272			
		5:KOMB B. MA	-24.048	-1.67E 3	30.890	-3.568	0.174	0.115			
22398	15546	1:BEBAN MATI	464.515	-668.220	-2.992	-1.336	0.002	-19.374			
		2:BEBAN HIDL	112.951	-154.305	-0.541	-0.358	-0.002	-4.046			
		3:BEBAN GEM	-143.765	-367.823	3.755	0.210	-0.020	-0.867			
		4:KOMBINASI	738.140	-1.05E 3	-4.457	-2.176	-0.001	-29.722			
		5:KOMB B. MA	381.333	-1.15E 3	0.626	-1.330	-0.021	-22.712			
	15648	1:BEBAN MATI	-464.515	893.466	2.992	1.336	0.020	13.631			
		2:BEBAN HIDL	-112.951	154.305	0.541	0.358	0.006	2.911			
		3:BEBAN GEM	143.765	367.823	-3.755	-0.210	-0.008	-1.838			
		4:KOMBINASI	-738.140	1.32E 3	4.457	2.176	0.034	21.014			
		5:KOMB B. MA	-381.333	1.37E 3	-0.626	1.330	0.016	13.447			
22399	15562	1:BEBAN MATI	377.069	-1.09E 3	0.773	0.132	-0.006	-24.085			
		2:BEBAN HIDL	130.662	-367.678	0.103	-0.019	-0.001	-5.538			



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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	127.685	-443.753	3.114	0.212	-0.013	1.254			
		4:KOMBINASI	661.542	-1.89E 3	1.093	0.129	-0.008	-37.763			
		5:KOMB B. MA	589.536	-1.77E 3	4.105	0.344	-0.020	-26.091			
	15708	1:BEBAN MATI	-377.069	1.45E 3	-0.773	-0.132	-0.004	9.164			
		2:BEBAN HIDL	-130.662	367.678	-0.103	0.019	-0.000	1.211			
		3:BEBAN GEM	-127.685	443.753	-3.114	-0.212	-0.024	-6.476			
		4:KOMBINASI	-661.542	2.33E 3	-1.093	-0.129	-0.005	12.935			
		5:KOMB B. MA	-589.536	2.13E 3	-4.105	-0.344	-0.029	3.091			
22400	15483	1:BEBAN MATI	183.677	3.08E 3	1.433	-0.106	-0.008	33.530			
		2:BEBAN HIDL	50.286	564.567	-0.482	-0.042	0.003	5.674			
		3:BEBAN GEM	-164.086	-487.604	15.767	-0.296	-0.093	-9.995			
		4:KOMBINASI	300.870	4.6E 3	0.948	-0.194	-0.004	49.315			
		5:KOMB B. MA	41.558	2.9E 3	17.699	-0.442	-0.103	26.440			
	15700	1:BEBAN MATI	-183.677	-2.72E 3	-1.433	0.106	-0.009	0.561			
		2:BEBAN HIDL	-50.286	-564.567	0.482	0.042	0.002	0.969			
		3:BEBAN GEM	164.086	487.604	-15.767	0.296	-0.092	4.257			
		4:KOMBINASI	-300.870	-4.16E 3	-0.948	0.194	-0.007	2.225			
		5:KOMB B. MA	-41.558	-2.54E 3	-17.699	0.442	-0.105	5.613			
22401	15563	1:BEBAN MATI	420.937	-1.4E 3	-0.162	0.039	-0.001	-33.030			
		2:BEBAN HIDL	140.102	-348.686	-0.105	-0.005	-0.000	-8.067			
		3:BEBAN GEM	70.688	-325.601	13.959	0.135	-0.070	0.111			
		4:KOMBINASI	729.287	-2.24E 3	-0.362	0.039	-0.002	-52.544			
		5:KOMB B. MA	579.220	-1.95E 3	14.433	0.178	-0.075	-37.754			
	15791	1:BEBAN MATI	-420.937	1.7E 3	0.162	-0.039	0.003	17.826			
		2:BEBAN HIDL	-140.102	348.686	0.105	0.005	0.001	4.648			
		3:BEBAN GEM	-70.688	325.601	-13.959	-0.135	-0.067	-3.304			
		4:KOMBINASI	-729.287	2.6E 3	0.362	-0.039	0.006	28.828			
		5:KOMB B. MA	-579.220	2.25E 3	-14.433	-0.178	-0.067	17.145			
22402	15506	1:BEBAN MATI	390.267	3.68E 3	-0.263	-0.117	0.004	44.151			
		2:BEBAN HIDL	129.772	846.139	-1.061	0.013	0.006	10.722			
		3:BEBAN GEM	-252.991	-379.117	27.565	-0.286	-0.147	-10.423			
		4:KOMBINASI	675.956	5.77E 3	-2.014	-0.120	0.015	70.137			
		5:KOMB B. MA	202.490	3.79E 3	28.043	-0.409	-0.147	39.640			
	15778	1:BEBAN MATI	-390.267	-3.38E 3	0.263	0.117	-0.002	-9.546			
		2:BEBAN HIDL	-129.772	-846.139	1.061	-0.013	0.004	-2.425			
		3:BEBAN GEM	252.991	379.117	-27.565	0.286	-0.123	6.705			
		4:KOMBINASI	-675.956	-5.41E 3	2.014	0.120	0.005	-15.335			
		5:KOMB B. MA	-202.490	-3.49E 3	-28.043	0.409	-0.128	-3.960			
22403	15564	1:BEBAN MATI	423.406	-1.42E 3	-0.786	0.129	0.002	-31.650			
		2:BEBAN HIDL	128.539	-367.570	-0.188	0.044	0.000	-7.401			
		3:BEBAN GEM	-4.765	-302.303	15.722	0.133	-0.080	0.031			
		4:KOMBINASI	713.750	-2.29E 3	-1.245	0.224	0.003	-49.823			
		5:KOMB B. MA	495.526	-1.95E 3	15.608	0.294	-0.082	-36.059			
	15765	1:BEBAN MATI	-423.406	1.72E 3	0.786	-0.129	0.006	16.290			
		2:BEBAN HIDL	-128.539	367.570	0.188	-0.044	0.002	3.797			
		3:BEBAN GEM	4.765	302.303	-15.722	-0.133	-0.074	-2.996			
		4:KOMBINASI	-713.750	2.65E 3	1.245	-0.224	0.009	25.623			
		5:KOMB B. MA	-495.526	2.25E 3	-15.608	-0.294	-0.071	15.423			



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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22404	15507	1:BEBAN MATI	417.489	3.64E 3	-0.352	-0.087	0.005	44.406			
		2:BEBAN HIDL	122.835	816.215	-0.815	0.003	0.005	10.560			
		3:BEBAN GEM	-295.785	-355.106	29.202	-0.279	-0.155	-9.786			
		4:KOMBINASI	697.523	5.68E 3	-1.725	-0.101	0.013	70.182			
		5:KOMB B. MA	180.616	3.76E 3	29.821	-0.379	-0.155	40.466			
15752	15752	1:BEBAN MATI	-417.489	-3.34E 3	0.352	0.087	-0.001	-10.160			
		2:BEBAN HIDL	-122.835	-816.215	0.815	-0.003	0.003	-2.555			
		3:BEBAN GEM	295.785	355.106	-29.202	0.279	-0.131	6.304			
		4:KOMBINASI	-697.523	-5.32E 3	1.725	0.101	0.003	-16.281			
		5:KOMB B. MA	-180.616	-3.46E 3	-29.821	0.379	-0.137	-5.075			
22405	15565	1:BEBAN MATI	440.573	-1.4E 3	-0.988	0.014	0.006	-32.053			
		2:BEBAN HIDL	139.877	-390.693	-0.177	-0.023	0.001	-7.791			
		3:BEBAN GEM	-53.702	-313.401	20.280	0.126	-0.106	0.090			
		4:KOMBINASI	752.491	-2.31E 3	-1.468	-0.021	0.008	-50.928			
		5:KOMB B. MA	468.113	-1.96E 3	20.200	0.133	-0.105	-36.633			
15739	15739	1:BEBAN MATI	-440.573	1.7E 3	0.988	-0.014	0.004	16.845			
		2:BEBAN HIDL	-139.877	390.693	0.177	0.023	0.001	3.959			
		3:BEBAN GEM	53.702	313.401	-20.280	-0.126	-0.093	-3.163			
		4:KOMBINASI	-752.491	2.67E 3	1.468	0.021	0.006	26.549			
		5:KOMB B. MA	-468.113	2.26E 3	-20.200	-0.133	-0.093	15.900			
22406	15508	1:BEBAN MATI	412.394	3.79E 3	2.826	-0.014	-0.013	48.075			
		2:BEBAN HIDL	132.315	821.891	0.388	0.031	-0.001	10.293			
		3:BEBAN GEM	-394.480	-366.921	26.949	-0.272	-0.153	-10.069			
		4:KOMBINASI	706.576	5.86E 3	4.012	0.033	-0.018	74.160			
		5:KOMB B. MA	77.579	3.89E 3	31.355	-0.282	-0.174	43.679			
15726	15726	1:BEBAN MATI	-412.394	-3.48E 3	-2.826	0.014	-0.015	-12.428			
		2:BEBAN HIDL	-132.315	-821.891	-0.388	-0.031	-0.002	-2.233			
		3:BEBAN GEM	394.480	366.921	-26.949	0.272	-0.112	6.471			
		4:KOMBINASI	-706.576	-5.5E 3	-4.012	-0.033	-0.022	-18.486			
		5:KOMB B. MA	-77.579	-3.59E 3	-31.355	0.282	-0.134	-6.974			
22407	15566	1:BEBAN MATI	500.213	-1.61E 3	1.683	-0.174	-0.008	-37.077			
		2:BEBAN HIDL	162.412	-357.372	0.959	-0.023	-0.005	-8.634			
		3:BEBAN GEM	-65.462	-339.820	5.052	0.125	-0.026	-0.833			
		4:KOMBINASI	860.115	-2.5E 3	3.555	-0.245	-0.017	-58.307			
		5:KOMB B. MA	528.925	-2.18E 3	7.563	-0.057	-0.038	-43.132			
15651	15651	1:BEBAN MATI	-500.213	1.83E 3	-1.683	0.174	-0.004	24.431			
		2:BEBAN HIDL	-162.412	357.372	-0.959	0.023	-0.002	6.006			
		3:BEBAN GEM	65.462	339.820	-5.052	-0.125	-0.011	-1.667			
		4:KOMBINASI	-860.115	2.77E 3	-3.555	0.245	-0.009	38.927			
		5:KOMB B. MA	-528.925	2.4E 3	-7.563	0.057	-0.017	26.285			
22408	15567	1:BEBAN MATI	311.321	-878.657	3.719	0.661	-0.021	-20.636			
		2:BEBAN HIDL	107.172	-309.198	1.242	0.246	-0.007	-4.823			
		3:BEBAN GEM	119.925	-460.578	3.881	0.056	-0.024	0.987			
		4:KOMBINASI	545.060	-1.55E 3	6.450	1.187	-0.037	-32.480			
		5:KOMB B. MA	501.545	-1.55E 3	8.539	0.868	-0.050	-22.493			
15942	15942	1:BEBAN MATI	-311.321	1.24E 3	-3.719	-0.661	-0.023	8.175			
		2:BEBAN HIDL	-107.172	309.198	-1.242	-0.246	-0.007	1.184			
		3:BEBAN GEM	-119.925	460.578	-3.881	-0.056	-0.022	-6.407			



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Job No 1	Sheet No 510	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-545.060	1.98E 3	-6.450	-1.187	-0.039	11.705			
		5:KOMB B. MA	-501.545	1.91E 3	-8.539	-0.868	-0.050	2.158			
22409	15485	1:BEBAN MATI	200.946	2.77E 3	3.382	-0.470	-0.016	29.894			
		2:BEBAN HIDL	59.628	521.126	2.169	-0.129	-0.012	5.262			
		3:BEBAN GEM	-255.942	-461.831	31.635	-0.294	-0.200	-9.782			
		4:KOMBINASI	336.540	4.16E 3	7.529	-0.770	-0.038	44.292			
		5:KOMB B. MA	-32.017	2.6E 3	37.900	-0.856	-0.233	22.781			
	15935	1:BEBAN MATI	-200.946	-2.41E 3	-3.382	0.470	-0.024	0.636			
		2:BEBAN HIDL	-59.628	-521.126	-2.169	0.129	-0.014	0.871			
		3:BEBAN GEM	255.942	461.831	-31.635	0.294	-0.173	4.347			
		4:KOMBINASI	-336.540	-3.73E 3	-7.529	0.770	-0.050	2.156			
		5:KOMB B. MA	32.017	-2.24E 3	-37.900	0.856	-0.213	5.723			
22410	15568	1:BEBAN MATI	378.247	-1.25E 3	18.035	-0.041	-0.074	-29.074			
		2:BEBAN HIDL	126.571	-329.070	6.190	0.020	-0.025	-7.161			
		3:BEBAN GEM	104.671	-339.370	-2.398	0.098	-0.022	-0.117			
		4:KOMBINASI	656.410	-2.03E 3	31.546	-0.017	-0.129	-46.347			
		5:KOMB B. MA	564.094	-1.81E 3	19.231	0.074	-0.112	-33.494			
	16004	1:BEBAN MATI	-378.247	1.55E 3	-18.035	0.041	-0.103	15.311			
		2:BEBAN HIDL	-126.571	329.070	-6.190	-0.020	-0.035	3.934			
		3:BEBAN GEM	-104.671	339.370	2.398	-0.098	0.045	-3.211			
		4:KOMBINASI	-656.410	2.39E 3	-31.546	0.017	-0.181	24.668			
		5:KOMB B. MA	-564.094	2.11E 3	-19.231	-0.074	-0.077	14.300			
22411	15509	1:BEBAN MATI	393.889	3.24E 3	21.446	-1.117	-0.092	38.727			
		2:BEBAN HIDL	132.562	724.469	8.462	-0.403	-0.037	9.146			
		3:BEBAN GEM	-172.266	-351.386	22.336	-0.207	-0.159	-10.079			
		4:KOMBINASI	684.766	5.05E 3	39.275	-1.985	-0.170	61.105			
		5:KOMB B. MA	292.547	3.31E 3	49.977	-1.575	-0.281	33.632			
	15993	1:BEBAN MATI	-393.889	-2.94E 3	-21.446	1.117	-0.119	-8.390			
		2:BEBAN HIDL	-132.562	-724.469	-8.462	0.403	-0.046	-2.041			
		3:BEBAN GEM	172.266	351.386	-22.336	0.207	-0.060	6.633			
		4:KOMBINASI	-684.766	-4.69E 3	-39.275	1.985	-0.215	-13.334			
		5:KOMB B. MA	-292.547	-3.01E 3	-49.977	1.575	-0.209	-2.650			
22412	15569	1:BEBAN MATI	392.115	-1.27E 3	16.431	0.011	-0.061	-28.625			
		2:BEBAN HIDL	121.522	-331.144	5.716	0.034	-0.022	-6.691			
		3:BEBAN GEM	16.702	-313.904	8.306	0.104	-0.069	-0.115			
		4:KOMBINASI	664.973	-2.06E 3	28.864	0.068	-0.108	-45.056			
		5:KOMB B. MA	482.565	-1.8E 3	28.582	0.140	-0.146	-32.761			
	15982	1:BEBAN MATI	-392.115	1.58E 3	-16.431	-0.011	-0.100	14.651			
		2:BEBAN HIDL	-121.522	331.144	-5.716	-0.034	-0.035	3.444			
		3:BEBAN GEM	-16.702	313.904	-8.306	-0.104	-0.013	-2.963			
		4:KOMBINASI	-664.973	2.42E 3	-28.864	-0.068	-0.175	23.091			
		5:KOMB B. MA	-482.565	2.1E 3	-28.582	-0.140	-0.134	13.606			
22413	15510	1:BEBAN MATI	621.846	3.26E 3	21.245	-1.014	-0.094	39.283			
		2:BEBAN HIDL	198.005	739.123	8.760	-0.396	-0.040	9.888			
		3:BEBAN GEM	-468.931	-328.965	26.783	-0.209	-0.190	-9.450			
		4:KOMBINASI	1.06E 3	5.1E 3	39.510	-1.850	-0.177	62.961			
		5:KOMB B. MA	248.271	3.36E 3	54.624	-1.471	-0.318	35.293			
	15971	1:BEBAN MATI	-621.846	-2.96E 3	-21.245	1.014	-0.114	-8.768			



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Job No 1	Sheet No 511	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-198.005	-739.123	-8.760	0.396	-0.046	-2.640			
		3:BEBAN GEM	468.931	328.965	-26.783	0.209	-0.072	6.224			
		4:KOMBINASI	-1.06E 3	-4.74E 3	-39.510	1.850	-0.210	-14.746			
		5:KOMB B. MA	-248.271	-3.06E 3	-54.624	1.471	-0.218	-3.817			
22414	15570	1:BEBAN MATI	274.274	-578.500	0.186	2.166	0.008	-15.780			
		2:BEBAN HIDL	74.890	-182.727	-0.048	0.622	0.003	-3.588			
		3:BEBAN GEM	-378.125	-336.357	5.457	0.034	-0.028	-0.093			
		4:KOMBINASI	448.952	-986.563	0.147	3.595	0.015	-24.678			
		5:KOMB B. MA	-77.824	-1.04E 3	5.888	2.575	-0.020	-18.031			
	15960	1:BEBAN MATI	-274.274	878.827	-0.186	-2.166	-0.009	8.634			
		2:BEBAN HIDL	-74.890	182.727	0.048	-0.622	-0.003	1.797			
		3:BEBAN GEM	378.125	336.357	-5.457	-0.034	-0.025	-3.206			
		4:KOMBINASI	-448.952	1.35E 3	-0.147	-3.595	-0.016	13.236			
		5:KOMB B. MA	77.824	1.34E 3	-5.888	-2.575	-0.038	6.346			
22415	15511	1:BEBAN MATI	376.083	2.09E 3	29.307	-3.991	-0.159	25.516			
		2:BEBAN HIDL	116.357	342.542	12.009	-1.246	-0.065	3.969			
		3:BEBAN GEM	567.282	-351.997	96.444	-0.257	-0.589	-10.098			
		4:KOMBINASI	637.471	3.05E 3	54.382	-6.784	-0.295	36.969			
		5:KOMB B. MA	1.04E 3	1.92E 3	137.778	-5.008	-0.817	17.294			
	15949	1:BEBAN MATI	-376.083	-1.79E 3	-29.307	3.991	-0.128	-6.508			
		2:BEBAN HIDL	-116.357	-342.542	-12.009	1.246	-0.053	-0.610			
		3:BEBAN GEM	-567.282	351.997	-96.444	0.257	-0.356	6.646			
		4:KOMBINASI	-637.471	-2.69E 3	-54.382	6.784	-0.239	-8.785			
		5:KOMB B. MA	-1.04E 3	-1.62E 3	-137.778	5.008	-0.534	0.105			
22416	15571	1:BEBAN MATI	412.376	-1.23E 3	12.415	1.046	-0.036	-27.866			
		2:BEBAN HIDL	134.166	-293.604	4.630	0.235	-0.013	-6.275			
		3:BEBAN GEM	-6.890	-314.189	30.144	0.312	-0.117	-0.798			
		4:KOMBINASI	709.517	-1.94E 3	22.306	1.632	-0.065	-43.479			
		5:KOMB B. MA	485.641	-1.73E 3	46.845	1.515	-0.167	-32.468			
	15917	1:BEBAN MATI	-412.376	1.45E 3	-12.415	-1.046	-0.055	18.020			
		2:BEBAN HIDL	-134.166	293.604	-4.630	-0.235	-0.021	4.115			
		3:BEBAN GEM	6.890	314.189	-30.144	-0.312	-0.105	-1.513			
		4:KOMBINASI	-709.517	2.21E 3	-22.306	-1.632	-0.099	28.208			
		5:KOMB B. MA	-485.641	1.96E 3	-46.845	-1.515	-0.178	18.900			
22417	15533	1:BEBAN MATI	427.598	2.02E 3	-35.577	5.163	0.268	21.406			
		2:BEBAN HIDL	132.842	384.695	-11.299	1.810	0.085	4.681			
		3:BEBAN GEM	-1.04E 3	-409.081	71.494	-0.107	-0.552	-10.861			
		4:KOMBINASI	725.666	3.03E 3	-60.771	9.091	0.457	33.177			
		5:KOMB B. MA	-583.860	1.82E 3	32.712	6.136	-0.260	12.811			
	16044	1:BEBAN MATI	-427.598	-1.56E 3	35.577	-5.163	0.255	4.928			
		2:BEBAN HIDL	-132.842	-384.695	11.299	-1.810	0.081	0.978			
		3:BEBAN GEM	1.04E 3	409.081	-71.494	0.107	-0.500	4.843			
		4:KOMBINASI	-725.666	-2.49E 3	60.771	-9.091	0.437	7.478			
		5:KOMB B. MA	583.860	-1.37E 3	-32.712	-6.136	-0.221	10.600			
22418	15572	1:BEBAN MATI	368.128	-1.12E 3	-0.618	-0.108	0.001	-18.498			
		2:BEBAN HIDL	101.671	-301.759	-0.055	0.076	-0.001	-4.082			
		3:BEBAN GEM	-310.001	-386.281	15.817	0.114	-0.102	0.179			
		4:KOMBINASI	604.428	-1.83E 3	-0.830	-0.009	0.000	-28.730			



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Job No

1

Sheet No

512

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	103.630	-1.71E 3	15.957	0.057	-0.106	-20.759			
	16013	1:BEBAN MATI	-368.128	1.48E 3	0.618	0.108	0.006	3.174			
		2:BEBAN HIDL	-101.671	301.759	0.055	-0.076	0.001	0.531			
		3:BEBAN GEM	310.001	386.281	-15.817	-0.114	-0.085	-4.725			
		4:KOMBINASI	-604.428	2.26E 3	0.830	0.009	0.009	4.659			
		5:KOMB B. MA	-103.630	2.07E 3	-15.957	-0.057	-0.082	-1.468			
22419	15487	1:BEBAN MATI	229.601	2.74E 3	-20.763	0.864	0.123	29.964			
		2:BEBAN HIDL	67.344	528.178	-5.580	0.309	0.033	5.893			
		3:BEBAN GEM	-335.115	-453.934	26.733	-0.350	-0.170	-10.101			
		4:KOMBINASI	383.272	4.13E 3	-33.843	1.531	0.201	45.385			
		5:KOMB B. MA	-81.864	2.58E 3	3.959	0.683	-0.035	22.894			
	16010	1:BEBAN MATI	-229.601	-2.38E 3	20.763	-0.864	0.121	0.122			
		2:BEBAN HIDL	-67.344	-528.178	5.580	-0.309	0.033	0.323			
		3:BEBAN GEM	335.115	453.934	-26.733	0.350	-0.145	4.759			
		4:KOMBINASI	-383.272	-3.7E 3	33.843	-1.531	0.197	0.663			
		5:KOMB B. MA	81.864	-2.22E 3	-3.959	-0.683	-0.012	5.313			
22420	15573	1:BEBAN MATI	429.615	-1.38E 3	1.729	-0.453	-0.011	-29.803			
		2:BEBAN HIDL	131.991	-360.679	0.493	-0.118	-0.003	-7.032			
		3:BEBAN GEM	64.009	-308.297	14.929	0.185	-0.114	0.107			
		4:KOMBINASI	726.724	-2.23E 3	2.864	-0.733	-0.018	-47.016			
		5:KOMB B. MA	576.019	-1.92E 3	17.700	-0.330	-0.132	-33.910			
	15878	1:BEBAN MATI	-429.615	1.83E 3	-1.729	0.453	-0.015	6.203			
		2:BEBAN HIDL	-131.991	360.679	-0.493	0.118	-0.004	1.727			
		3:BEBAN GEM	-64.009	308.297	-14.929	-0.185	-0.105	-4.642			
		4:KOMBINASI	-726.724	2.77E 3	-2.864	0.733	-0.024	10.207			
		5:KOMB B. MA	-576.019	2.37E 3	-17.700	0.330	-0.128	2.365			
22421	15512	1:BEBAN MATI	397.332	3.21E 3	-14.629	0.958	0.104	38.311			
		2:BEBAN HIDL	127.317	682.446	-3.694	0.241	0.026	8.657			
		3:BEBAN GEM	-68.330	-364.356	20.848	-0.275	-0.161	-10.109			
		4:KOMBINASI	680.506	4.94E 3	-23.466	1.534	0.167	59.824			
		5:KOMB B. MA	401.976	3.23E 3	5.045	0.813	-0.049	32.890			
	15872	1:BEBAN MATI	-397.332	-2.76E 3	14.629	-0.958	0.111	5.537			
		2:BEBAN HIDL	-127.317	-682.446	3.694	-0.241	0.028	1.382			
		3:BEBAN GEM	68.330	364.356	-20.848	0.275	-0.146	4.750			
		4:KOMBINASI	-680.506	-4.4E 3	23.466	-1.534	0.179	8.855			
		5:KOMB B. MA	-401.976	-2.78E 3	-5.045	-0.813	-0.025	11.353			
22422	15574	1:BEBAN MATI	409.839	-1.36E 3	4.312	-0.380	-0.030	-28.997			
		2:BEBAN HIDL	121.880	-347.189	1.163	-0.117	-0.008	-6.604			
		3:BEBAN GEM	292.736	-284.241	17.077	0.178	-0.124	0.161			
		4:KOMBINASI	686.815	-2.19E 3	7.036	-0.642	-0.048	-45.363			
		5:KOMB B. MA	790.340	-1.87E 3	22.941	-0.263	-0.164	-32.791			
	15866	1:BEBAN MATI	-409.839	1.82E 3	-4.312	0.380	-0.034	5.606			
		2:BEBAN HIDL	-121.880	347.189	-1.163	0.117	-0.009	1.497			
		3:BEBAN GEM	-292.736	284.241	-17.077	-0.178	-0.128	-4.342			
		4:KOMBINASI	-686.815	2.73E 3	-7.036	0.642	-0.055	9.122			
		5:KOMB B. MA	-790.340	2.32E 3	-22.941	0.263	-0.173	1.945			
22423	15513	1:BEBAN MATI	606.500	3.23E 3	-16.501	0.881	0.119	39.322			
		2:BEBAN HIDL	187.041	698.791	-4.578	0.258	0.033	9.442			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 513	Rev
Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	45.873	-324.975	34.394	-0.301	-0.275	-9.005			
		4:KOMBINASI	1.03E 3	4.99E 3	-27.127	1.470	0.196	62.295			
		5:KOMB B. MA	766.891	3.3E 3	16.865	0.719	-0.150	35.533			
	15860	1:BEBAN MATI	-606.500	-2.78E 3	16.501	-0.881	0.124	4.832			
		2:BEBAN HIDL	-187.041	-698.791	4.578	-0.258	0.034	0.837			
		3:BEBAN GEM	-45.873	324.975	-34.394	0.301	-0.231	4.225			
		4:KOMBINASI	-1.03E 3	-4.45E 3	27.127	-1.470	0.203	7.137			
		5:KOMB B. MA	-766.891	-2.85E 3	-16.865	-0.719	-0.098	9.770			
22424	15575	1:BEBAN MATI	253.418	-838.195	4.804	-2.199	-0.036	-19.482			
		2:BEBAN HIDL	72.332	-224.273	1.352	-0.605	-0.010	-4.150			
		3:BEBAN GEM	81.495	-347.308	8.696	0.266	-0.065	0.009			
		4:KOMBINASI	419.834	-1.36E 3	7.927	-3.607	-0.059	-30.018			
		5:KOMB B. MA	382.387	-1.34E 3	14.745	-2.283	-0.110	-21.963			
	15854	1:BEBAN MATI	-253.418	1.29E 3	-4.804	2.199	-0.035	3.838			
		2:BEBAN HIDL	-72.332	224.273	-1.352	0.605	-0.010	0.851			
		3:BEBAN GEM	-81.495	347.308	-8.696	-0.266	-0.063	-5.117			
		4:KOMBINASI	-419.834	1.91E 3	-7.927	3.607	-0.058	5.968			
		5:KOMB B. MA	-382.387	1.79E 3	-14.745	2.283	-0.107	-1.024			
22425	15514	1:BEBAN MATI	582.439	1.99E 3	-26.258	4.564	0.202	19.748			
		2:BEBAN HIDL	170.827	308.879	-7.173	1.307	0.056	2.884			
		3:BEBAN GEM	-2.02E 3	-372.861	16.407	-0.427	-0.242	-10.558			
		4:KOMBINASI	972.250	2.88E 3	-42.988	7.569	0.332	28.312			
		5:KOMB B. MA	-1.44E 3	1.79E 3	-13.335	4.900	-0.018	10.392			
	15848	1:BEBAN MATI	-582.439	-1.54E 3	26.258	-4.564	0.184	6.237			
		2:BEBAN HIDL	-170.827	-308.879	7.173	-1.307	0.050	1.660			
		3:BEBAN GEM	2.02E 3	372.861	-16.407	0.427	0.001	5.073			
		4:KOMBINASI	-972.250	-2.34E 3	42.988	-7.569	0.300	10.139			
		5:KOMB B. MA	1.44E 3	-1.34E 3	13.335	-4.900	0.214	12.559			
22426	15544	1:BEBAN MATI	234.950	703.552	11.968	1.502	-0.050	4.920			
		2:BEBAN HIDL	91.263	145.879	5.721	0.225	-0.026	1.533			
		3:BEBAN GEM	-938.173	-766.228	108.076	-0.098	-0.585	-11.426			
		4:KOMBINASI	427.961	1.08E 3	23.516	2.162	-0.102	8.356			
		5:KOMB B. MA	-695.374	-13.460	128.881	1.534	-0.681	-6.158			
	15715	1:BEBAN MATI	-234.950	-403.225	-11.968	-1.502	-0.067	0.507			
		2:BEBAN HIDL	-91.263	-145.879	-5.721	-0.225	-0.030	-0.102			
		3:BEBAN GEM	938.173	766.228	-108.076	0.098	-0.474	3.912			
		4:KOMBINASI	-427.961	-717.275	-23.516	-2.162	-0.129	0.445			
		5:KOMB B. MA	695.374	313.787	-128.881	-1.534	-0.583	4.554			
22427	15534	1:BEBAN MATI	390.732	3.31E 3	0.065	-0.033	0.001	34.741			
		2:BEBAN HIDL	162.219	829.173	-0.100	0.003	0.001	9.146			
		3:BEBAN GEM	459.779	-386.607	15.004	-0.188	-0.118	-9.882			
		4:KOMBINASI	728.429	5.3E 3	-0.082	-0.034	0.003	56.322			
		5:KOMB B. MA	970.832	3.41E 3	15.759	-0.228	-0.122	29.852			
	16056	1:BEBAN MATI	-390.732	-2.86E 3	-0.065	0.033	-0.002	10.709			
		2:BEBAN HIDL	-162.219	-829.173	0.100	-0.003	0.000	3.052			
		3:BEBAN GEM	-459.779	386.607	-15.004	0.188	-0.103	4.195			
		4:KOMBINASI	-728.429	-4.76E 3	0.082	0.034	-0.001	17.733			
		5:KOMB B. MA	-970.832	-2.96E 3	-15.759	0.228	-0.110	16.944			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 514	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22428	15576	1:BEBAN MATI	249.421	-1.44E 3	-0.655	0.079	0.004	-20.518			
		2:BEBAN HIDL	60.881	-353.154	-0.235	0.016	0.001	-4.367			
		3:BEBAN GEM	1.07E 3	-392.842	17.694	0.206	-0.114	0.043			
		4:KOMBINASI	396.714	-2.29E 3	-1.162	0.121	0.007	-31.608			
		5:KOMB B. MA	1.41E 3	-2.06E 3	17.783	0.305	-0.115	-23.093			
16024	16024	1:BEBAN MATI	-249.421	1.8E 3	0.655	-0.079	0.004	1.500			
		2:BEBAN HIDL	-60.881	353.154	0.235	-0.016	0.001	0.211			
		3:BEBAN GEM	-1.07E 3	392.842	-17.694	-0.206	-0.095	-4.666			
		4:KOMBINASI	-396.714	2.72E 3	1.162	-0.121	0.007	2.138			
		5:KOMB B. MA	-1.41E 3	2.42E 3	-17.783	-0.305	-0.095	-3.272			
22429	15489	1:BEBAN MATI	163.333	3.13E 3	0.824	-0.045	-0.005	35.846			
		2:BEBAN HIDL	44.349	619.661	0.094	0.010	-0.001	7.529			
		3:BEBAN GEM	1.02E 3	-454.327	31.877	-0.293	-0.206	-9.994			
		4:KOMBINASI	266.958	4.74E 3	1.139	-0.038	-0.006	55.062			
		5:KOMB B. MA	1.26E 3	3.02E 3	34.351	-0.347	-0.221	29.870			
16018	16018	1:BEBAN MATI	-163.333	-2.77E 3	-0.824	0.045	-0.005	-1.162			
		2:BEBAN HIDL	-44.349	-619.661	-0.094	-0.010	-0.001	-0.237			
		3:BEBAN GEM	-1.02E 3	454.327	-31.877	0.293	-0.169	4.648			
		4:KOMBINASI	-266.958	-4.31E 3	-1.139	0.038	-0.007	-1.773			
		5:KOMB B. MA	-1.26E 3	-2.66E 3	-34.351	0.347	-0.183	3.576			
22430	15577	1:BEBAN MATI	411.828	-1.72E 3	-0.116	0.021	0.000	-35.191			
		2:BEBAN HIDL	119.545	-433.986	-0.018	0.005	-0.000	-8.049			
		3:BEBAN GEM	1.49E 3	-302.484	26.855	0.162	-0.210	-0.097			
		4:KOMBINASI	685.465	-2.76E 3	-0.168	0.034	0.000	-55.108			
		5:KOMB B. MA	2.04E 3	-2.3E 3	28.071	0.194	-0.220	-40.122			
15833	15833	1:BEBAN MATI	-411.828	2.17E 3	0.116	-0.021	0.001	6.607			
		2:BEBAN HIDL	-119.545	433.986	0.018	-0.005	0.000	1.666			
		3:BEBAN GEM	-1.49E 3	302.484	-26.855	-0.162	-0.185	-4.353			
		4:KOMBINASI	-685.465	3.3E 3	0.168	-0.034	0.002	10.593			
		5:KOMB B. MA	-2.04E 3	2.75E 3	-28.071	-0.194	-0.193	3.036			
22431	15515	1:BEBAN MATI	364.817	3.65E 3	0.368	-0.091	-0.002	44.197			
		2:BEBAN HIDL	109.894	775.677	0.014	-0.018	0.000	10.025			
		3:BEBAN GEM	776.602	-355.914	0.186	-0.270	-0.005	-9.681			
		4:KOMBINASI	613.611	5.62E 3	0.465	-0.138	-0.002	69.076			
		5:KOMB B. MA	1.25E 3	3.74E 3	0.572	-0.385	-0.007	40.046			
15826	15826	1:BEBAN MATI	-364.817	-3.2E 3	-0.368	0.091	-0.003	6.141			
		2:BEBAN HIDL	-109.894	-775.677	-0.014	0.018	-0.000	1.385			
		3:BEBAN GEM	-776.602	355.914	-0.186	0.270	0.002	4.446			
		4:KOMBINASI	-613.611	-5.08E 3	-0.465	0.138	-0.005	9.585			
		5:KOMB B. MA	-1.25E 3	-3.29E 3	-0.572	0.385	-0.001	11.640			
22432	15578	1:BEBAN MATI	384.621	-1.68E 3	0.124	-0.004	-0.002	-33.791			
		2:BEBAN HIDL	105.850	-427.444	0.033	-0.027	-0.000	-7.668			
		3:BEBAN GEM	347.078	-288.595	-43.138	0.151	0.329	-0.080			
		4:KOMBINASI	630.904	-2.7E 3	0.202	-0.047	-0.002	-52.819			
		5:KOMB B. MA	812.563	-2.24E 3	-45.151	0.138	0.343	-38.477			
15819	15819	1:BEBAN MATI	-384.621	2.13E 3	-0.124	0.004	-0.000	5.757			
		2:BEBAN HIDL	-105.850	427.444	-0.033	0.027	-0.000	1.381			
		3:BEBAN GEM	-347.078	288.595	43.138	-0.151	0.306	-4.165			



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Job No 1	Sheet No 515	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-630.904	3.24E 3	-0.202	0.047	-0.001	9.117			
		5:KOMB B. MA	-812.563	2.69E 3	45.151	-0.138	0.321	2.212			
22433	15516	1:BEBAN MATI	385.762	3.67E 3	1.003	-0.054	-0.006	46.105			
		2:BEBAN HIDL	103.145	768.551	0.107	-0.006	-0.001	10.239			
		3:BEBAN GEM	-1.27E 3	-342.518	75.538	-0.247	-0.584	-9.249			
		4:KOMBINASI	627.946	5.63E 3	1.375	-0.075	-0.008	71.708			
		5:KOMB B. MA	-888.460	3.77E 3	80.382	-0.317	-0.620	42.537			
	15812	1:BEBAN MATI	-385.762	-3.22E 3	-1.003	0.054	-0.008	4.508			
		2:BEBAN HIDL	-103.145	-768.551	-0.107	0.006	-0.001	1.067			
		3:BEBAN GEM	1.27E 3	342.518	-75.538	0.247	-0.527	4.210			
		4:KOMBINASI	-627.946	-5.09E 3	-1.375	0.075	-0.012	7.116			
		5:KOMB B. MA	888.460	-3.32E 3	-80.382	0.317	-0.562	9.569			
22434	15579	1:BEBAN MATI	394.766	-1.74E 3	1.229	-0.075	-0.011	-35.303			
		2:BEBAN HIDL	116.750	-458.888	0.306	-0.029	-0.003	-8.214			
		3:BEBAN GEM	-937.726	-305.171	45.376	0.214	-0.329	-0.153			
		4:KOMBINASI	660.520	-2.82E 3	1.964	-0.136	-0.018	-55.505			
		5:KOMB B. MA	-519.796	-2.34E 3	49.057	0.133	-0.358	-40.391			
	15805	1:BEBAN MATI	-394.766	2.19E 3	-1.229	0.075	-0.007	6.363			
		2:BEBAN HIDL	-116.750	458.888	-0.306	0.029	-0.002	1.463			
		3:BEBAN GEM	937.726	305.171	-45.376	-0.214	-0.339	-4.336			
		4:KOMBINASI	-660.520	3.37E 3	-1.964	0.136	-0.011	9.977			
		5:KOMB B. MA	519.796	2.79E 3	-49.057	-0.133	-0.364	2.688			
22435	15517	1:BEBAN MATI	444.376	3.67E 3	-0.716	-0.642	0.004	44.437			
		2:BEBAN HIDL	140.008	759.764	-0.709	-0.117	0.005	9.311			
		3:BEBAN GEM	-724.234	-348.659	28.354	-0.270	-0.213	-9.579			
		4:KOMBINASI	757.263	5.62E 3	-1.994	-0.958	0.012	68.221			
		5:KOMB B. MA	-232.065	3.76E 3	28.630	-0.996	-0.217	39.966			
	15798	1:BEBAN MATI	-444.376	-3.22E 3	0.716	0.642	0.007	6.246			
		2:BEBAN HIDL	-140.008	-759.764	0.709	0.117	0.006	1.866			
		3:BEBAN GEM	724.234	348.659	-28.354	0.270	-0.204	4.450			
		4:KOMBINASI	-757.263	-5.08E 3	1.994	0.958	0.017	10.480			
		5:KOMB B. MA	232.065	-3.31E 3	-28.630	0.996	-0.204	12.038			
22436	15580	1:BEBAN MATI	569.317	-1.5E 3	2.534	-1.313	-0.025	-32.581			
		2:BEBAN HIDL	135.633	-309.191	0.850	-0.358	-0.008	-6.924			
		3:BEBAN GEM	76.845	-324.302	-9.192	0.120	0.141	-1.052			
		4:KOMBINASI	900.193	-2.29E 3	4.400	-2.148	-0.043	-50.176			
		5:KOMB B. MA	731.384	-2.03E 3	-6.608	-1.401	0.118	-37.841			
	15687	1:BEBAN MATI	-569.317	1.95E 3	-2.534	1.313	-0.012	7.216			
		2:BEBAN HIDL	-135.633	309.191	-0.850	0.358	-0.005	2.376			
		3:BEBAN GEM	-76.845	324.302	9.192	-0.120	-0.006	-3.718			
		4:KOMBINASI	-900.193	2.83E 3	-4.400	2.148	-0.022	12.461			
		5:KOMB B. MA	-731.384	2.48E 3	6.608	1.401	-0.021	4.738			
22437	15535	1:BEBAN MATI	390.732	3.31E 3	-0.065	0.033	-0.001	34.741			
		2:BEBAN HIDL	162.219	829.173	0.100	-0.003	-0.001	9.146			
		3:BEBAN GEM	486.012	-389.664	-13.090	-0.187	0.106	-9.945			
		4:KOMBINASI	728.429	5.3E 3	0.082	0.034	-0.003	56.322			
		5:KOMB B. MA	998.377	3.4E 3	-13.749	-0.165	0.110	29.786			
	16070	1:BEBAN MATI	-390.732	-2.86E 3	0.065	-0.033	0.002	10.709			



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Job No 1	Sheet No 516	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-162.219	-829.173	-0.100	0.003	-0.000	3.052			
		3:BEBAN GEM	-486.012	389.664	13.090	0.187	0.087	4.213			
		4:KOMBINASI	-728.429	-4.76E 3	-0.082	-0.034	0.001	17.733			
		5:KOMB B. MA	-998.377	-2.95E 3	13.749	0.165	0.092	16.963			
22438	15581	1:BEBAN MATI	249.421	-1.44E 3	0.655	-0.079	-0.004	-20.518			
		2:BEBAN HIDL	60.881	-353.154	0.235	-0.016	-0.001	-4.367			
		3:BEBAN GEM	1.1E 3	-387.267	-26.140	0.198	0.163	0.107			
		4:KOMBINASI	396.714	-2.29E 3	1.162	-0.121	-0.007	-31.608			
		5:KOMB B. MA	1.45E 3	-2.05E 3	-26.651	0.119	0.166	-23.025			
	16036	1:BEBAN MATI	-249.421	1.8E 3	-0.655	0.079	-0.004	1.500			
		2:BEBAN HIDL	-60.881	353.154	-0.235	0.016	-0.001	0.211			
		3:BEBAN GEM	-1.1E 3	387.267	26.140	-0.198	0.145	-4.665			
		4:KOMBINASI	-396.714	2.72E 3	-1.162	0.121	-0.007	2.138			
		5:KOMB B. MA	-1.45E 3	2.41E 3	26.651	-0.119	0.148	-3.271			
22439	15491	1:BEBAN MATI	163.333	3.13E 3	-0.824	0.045	0.005	35.846			
		2:BEBAN HIDL	44.349	619.661	-0.094	-0.010	0.001	7.529			
		3:BEBAN GEM	1.08E 3	-460.920	-36.790	-0.299	0.237	-10.063			
		4:KOMBINASI	266.958	4.74E 3	-1.139	0.038	0.006	55.062			
		5:KOMB B. MA	1.32E 3	3.02E 3	-39.510	-0.275	0.254	29.797			
	16030	1:BEBAN MATI	-163.333	-2.77E 3	0.824	-0.045	0.005	-1.162			
		2:BEBAN HIDL	-44.349	-619.661	0.094	0.010	0.001	-0.237			
		3:BEBAN GEM	-1.08E 3	460.920	36.790	0.299	0.196	4.639			
		4:KOMBINASI	-266.958	-4.31E 3	1.139	-0.038	0.007	-1.773			
		5:KOMB B. MA	-1.32E 3	-2.65E 3	39.510	0.275	0.211	3.567			
22440	15582	1:BEBAN MATI	411.828	-1.72E 3	0.116	-0.021	-0.000	-35.191			
		2:BEBAN HIDL	119.545	-433.986	0.018	-0.005	0.000	-8.049			
		3:BEBAN GEM	1.58E 3	-296.204	-51.332	0.158	0.390	-0.008			
		4:KOMBINASI	685.465	-2.76E 3	0.168	-0.034	-0.000	-55.108			
		5:KOMB B. MA	2.14E 3	-2.29E 3	-53.772	0.141	0.410	-40.030			
	15836	1:BEBAN MATI	-411.828	2.17E 3	-0.116	0.021	-0.001	6.607			
		2:BEBAN HIDL	-119.545	433.986	-0.018	0.005	-0.000	1.666			
		3:BEBAN GEM	-1.58E 3	296.204	51.332	-0.158	0.365	-4.349			
		4:KOMBINASI	-685.465	3.3E 3	-0.168	0.034	-0.002	10.593			
		5:KOMB B. MA	-2.14E 3	2.74E 3	53.772	-0.141	0.381	3.040			
22441	15518	1:BEBAN MATI	364.817	3.65E 3	-0.368	0.091	0.002	44.197			
		2:BEBAN HIDL	109.894	775.677	-0.014	0.018	-0.000	10.025			
		3:BEBAN GEM	398.807	-361.991	-18.963	-0.264	0.110	-9.749			
		4:KOMBINASI	613.611	5.62E 3	-0.465	0.138	0.002	69.076			
		5:KOMB B. MA	849.501	3.73E 3	-20.288	-0.175	0.117	39.976			
	15829	1:BEBAN MATI	-364.817	-3.2E 3	0.368	-0.091	0.003	6.141			
		2:BEBAN HIDL	-109.894	-775.677	0.014	-0.018	0.000	1.385			
		3:BEBAN GEM	-398.807	361.991	18.963	0.264	0.169	4.424			
		4:KOMBINASI	-613.611	-5.08E 3	0.465	-0.138	0.005	9.585			
		5:KOMB B. MA	-849.501	-3.28E 3	20.288	0.175	0.181	11.617			
22442	15583	1:BEBAN MATI	384.621	-1.68E 3	-0.124	0.004	0.002	-33.791			
		2:BEBAN HIDL	105.850	-427.444	-0.033	0.027	0.000	-7.668			
		3:BEBAN GEM	-445.138	-283.685	36.752	0.161	-0.203	-0.012			
		4:KOMBINASI	630.904	-2.7E 3	-0.202	0.047	0.002	-52.819			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 517	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-19.265	-2.23E 3	38.445	0.189	-0.212	-38.405			
	15822	1:BEBAN MATI	-384.621	2.13E 3	0.124	-0.004	0.000	5.757			
		2:BEBAN HIDL	-105.850	427.444	0.033	-0.027	0.000	1.381			
		3:BEBAN GEM	445.138	283.685	-36.752	-0.161	-0.337	-4.161			
		4:KOMBINASI	-630.904	3.24E 3	0.202	-0.047	0.001	9.117			
		5:KOMB B. MA	19.265	2.69E 3	-38.445	-0.189	-0.354	2.216			
22443	15519	1:BEBAN MATI	385.762	3.67E 3	-1.003	0.054	0.006	46.105			
		2:BEBAN HIDL	103.145	768.551	-0.107	0.006	0.001	10.239			
		3:BEBAN GEM	-1.2E 3	-348.769	-26.512	-0.283	0.211	-9.345			
		4:KOMBINASI	627.947	5.63E 3	-1.375	0.075	0.008	71.708			
		5:KOMB B. MA	-810.386	3.76E 3	-28.905	-0.239	0.229	42.436			
	15815	1:BEBAN MATI	-385.762	-3.22E 3	1.003	-0.054	0.008	4.508			
		2:BEBAN HIDL	-103.145	-768.551	0.107	-0.006	0.001	1.067			
		3:BEBAN GEM	1.2E 3	348.769	26.512	0.283	0.179	4.214			
		4:KOMBINASI	-627.947	-5.09E 3	1.375	-0.075	0.012	7.116			
		5:KOMB B. MA	810.386	-3.31E 3	28.905	0.239	0.197	9.573			
22444	15584	1:BEBAN MATI	394.767	-1.74E 3	-1.229	0.075	0.011	-35.303			
		2:BEBAN HIDL	116.750	-458.888	-0.306	0.029	0.003	-8.214			
		3:BEBAN GEM	-852.495	-299.304	-28.845	0.101	0.206	-0.106			
		4:KOMBINASI	660.520	-2.82E 3	-1.964	0.136	0.018	-55.505			
		5:KOMB B. MA	-430.303	-2.33E 3	-31.700	0.198	0.229	-40.342			
	15808	1:BEBAN MATI	-394.767	2.19E 3	1.229	-0.075	0.007	6.363			
		2:BEBAN HIDL	-116.750	458.888	0.306	-0.029	0.002	1.463			
		3:BEBAN GEM	852.495	299.304	28.845	-0.101	0.218	-4.297			
		4:KOMBINASI	-660.520	3.37E 3	1.964	-0.136	0.011	9.977			
		5:KOMB B. MA	430.303	2.78E 3	31.700	-0.198	0.237	2.729			
22445	15520	1:BEBAN MATI	444.376	3.67E 3	0.716	0.642	-0.004	44.437			
		2:BEBAN HIDL	140.007	759.763	0.709	0.117	-0.005	9.311			
		3:BEBAN GEM	-737.910	-346.806	-12.036	-0.247	0.087	-9.491			
		4:KOMBINASI	757.263	5.62E 3	1.994	0.958	-0.012	68.221			
		5:KOMB B. MA	-246.426	3.76E 3	-11.496	0.453	0.085	40.058			
	15801	1:BEBAN MATI	-444.376	-3.22E 3	-0.716	-0.642	-0.007	6.246			
		2:BEBAN HIDL	-140.007	-759.763	-0.709	-0.117	-0.006	1.866			
		3:BEBAN GEM	737.910	346.806	12.036	0.247	0.090	4.389			
		4:KOMBINASI	-757.263	-5.08E 3	-1.994	-0.958	-0.017	10.480			
		5:KOMB B. MA	246.426	-3.31E 3	11.496	-0.453	0.085	11.974			
22446	15585	1:BEBAN MATI	569.317	-1.5E 3	-2.534	1.313	0.025	-32.581			
		2:BEBAN HIDL	135.633	-309.191	-0.850	0.358	0.008	-6.924			
		3:BEBAN GEM	-56.114	-305.645	10.900	0.230	-0.157	-0.470			
		4:KOMBINASI	900.192	-2.29E 3	-4.400	2.148	0.043	-50.176			
		5:KOMB B. MA	591.776	-2.01E 3	8.402	1.769	-0.135	-37.229			
	15690	1:BEBAN MATI	-569.317	1.95E 3	2.534	-1.313	0.012	7.216			
		2:BEBAN HIDL	-135.633	309.191	0.850	-0.358	0.005	2.376			
		3:BEBAN GEM	56.114	305.645	-10.900	-0.230	-0.003	-4.026			
		4:KOMBINASI	-900.192	2.83E 3	4.400	-2.148	0.022	12.461			
		5:KOMB B. MA	-591.776	2.46E 3	-8.402	-1.769	0.011	4.414			
22447	15536	1:BEBAN MATI	427.599	2.02E 3	35.577	-5.163	-0.268	21.406			
		2:BEBAN HIDL	132.842	384.695	11.299	-1.810	-0.085	4.681			



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Job No

1

Sheet No

518

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.34E 3	-371.486	-76.795	-0.047	0.603	-9.830			
		4:KOMBINASI	725.666	3.03E 3	60.771	-9.091	-0.457	33.177			
		5:KOMB B. MA	-899.565	1.86E 3	-38.279	-6.298	0.315	13.892			
	16087	1:BEBAN MATI	-427.599	-1.56E 3	-35.577	5.163	-0.255	4.928			
		2:BEBAN HIDL	-132.842	-384.695	-11.299	1.810	-0.081	0.978			
		3:BEBAN GEM	1.34E 3	371.486	76.795	0.047	0.526	4.366			
		4:KOMBINASI	-725.666	-2.49E 3	-60.771	9.091	-0.437	7.478			
		5:KOMB B. MA	899.565	-1.41E 3	38.279	6.298	0.248	10.099			
22448	15586	1:BEBAN MATI	368.129	-1.12E 3	0.618	0.108	-0.001	-18.498			
		2:BEBAN HIDL	101.671	-301.759	0.055	-0.076	0.001	-4.082			
		3:BEBAN GEM	-493.244	-403.308	-24.377	0.218	0.152	0.108			
		4:KOMBINASI	604.428	-1.83E 3	0.830	0.009	-0.000	-28.730			
		5:KOMB B. MA	-88.775	-1.73E 3	-24.945	0.292	0.159	-20.835			
	16417	1:BEBAN MATI	-368.129	1.48E 3	-0.618	-0.108	-0.006	3.174			
		2:BEBAN HIDL	-101.671	301.759	-0.055	0.076	-0.001	0.531			
		3:BEBAN GEM	493.244	403.308	24.377	-0.218	0.135	-4.854			
		4:KOMBINASI	-604.428	2.26E 3	-0.830	-0.009	-0.009	4.659			
		5:KOMB B. MA	88.775	2.09E 3	24.945	-0.292	0.134	-1.603			
22449	15493	1:BEBAN MATI	229.601	2.74E 3	20.763	-0.864	-0.123	29.964			
		2:BEBAN HIDL	67.344	528.177	5.580	-0.309	-0.033	5.893			
		3:BEBAN GEM	-485.683	-442.186	-28.361	-0.193	0.179	-9.886			
		4:KOMBINASI	383.272	4.13E 3	33.843	-1.531	-0.201	45.385			
		5:KOMB B. MA	-239.960	2.59E 3	-5.668	-1.253	0.044	23.120			
	16414	1:BEBAN MATI	-229.601	-2.38E 3	-20.763	0.864	-0.121	0.122			
		2:BEBAN HIDL	-67.344	-528.177	-5.580	0.309	-0.033	0.323			
		3:BEBAN GEM	485.683	442.186	28.361	0.193	0.155	4.682			
		4:KOMBINASI	-383.272	-3.7E 3	-33.843	1.531	-0.197	0.663			
		5:KOMB B. MA	239.960	-2.23E 3	5.668	1.253	0.022	5.232			
22450	15587	1:BEBAN MATI	429.615	-1.38E 3	-1.729	0.453	0.011	-29.803			
		2:BEBAN HIDL	131.991	-360.678	-0.493	0.118	0.003	-7.032			
		3:BEBAN GEM	-141.267	-320.150	-22.685	0.074	0.171	-0.106			
		4:KOMBINASI	726.724	-2.23E 3	-2.864	0.733	0.018	-47.016			
		5:KOMB B. MA	360.480	-1.93E 3	-25.844	0.601	0.192	-34.134			
	16282	1:BEBAN MATI	-429.615	1.83E 3	1.729	-0.453	0.015	6.203			
		2:BEBAN HIDL	-131.991	360.678	0.493	-0.118	0.004	1.727			
		3:BEBAN GEM	141.267	320.150	22.685	-0.074	0.163	-4.603			
		4:KOMBINASI	-726.724	2.77E 3	2.864	-0.733	0.024	10.207			
		5:KOMB B. MA	-360.480	2.38E 3	25.844	-0.601	0.188	2.406			
22451	15521	1:BEBAN MATI	397.332	3.21E 3	14.629	-0.958	-0.104	38.311			
		2:BEBAN HIDL	127.317	682.446	3.694	-0.241	-0.026	8.657			
		3:BEBAN GEM	-404.271	-348.955	-19.742	-0.207	0.164	-9.830			
		4:KOMBINASI	680.506	4.94E 3	23.466	-1.534	-0.167	59.824			
		5:KOMB B. MA	49.238	3.25E 3	-3.883	-1.319	0.052	33.184			
	16276	1:BEBAN MATI	-397.332	-2.76E 3	-14.629	0.958	-0.111	5.537			
		2:BEBAN HIDL	-127.317	-682.446	-3.694	0.241	-0.028	1.382			
		3:BEBAN GEM	404.271	348.955	19.742	0.207	0.127	4.697			
		4:KOMBINASI	-680.506	-4.4E 3	-23.466	1.534	-0.179	8.855			
		5:KOMB B. MA	-49.238	-2.8E 3	3.883	1.319	0.005	11.297			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 519	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22452	15588	1:BEBAN MATI	409.839	-1.36E 3	-4.312	0.380	0.030	-28.997			
		2:BEBAN HIDL	121.880	-347.189	-1.163	0.117	0.008	-6.604			
		3:BEBAN GEM	-87.962	-297.885	-17.117	0.086	0.133	-0.038			
		4:KOMBINASI	686.815	-2.19E 3	-7.036	0.642	0.048	-45.363			
		5:KOMB B. MA	390.607	-1.89E 3	-22.982	0.540	0.174	-33.000			
16270		1:BEBAN MATI	-409.839	1.82E 3	4.312	-0.380	0.034	5.606			
		2:BEBAN HIDL	-121.880	347.189	1.163	-0.117	0.009	1.497			
		3:BEBAN GEM	87.962	297.885	17.117	-0.086	0.119	-4.344			
		4:KOMBINASI	-686.815	2.73E 3	7.036	-0.642	0.055	9.122			
		5:KOMB B. MA	-390.607	2.34E 3	22.982	-0.540	0.164	1.944			
22453	15522	1:BEBAN MATI	606.500	3.23E 3	16.501	-0.881	-0.119	39.322			
		2:BEBAN HIDL	187.041	698.791	4.578	-0.258	-0.033	9.442			
		3:BEBAN GEM	-257.904	-316.486	-17.895	-0.178	0.141	-8.886			
		4:KOMBINASI	1.03E 3	4.99E 3	27.127	-1.470	-0.196	62.295			
		5:KOMB B. MA	447.925	3.31E 3	0.459	-1.223	0.009	35.658			
16264		1:BEBAN MATI	-606.500	-2.78E 3	-16.501	0.881	-0.124	4.832			
		2:BEBAN HIDL	-187.041	-698.791	-4.578	0.258	-0.034	0.837			
		3:BEBAN GEM	257.904	316.486	17.895	0.178	0.123	4.231			
		4:KOMBINASI	-1.03E 3	-4.45E 3	-27.127	1.470	-0.203	7.137			
		5:KOMB B. MA	-447.925	-2.86E 3	-0.459	1.223	-0.015	9.776			
22454	15589	1:BEBAN MATI	253.418	-838.194	-4.804	2.199	0.036	-19.481			
		2:BEBAN HIDL	72.332	-224.273	-1.352	0.605	0.010	-4.150			
		3:BEBAN GEM	-229.630	-346.162	-11.522	0.031	0.088	-0.034			
		4:KOMBINASI	419.834	-1.36E 3	-7.927	3.607	0.059	-30.018			
		5:KOMB B. MA	55.706	-1.34E 3	-17.713	2.594	0.134	-22.008			
16258		1:BEBAN MATI	-253.418	1.29E 3	4.804	-2.199	0.035	3.838			
		2:BEBAN HIDL	-72.332	224.273	1.352	-0.605	0.010	0.851			
		3:BEBAN GEM	229.630	346.162	11.522	-0.031	0.082	-5.058			
		4:KOMBINASI	-419.834	1.91E 3	7.927	-3.607	0.058	5.968			
		5:KOMB B. MA	-55.706	1.79E 3	17.713	-2.594	0.127	-0.962			
22455	15523	1:BEBAN MATI	582.439	1.99E 3	26.258	-4.564	-0.202	19.748			
		2:BEBAN HIDL	170.827	308.878	7.173	-1.307	-0.056	2.884			
		3:BEBAN GEM	-1.53E 3	-364.413	19.186	-0.079	-0.054	-10.322			
		4:KOMBINASI	972.250	2.88E 3	42.988	-7.569	-0.332	28.312			
		5:KOMB B. MA	-921.077	1.79E 3	50.707	-5.431	-0.292	10.640			
16252		1:BEBAN MATI	-582.439	-1.54E 3	-26.258	4.564	-0.184	6.237			
		2:BEBAN HIDL	-170.827	-308.878	-7.173	1.307	-0.050	1.660			
		3:BEBAN GEM	1.53E 3	364.413	-19.186	0.079	-0.228	4.962			
		4:KOMBINASI	-972.250	-2.34E 3	-42.988	7.569	-0.300	10.139			
		5:KOMB B. MA	921.077	-1.34E 3	-50.707	5.431	-0.453	12.442			
22456	15545	1:BEBAN MATI	234.950	703.552	-11.968	-1.502	0.050	4.920			
		2:BEBAN HIDL	91.263	145.878	-5.721	-0.225	0.026	1.533			
		3:BEBAN GEM	-707.008	-815.037	-132.640	-0.450	0.693	-12.446			
		4:KOMBINASI	427.961	1.08E 3	-23.516	-2.162	0.102	8.356			
		5:KOMB B. MA	-452.651	-64.710	-154.673	-2.109	0.793	-7.228			
16161		1:BEBAN MATI	-234.950	-403.225	11.968	1.502	0.067	0.507			
		2:BEBAN HIDL	-91.263	-145.878	5.721	0.225	0.030	-0.102			
		3:BEBAN GEM	707.008	815.037	132.640	0.450	0.608	4.453			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 520	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-427.961	-717.275	23.516	2.162	0.129	0.445			
		5:KOMB B. MA	452.651	365.037	154.673	2.109	0.724	5.121			
22457	15590	1:BEBAN MATI	311.321	-878.657	-3.719	-0.661	0.021	-20.636			
		2:BEBAN HIDL	107.172	-309.198	-1.242	-0.246	0.007	-4.823			
		3:BEBAN GEM	84.633	-437.240	-9.400	0.269	0.057	1.249			
		4:KOMBINASI	545.060	-1.55E 3	-6.450	-1.187	0.037	-32.480			
		5:KOMB B. MA	464.488	-1.52E 3	-14.334	-0.527	0.086	-22.219			
	16346	1:BEBAN MATI	-311.321	1.24E 3	3.719	0.661	0.023	8.175			
		2:BEBAN HIDL	-107.172	309.198	1.242	0.246	0.007	1.184			
		3:BEBAN GEM	-84.633	437.240	9.400	-0.269	0.053	-6.394			
		4:KOMBINASI	-545.060	1.98E 3	6.450	1.187	0.039	11.705			
		5:KOMB B. MA	-464.488	1.88E 3	14.334	0.527	0.083	2.172			
22458	15495	1:BEBAN MATI	200.946	2.77E 3	-3.382	0.470	0.016	29.894			
		2:BEBAN HIDL	59.628	521.126	-2.169	0.129	0.012	5.262			
		3:BEBAN GEM	-335.349	-480.913	-30.120	-0.250	0.189	-9.955			
		4:KOMBINASI	336.540	4.16E 3	-7.529	0.770	0.038	44.292			
		5:KOMB B. MA	-115.393	2.58E 3	-36.310	0.285	0.221	22.598			
	16339	1:BEBAN MATI	-200.946	-2.41E 3	3.382	-0.470	0.024	0.636			
		2:BEBAN HIDL	-59.628	-521.126	2.169	-0.129	0.014	0.871			
		3:BEBAN GEM	335.349	480.913	30.120	0.250	0.166	4.296			
		4:KOMBINASI	-336.540	-3.73E 3	7.529	-0.770	0.050	2.156			
		5:KOMB B. MA	115.393	-2.22E 3	36.310	-0.285	0.206	5.669			
22459	15591	1:BEBAN MATI	378.247	-1.25E 3	-18.035	0.041	0.074	-29.074			
		2:BEBAN HIDL	126.571	-329.070	-6.190	-0.020	0.025	-7.161			
		3:BEBAN GEM	-13.454	-318.176	-29.545	0.124	0.167	0.171			
		4:KOMBINASI	656.409	-2.03E 3	-31.546	0.017	0.129	-46.347			
		5:KOMB B. MA	440.063	-1.78E 3	-52.771	0.159	0.264	-33.191			
	16408	1:BEBAN MATI	-378.247	1.55E 3	18.035	-0.041	0.103	15.311			
		2:BEBAN HIDL	-126.571	329.070	6.190	0.020	0.035	3.934			
		3:BEBAN GEM	13.454	318.176	29.545	-0.124	0.123	-3.292			
		4:KOMBINASI	-656.409	2.39E 3	31.546	-0.017	0.181	24.668			
		5:KOMB B. MA	-440.063	2.09E 3	52.771	-0.159	0.254	14.215			
22460	15524	1:BEBAN MATI	393.889	3.24E 3	-21.446	1.117	0.092	38.727			
		2:BEBAN HIDL	132.562	724.469	-8.462	0.403	0.037	9.146			
		3:BEBAN GEM	-382.948	-366.351	-54.927	-0.312	0.291	-10.283			
		4:KOMBINASI	684.765	5.05E 3	-39.274	1.985	0.170	61.105			
		5:KOMB B. MA	71.331	3.29E 3	-84.196	1.031	0.420	33.418			
	16397	1:BEBAN MATI	-393.889	-2.94E 3	21.446	-1.117	0.119	-8.390			
		2:BEBAN HIDL	-132.562	-724.469	8.462	-0.403	0.046	-2.041			
		3:BEBAN GEM	382.948	366.351	54.927	0.312	0.247	6.690			
		4:KOMBINASI	-684.765	-4.69E 3	39.274	-1.985	0.215	-13.334			
		5:KOMB B. MA	-71.331	-2.99E 3	84.196	-1.031	0.406	-2.590			
22461	15592	1:BEBAN MATI	392.114	-1.27E 3	-16.431	-0.011	0.061	-28.625			
		2:BEBAN HIDL	121.522	-331.144	-5.716	-0.034	0.022	-6.691			
		3:BEBAN GEM	-201.386	-291.806	-55.920	0.123	0.281	0.166			
		4:KOMBINASI	664.973	-2.06E 3	-28.864	-0.068	0.108	-45.056			
		5:KOMB B. MA	253.572	-1.78E 3	-78.577	0.098	0.369	-32.465			
	16386	1:BEBAN MATI	-392.114	1.58E 3	16.431	0.011	0.100	14.651			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 521	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-121.522	331.144	5.716	0.034	0.035	3.444			
		3:BEBAN GEM	201.386	291.806	55.920	-0.123	0.268	-3.028			
		4:KOMBINASI	-664.973	2.42E 3	28.864	0.068	0.175	23.091			
		5:KOMB B. MA	-253.572	2.08E 3	78.577	-0.098	0.402	13.538			
22462	15525	1:BEBAN MATI	621.846	3.26E 3	-21.245	1.014	0.094	39.283			
		2:BEBAN HIDL	198.005	739.123	-8.760	0.396	0.040	9.888			
		3:BEBAN GEM	-659.602	-337.063	-58.797	-0.305	0.317	-9.491			
		4:KOMBINASI	1.06E 3	5.1E 3	-39.510	1.850	0.177	62.961			
		5:KOMB B. MA	48.066	3.35E 3	-88.238	0.931	0.451	35.250			
	16375	1:BEBAN MATI	-621.846	-2.96E 3	21.245	-1.014	0.114	-8.768			
		2:BEBAN HIDL	-198.005	-739.123	8.760	-0.396	0.046	-2.640			
		3:BEBAN GEM	659.602	337.063	58.797	0.305	0.260	6.185			
		4:KOMBINASI	-1.06E 3	-4.74E 3	39.510	-1.850	0.210	-14.746			
		5:KOMB B. MA	-48.066	-3.05E 3	88.238	-0.931	0.415	-3.858			
22463	15593	1:BEBAN MATI	274.274	-578.500	-0.186	-2.166	-0.008	-15.780			
		2:BEBAN HIDL	74.890	-182.727	0.048	-0.622	-0.003	-3.588			
		3:BEBAN GEM	-500.173	-330.037	-1.462	0.255	0.002	0.087			
		4:KOMBINASI	448.953	-986.563	-0.147	-3.595	-0.015	-24.678			
		5:KOMB B. MA	-205.973	-1.03E 3	-1.693	-2.272	-0.008	-17.841			
	16364	1:BEBAN MATI	-274.274	878.827	0.186	2.166	0.009	8.634			
		2:BEBAN HIDL	-74.890	182.727	-0.048	0.622	0.003	1.797			
		3:BEBAN GEM	500.173	330.037	1.462	-0.255	0.013	-3.324			
		4:KOMBINASI	-448.953	1.35E 3	0.147	3.595	0.016	13.236			
		5:KOMB B. MA	205.973	1.34E 3	1.693	2.272	0.025	6.222			
22464	15526	1:BEBAN MATI	376.083	2.09E 3	-29.307	3.991	0.159	25.516			
		2:BEBAN HIDL	116.356	342.542	-12.009	1.246	0.065	3.969			
		3:BEBAN GEM	111.962	-356.826	-82.467	-0.253	0.482	-10.114			
		4:KOMBINASI	637.471	3.05E 3	-54.382	6.784	0.295	36.969			
		5:KOMB B. MA	563.457	1.92E 3	-123.102	4.474	0.704	17.277			
	16353	1:BEBAN MATI	-376.083	-1.79E 3	29.307	-3.991	0.128	-6.508			
		2:BEBAN HIDL	-116.356	-342.542	12.009	-1.246	0.053	-0.610			
		3:BEBAN GEM	-111.962	356.826	82.467	0.253	0.327	6.615			
		4:KOMBINASI	-637.471	-2.69E 3	54.382	-6.784	0.239	-8.785			
		5:KOMB B. MA	-563.457	-1.62E 3	123.102	-4.474	0.503	0.072			
22465	15594	1:BEBAN MATI	412.376	-1.23E 3	-12.415	-1.046	0.036	-27.866			
		2:BEBAN HIDL	134.166	-293.604	-4.630	-0.235	0.013	-6.275			
		3:BEBAN GEM	-94.643	-339.514	-37.193	-0.005	0.129	-1.276			
		4:KOMBINASI	709.517	-1.94E 3	-22.306	-1.632	0.065	-43.479			
		5:KOMB B. MA	393.501	-1.76E 3	-54.246	-1.192	0.180	-32.971			
	16321	1:BEBAN MATI	-412.376	1.45E 3	12.415	1.046	0.055	18.020			
		2:BEBAN HIDL	-134.166	293.604	4.630	0.235	0.021	4.115			
		3:BEBAN GEM	94.643	339.514	37.193	0.005	0.144	-1.221			
		4:KOMBINASI	-709.517	2.21E 3	22.306	1.632	0.099	28.208			
		5:KOMB B. MA	-393.501	1.98E 3	54.246	1.192	0.219	19.207			
22466	15595	1:BEBAN MATI	377.069	-1.09E 3	-0.773	-0.132	0.006	-24.085			
		2:BEBAN HIDL	130.662	-367.678	-0.103	0.019	0.001	-5.538			
		3:BEBAN GEM	91.604	-441.961	-9.621	0.181	0.051	1.151			
		4:KOMBINASI	661.542	-1.89E 3	-1.093	-0.129	0.008	-37.763			



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Job No 1	Sheet No 522	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	551.651	-1.77E 3	-10.937	0.069	0.059	-26.200			
	16154	1:BEBAN MATI	-377.069	1.45E 3	0.773	0.132	0.004	9.164			
		2:BEBAN HIDL	-130.662	367.678	0.103	-0.019	0.000	1.211			
		3:BEBAN GEM	-91.604	441.961	9.621	-0.181	0.062	-6.352			
		4:KOMBINASI	-661.542	2.33E 3	1.093	0.129	0.005	12.935			
		5:KOMB B. MA	-551.651	2.13E 3	10.937	-0.069	0.069	3.222			
22467	15497	1:BEBAN MATI	183.676	3.08E 3	-1.433	0.106	0.008	33.530			
		2:BEBAN HIDL	50.286	564.567	0.482	0.042	-0.003	5.674			
		3:BEBAN GEM	-248.670	-471.323	-13.261	-0.301	0.081	-9.740			
		4:KOMBINASI	300.870	4.6E 3	-0.948	0.194	0.004	49.315			
		5:KOMB B. MA	-47.255	2.92E 3	-15.068	-0.185	0.091	26.707			
	16146	1:BEBAN MATI	-183.676	-2.72E 3	1.433	-0.106	0.009	0.561			
		2:BEBAN HIDL	-50.286	-564.567	-0.482	-0.042	-0.002	0.969			
		3:BEBAN GEM	248.670	471.323	13.261	0.301	0.075	4.194			
		4:KOMBINASI	-300.870	-4.16E 3	0.948	-0.194	0.007	2.225			
		5:KOMB B. MA	47.255	-2.56E 3	15.068	0.185	0.087	5.547			
22468	15596	1:BEBAN MATI	420.936	-1.4E 3	0.162	-0.039	0.001	-33.030			
		2:BEBAN HIDL	140.102	-348.686	0.105	0.005	0.000	-8.067			
		3:BEBAN GEM	-91.793	-327.275	-22.143	0.131	0.118	0.002			
		4:KOMBINASI	729.287	-2.24E 3	0.362	-0.039	0.002	-52.544			
		5:KOMB B. MA	408.615	-1.95E 3	-23.026	0.102	0.125	-37.869			
	16237	1:BEBAN MATI	-420.936	1.7E 3	-0.162	0.039	-0.003	17.826			
		2:BEBAN HIDL	-140.102	348.686	-0.105	-0.005	-0.001	4.648			
		3:BEBAN GEM	91.793	327.275	22.143	-0.131	0.099	-3.211			
		4:KOMBINASI	-729.287	2.6E 3	-0.362	0.039	-0.006	28.828			
		5:KOMB B. MA	-408.615	2.25E 3	23.026	-0.102	0.101	17.243			
22469	15527	1:BEBAN MATI	390.267	3.68E 3	0.263	0.117	-0.004	44.151			
		2:BEBAN HIDL	129.772	846.139	1.061	-0.013	-0.006	10.722			
		3:BEBAN GEM	-468.095	-364.779	-19.997	-0.288	0.115	-10.157			
		4:KOMBINASI	675.956	5.77E 3	2.014	0.120	-0.015	70.137			
		5:KOMB B. MA	-23.369	3.8E 3	-20.097	-0.193	0.112	39.919			
	16224	1:BEBAN MATI	-390.267	-3.38E 3	-0.263	-0.117	0.002	-9.546			
		2:BEBAN HIDL	-129.772	-846.139	-1.061	0.013	-0.004	-2.425			
		3:BEBAN GEM	468.095	364.779	19.997	0.288	0.082	6.580			
		4:KOMBINASI	-675.956	-5.41E 3	-2.014	-0.120	-0.005	-15.335			
		5:KOMB B. MA	23.369	-3.5E 3	20.097	0.193	0.085	-4.092			
22470	15597	1:BEBAN MATI	423.406	-1.42E 3	0.786	-0.129	-0.002	-31.650			
		2:BEBAN HIDL	128.539	-367.570	0.188	-0.044	-0.000	-7.401			
		3:BEBAN GEM	-244.306	-303.918	-16.948	0.127	0.094	-0.061			
		4:KOMBINASI	713.750	-2.29E 3	1.245	-0.224	-0.003	-49.823			
		5:KOMB B. MA	244.008	-1.96E 3	-16.896	-0.022	0.096	-36.156			
	16211	1:BEBAN MATI	-423.406	1.72E 3	-0.786	0.129	-0.006	16.290			
		2:BEBAN HIDL	-128.539	367.570	-0.188	0.044	-0.002	3.797			
		3:BEBAN GEM	244.306	303.918	16.948	-0.127	0.072	-2.919			
		4:KOMBINASI	-713.750	2.65E 3	-1.245	0.224	-0.009	25.623			
		5:KOMB B. MA	-244.008	2.26E 3	16.896	0.022	0.069	15.503			
22471	15528	1:BEBAN MATI	417.489	3.64E 3	0.352	0.087	-0.005	44.406			
		2:BEBAN HIDL	122.835	816.215	0.815	-0.003	-0.005	10.560			



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Job No

1

Sheet No

523

Rev

Part

1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-509.952	-343.517	-9.545	-0.290	0.056	-9.569			
		4:KOMBINASI	697.523	5.68E 3	1.725	0.101	-0.013	70.182			
		5:KOMB B. MA	-44.260	3.77E 3	-9.182	-0.219	0.051	40.695			
	16198	1:BEBAN MATI	-417.489	-3.34E 3	-0.352	-0.087	0.001	-10.160			
		2:BEBAN HIDL	-122.835	-816.215	-0.815	0.003	-0.003	-2.555			
		3:BEBAN GEM	509.952	343.517	9.545	0.290	0.038	6.200			
		4:KOMBINASI	-697.523	-5.32E 3	-1.725	-0.101	-0.003	-16.281			
		5:KOMB B. MA	44.260	-3.47E 3	9.182	0.219	0.039	-5.184			
22472	15598	1:BEBAN MATI	440.573	-1.4E 3	0.988	-0.014	-0.006	-32.053			
		2:BEBAN HIDL	139.877	-390.693	0.177	0.023	-0.001	-7.791			
		3:BEBAN GEM	-195.443	-313.697	-13.241	0.140	0.069	0.017			
		4:KOMBINASI	752.491	-2.31E 3	1.468	0.021	-0.008	-50.928			
		5:KOMB B. MA	319.284	-1.96E 3	-12.809	0.147	0.067	-36.709			
	16185	1:BEBAN MATI	-440.573	1.7E 3	-0.988	0.014	-0.004	16.845			
		2:BEBAN HIDL	-139.877	390.693	-0.177	-0.023	-0.001	3.959			
		3:BEBAN GEM	195.443	313.697	13.241	-0.140	0.061	-3.094			
		4:KOMBINASI	-752.491	2.67E 3	-1.468	-0.021	-0.006	26.549			
		5:KOMB B. MA	-319.284	2.26E 3	12.809	-0.147	0.059	15.973			
22473	15529	1:BEBAN MATI	412.394	3.79E 3	-2.826	0.014	0.013	48.076			
		2:BEBAN HIDL	132.315	821.891	-0.388	-0.031	0.001	10.293			
		3:BEBAN GEM	-486.927	-354.692	-5.988	-0.287	0.043	-9.825			
		4:KOMBINASI	706.576	5.86E 3	-4.012	-0.033	0.018	74.160			
		5:KOMB B. MA	-19.490	3.91E 3	-9.346	-0.306	0.058	43.935			
	16172	1:BEBAN MATI	-412.394	-3.48E 3	2.826	-0.014	0.015	-12.428			
		2:BEBAN HIDL	-132.315	-821.891	0.388	0.031	0.002	-2.233			
		3:BEBAN GEM	486.927	354.692	5.988	0.287	0.016	6.347			
		4:KOMBINASI	-706.576	-5.5E 3	4.012	0.033	0.022	-18.486			
		5:KOMB B. MA	19.490	-3.61E 3	9.346	0.306	0.033	-7.103			
22474	15599	1:BEBAN MATI	500.213	-1.61E 3	-1.683	0.174	0.008	-37.077			
		2:BEBAN HIDL	162.412	-357.372	-0.959	0.023	0.005	-8.634			
		3:BEBAN GEM	-128.590	-341.459	-1.525	0.132	0.013	-0.924			
		4:KOMBINASI	860.115	-2.5E 3	-3.555	0.245	0.017	-58.307			
		5:KOMB B. MA	462.641	-2.18E 3	-3.860	0.327	0.025	-43.228			
	16113	1:BEBAN MATI	-500.213	1.83E 3	1.683	-0.174	0.004	24.431			
		2:BEBAN HIDL	-162.412	357.372	0.959	-0.023	0.002	6.006			
		3:BEBAN GEM	128.590	341.459	1.525	-0.132	-0.002	-1.587			
		4:KOMBINASI	-860.115	2.77E 3	3.555	-0.245	0.009	38.927			
		5:KOMB B. MA	-462.641	2.4E 3	3.860	-0.327	0.004	26.368			
22475	15501	1:BEBAN MATI	549.418	2.12E 3	41.449	-3.230	-0.220	25.553			
		2:BEBAN HIDL	172.238	368.191	16.362	-1.155	-0.087	4.714			
		3:BEBAN GEM	-697.179	-349.638	-8.304	-0.182	0.073	-9.972			
		4:KOMBINASI	934.883	3.13E 3	75.919	-5.724	-0.404	38.206			
		5:KOMB B. MA	-79.276	1.97E 3	42.547	-4.114	-0.196	17.911			
	16169	1:BEBAN MATI	-549.418	-1.82E 3	-41.449	3.230	-0.186	-6.255			
		2:BEBAN HIDL	-172.238	-368.191	-16.362	1.155	-0.073	-1.103			
		3:BEBAN GEM	697.179	349.638	8.304	0.182	0.009	6.543			
		4:KOMBINASI	-934.883	-2.77E 3	-75.919	5.724	-0.341	-9.272			
		5:KOMB B. MA	79.276	-1.67E 3	-42.547	4.114	-0.221	-0.047			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 524	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22476	15547	1:BEBAN MATI	464.515	-668.221	2.992	1.336	-0.002	-19.374			
		2:BEBAN HIDL	112.951	-154.306	0.541	0.358	0.002	-4.046			
		3:BEBAN GEM	-238.792	-357.547	-4.717	0.073	0.027	-0.908			
		4:KOMBINASI	738.140	-1.05E 3	4.457	2.176	0.001	-29.722			
		5:KOMB B. MA	281.554	-1.14E 3	-1.636	1.627	0.028	-22.755			
16110	15547	1:BEBAN MATI	-464.515	893.467	-2.992	-1.336	-0.020	13.631			
		2:BEBAN HIDL	-112.951	154.306	-0.541	-0.358	-0.006	2.911			
		3:BEBAN GEM	238.792	357.547	4.717	-0.073	0.008	-1.722			
		4:KOMBINASI	-738.140	1.32E 3	-4.457	-2.176	-0.034	21.014			
		5:KOMB B. MA	-281.554	1.36E 3	1.636	-1.627	-0.016	13.570			
22477	15484	1:BEBAN MATI	127.944	758.182	34.664	0.089	-0.197	3.622			
		2:BEBAN HIDL	46.264	50.882	12.115	-0.156	-0.069	-0.212			
		3:BEBAN GEM	-141.226	-267.754	-16.895	0.447	0.115	-4.260			
		4:KOMBINASI	227.556	991.230	60.981	-0.143	-0.348	4.007			
		5:KOMB B. MA	7.416	507.570	24.193	0.465	-0.118	-0.979			
15665	15484	1:BEBAN MATI	-127.944	-397.789	-34.664	-0.089	-0.211	3.180			
		2:BEBAN HIDL	-46.264	-50.882	-12.115	0.156	-0.073	0.811			
		3:BEBAN GEM	141.226	267.754	16.895	-0.447	0.084	1.109			
		4:KOMBINASI	-227.556	-558.759	-60.981	0.143	-0.370	5.113			
		5:KOMB B. MA	-7.416	-147.177	-24.193	-0.465	-0.167	4.831			
22478	15482	1:BEBAN MATI	351.816	1.38E 3	55.944	-2.425	-0.332	11.365			
		2:BEBAN HIDL	127.930	217.267	19.500	-0.837	-0.116	1.784			
		3:BEBAN GEM	-197.614	-138.520	-16.110	0.501	0.107	-3.377			
		4:KOMBINASI	626.867	2E 3	98.334	-4.249	-0.585	16.492			
		5:KOMB B. MA	221.080	1.37E 3	50.729	-2.401	-0.289	8.890			
15896	15482	1:BEBAN MATI	-351.816	-1.02E 3	-55.944	2.425	-0.326	2.766			
		2:BEBAN HIDL	-127.930	-217.267	-19.500	0.837	-0.113	0.773			
		3:BEBAN GEM	197.614	138.520	16.110	-0.501	0.082	1.747			
		4:KOMBINASI	-626.867	-1.57E 3	-98.334	4.249	-0.572	4.555			
		5:KOMB B. MA	-221.080	-1.01E 3	-50.729	2.401	-0.308	5.063			
22479	15529	1:BEBAN MATI	199.034	2.29E 3	-0.562	-0.020	0.002	18.951			
		2:BEBAN HIDL	70.754	425.676	0.413	0.016	-0.003	2.417			
		3:BEBAN GEM	152.525	-136.688	-10.682	0.619	0.057	-2.690			
		4:KOMBINASI	352.048	3.43E 3	-0.013	0.002	-0.003	26.608			
		5:KOMB B. MA	401.638	2.41E 3	-11.530	0.640	0.059	17.577			
16126	15529	1:BEBAN MATI	-199.034	-1.93E 3	0.562	0.020	0.005	5.932			
		2:BEBAN HIDL	-70.754	-425.676	-0.413	-0.016	-0.002	2.592			
		3:BEBAN GEM	-152.525	136.688	10.682	-0.619	0.069	1.081			
		4:KOMBINASI	-352.048	-3E 3	0.013	-0.002	0.003	11.266			
		5:KOMB B. MA	-401.638	-2.05E 3	11.530	-0.640	0.076	8.622			
22480	15526	1:BEBAN MATI	315.000	2.43E 3	-4.012	0.268	0.025	23.701			
		2:BEBAN HIDL	137.909	604.344	-1.641	0.091	0.010	6.827			
		3:BEBAN GEM	843.413	-136.486	-13.143	0.619	0.092	-2.866			
		4:KOMBINASI	598.655	3.88E 3	-7.441	0.466	0.045	39.365			
		5:KOMB B. MA	1.28E 3	2.65E 3	-18.797	0.972	0.127	24.789			
16332	15526	1:BEBAN MATI	-315.000	-2.07E 3	4.012	-0.268	0.023	2.741			
		2:BEBAN HIDL	-137.909	-604.344	1.641	-0.091	0.009	0.285			
		3:BEBAN GEM	-843.413	136.486	13.143	-0.619	0.063	1.260			



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Job No 1	Sheet No 525	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-598.655	-3.45E 3	7.441	-0.466	0.042	3.745			
		5:KOMB B. MA	-1.28E 3	-2.29E 3	18.797	-0.972	0.094	4.234			
22481	15523	1:BEBAN MATI	-17.896	2.17E 3	6.790	-5.113	-0.042	23.220			
		2:BEBAN HIDL	-8.491	591.362	1.161	-2.019	-0.008	6.639			
		3:BEBAN GEM	1.26E 3	-263.339	32.641	0.462	-0.110	-5.118			
		4:KOMBINASI	-35.061	3.55E 3	10.005	-9.366	-0.063	38.485			
		5:KOMB B. MA	1.3E 3	2.25E 3	41.759	-5.839	-0.162	21.829			
	16167	1:BEBAN MATI	17.896	-1.81E 3	-6.790	5.113	-0.038	0.239			
		2:BEBAN HIDL	8.491	-591.362	-1.161	2.019	-0.006	0.321			
		3:BEBAN GEM	-1.26E 3	263.339	-32.641	-0.462	-0.274	2.019			
		4:KOMBINASI	35.061	-3.12E 3	-10.005	9.366	-0.055	0.800			
		5:KOMB B. MA	-1.3E 3	-1.89E 3	-41.759	5.839	-0.329	2.552			
22482	15600	1:BEBAN MATI	388.778	-1.5E 3	-5.061	0.206	0.039	-31.303			
		2:BEBAN HIDL	100.026	-423.438	-1.560	0.085	0.012	-6.846			
		3:BEBAN GEM	1.06E 3	-21.452	18.844	-0.391	-0.148	0.246			
		4:KOMBINASI	626.575	-2.47E 3	-8.569	0.383	0.067	-48.517			
		5:KOMB B. MA	1.56E 3	-1.77E 3	13.789	-0.154	-0.109	-35.152			
	16249	1:BEBAN MATI	-388.778	1.95E 3	5.061	-0.206	0.035	5.967			
		2:BEBAN HIDL	-100.026	423.438	1.560	-0.085	0.011	0.617			
		3:BEBAN GEM	-1.06E 3	21.452	-18.844	0.391	-0.129	-0.561			
		4:KOMBINASI	-626.575	3.01E 3	8.569	-0.383	0.059	8.147			
		5:KOMB B. MA	-1.56E 3	2.22E 3	-13.789	0.154	-0.094	5.747			
22483	15520	1:BEBAN MATI	212.817	3.34E 3	3.637	-1.712	-0.028	39.553			
		2:BEBAN HIDL	44.550	645.245	1.801	-0.462	-0.013	7.650			
		3:BEBAN GEM	1.13E 3	-78.166	-1.302	0.869	-0.019	-1.899			
		4:KOMBINASI	326.661	5.05E 3	7.246	-2.792	-0.055	59.703			
		5:KOMB B. MA	1.42E 3	3.65E 3	3.351	-1.076	-0.056	42.149			
	16250	1:BEBAN MATI	-212.817	-2.89E 3	-3.637	1.712	-0.026	6.335			
		2:BEBAN HIDL	-44.550	-645.245	-1.801	0.462	-0.013	1.842			
		3:BEBAN GEM	-1.13E 3	78.166	1.302	-0.869	0.038	0.749			
		4:KOMBINASI	-326.661	-4.51E 3	-7.246	2.792	-0.052	10.549			
		5:KOMB B. MA	-1.42E 3	-3.2E 3	-3.351	1.076	0.006	8.227			
22484	15601	1:BEBAN MATI	277.225	-1.73E 3	0.067	-0.385	-0.000	-36.243			
		2:BEBAN HIDL	79.868	-435.781	-0.232	-0.067	0.002	-8.418			
		3:BEBAN GEM	1.45E 3	-86.131	1.922	-0.552	-0.031	0.100			
		4:KOMBINASI	460.459	-2.77E 3	-0.291	-0.568	0.002	-56.961			
		5:KOMB B. MA	1.85E 3	-2.08E 3	1.946	-1.005	-0.032	-41.189			
	15692	1:BEBAN MATI	-277.225	2.18E 3	-0.067	0.385	-0.001	7.554			
		2:BEBAN HIDL	-79.868	435.781	0.232	0.067	0.002	2.008			
		3:BEBAN GEM	-1.45E 3	86.131	-1.922	0.552	0.003	-1.367			
		4:KOMBINASI	-460.459	3.31E 3	0.291	0.568	0.002	12.278			
		5:KOMB B. MA	-1.85E 3	2.53E 3	-1.946	1.005	0.004	7.324			
22485	15517	1:BEBAN MATI	306.108	3.7E 3	1.084	0.579	-0.012	44.487			
		2:BEBAN HIDL	91.638	775.057	1.265	0.089	-0.010	9.599			
		3:BEBAN GEM	1.19E 3	-88.882	-16.460	0.940	0.099	-2.263			
		4:KOMBINASI	513.950	5.68E 3	3.325	0.837	-0.030	68.743			
		5:KOMB B. MA	1.61E 3	4.08E 3	-15.440	1.619	0.087	47.870			
	15691	1:BEBAN MATI	-306.108	-3.25E 3	-1.084	-0.579	-0.004	6.685			



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Job No 1	Sheet No 526	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-91.638	-775.057	-1.265	-0.089	-0.009	1.802			
		3:BEBAN GEM	-1.19E 3	88.882	16.460	-0.940	0.143	0.955			
		4:KOMBINASI	-513.950	-5.14E 3	-3.325	-0.837	-0.019	10.905			
		5:KOMB B. MA	-1.61E 3	-3.63E 3	15.440	-1.619	0.140	8.769			
22486	15602	1:BEBAN MATI	301.353	-1.43E 3	-0.701	1.489	0.010	-31.539			
		2:BEBAN HIDL	73.630	-329.207	-0.293	0.371	0.003	-6.867			
		3:BEBAN GEM	870.808	-128.600	-19.454	-0.573	0.133	-0.144			
		4:KOMBINASI	479.432	-2.25E 3	-1.311	2.379	0.017	-48.834			
		5:KOMB B. MA	1.26E 3	-1.77E 3	-21.304	1.110	0.151	-35.811			
	15846	1:BEBAN MATI	-301.353	1.88E 3	0.701	-1.489	0.000	7.151			
		2:BEBAN HIDL	-73.630	329.207	0.293	-0.371	0.001	2.024			
		3:BEBAN GEM	-870.808	128.600	19.454	0.573	0.154	-1.747			
		4:KOMBINASI	-479.432	2.79E 3	1.311	-2.379	0.002	11.820			
		5:KOMB B. MA	-1.26E 3	2.22E 3	21.304	-1.110	0.162	6.531			
22487	15514	1:BEBAN MATI	558.779	3.36E 3	10.086	-1.215	-0.067	40.945			
		2:BEBAN HIDL	146.065	745.790	2.812	-0.308	-0.019	10.555			
		3:BEBAN GEM	786.548	-152.885	-33.343	0.939	0.196	-4.612			
		4:KOMBINASI	904.240	5.23E 3	16.603	-1.951	-0.110	66.022			
		5:KOMB B. MA	1.47E 3	3.65E 3	-23.237	-0.414	0.127	42.436			
	15845	1:BEBAN MATI	-558.779	-2.91E 3	-10.086	1.215	-0.081	5.169			
		2:BEBAN HIDL	-146.065	-745.790	-2.812	0.308	-0.023	0.415			
		3:BEBAN GEM	-786.548	152.885	33.343	-0.939	0.295	2.363			
		4:KOMBINASI	-904.240	-4.68E 3	-16.603	1.951	-0.134	6.868			
		5:KOMB B. MA	-1.47E 3	-3.2E 3	23.237	0.414	0.215	7.899			
22488	15511	1:BEBAN MATI	2.210	1.93E 3	-13.542	-7.591	0.076	18.492			
		2:BEBAN HIDL	-6.733	443.676	-5.018	-2.517	0.028	3.950			
		3:BEBAN GEM	862.644	-30.740	-96.696	0.542	0.498	-0.487			
		4:KOMBINASI	-8.121	3.03E 3	-24.280	-13.136	0.137	28.511			
		5:KOMB B. MA	903.946	2.17E 3	-118.084	-8.532	0.616	20.351			
	15720	1:BEBAN MATI	-2.210	-1.57E 3	13.542	7.591	0.083	2.116			
		2:BEBAN HIDL	6.733	-443.676	5.018	2.517	0.031	1.271			
		3:BEBAN GEM	-862.644	30.740	96.696	-0.542	0.640	0.125			
		4:KOMBINASI	8.121	-2.6E 3	24.280	13.136	0.149	4.573			
		5:KOMB B. MA	-903.946	-1.8E 3	118.084	8.532	0.774	3.010			
22489	15508	1:BEBAN MATI	137.887	2.09E 3	-2.591	0.016	0.015	17.082			
		2:BEBAN HIDL	70.072	406.434	-0.745	-0.028	0.004	2.564			
		3:BEBAN GEM	178.307	-158.022	-29.287	0.630	0.180	-3.337			
		4:KOMBINASI	277.579	3.16E 3	-4.301	-0.025	0.024	24.601			
		5:KOMB B. MA	367.152	2.17E 3	-33.789	0.661	0.206	15.116			
	15926	1:BEBAN MATI	-137.887	-1.73E 3	2.591	-0.016	0.016	5.393			
		2:BEBAN HIDL	-70.072	-406.434	0.745	0.028	0.005	2.219			
		3:BEBAN GEM	-178.307	158.022	29.287	-0.630	0.164	1.478			
		4:KOMBINASI	-277.579	-2.73E 3	4.301	0.025	0.027	10.022			
		5:KOMB B. MA	-367.152	-1.81E 3	33.789	-0.661	0.191	8.276			
22490	15528	1:BEBAN MATI	227.462	2.24E 3	-0.890	-0.013	0.006	17.792			
		2:BEBAN HIDL	74.728	438.560	-0.582	-0.004	0.004	2.598			
		3:BEBAN GEM	23.970	-137.115	-6.457	0.613	0.033	-2.726			
		4:KOMBINASI	392.520	3.4E 3	-1.999	-0.022	0.013	25.507			



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Job No 1	Sheet No 527	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	297.468	2.36E 3	-8.019	0.629	0.043	16.488			
	16193	1:BEBAN MATI	-227.462	-1.88E 3	0.890	0.013	0.004	6.507			
		2:BEBAN HIDL	-74.728	-438.560	0.582	0.004	0.003	2.563			
		3:BEBAN GEM	-23.970	137.115	6.457	-0.613	0.043	1.113			
		4:KOMBINASI	-392.520	-2.96E 3	1.999	0.022	0.010	11.909			
		5:KOMB B. MA	-297.468	-2E 3	8.019	-0.629	0.052	9.213			
22491	15525	1:BEBAN MATI	370.248	2.42E 3	10.578	0.310	-0.065	24.152			
		2:BEBAN HIDL	148.999	600.897	3.740	0.064	-0.023	6.831			
		3:BEBAN GEM	334.853	-144.246	-3.925	0.617	0.050	-3.302			
		4:KOMBINASI	682.696	3.86E 3	18.679	0.474	-0.115	39.912			
		5:KOMB B. MA	811.243	2.63E 3	8.701	0.996	-0.027	24.784			
	16371	1:BEBAN MATI	-370.248	-2.06E 3	-10.578	-0.310	-0.060	2.159			
		2:BEBAN HIDL	-148.999	-600.897	-3.740	-0.064	-0.021	0.240			
		3:BEBAN GEM	-334.853	144.246	3.925	-0.617	-0.003	1.604			
		4:KOMBINASI	-682.696	-3.43E 3	-18.679	-0.474	-0.105	2.975			
		5:KOMB B. MA	-811.243	-2.26E 3	-8.701	-0.996	-0.076	3.987			
22492	15522	1:BEBAN MATI	-165.325	712.127	14.689	-1.327	-0.126	10.989			
		2:BEBAN HIDL	-47.883	83.442	4.499	-0.361	-0.039	2.337			
		3:BEBAN GEM	1.18E 3	-159.310	11.974	0.160	-0.125	-2.790			
		4:KOMBINASI	-275.002	988.059	24.825	-2.170	-0.213	16.926			
		5:KOMB B. MA	1.04E 3	594.916	29.961	-1.375	-0.280	9.462			
	16287	1:BEBAN MATI	165.325	-171.537	-14.689	1.327	-0.133	-3.190			
		2:BEBAN HIDL	47.883	-83.442	-4.499	0.361	-0.041	-0.864			
		3:BEBAN GEM	-1.18E 3	159.310	-11.974	-0.160	-0.087	-0.022			
		4:KOMBINASI	275.002	-339.351	-24.825	2.170	-0.225	-5.211			
		5:KOMB B. MA	-1.04E 3	-54.326	-29.961	1.375	-0.249	-3.731			
22493	15603	1:BEBAN MATI	475.564	-1.62E 3	-1.469	-0.307	0.009	-37.901			
		2:BEBAN HIDL	134.104	-452.814	-0.625	-0.065	0.004	-8.623			
		3:BEBAN GEM	718.435	-96.841	31.927	-0.544	-0.231	-0.095			
		4:KOMBINASI	785.243	-2.67E 3	-2.762	-0.472	0.018	-59.277			
		5:KOMB B. MA	1.31E 3	-2E 3	31.680	-0.917	-0.230	-43.174			
	16261	1:BEBAN MATI	-475.564	2.07E 3	1.469	0.307	0.012	10.704			
		2:BEBAN HIDL	-134.104	452.814	0.625	0.065	0.005	1.962			
		3:BEBAN GEM	-718.435	96.841	-31.927	0.544	-0.239	-1.329			
		4:KOMBINASI	-785.243	3.21E 3	2.762	0.472	0.023	15.984			
		5:KOMB B. MA	-1.31E 3	2.45E 3	-31.680	0.917	-0.236	10.485			
22494	15519	1:BEBAN MATI	344.554	3.8E 3	0.988	-0.004	-0.007	45.887			
		2:BEBAN HIDL	96.284	783.278	-0.051	0.011	0.001	9.692			
		3:BEBAN GEM	630.969	-103.720	26.896	0.965	-0.200	-2.883			
		4:KOMBINASI	567.519	5.81E 3	1.104	0.013	-0.007	70.572			
		5:KOMB B. MA	1.06E 3	4.16E 3	29.199	1.016	-0.216	48.675			
	16262	1:BEBAN MATI	-344.554	-3.35E 3	-0.988	0.004	-0.008	6.645			
		2:BEBAN HIDL	-96.284	-783.278	0.051	-0.011	0.000	1.830			
		3:BEBAN GEM	-630.969	103.720	-26.896	-0.965	-0.196	1.357			
		4:KOMBINASI	-567.519	-5.27E 3	-1.104	-0.013	-0.009	10.902			
		5:KOMB B. MA	-1.06E 3	-3.71E 3	-29.199	-1.016	-0.213	9.168			
22495	15604	1:BEBAN MATI	302.113	-1.67E 3	0.123	0.016	-0.001	-33.224			
		2:BEBAN HIDL	90.591	-432.273	0.089	-0.009	-0.000	-7.901			



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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.33E 3	-78.560	24.747	-0.535	-0.254	0.004			
		4:KOMBINASI	507.482	-2.69E 3	0.291	0.005	-0.002	-52.510			
		5:KOMB B. MA	1.75E 3	-2.01E 3	26.161	-0.551	-0.267	-37.960			
	15810	1:BEBAN MATI	-302.113	2.12E 3	-0.123	-0.016	-0.001	5.379			
		2:BEBAN HIDL	-90.591	432.273	-0.089	0.009	-0.001	1.542			
		3:BEBAN GEM	-1.33E 3	78.560	-24.747	0.535	-0.110	-1.160			
		4:KOMBINASI	-507.482	3.23E 3	-0.291	-0.005	-0.003	8.922			
		5:KOMB B. MA	-1.75E 3	2.46E 3	-26.161	0.551	-0.117	5.087			
22496	15516	1:BEBAN MATI	306.530	3.62E 3	0.117	-0.016	-0.000	45.463			
		2:BEBAN HIDL	92.817	769.474	-0.209	0.018	0.002	9.984			
		3:BEBAN GEM	752.903	-94.351	-43.946	0.901	0.336	-2.512			
		4:KOMBINASI	516.344	5.58E 3	-0.193	0.010	0.003	70.530			
		5:KOMB B. MA	1.15E 3	3.99E 3	-46.152	0.940	0.354	48.816			
	15809	1:BEBAN MATI	-306.530	-3.17E 3	-0.117	0.016	-0.002	4.516			
		2:BEBAN HIDL	-92.817	-769.474	0.209	-0.018	0.001	1.335			
		3:BEBAN GEM	-752.903	94.351	43.946	-0.901	0.310	1.124			
		4:KOMBINASI	-516.344	-5.04E 3	0.193	-0.010	0.000	7.555			
		5:KOMB B. MA	-1.15E 3	-3.53E 3	46.152	-0.940	0.325	6.498			
22497	15605	1:BEBAN MATI	378.456	-1.83E 3	-0.392	0.042	0.004	-37.820			
		2:BEBAN HIDL	106.840	-445.384	0.059	0.005	0.000	-8.599			
		3:BEBAN GEM	163.239	-93.367	-49.963	-0.585	0.374	-0.143			
		4:KOMBINASI	625.091	-2.91E 3	-0.376	0.059	0.005	-59.142			
		5:KOMB B. MA	613.962	-2.2E 3	-52.818	-0.570	0.397	-43.130			
	15858	1:BEBAN MATI	-378.456	2.28E 3	0.392	-0.042	0.001	7.583			
		2:BEBAN HIDL	-106.840	445.384	-0.059	-0.005	-0.001	2.047			
		3:BEBAN GEM	-163.239	93.367	49.963	0.585	0.361	-1.230			
		4:KOMBINASI	-625.091	3.45E 3	0.376	-0.059	0.000	12.376			
		5:KOMB B. MA	-613.962	2.65E 3	52.818	0.570	0.380	7.520			
22498	15513	1:BEBAN MATI	725.674	3.64E 3	9.475	0.358	-0.072	40.334			
		2:BEBAN HIDL	203.859	810.549	3.176	0.063	-0.024	10.151			
		3:BEBAN GEM	182.786	-89.503	-50.044	0.959	0.343	-2.637			
		4:KOMBINASI	1.2E 3	5.67E 3	16.452	0.531	-0.124	64.643			
		5:KOMB B. MA	1.04E 3	4.04E 3	-41.166	1.403	0.274	43.656			
	15857	1:BEBAN MATI	-725.674	-3.19E 3	-9.475	-0.358	-0.068	9.945			
		2:BEBAN HIDL	-203.859	-810.549	-3.176	-0.063	-0.023	1.772			
		3:BEBAN GEM	-182.786	89.503	50.044	-0.959	0.394	1.320			
		4:KOMBINASI	-1.2E 3	-5.13E 3	-16.452	-0.531	-0.118	14.769			
		5:KOMB B. MA	-1.04E 3	-3.59E 3	41.166	-1.403	0.332	12.394			
22499	15510	1:BEBAN MATI	-42.439	929.268	14.630	-1.238	-0.128	14.810			
		2:BEBAN HIDL	-18.088	103.951	4.675	-0.375	-0.041	2.700			
		3:BEBAN GEM	-454.155	-147.748	-32.882	0.287	0.305	-2.499			
		4:KOMBINASI	-79.868	1.28E 3	25.037	-2.085	-0.219	22.092			
		5:KOMB B. MA	-530.155	836.502	-17.091	-1.161	0.168	13.806			
	15883	1:BEBAN MATI	42.439	-388.678	-14.630	1.238	-0.130	-3.178			
		2:BEBAN HIDL	18.088	-103.951	-4.675	0.375	-0.042	-0.865			
		3:BEBAN GEM	454.155	147.748	32.882	-0.287	0.275	-0.109			
		4:KOMBINASI	79.868	-632.735	-25.037	2.085	-0.222	-5.198			
		5:KOMB B. MA	530.155	-295.913	17.091	1.161	0.134	-3.812			



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Job No 1	Sheet No 529	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22500	15507	1:BEBAN MATI	171.758	2.05E 3	2.248	-0.093	-0.014	16.477			
		2:BEBAN HIDL	74.462	413.740	0.364	-0.001	-0.002	2.736			
		3:BEBAN GEM	-188.704	-143.470	-34.983	0.635	0.219	-3.235			
		4:KOMBINASI	325.250	3.12E 3	3.281	-0.114	-0.020	24.150			
		5:KOMB B. MA	18.297	2.15E 3	-34.265	0.573	0.214	14.722			
15965	15965	1:BEBAN MATI	-171.758	-1.69E 3	-2.248	0.093	-0.013	5.501			
		2:BEBAN HIDL	-74.462	-413.740	-0.364	0.001	-0.002	2.133			
		3:BEBAN GEM	188.704	143.470	34.983	-0.635	0.193	1.546			
		4:KOMBINASI	-325.250	-2.69E 3	-3.281	0.114	-0.018	10.013			
		5:KOMB B. MA	-18.297	-1.78E 3	34.265	-0.573	0.189	8.404			
22501	15527	1:BEBAN MATI	227.028	2.27E 3	-1.285	0.022	0.008	18.536			
		2:BEBAN HIDL	71.412	448.563	-0.026	0.007	0.000	2.933			
		3:BEBAN GEM	73.911	-135.876	0.527	0.620	-0.011	-2.658			
		4:KOMBINASI	386.692	3.44E 3	-1.584	0.037	0.010	26.936			
		5:KOMB B. MA	347.482	2.4E 3	-0.747	0.677	-0.004	17.504			
16219	16219	1:BEBAN MATI	-227.028	-1.91E 3	1.285	-0.022	0.007	6.073			
		2:BEBAN HIDL	-71.412	-448.563	0.026	-0.007	-0.000	2.345			
		3:BEBAN GEM	-73.911	135.876	-0.527	-0.620	0.005	1.059			
		4:KOMBINASI	-386.692	-3.01E 3	1.584	-0.037	0.009	11.040			
		5:KOMB B. MA	-347.482	-2.04E 3	0.747	-0.677	0.012	8.593			
22502	15524	1:BEBAN MATI	277.345	2.28E 3	-2.022	0.031	0.012	21.658			
		2:BEBAN HIDL	112.849	540.565	-0.091	0.001	0.001	5.625			
		3:BEBAN GEM	379.088	-150.812	20.689	0.635	-0.135	-3.416			
		4:KOMBINASI	513.373	3.6E 3	-2.573	0.039	0.015	34.988			
		5:KOMB B. MA	743.097	2.44E 3	19.646	0.699	-0.129	21.445			
16393	16393	1:BEBAN MATI	-277.345	-1.92E 3	2.022	-0.031	0.012	3.018			
		2:BEBAN HIDL	-112.849	-540.565	0.091	-0.001	0.000	0.737			
		3:BEBAN GEM	-379.088	150.812	-20.689	-0.635	-0.108	1.641			
		4:KOMBINASI	-513.373	-3.16E 3	2.573	-0.039	0.015	4.800			
		5:KOMB B. MA	-743.097	-2.08E 3	-19.646	-0.699	-0.102	5.183			
22503	15521	1:BEBAN MATI	-103.149	1.06E 3	-0.992	-0.009	0.009	13.698			
		2:BEBAN HIDL	-18.208	193.716	-0.166	-0.020	0.002	3.229			
		3:BEBAN GEM	473.048	-146.963	21.175	0.361	-0.192	-2.648			
		4:KOMBINASI	-152.911	1.58E 3	-1.455	-0.043	0.014	21.604			
		5:KOMB B. MA	382.627	1.02E 3	21.142	0.358	-0.191	12.854			
16293	16293	1:BEBAN MATI	103.149	-519.042	0.992	0.009	0.008	0.235			
		2:BEBAN HIDL	18.208	-193.716	0.166	0.020	0.001	0.191			
		3:BEBAN GEM	-473.048	146.963	-21.175	-0.361	-0.182	0.054			
		4:KOMBINASI	152.911	-932.796	1.455	0.043	0.012	0.588			
		5:KOMB B. MA	-382.627	-480.960	-21.142	-0.358	-0.182	0.407			
22504	15606	1:BEBAN MATI	443.778	-1.54E 3	-0.526	-0.049	0.004	-36.899			
		2:BEBAN HIDL	126.849	-413.996	-0.242	-0.019	0.002	-8.340			
		3:BEBAN GEM	755.699	-87.159	44.450	-0.563	-0.333	0.101			
		4:KOMBINASI	735.493	-2.51E 3	-1.018	-0.089	0.008	-57.623			
		5:KOMB B. MA	1.31E 3	-1.88E 3	46.002	-0.652	-0.344	-41.797			
16273	16273	1:BEBAN MATI	-443.778	1.99E 3	0.526	0.049	0.004	10.942			
		2:BEBAN HIDL	-126.849	413.996	0.242	0.019	0.002	2.250			
		3:BEBAN GEM	-755.699	87.159	-44.450	0.563	-0.321	-1.383			



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Job No 1	Sheet No 530	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-735.493	3.05E 3	1.018	0.089	0.007	16.731			
		5:KOMB B. MA	-1.31E 3	2.33E 3	-46.002	0.652	-0.332	10.840			
22505	15518	1:BEBAN MATI	384.367	3.77E 3	-1.229	0.004	0.009	46.182			
		2:BEBAN HIDL	112.773	785.193	-0.134	-0.032	0.001	10.033			
		3:BEBAN GEM	1.03E 3	-113.723	89.853	0.916	-0.709	-2.978			
		4:KOMBINASI	641.677	5.78E 3	-1.690	-0.047	0.013	71.471			
		5:KOMB B. MA	1.53E 3	4.12E 3	93.036	0.946	-0.734	49.075			
	16274	1:BEBAN MATI	-384.367	-3.32E 3	1.229	-0.004	0.009	5.976			
		2:BEBAN HIDL	-112.773	-785.193	0.134	0.032	0.001	1.517			
		3:BEBAN GEM	-1.03E 3	113.723	-89.853	-0.916	-0.613	1.305			
		4:KOMBINASI	-641.677	-5.24E 3	1.690	0.047	0.012	9.599			
		5:KOMB B. MA	-1.53E 3	-3.67E 3	-93.036	-0.946	-0.635	8.257			
22506	15607	1:BEBAN MATI	357.094	-1.66E 3	0.099	-0.040	-0.001	-33.026			
		2:BEBAN HIDL	109.231	-430.009	-0.034	-0.006	0.000	-7.741			
		3:BEBAN GEM	-1.82E 3	-75.640	105.885	-0.548	-0.722	0.013			
		4:KOMBINASI	603.282	-2.68E 3	0.064	-0.057	-0.000	-52.018			
		5:KOMB B. MA	-1.49E 3	-2E 3	111.257	-0.618	-0.758	-37.657			
	15824	1:BEBAN MATI	-357.094	2.11E 3	-0.099	0.040	-0.001	5.241			
		2:BEBAN HIDL	-109.231	430.009	0.034	0.006	0.000	1.416			
		3:BEBAN GEM	1.82E 3	75.640	-105.885	0.548	-0.836	-1.126			
		4:KOMBINASI	-603.282	3.22E 3	-0.064	0.057	-0.001	8.555			
		5:KOMB B. MA	1.49E 3	2.45E 3	-111.257	0.618	-0.878	4.909			
22507	15515	1:BEBAN MATI	354.016	3.61E 3	-0.532	0.066	0.004	45.483			
		2:BEBAN HIDL	108.845	765.815	0.093	0.010	-0.001	10.057			
		3:BEBAN GEM	-607.378	-97.027	-132.567	0.930	1.002	-2.571			
		4:KOMBINASI	598.972	5.56E 3	-0.489	0.095	0.004	70.671			
		5:KOMB B. MA	-218.423	3.97E 3	-139.671	1.048	1.056	48.817			
	15823	1:BEBAN MATI	-354.016	-3.16E 3	0.532	-0.066	0.004	4.372			
		2:BEBAN HIDL	-108.845	-765.815	-0.093	-0.010	-0.001	1.208			
		3:BEBAN GEM	607.378	97.027	132.567	-0.930	0.948	1.144			
		4:KOMBINASI	-598.972	-5.02E 3	0.489	-0.095	0.003	7.179			
		5:KOMB B. MA	218.423	-3.52E 3	139.671	-1.048	0.999	6.298			
22508	15608	1:BEBAN MATI	395.755	-1.81E 3	0.680	0.018	-0.005	-36.860			
		2:BEBAN HIDL	115.501	-448.903	0.159	0.034	-0.001	-8.339			
		3:BEBAN GEM	-571.778	-88.834	-38.257	-0.536	0.283	0.010			
		4:KOMBINASI	659.708	-2.89E 3	1.070	0.076	-0.007	-57.574			
		5:KOMB B. MA	-135.311	-2.17E 3	-39.395	-0.525	0.292	-41.853			
	15870	1:BEBAN MATI	-395.755	2.26E 3	-0.680	-0.018	-0.005	6.898			
		2:BEBAN HIDL	-115.501	448.903	-0.159	-0.034	-0.001	1.735			
		3:BEBAN GEM	571.778	88.834	38.257	0.536	0.280	-1.317			
		4:KOMBINASI	-659.708	3.43E 3	-1.070	-0.076	-0.008	11.054			
		5:KOMB B. MA	135.311	2.62E 3	39.395	0.525	0.287	6.556			
22509	15512	1:BEBAN MATI	581.152	3.51E 3	0.327	0.055	-0.003	38.203			
		2:BEBAN HIDL	160.633	755.848	0.401	0.009	-0.003	9.054			
		3:BEBAN GEM	-468.557	-111.528	-39.020	0.955	0.292	-3.005			
		4:KOMBINASI	954.396	5.43E 3	1.034	0.080	-0.008	60.330			
		5:KOMB B. MA	185.547	3.85E 3	-40.403	1.063	0.302	40.481			
	15869	1:BEBAN MATI	-581.152	-3.06E 3	-0.327	-0.055	-0.002	10.174			



Software licensed to Snow Panther [LZ0]

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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-160.633	-755.848	-0.401	-0.009	-0.003	2.064			
		3:BEBAN GEM	468.557	111.528	39.020	-0.955	0.282	1.364			
		4:KOMBINASI	-954.396	-4.89E 3	-1.034	-0.080	-0.007	15.512			
		5:KOMB B. MA	-185.547	-3.4E 3	40.403	-1.063	0.293	12.845			
22510	15509	1:BEBAN MATI	41.183	1.23E 3	0.704	0.017	-0.006	16.727			
		2:BEBAN HIDL	13.737	202.737	0.295	-0.002	-0.002	3.385			
		3:BEBAN GEM	-269.721	-145.040	-23.635	0.380	0.210	-2.510			
		4:KOMBINASI	71.398	1.8E 3	1.317	0.017	-0.011	25.488			
		5:KOMB B. MA	-233.783	1.2E 3	-23.935	0.415	0.213	16.123			
	15889	1:BEBAN MATI	-41.183	-691.018	-0.704	-0.017	-0.006	0.243			
		2:BEBAN HIDL	-13.737	-202.737	-0.295	0.002	-0.003	0.193			
		3:BEBAN GEM	269.721	145.040	23.635	-0.380	0.207	-0.051			
		4:KOMBINASI	-71.398	-1.15E 3	-1.317	-0.017	-0.012	0.600			
		5:KOMB B. MA	233.783	-660.369	23.935	-0.415	0.209	0.305			
22511	15506	1:BEBAN MATI	186.405	2.11E 3	0.239	-0.003	-0.002	18.220			
		2:BEBAN HIDL	80.157	447.603	0.451	-0.029	-0.003	3.589			
		3:BEBAN GEM	-139.186	-150.222	-34.610	0.637	0.216	-3.332			
		4:KOMBINASI	351.937	3.25E 3	1.009	-0.050	-0.007	27.606			
		5:KOMB B. MA	88.354	2.22E 3	-35.831	0.649	0.223	16.874			
	15987	1:BEBAN MATI	-186.405	-1.75E 3	-0.239	0.003	-0.001	4.496			
		2:BEBAN HIDL	-80.157	-447.603	-0.451	0.029	-0.003	1.678			
		3:BEBAN GEM	139.186	150.222	34.610	-0.637	0.191	1.564			
		4:KOMBINASI	-351.937	-2.82E 3	-1.009	0.050	-0.005	8.081			
		5:KOMB B. MA	-88.354	-1.86E 3	35.831	-0.649	0.199	7.146			
22512	15497	1:BEBAN MATI	216.852	2.26E 3	-8.956	0.434	0.052	19.329			
		2:BEBAN HIDL	70.791	422.693	-3.849	0.141	0.023	2.824			
		3:BEBAN GEM	-134.816	-137.417	-0.201	0.644	-0.005	-2.605			
		4:KOMBINASI	373.489	3.39E 3	-16.905	0.747	0.098	27.713			
		5:KOMB B. MA	117.770	2.37E 3	-11.476	1.195	0.060	18.289			
	16144	1:BEBAN MATI	-216.852	-1.9E 3	8.956	-0.434	0.054	5.195			
		2:BEBAN HIDL	-70.791	-422.693	3.849	-0.141	0.023	2.151			
		3:BEBAN GEM	134.816	137.417	0.201	-0.644	0.007	0.988			
		4:KOMBINASI	-373.489	-2.96E 3	16.905	-0.747	0.100	9.675			
		5:KOMB B. MA	-117.770	-2.01E 3	11.476	-1.195	0.075	7.522			
22513	15495	1:BEBAN MATI	256.955	2.16E 3	-7.260	0.646	0.041	19.948			
		2:BEBAN HIDL	105.742	503.281	-2.706	0.266	0.015	5.226			
		3:BEBAN GEM	-232.177	-153.078	18.817	0.638	-0.127	-3.390			
		4:KOMBINASI	477.534	3.4E 3	-13.041	1.201	0.074	32.299			
		5:KOMB B. MA	76.615	2.3E 3	10.874	1.475	-0.083	19.525			
	16337	1:BEBAN MATI	-256.955	-1.8E 3	7.260	-0.646	0.044	3.374			
		2:BEBAN HIDL	-105.742	-503.281	2.706	-0.266	0.016	0.696			
		3:BEBAN GEM	232.177	153.078	-18.817	-0.638	-0.094	1.588			
		4:KOMBINASI	-477.534	-2.97E 3	13.041	-1.201	0.079	5.163			
		5:KOMB B. MA	-76.615	-1.94E 3	-10.874	-1.475	-0.045	5.459			
22514	15493	1:BEBAN MATI	-41.972	1.06E 3	-2.661	0.162	0.023	13.710			
		2:BEBAN HIDL	-3.403	184.722	-0.613	0.105	0.005	3.052			
		3:BEBAN GEM	-198.500	-157.013	21.602	0.359	-0.204	-2.810			
		4:KOMBINASI	-55.811	1.57E 3	-4.174	0.363	0.036	21.336			



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Job No

1

Sheet No

532

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-252.439	1.01E 3	19.654	0.603	-0.189	12.591			
	16299	1:BEBAN MATI	41.972	-518.571	2.661	-0.162	0.024	0.215			
		2:BEBAN HIDL	3.403	-184.722	0.613	-0.105	0.006	0.209			
		3:BEBAN GEM	198.500	157.013	-21.602	-0.359	-0.177	0.038			
		4:KOMBINASI	55.811	-917.840	4.174	-0.363	0.038	0.591			
		5:KOMB B. MA	252.439	-464.541	-19.654	-0.603	-0.158	0.380			
22515	15609	1:BEBAN MATI	430.734	-1.36E 3	1.863	-0.480	-0.011	-33.924			
		2:BEBAN HIDL	129.287	-364.158	0.656	-0.108	-0.004	-7.459			
		3:BEBAN GEM	-340.854	-90.962	30.640	-0.538	-0.229	-0.009			
		4:KOMBINASI	723.740	-2.22E 3	3.286	-0.749	-0.019	-52.644			
		5:KOMB B. MA	150.409	-1.68E 3	34.428	-1.110	-0.254	-38.409			
	16285	1:BEBAN MATI	-430.734	1.82E 3	-1.863	0.480	-0.016	10.533			
		2:BEBAN HIDL	-129.287	364.158	-0.656	0.108	-0.006	2.103			
		3:BEBAN GEM	340.854	90.962	-30.640	0.538	-0.221	-1.329			
		4:KOMBINASI	-723.740	2.76E 3	-3.286	0.749	-0.029	16.003			
		5:KOMB B. MA	-150.409	2.13E 3	-34.428	1.110	-0.252	10.398			
22516	15491	1:BEBAN MATI	396.066	3.53E 3	-6.224	0.670	0.044	43.178			
		2:BEBAN HIDL	120.931	712.252	-1.743	0.198	0.012	9.074			
		3:BEBAN GEM	-835.649	-110.502	12.469	0.909	-0.112	-2.941			
		4:KOMBINASI	668.769	5.38E 3	-10.257	1.120	0.072	66.331			
		5:KOMB B. MA	-408.807	3.84E 3	5.823	1.743	-0.067	45.534			
	16286	1:BEBAN MATI	-396.066	-3.08E 3	6.224	-0.670	0.048	5.454			
		2:BEBAN HIDL	-120.931	-712.252	1.743	-0.198	0.013	1.404			
		3:BEBAN GEM	835.649	110.502	-12.469	-0.909	-0.071	1.315			
		4:KOMBINASI	-668.769	-4.84E 3	10.257	-1.120	0.078	8.790			
		5:KOMB B. MA	408.807	-3.39E 3	-5.823	-1.743	-0.019	7.677			
22517	15610	1:BEBAN MATI	372.815	-1.49E 3	1.789	-0.405	-0.011	-30.093			
		2:BEBAN HIDL	117.388	-376.723	0.514	-0.113	-0.003	-6.847			
		3:BEBAN GEM	-1.15E 3	-80.122	11.120	-0.520	-0.118	-0.053			
		4:KOMBINASI	635.199	-2.39E 3	2.969	-0.667	-0.018	-47.067			
		5:KOMB B. MA	-767.486	-1.8E 3	13.773	-1.019	-0.136	-34.257			
	15838	1:BEBAN MATI	-372.815	1.94E 3	-1.789	0.405	-0.015	4.839			
		2:BEBAN HIDL	-117.388	376.723	-0.514	0.113	-0.005	1.305			
		3:BEBAN GEM	1.15E 3	80.122	-11.120	0.520	-0.046	-1.125			
		4:KOMBINASI	-635.199	2.93E 3	-2.969	0.667	-0.026	7.895			
		5:KOMB B. MA	767.486	2.25E 3	-13.773	1.019	-0.067	4.441			
22518	15489	1:BEBAN MATI	366.800	3.37E 3	-6.596	0.673	0.047	42.237			
		2:BEBAN HIDL	116.729	690.506	-1.917	0.177	0.013	9.048			
		3:BEBAN GEM	-1.13E 3	-95.371	-18.924	0.909	0.128	-2.541			
		4:KOMBINASI	626.927	5.15E 3	-10.982	1.090	0.078	65.160			
		5:KOMB B. MA	-744.916	3.68E 3	-27.616	1.733	0.189	44.997			
	15837	1:BEBAN MATI	-366.800	-2.92E 3	6.596	-0.673	0.050	3.992			
		2:BEBAN HIDL	-116.729	-690.506	1.917	-0.177	0.015	1.110			
		3:BEBAN GEM	1.13E 3	95.371	18.924	-0.909	0.150	1.138			
		4:KOMBINASI	-626.927	-4.61E 3	10.982	-1.090	0.084	6.566			
		5:KOMB B. MA	744.916	-3.23E 3	27.616	-1.733	0.217	5.853			
22519	15611	1:BEBAN MATI	399.345	-1.65E 3	1.433	-0.388	-0.008	-33.893			
		2:BEBAN HIDL	121.641	-397.448	0.348	-0.133	-0.002	-7.457			



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Job No 1	Sheet No 533	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-700.028	-96.853	-14.461	-0.519	0.111	-0.114			
		4:KOMBINASI	673.841	-2.61E 3	2.275	-0.678	-0.013	-52.604			
		5:KOMB B. MA	-262.700	-1.99E 3	-13.543	-1.013	0.107	-38.487			
	15882	1:BEBAN MATI	-399.345	2.1E 3	-1.433	0.388	-0.013	6.364			
		2:BEBAN HIDL	-121.641	397.448	-0.348	0.133	-0.003	1.611			
		3:BEBAN GEM	700.028	96.853	14.461	0.519	0.102	-1.311			
		4:KOMBINASI	-673.841	3.15E 3	-2.275	0.678	-0.021	10.214			
		5:KOMB B. MA	262.700	2.44E 3	13.543	1.013	0.092	5.954			
22520	15487	1:BEBAN MATI	543.133	3.27E 3	-6.888	0.747	0.052	34.946			
		2:BEBAN HIDL	158.516	686.778	-2.223	0.174	0.017	8.171			
		3:BEBAN GEM	-542.165	-109.699	-32.146	0.950	0.234	-3.040			
		4:KOMBINASI	905.385	5.02E 3	-11.822	1.175	0.088	55.009			
		5:KOMB B. MA	68.969	3.56E 3	-41.975	1.849	0.308	36.657			
	15881	1:BEBAN MATI	-543.133	-2.82E 3	6.888	-0.747	0.050	9.793			
		2:BEBAN HIDL	-158.516	-686.778	2.223	-0.174	0.016	1.931			
		3:BEBAN GEM	542.165	109.699	32.146	-0.950	0.239	1.426			
		4:KOMBINASI	-905.385	-4.48E 3	11.822	-1.175	0.085	14.842			
		5:KOMB B. MA	-68.969	-3.11E 3	41.975	-1.849	0.310	12.450			
22521	15485	1:BEBAN MATI	72.010	1.15E 3	-1.817	0.236	0.016	15.281			
		2:BEBAN HIDL	19.518	184.415	-0.928	0.027	0.008	3.034			
		3:BEBAN GEM	-437.427	-138.352	-19.882	0.409	0.172	-2.360			
		4:KOMBINASI	117.641	1.68E 3	-3.665	0.327	0.032	23.192			
		5:KOMB B. MA	-375.577	1.12E 3	-23.250	0.682	0.201	14.623			
	15895	1:BEBAN MATI	-72.010	-610.366	1.817	-0.236	0.016	0.265			
		2:BEBAN HIDL	-19.518	-184.415	0.928	-0.027	0.008	0.221			
		3:BEBAN GEM	437.427	138.352	19.882	-0.409	0.179	-0.082			
		4:KOMBINASI	-117.641	-1.03E 3	3.665	-0.327	0.033	0.671			
		5:KOMB B. MA	375.577	-575.745	23.250	-0.682	0.209	0.311			
22522	15483	1:BEBAN MATI	180.843	2.09E 3	-9.195	0.528	0.054	18.542			
		2:BEBAN HIDL	79.115	419.763	-3.576	0.216	0.021	3.381			
		3:BEBAN GEM	-277.004	-159.641	-31.301	0.658	0.193	-3.439			
		4:KOMBINASI	343.597	3.18E 3	-16.756	0.980	0.098	27.659			
		5:KOMB B. MA	-62.542	2.17E 3	-44.207	1.349	0.269	16.959			
	15929	1:BEBAN MATI	-180.843	-1.73E 3	9.195	-0.528	0.054	3.924			
		2:BEBAN HIDL	-79.115	-419.763	3.576	-0.216	0.021	1.559			
		3:BEBAN GEM	277.004	159.641	31.301	-0.658	0.176	1.560			
		4:KOMBINASI	-343.597	-2.75E 3	16.756	-0.980	0.099	7.203			
		5:KOMB B. MA	62.542	-1.81E 3	44.207	-1.349	0.251	6.498			
22523	15538	1:BEBAN MATI	269.259	1.36E 3	-31.663	1.622	0.192	10.374			
		2:BEBAN HIDL	85.350	194.845	-11.387	0.554	0.070	1.338			
		3:BEBAN GEM	-170.540	-123.834	-11.261	0.480	0.068	-2.581			
		4:KOMBINASI	459.671	1.94E 3	-56.216	2.832	0.342	14.589			
		5:KOMB B. MA	141.402	1.34E 3	-50.320	2.458	0.306	8.467			
	16157	1:BEBAN MATI	-269.259	-996.296	31.663	-1.622	0.180	3.471			
		2:BEBAN HIDL	-85.350	-194.845	11.387	-0.554	0.064	0.955			
		3:BEBAN GEM	170.540	123.834	11.261	-0.480	0.064	1.124			
		4:KOMBINASI	-459.671	-1.51E 3	56.216	-2.832	0.319	5.693			
		5:KOMB B. MA	-141.402	-983.178	50.320	-2.458	0.286	5.224			



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Job No 1	Sheet No 534	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22524	15537	1:BEBAN MATI	195.552	1.4E 3	-30.944	2.112	0.192	13.848			
		2:BEBAN HIDL	68.067	242.820	-10.690	0.731	0.066	3.055			
		3:BEBAN GEM	-756.503	-154.115	-5.360	0.451	0.028	-3.880			
		4:KOMBINASI	343.570	2.07E 3	-54.236	3.704	0.336	21.506			
		5:KOMB B. MA	-557.936	1.39E 3	-42.985	3.024	0.261	11.607			
16349	16349	1:BEBAN MATI	-195.552	-1.04E 3	30.944	-2.112	0.172	0.565			
		2:BEBAN HIDL	-68.067	-242.820	10.690	-0.731	0.060	-0.198			
		3:BEBAN GEM	756.503	154.115	5.360	-0.451	0.035	2.066			
		4:KOMBINASI	-343.570	-1.64E 3	54.236	-3.704	0.302	0.362			
		5:KOMB B. MA	557.936	-1.03E 3	42.985	-3.024	0.245	2.616			
22525	15536	1:BEBAN MATI	-1.825	660.617	-13.346	1.909	0.114	9.392			
		2:BEBAN HIDL	-2.454	28.848	-3.375	0.539	0.029	1.357			
		3:BEBAN GEM	-2.03E 3	-41.202	49.944	-0.143	-0.491	-0.877			
		4:KOMBINASI	-6.117	838.898	-21.415	3.152	0.183	13.440			
		5:KOMB B. MA	-2.13E 3	634.664	37.070	2.082	-0.384	9.285			
16418	16418	1:BEBAN MATI	1.825	-120.027	13.346	-1.909	0.122	-2.502			
		2:BEBAN HIDL	2.454	-28.848	3.375	-0.539	0.031	-0.847			
		3:BEBAN GEM	2.03E 3	41.202	-49.944	0.143	-0.391	0.150			
		4:KOMBINASI	6.117	-190.190	21.415	-3.152	0.195	-4.358			
		5:KOMB B. MA	2.13E 3	-94.074	-37.070	-2.082	-0.270	-2.853			
22526	15556	1:BEBAN MATI	515.601	-965.299	3.103	-0.753	-0.021	-29.122			
		2:BEBAN HIDL	165.557	-315.682	0.880	-0.073	-0.006	-7.492			
		3:BEBAN GEM	-1.27E 3	-107.591	23.568	-0.435	-0.169	0.099			
		4:KOMBINASI	883.613	-1.66E 3	5.132	-1.020	-0.035	-46.934			
		5:KOMB B. MA	-717.713	-1.27E 3	28.377	-1.253	-0.202	-33.514			
16084	16084	1:BEBAN MATI	-515.601	1.42E 3	-3.103	0.753	-0.024	11.609			
		2:BEBAN HIDL	-165.557	315.682	-0.880	0.073	-0.007	2.848			
		3:BEBAN GEM	1.27E 3	107.591	-23.568	0.435	-0.178	-1.681			
		4:KOMBINASI	-883.613	2.2E 3	-5.132	1.020	-0.040	18.488			
		5:KOMB B. MA	717.713	1.72E 3	-28.377	1.253	-0.215	11.553			
22527	15535	1:BEBAN MATI	394.512	3.23E 3	0.464	-0.499	-0.002	37.850			
		2:BEBAN HIDL	122.313	725.951	1.578	-0.366	-0.011	8.805			
		3:BEBAN GEM	-1.21E 3	-107.306	6.635	0.801	-0.067	-2.897			
		4:KOMBINASI	669.116	5.04E 3	3.081	-1.185	-0.019	59.509			
		5:KOMB B. MA	-799.291	3.56E 3	8.377	0.122	-0.079	40.092			
16075	16075	1:BEBAN MATI	-394.512	-2.78E 3	-0.464	0.499	-0.005	6.407			
		2:BEBAN HIDL	-122.313	-725.951	-1.578	0.366	-0.013	1.873			
		3:BEBAN GEM	1.21E 3	107.306	-6.635	-0.801	-0.031	1.318			
		4:KOMBINASI	-669.116	-4.5E 3	-3.081	1.185	-0.026	10.686			
		5:KOMB B. MA	799.291	-3.11E 3	-8.377	-0.122	-0.044	8.916			
22528	15612	1:BEBAN MATI	365.525	-1.07E 3	1.669	-1.091	-0.014	-24.743			
		2:BEBAN HIDL	117.795	-327.004	0.171	-0.194	-0.002	-6.511			
		3:BEBAN GEM	-1.17E 3	-87.314	16.738	-0.395	-0.129	-0.130			
		4:KOMBINASI	627.103	-1.81E 3	2.277	-1.619	-0.021	-40.110			
		5:KOMB B. MA	-793.365	-1.36E 3	19.347	-1.622	-0.151	-28.786			
16038	16038	1:BEBAN MATI	-365.525	1.52E 3	-1.669	1.091	-0.010	5.711			
		2:BEBAN HIDL	-117.795	327.004	-0.171	0.194	-0.000	1.701			
		3:BEBAN GEM	1.17E 3	87.314	-16.738	0.395	-0.118	-1.154			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

535

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-627.103	2.35E 3	-2.277	1.619	-0.012	9.575			
		5:KOMB B. MA	793.365	1.81E 3	-19.347	1.622	-0.134	5.520			
22529	15534	1:BEBAN MATI	365.884	3.08E 3	1.854	-0.670	-0.013	37.461			
		2:BEBAN HIDL	118.547	701.615	2.050	-0.421	-0.014	9.000			
		3:BEBAN GEM	-1.2E 3	-87.528	-18.600	0.810	0.126	-2.521			
		4:KOMBINASI	628.736	4.81E 3	5.505	-1.478	-0.038	59.353			
		5:KOMB B. MA	-818.016	3.41E 3	-16.446	-0.072	0.111	40.214			
	16037	1:BEBAN MATI	-365.884	-2.63E 3	-1.854	0.670	-0.015	4.484			
		2:BEBAN HIDL	-118.547	-701.615	-2.050	0.421	-0.016	1.321			
		3:BEBAN GEM	1.2E 3	87.528	18.600	-0.810	0.148	1.234			
		4:KOMBINASI	-628.736	-4.27E 3	-5.505	1.478	-0.043	7.494			
		5:KOMB B. MA	818.016	-2.96E 3	16.446	0.072	0.131	6.571			
22530	15554	1:BEBAN MATI	424.347	-1.22E 3	2.502	-1.337	-0.020	-28.926			
		2:BEBAN HIDL	134.534	-351.276	0.351	-0.278	-0.004	-7.429			
		3:BEBAN GEM	-1.12E 3	-93.109	-6.750	-0.406	0.053	0.007			
		4:KOMBINASI	724.470	-2.02E 3	3.564	-2.049	-0.029	-46.597			
		5:KOMB B. MA	-666.149	-1.53E 3	-4.374	-1.930	0.034	-33.376			
	16026	1:BEBAN MATI	-424.347	1.67E 3	-2.502	1.337	-0.017	7.683			
		2:BEBAN HIDL	-134.534	351.276	-0.351	0.278	-0.002	2.261			
		3:BEBAN GEM	1.12E 3	93.109	6.750	0.406	0.046	-1.377			
		4:KOMBINASI	-724.470	2.57E 3	-3.564	2.049	-0.023	12.837			
		5:KOMB B. MA	666.149	1.98E 3	4.374	1.930	0.030	7.594			
22531	15533	1:BEBAN MATI	769.594	3.08E 3	-7.732	-1.387	0.062	31.397			
		2:BEBAN HIDL	248.745	725.864	-1.907	-0.671	0.016	8.155			
		3:BEBAN GEM	-1.56E 3	-84.627	-24.003	0.851	0.179	-2.382			
		4:KOMBINASI	1.32E 3	4.86E 3	-12.330	-2.738	0.100	50.724			
		5:KOMB B. MA	-716.059	3.43E 3	-34.080	-0.896	0.260	33.789			
	16025	1:BEBAN MATI	-769.594	-2.63E 3	7.732	1.387	0.051	10.575			
		2:BEBAN HIDL	-248.745	-725.864	1.907	0.671	0.012	2.523			
		3:BEBAN GEM	1.56E 3	84.627	24.003	-0.851	0.174	1.137			
		4:KOMBINASI	-1.32E 3	-4.32E 3	12.330	2.738	0.081	16.727			
		5:KOMB B. MA	716.059	-2.97E 3	34.080	0.896	0.241	13.283			
22532	15532	1:BEBAN MATI	70.995	897.145	-8.308	-0.348	0.071	13.323			
		2:BEBAN HIDL	33.117	137.809	-3.399	-0.024	0.029	3.230			
		3:BEBAN GEM	-1.18E 3	-262.697	-13.782	0.695	0.097	-4.600			
		4:KOMBINASI	138.181	1.3E 3	-15.408	-0.456	0.131	21.157			
		5:KOMB B. MA	-1.14E 3	703.998	-24.818	0.367	0.190	10.431			
	16014	1:BEBAN MATI	-70.995	-356.556	8.308	0.348	0.076	-2.258			
		2:BEBAN HIDL	-33.117	-137.809	3.399	0.024	0.031	-0.798			
		3:BEBAN GEM	1.18E 3	262.697	13.782	-0.695	0.146	-0.037			
		4:KOMBINASI	-138.181	-648.361	15.408	0.456	0.141	-3.986			
		5:KOMB B. MA	1.14E 3	-163.409	24.818	-0.367	0.248	-2.776			
22533	15531	1:BEBAN MATI	224.277	1.23E 3	-32.217	1.735	0.195	9.939			
		2:BEBAN HIDL	82.397	168.806	-11.705	0.636	0.071	1.341			
		3:BEBAN GEM	-358.760	-135.093	-9.265	0.497	0.058	-3.373			
		4:KOMBINASI	400.967	1.75E 3	-57.389	3.099	0.348	14.072			
		5:KOMB B. MA	-102.983	1.19E 3	-48.968	2.638	0.298	7.201			
	15943	1:BEBAN MATI	-224.277	-874.087	32.217	-1.735	0.184	2.468			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 536	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-82.397	-168.806	11.705	-0.636	0.066	0.646			
		3:BEBAN GEM	358.760	135.093	9.265	-0.497	0.051	1.783			
		4:KOMBINASI	-400.967	-1.32E 3	57.389	-3.099	0.327	3.995			
		5:KOMB B. MA	102.983	-833.524	48.968	-2.638	0.278	4.728			
22534	15541	1:BEBAN MATI	372.072	1.91E 3	-38.884	4.835	0.284	22.628			
		2:BEBAN HIDL	134.650	355.694	-13.902	1.727	0.102	4.674			
		3:BEBAN GEM	-953.679	-96.150	-0.603	0.529	-0.011	-2.819			
		4:KOMBINASI	661.927	2.86E 3	-68.904	8.566	0.504	34.632			
		5:KOMB B. MA	-548.501	2.02E 3	-47.859	6.427	0.333	22.472			
	16058	1:BEBAN MATI	-372.072	-1.46E 3	38.884	-4.835	0.288	2.158			
		2:BEBAN HIDL	-134.650	-355.694	13.902	-1.727	0.103	0.558			
		3:BEBAN GEM	953.679	96.150	0.603	-0.529	0.020	1.405			
		4:KOMBINASI	-661.927	-2.32E 3	68.904	-8.566	0.510	3.482			
		5:KOMB B. MA	548.501	-1.57E 3	47.859	-6.427	0.371	3.967			
22535	15599	1:BEBAN MATI	70.646	1.18E 3	1.448	-0.036	-0.011	10.007			
		2:BEBAN HIDL	24.343	286.554	0.736	0.029	-0.005	2.454			
		3:BEBAN GEM	107.578	0.228	-0.722	-0.008	0.006	0.042			
		4:KOMBINASI	123.724	1.88E 3	2.916	0.003	-0.022	15.936			
		5:KOMB B. MA	198.208	1.36E 3	1.132	-0.028	-0.008	11.524			
	16108	1:BEBAN MATI	-70.646	-954.040	-1.448	0.036	-0.006	2.577			
		2:BEBAN HIDL	-24.343	-286.554	-0.736	-0.029	-0.003	0.918			
		3:BEBAN GEM	-107.578	-0.228	0.722	0.008	0.002	-0.039			
		4:KOMBINASI	-123.724	-1.6E 3	-2.916	-0.003	-0.013	4.561			
		5:KOMB B. MA	-198.208	-1.13E 3	-1.132	0.028	-0.005	3.087			
22536	15594	1:BEBAN MATI	83.320	948.822	1.612	0.001	-0.011	5.892			
		2:BEBAN HIDL	35.523	237.775	0.452	-0.028	-0.003	1.738			
		3:BEBAN GEM	285.480	-2.968	-1.785	0.033	0.016	-0.199			
		4:KOMBINASI	156.821	1.52E 3	2.658	-0.044	-0.018	9.851			
		5:KOMB B. MA	404.388	1.09E 3	0.009	0.019	0.004	6.726			
	16317	1:BEBAN MATI	-83.320	-718.171	-1.612	-0.001	-0.008	3.916			
		2:BEBAN HIDL	-35.523	-237.775	-0.452	0.028	-0.002	1.060			
		3:BEBAN GEM	-285.480	2.968	1.785	-0.033	0.005	0.164			
		4:KOMBINASI	-156.821	-1.24E 3	-2.658	0.044	-0.013	6.396			
		5:KOMB B. MA	-404.388	-857.719	-0.009	-0.019	-0.004	4.725			
22537	15545	1:BEBAN MATI	63.753	1.16E 3	-0.341	0.454	0.004	14.584			
		2:BEBAN HIDL	53.098	274.883	0.514	0.083	-0.003	3.827			
		3:BEBAN GEM	661.531	-52.669	-25.883	0.632	0.178	-1.387			
		4:KOMBINASI	161.461	1.84E 3	0.413	0.678	0.001	23.624			
		5:KOMB B. MA	790.219	1.27E 3	-27.210	1.167	0.190	15.424			
	16138	1:BEBAN MATI	-63.753	-932.725	0.341	-0.454	-0.000	-2.251			
		2:BEBAN HIDL	-53.098	-274.883	-0.514	-0.083	-0.003	-0.592			
		3:BEBAN GEM	-661.531	52.669	25.883	-0.632	0.126	0.768			
		4:KOMBINASI	-161.461	-1.56E 3	-0.413	-0.678	-0.006	-3.648			
		5:KOMB B. MA	-790.219	-1.04E 3	27.210	-1.167	0.131	-1.800			
22538	15557	1:BEBAN MATI	96.065	-440.159	-1.881	-0.028	0.015	-7.555			
		2:BEBAN HIDL	10.221	-118.518	-0.637	0.042	0.005	-1.462			
		3:BEBAN GEM	1.38E 3	-46.824	1.598	-0.229	-0.023	0.136			
		4:KOMBINASI	131.633	-717.820	-3.277	0.035	0.027	-11.406			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 537	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Engineering

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	1.55E 3	-560.435	-0.585	-0.242	-0.005	-8.290			
	16243	1:BEBAN MATI	-96.065	728.474	1.881	0.028	0.012	-1.040			
		2:BEBAN HIDL	-10.221	118.518	0.637	-0.042	0.004	-0.281			
		3:BEBAN GEM	-1.38E 3	46.824	-1.598	0.229	-0.001	-0.825			
		4:KOMBINASI	-131.633	1.06E 3	3.277	-0.035	0.022	-1.698			
		5:KOMB B. MA	-1.55E 3	848.750	0.585	0.242	0.014	-2.074			
22539	15585	1:BEBAN MATI	182.102	1.06E 3	9.702	0.222	-0.067	11.427			
		2:BEBAN HIDL	39.030	188.417	2.294	0.010	-0.016	2.394			
		3:BEBAN GEM	1.89E 3	-48.682	19.978	-0.235	-0.190	-0.795			
		4:KOMBINASI	280.970	1.58E 3	15.313	0.283	-0.105	17.543			
		5:KOMB B. MA	2.19E 3	1.13E 3	32.055	-0.018	-0.275	12.029			
	16247	1:BEBAN MATI	-182.102	-775.834	-9.702	-0.222	-0.076	2.106			
		2:BEBAN HIDL	-39.030	-188.417	-2.294	-0.010	-0.018	0.378			
		3:BEBAN GEM	-1.89E 3	48.682	-19.978	0.235	-0.104	0.079			
		4:KOMBINASI	-280.970	-1.23E 3	-15.313	-0.283	-0.120	3.131			
		5:KOMB B. MA	-2.19E 3	-837.768	-32.055	0.018	-0.196	2.415			
22540	15613	1:BEBAN MATI	215.561	-225.035	-0.033	-0.034	0.004	-11.016			
		2:BEBAN HIDL	50.687	-79.504	-0.067	-0.012	0.001	-2.778			
		3:BEBAN GEM	1.03E 3	-0.395	2.650	0.144	-0.017	0.095			
		4:KOMBINASI	339.772	-397.248	-0.146	-0.059	0.007	-17.665			
		5:KOMB B. MA	1.33E 3	-273.152	2.709	0.111	-0.013	-12.583			
	15685	1:BEBAN MATI	-215.561	513.350	0.033	0.034	-0.004	5.586			
		2:BEBAN HIDL	-50.687	79.504	0.067	0.012	-0.000	1.609			
		3:BEBAN GEM	-1.03E 3	0.395	-2.650	-0.144	-0.022	-0.101			
		4:KOMBINASI	-339.772	743.225	0.146	0.059	-0.005	9.277			
		5:KOMB B. MA	-1.33E 3	561.467	-2.709	-0.111	-0.027	6.445			
22541	15580	1:BEBAN MATI	188.975	1.22E 3	1.093	0.184	-0.016	11.112			
		2:BEBAN HIDL	43.805	262.174	0.397	0.038	-0.005	2.447			
		3:BEBAN GEM	1.26E 3	7.285	-7.465	-0.081	0.071	0.073			
		4:KOMBINASI	296.859	1.89E 3	1.947	0.282	-0.028	17.250			
		5:KOMB B. MA	1.54E 3	1.39E 3	-6.507	0.122	0.055	12.657			
	15684	1:BEBAN MATI	-188.975	-936.362	-1.093	-0.184	0.000	4.783			
		2:BEBAN HIDL	-43.805	-262.174	-0.397	-0.038	-0.001	1.409			
		3:BEBAN GEM	-1.26E 3	-7.285	7.465	0.081	0.039	0.034			
		4:KOMBINASI	-296.859	-1.54E 3	-1.947	-0.282	-0.001	7.994			
		5:KOMB B. MA	-1.54E 3	-1.1E 3	6.507	-0.122	0.041	5.664			
22542	15555	1:BEBAN MATI	87.952	-187.048	-2.025	0.162	0.015	-7.218			
		2:BEBAN HIDL	11.875	-70.044	-0.440	-0.014	0.004	-1.457			
		3:BEBAN GEM	1.51E 3	-22.280	-1.810	0.185	-0.006	-0.109			
		4:KOMBINASI	124.542	-336.528	-3.135	0.173	0.024	-10.993			
		5:KOMB B. MA	1.68E 3	-252.468	-4.190	0.349	0.011	-8.207			
	15843	1:BEBAN MATI	-87.952	475.363	2.025	-0.162	0.014	2.346			
		2:BEBAN HIDL	-11.875	70.044	0.440	0.014	0.003	0.427			
		3:BEBAN GEM	-1.51E 3	22.280	1.810	-0.185	0.033	-0.219			
		4:KOMBINASI	-124.542	682.505	3.135	-0.173	0.022	3.498			
		5:KOMB B. MA	-1.68E 3	540.783	4.190	-0.349	0.050	2.372			
22543	15544	1:BEBAN MATI	225.471	1.38E 3	6.793	-0.559	-0.051	19.703			
		2:BEBAN HIDL	40.784	243.569	2.259	-0.223	-0.016	3.995			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 538	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	829.598	-32.802	-11.022	0.443	0.065	-1.331			
		4:KOMBINASI	335.819	2.05E 3	11.767	-1.027	-0.087	30.035			
		5:KOMB B. MA	1.12E 3	1.5E 3	-3.424	-0.227	0.008	20.702			
	15839	1:BEBAN MATI	-225.471	-1.1E 3	-6.793	0.559	-0.049	-1.469			
		2:BEBAN HIDL	-40.784	-243.569	-2.259	0.223	-0.017	-0.412			
		3:BEBAN GEM	-829.598	32.802	11.022	-0.443	0.097	0.849			
		4:KOMBINASI	-335.819	-1.7E 3	-11.767	1.027	-0.086	-2.422			
		5:KOMB B. MA	-1.12E 3	-1.21E 3	3.424	0.227	0.042	-0.825			
22544	15571	1:BEBAN MATI	66.110	542.193	-0.679	-0.065	0.004	3.860			
		2:BEBAN HIDL	32.587	121.018	-0.149	0.017	0.001	1.179			
		3:BEBAN GEM	176.707	-21.559	-5.377	-0.242	0.039	-0.049			
		4:KOMBINASI	131.471	844.260	-1.054	-0.050	0.005	6.519			
		5:KOMB B. MA	271.204	592.166	-6.415	-0.308	0.044	4.515			
	15675	1:BEBAN MATI	-66.110	-311.541	0.679	0.065	0.004	1.164			
		2:BEBAN HIDL	-32.587	-121.018	0.149	-0.017	0.001	0.245			
		3:BEBAN GEM	-176.707	21.559	5.377	0.242	0.025	-0.204			
		4:KOMBINASI	-131.471	-567.478	1.054	0.050	0.007	1.788			
		5:KOMB B. MA	-271.204	-361.515	6.415	0.308	0.031	1.096			
22545	15566	1:BEBAN MATI	79.722	1.13E 3	0.343	0.128	-0.004	10.059			
		2:BEBAN HIDL	28.911	270.556	0.069	0.049	-0.001	2.464			
		3:BEBAN GEM	75.725	-4.459	-2.776	-0.016	0.020	-0.251			
		4:KOMBINASI	141.924	1.78E 3	0.523	0.233	-0.007	16.013			
		5:KOMB B. MA	176.580	1.28E 3	-2.530	0.141	0.016	11.274			
	15911	1:BEBAN MATI	-79.722	-895.691	-0.343	-0.128	-0.000	1.838			
		2:BEBAN HIDL	-28.911	-270.556	-0.069	-0.049	0.000	0.720			
		3:BEBAN GEM	-75.725	4.459	2.776	0.016	0.013	0.199			
		4:KOMBINASI	-141.924	-1.51E 3	-0.523	-0.233	0.000	3.358			
		5:KOMB B. MA	-176.580	-1.05E 3	2.530	-0.141	0.014	2.479			
22546	15597	1:BEBAN MATI	79.621	1.22E 3	-0.424	0.011	0.003	10.126			
		2:BEBAN HIDL	29.793	295.148	-0.120	0.007	0.001	2.415			
		3:BEBAN GEM	101.780	-1.492	7.259	-0.010	-0.043	-0.000			
		4:KOMBINASI	143.214	1.94E 3	-0.701	0.024	0.004	16.015			
		5:KOMB B. MA	204.365	1.4E 3	7.126	0.004	-0.042	11.575			
	16206	1:BEBAN MATI	-79.621	-989.118	0.424	-0.011	0.002	2.871			
		2:BEBAN HIDL	-29.793	-295.148	0.120	-0.007	0.001	1.059			
		3:BEBAN GEM	-101.780	1.492	-7.259	0.010	-0.042	-0.017			
		4:KOMBINASI	-143.214	-1.66E 3	0.701	-0.024	0.004	5.138			
		5:KOMB B. MA	-204.365	-1.16E 3	-7.126	-0.004	-0.042	3.488			
22547	15592	1:BEBAN MATI	147.949	1.1E 3	-0.730	0.039	0.003	9.904			
		2:BEBAN HIDL	51.463	277.606	-0.202	0.022	0.001	2.701			
		3:BEBAN GEM	380.566	-7.797	17.254	-0.013	-0.102	-0.325			
		4:KOMBINASI	259.881	1.77E 3	-1.200	0.082	0.005	16.207			
		5:KOMB B. MA	578.421	1.26E 3	17.265	0.039	-0.103	11.184			
	16382	1:BEBAN MATI	-147.949	-873.635	0.730	-0.039	0.006	1.734			
		2:BEBAN HIDL	-51.463	-277.606	0.202	-0.022	0.002	0.566			
		3:BEBAN GEM	-380.566	7.797	-17.254	0.013	-0.102	0.233			
		4:KOMBINASI	-259.881	-1.49E 3	1.200	-0.082	0.010	2.986			
		5:KOMB B. MA	-578.421	-1.03E 3	-17.265	-0.039	-0.100	2.318			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 539	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22548	15588	1:BEBAN MATI	154.038	621.273	-0.276	-0.004	0.003	8.550			
		2:BEBAN HIDL	48.153	121.160	-0.099	-0.003	0.001	2.155			
		3:BEBAN GEM	343.433	7.086	10.454	0.024	-0.094	0.099			
		4:KOMBINASI	261.891	939.384	-0.489	-0.009	0.006	13.708			
		5:KOMB B. MA	543.534	701.409	10.642	0.019	-0.095	9.947			
16290	16290	1:BEBAN MATI	-154.038	-275.296	0.276	0.004	0.001	-0.637			
		2:BEBAN HIDL	-48.153	-121.160	0.099	0.003	0.001	-0.016			
		3:BEBAN GEM	-343.433	-7.086	-10.454	-0.024	-0.090	0.026			
		4:KOMBINASI	-261.891	-524.211	0.489	0.009	0.003	-0.791			
		5:KOMB B. MA	-543.534	-355.432	-10.642	-0.019	-0.093	-0.619			
22549	15614	1:BEBAN MATI	181.286	-112.399	-0.516	-0.044	0.004	-9.435			
		2:BEBAN HIDL	53.876	-59.000	-0.197	-0.030	0.002	-2.185			
		3:BEBAN GEM	439.693	-13.809	14.943	0.124	-0.112	0.056			
		4:KOMBINASI	303.745	-229.279	-0.934	-0.100	0.007	-14.818			
		5:KOMB B. MA	675.289	-162.299	15.057	0.069	-0.113	-10.687			
16267	16267	1:BEBAN MATI	-181.286	400.714	0.516	0.044	0.003	5.661			
		2:BEBAN HIDL	-53.876	59.000	0.197	0.030	0.001	1.317			
		3:BEBAN GEM	-439.693	13.809	-14.943	-0.124	-0.108	-0.259			
		4:KOMBINASI	-303.745	575.256	0.934	0.100	0.006	8.901			
		5:KOMB B. MA	-675.289	450.613	-15.057	-0.069	-0.109	6.179			
22550	15583	1:BEBAN MATI	219.375	1.25E 3	-0.328	-0.026	0.002	13.675			
		2:BEBAN HIDL	65.520	265.323	-0.125	-0.019	0.001	3.110			
		3:BEBAN GEM	557.511	-2.094	30.606	-0.104	-0.230	-0.233			
		4:KOMBINASI	368.082	1.93E 3	-0.594	-0.062	0.005	21.386			
		5:KOMB B. MA	844.074	1.41E 3	31.733	-0.147	-0.239	15.296			
16268	16268	1:BEBAN MATI	-219.375	-963.816	0.328	0.026	0.002	2.624			
		2:BEBAN HIDL	-65.520	-265.323	0.125	0.019	0.001	0.793			
		3:BEBAN GEM	-557.511	2.094	-30.606	0.104	-0.220	0.203			
		4:KOMBINASI	-368.082	-1.58E 3	0.594	0.062	0.004	4.417			
		5:KOMB B. MA	-844.074	-1.12E 3	-31.733	0.147	-0.228	3.312			
22551	15615	1:BEBAN MATI	219.687	-201.054	-0.024	-0.003	0.000	-7.605			
		2:BEBAN HIDL	65.504	-73.669	-0.011	-0.003	0.000	-1.910			
		3:BEBAN GEM	1.19E 3	-5.965	100.398	0.125	-0.815	0.021			
		4:KOMBINASI	368.431	-359.136	-0.047	-0.007	0.000	-12.182			
		5:KOMB B. MA	1.51E 3	-251.519	105.387	0.127	-0.855	-8.729			
15817	15817	1:BEBAN MATI	-219.687	489.368	0.024	0.003	0.000	2.527			
		2:BEBAN HIDL	-65.504	73.669	0.011	0.003	0.000	0.826			
		3:BEBAN GEM	-1.19E 3	5.965	-100.398	-0.125	-0.662	-0.108			
		4:KOMBINASI	-368.431	705.113	0.047	0.007	0.000	4.354			
		5:KOMB B. MA	-1.51E 3	539.833	-105.387	-0.127	-0.695	2.909			
22552	15578	1:BEBAN MATI	219.500	1.2E 3	0.124	0.004	-0.001	13.662			
		2:BEBAN HIDL	65.740	256.634	0.047	0.005	-0.000	3.123			
		3:BEBAN GEM	-946.508	3.368	-97.656	-0.103	0.738	-0.084			
		4:KOMBINASI	368.585	1.84E 3	0.224	0.014	-0.001	21.390			
		5:KOMB B. MA	-734.889	1.35E 3	-102.387	-0.101	0.774	15.447			
15816	15816	1:BEBAN MATI	-219.500	-906.986	-0.124	-0.004	-0.001	1.801			
		2:BEBAN HIDL	-65.740	-256.634	-0.047	-0.005	-0.000	0.652			
		3:BEBAN GEM	946.508	-3.368	97.656	0.103	0.699	0.134			



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Job No 1	Sheet No 540	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-368.585	-1.5E 3	-0.224	-0.014	-0.002	3.204			
		5:KOMB B. MA	734.889	-1.06E 3	102.387	0.101	0.732	2.332			
22553	15616	1:BEBAN MATI	213.833	-262.687	0.476	0.037	-0.003	-9.371			
		2:BEBAN HIDL	63.406	-82.255	0.179	0.025	-0.001	-2.181			
		3:BEBAN GEM	-500.429	-9.795	-32.160	0.130	0.227	0.036			
		4:KOMBINASI	358.049	-446.832	0.858	0.085	-0.006	-14.734			
		5:KOMB B. MA	-273.574	-322.325	-33.185	0.189	0.234	-10.642			
	15864	1:BEBAN MATI	-213.833	551.001	-0.476	-0.037	-0.004	3.386			
		2:BEBAN HIDL	-63.406	82.255	-0.179	-0.025	-0.001	0.971			
		3:BEBAN GEM	500.429	9.795	32.160	-0.130	0.246	-0.180			
		4:KOMBINASI	-358.049	792.809	-0.858	-0.085	-0.007	5.617			
		5:KOMB B. MA	273.574	610.639	33.185	-0.189	0.254	3.780			
22554	15574	1:BEBAN MATI	163.962	1.12E 3	0.713	0.030	-0.007	9.261			
		2:BEBAN HIDL	49.355	242.339	0.263	0.019	-0.002	2.407			
		3:BEBAN GEM	-277.704	-3.151	-20.606	-0.111	0.152	-0.262			
		4:KOMBINASI	275.722	1.73E 3	1.276	0.067	-0.012	14.964			
		5:KOMB B. MA	-98.014	1.26E 3	-20.766	-0.075	0.152	10.430			
	15863	1:BEBAN MATI	-163.962	-826.859	-0.713	-0.030	-0.004	5.022			
		2:BEBAN HIDL	-49.355	-242.339	-0.263	-0.019	-0.002	1.158			
		3:BEBAN GEM	277.704	3.151	20.606	0.111	0.151	0.216			
		4:KOMBINASI	-275.722	-1.38E 3	-1.276	-0.067	-0.007	7.880			
		5:KOMB B. MA	98.014	-968.955	20.766	0.075	0.153	5.944			
22555	15569	1:BEBAN MATI	156.201	658.119	0.448	0.006	-0.003	9.203			
		2:BEBAN HIDL	51.257	133.466	0.152	0.000	-0.001	2.373			
		3:BEBAN GEM	-107.748	3.667	-12.979	0.007	0.117	0.073			
		4:KOMBINASI	269.451	1E 3	0.781	0.008	-0.006	14.841			
		5:KOMB B. MA	73.819	742.049	-13.089	0.014	0.119	10.704			
	15886	1:BEBAN MATI	-156.201	-312.142	-0.448	-0.006	-0.005	-0.639			
		2:BEBAN HIDL	-51.257	-133.466	-0.152	-0.000	-0.002	-0.018			
		3:BEBAN GEM	107.748	-3.667	12.979	-0.007	0.112	-0.009			
		4:KOMBINASI	-269.451	-588.116	-0.781	-0.008	-0.008	-0.795			
		5:KOMB B. MA	-73.819	-396.072	13.089	-0.014	0.112	-0.659			
22556	15564	1:BEBAN MATI	94.513	1.1E 3	0.451	-0.048	-0.003	10.024			
		2:BEBAN HIDL	34.976	264.968	0.108	-0.027	-0.001	2.400			
		3:BEBAN GEM	-42.065	-6.489	-11.526	-0.014	0.074	-0.261			
		4:KOMBINASI	169.378	1.75E 3	0.714	-0.101	-0.004	15.868			
		5:KOMB B. MA	71.330	1.25E 3	-11.587	-0.079	0.075	11.190			
	15976	1:BEBAN MATI	-94.513	-871.797	-0.451	0.048	-0.002	1.593			
		2:BEBAN HIDL	-34.976	-264.968	-0.108	0.027	-0.001	0.718			
		3:BEBAN GEM	42.065	6.489	11.526	0.014	0.062	0.184			
		4:KOMBINASI	-169.378	-1.47E 3	-0.714	0.101	-0.004	3.060			
		5:KOMB B. MA	-71.330	-1.02E 3	11.587	0.079	0.062	2.217			
22557	15596	1:BEBAN MATI	77.610	1.23E 3	-0.425	-0.044	0.003	10.412			
		2:BEBAN HIDL	28.320	297.488	-0.181	-0.007	0.001	2.497			
		3:BEBAN GEM	40.736	-0.631	11.010	-0.012	-0.066	0.030			
		4:KOMBINASI	138.444	1.95E 3	-0.801	-0.064	0.006	16.489			
		5:KOMB B. MA	137.375	1.41E 3	11.026	-0.061	-0.066	11.941			
	16232	1:BEBAN MATI	-77.610	-998.339	0.425	0.044	0.002	2.694			



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Job No 1	Sheet No 541	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-28.320	-297.488	0.181	0.007	0.001	1.004			
		3:BEBAN GEM	-40.736	0.631	-11.010	0.012	-0.063	-0.037			
		4:KOMBINASI	-138.444	-1.67E 3	0.801	0.064	0.004	4.839			
		5:KOMB B. MA	-137.375	-1.18E 3	-11.026	0.061	-0.064	3.257			
22558	15591	1:BEBAN MATI	159.962	1.1E 3	-0.835	-0.011	0.005	9.633			
		2:BEBAN HIDL	55.429	274.442	-0.195	-0.007	0.001	2.569			
		3:BEBAN GEM	133.123	-7.912	23.924	-0.012	-0.146	-0.323			
		4:KOMBINASI	280.640	1.76E 3	-1.314	-0.023	0.008	15.670			
		5:KOMB B. MA	332.998	1.25E 3	24.168	-0.028	-0.148	10.835			
	16404	1:BEBAN MATI	-159.962	-866.753	0.835	0.011	0.005	1.924			
		2:BEBAN HIDL	-55.429	-274.442	0.195	0.007	0.001	0.660			
		3:BEBAN GEM	-133.123	7.912	-23.924	0.012	-0.135	0.230			
		4:KOMBINASI	-280.640	-1.48E 3	1.314	0.023	0.007	3.366			
		5:KOMB B. MA	-332.998	-1.02E 3	-24.168	0.028	-0.137	2.562			
22559	15587	1:BEBAN MATI	144.345	628.347	-0.290	-0.039	0.003	8.573			
		2:BEBAN HIDL	46.624	123.668	-0.057	-0.011	0.001	2.142			
		3:BEBAN GEM	157.707	5.089	14.071	0.033	-0.127	0.050			
		4:KOMBINASI	247.813	951.885	-0.438	-0.065	0.004	13.715			
		5:KOMB B. MA	337.912	707.891	14.451	-0.011	-0.130	9.910			
	16296	1:BEBAN MATI	-144.345	-282.370	0.290	0.039	0.002	-0.535			
		2:BEBAN HIDL	-46.624	-123.668	0.057	0.011	0.000	0.041			
		3:BEBAN GEM	-157.707	-5.089	-14.071	-0.033	-0.122	0.040			
		4:KOMBINASI	-247.813	-536.712	0.438	0.065	0.004	-0.576			
		5:KOMB B. MA	-337.912	-361.913	-14.451	0.011	-0.125	-0.468			
22560	15617	1:BEBAN MATI	189.409	-115.830	-0.073	-0.025	0.000	-9.546			
		2:BEBAN HIDL	59.025	-58.603	-0.006	-0.007	0.000	-2.227			
		3:BEBAN GEM	147.156	-12.093	21.206	0.134	-0.160	0.061			
		4:KOMBINASI	321.731	-232.760	-0.097	-0.042	0.001	-15.018			
		5:KOMB B. MA	379.338	-163.689	22.190	0.111	-0.167	-10.818			
	16279	1:BEBAN MATI	-189.409	404.145	0.073	0.025	0.001	5.721			
		2:BEBAN HIDL	-59.025	58.603	0.006	0.007	0.000	1.365			
		3:BEBAN GEM	-147.156	12.093	-21.206	-0.134	-0.152	-0.238			
		4:KOMBINASI	-321.731	578.738	0.097	0.042	0.001	9.050			
		5:KOMB B. MA	-379.338	452.004	-22.190	-0.111	-0.159	6.290			
22561	15582	1:BEBAN MATI	223.829	1.26E 3	-0.282	-0.021	0.003	13.887			
		2:BEBAN HIDL	68.830	270.424	-0.062	-0.002	0.001	3.240			
		3:BEBAN GEM	-123.452	-2.154	20.978	-0.101	-0.151	-0.230			
		4:KOMBINASI	378.723	1.95E 3	-0.438	-0.028	0.004	21.848			
		5:KOMB B. MA	135.503	1.42E 3	21.707	-0.128	-0.156	15.590			
	16280	1:BEBAN MATI	-223.829	-972.413	0.282	0.021	0.002	2.537			
		2:BEBAN HIDL	-68.830	-270.424	0.062	0.002	0.000	0.738			
		3:BEBAN GEM	123.452	2.154	-20.978	0.101	-0.157	0.198			
		4:KOMBINASI	-378.723	-1.6E 3	0.438	0.028	0.002	4.226			
		5:KOMB B. MA	-135.503	-1.13E 3	-21.707	0.128	-0.163	3.188			
22562	15618	1:BEBAN MATI	236.051	-205.569	0.055	0.001	-0.001	-7.589			
		2:BEBAN HIDL	72.760	-76.422	0.015	-0.002	-0.000	-1.899			
		3:BEBAN GEM	-831.638	-4.802	8.039	0.126	-0.093	0.047			
		4:KOMBINASI	399.677	-368.958	0.090	-0.001	-0.001	-12.145			



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Job No 1	Sheet No 542	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-593.512	-256.465	8.505	0.133	-0.098	-8.679			
	15831	1:BEBAN MATI	-236.051	493.883	-0.055	-0.001	-0.000	2.445			
		2:BEBAN HIDL	-72.760	76.422	-0.015	0.002	-0.000	0.775			
		3:BEBAN GEM	831.638	4.802	-8.039	-0.126	-0.026	-0.118			
		4:KOMBINASI	-399.677	714.935	-0.090	0.001	-0.000	4.173			
		5:KOMB B. MA	593.512	544.779	-8.505	-0.133	-0.027	2.786			
22563	15577	1:BEBAN MATI	229.424	1.2E 3	-0.073	-0.000	0.001	13.836			
		2:BEBAN HIDL	70.605	260.037	-0.021	0.001	0.000	3.229			
		3:BEBAN GEM	-615.019	2.709	-14.501	-0.103	0.111	-0.083			
		4:KOMBINASI	388.277	1.86E 3	-0.120	0.002	0.002	21.769			
		5:KOMB B. MA	-373.983	1.36E 3	-15.311	-0.107	0.117	15.686			
	15830	1:BEBAN MATI	-229.424	-912.563	0.073	0.000	0.000	1.709			
		2:BEBAN HIDL	-70.605	-260.037	0.021	-0.001	0.000	0.596			
		3:BEBAN GEM	615.019	-2.709	14.501	0.103	0.103	0.123			
		4:KOMBINASI	-388.277	-1.51E 3	0.120	-0.002	0.000	3.005			
		5:KOMB B. MA	373.983	-1.07E 3	15.311	0.107	0.108	2.195			
22564	15619	1:BEBAN MATI	216.709	-273.226	0.237	0.025	-0.002	-9.455			
		2:BEBAN HIDL	66.805	-87.929	0.051	0.002	-0.000	-2.219			
		3:BEBAN GEM	-265.692	-10.837	-14.771	0.125	0.109	0.029			
		4:KOMBINASI	366.938	-468.558	0.367	0.033	-0.003	-14.897			
		5:KOMB B. MA	-22.184	-337.362	-15.242	0.157	0.112	-10.756			
	15876	1:BEBAN MATI	-216.709	561.540	-0.237	-0.025	-0.002	3.316			
		2:BEBAN HIDL	-66.805	87.929	-0.051	-0.002	-0.000	0.926			
		3:BEBAN GEM	265.692	10.837	14.771	-0.125	0.109	-0.189			
		4:KOMBINASI	-366.938	814.535	-0.367	-0.033	-0.002	5.460			
		5:KOMB B. MA	22.184	625.676	15.242	-0.157	0.112	3.673			
22565	15573	1:BEBAN MATI	165.620	1.12E 3	-0.011	0.026	0.000	9.297			
		2:BEBAN HIDL	52.053	242.830	-0.016	0.008	0.000	2.369			
		3:BEBAN GEM	-190.105	-5.879	-13.258	-0.118	0.100	-0.353			
		4:KOMBINASI	282.030	1.73E 3	-0.039	0.044	0.001	14.947			
		5:KOMB B. MA	-2.758	1.26E 3	-13.942	-0.094	0.106	10.348			
	15875	1:BEBAN MATI	-165.620	-831.875	0.011	-0.026	-0.000	5.060			
		2:BEBAN HIDL	-52.053	-242.830	0.016	-0.008	0.000	1.203			
		3:BEBAN GEM	190.105	5.879	13.258	0.118	0.095	0.267			
		4:KOMBINASI	-282.030	-1.39E 3	0.039	-0.044	-0.000	7.997			
		5:KOMB B. MA	2.758	-971.399	13.942	0.094	0.099	6.062			
22566	15568	1:BEBAN MATI	150.834	650.716	0.361	0.028	-0.003	8.962			
		2:BEBAN HIDL	50.254	130.154	0.073	0.006	-0.001	2.252			
		3:BEBAN GEM	-158.140	7.715	-8.837	0.007	0.079	0.141			
		4:KOMBINASI	261.407	989.105	0.550	0.044	-0.005	14.358			
		5:KOMB B. MA	14.939	736.909	-8.875	0.039	0.079	10.462			
	15892	1:BEBAN MATI	-150.834	-304.739	-0.361	-0.028	-0.003	-0.529			
		2:BEBAN HIDL	-50.254	-130.154	-0.073	-0.006	-0.001	0.045			
		3:BEBAN GEM	158.140	-7.715	8.837	-0.007	0.077	-0.005			
		4:KOMBINASI	-261.407	-573.933	-0.550	-0.044	-0.005	-0.563			
		5:KOMB B. MA	-14.939	-390.932	8.875	-0.039	0.077	-0.508			
22567	15563	1:BEBAN MATI	92.371	1.12E 3	0.288	-0.015	-0.001	10.322			
		2:BEBAN HIDL	33.351	270.391	0.086	-0.004	-0.000	2.506			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

543

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-66.179	-7.046	-10.713	-0.013	0.069	-0.256			
		4:KOMBINASI	164.207	1.77E 3	0.482	-0.024	-0.002	16.396			
		5:KOMB B. MA	42.893	1.27E 3	-10.910	-0.031	0.071	11.556			
	15998	1:BEBAN MATI	-92.371	-885.469	-0.288	0.015	-0.002	1.455			
		2:BEBAN HIDL	-33.351	-270.391	-0.086	0.004	-0.001	0.676			
		3:BEBAN GEM	66.179	7.046	10.713	0.013	0.057	0.173			
		4:KOMBINASI	-164.207	-1.5E 3	-0.482	0.024	-0.003	2.828			
		5:KOMB B. MA	-42.893	-1.04E 3	10.910	0.031	0.057	2.043			
22568	15595	1:BEBAN MATI	93.373	1.11E 3	-0.655	-0.007	0.006	9.628			
		2:BEBAN HIDL	31.146	255.707	-0.542	-0.048	0.004	2.289			
		3:BEBAN GEM	-99.213	-2.778	4.743	-0.002	-0.027	-0.043			
		4:KOMBINASI	161.882	1.74E 3	-1.653	-0.086	0.014	15.216			
		5:KOMB B. MA	7.888	1.26E 3	4.001	-0.038	-0.020	10.956			
	16149	1:BEBAN MATI	-93.373	-875.814	0.655	0.007	0.002	2.036			
		2:BEBAN HIDL	-31.146	-255.707	0.542	0.048	0.002	0.720			
		3:BEBAN GEM	99.213	2.778	-4.743	0.002	-0.029	0.011			
		4:KOMBINASI	-161.882	-1.46E 3	1.653	0.086	0.005	3.595			
		5:KOMB B. MA	-7.888	-1.03E 3	-4.001	0.038	-0.027	2.479			
22569	15590	1:BEBAN MATI	118.905	982.743	-1.835	-0.008	0.013	8.548			
		2:BEBAN HIDL	40.677	235.768	-0.553	0.021	0.004	2.324			
		3:BEBAN GEM	-322.814	-9.719	15.778	-0.029	-0.098	-0.432			
		4:KOMBINASI	207.769	1.56E 3	-3.087	0.024	0.022	13.976			
		5:KOMB B. MA	-195.643	1.11E 3	14.400	-0.027	-0.088	9.489			
	16342	1:BEBAN MATI	-118.905	-752.092	1.835	0.008	0.009	1.659			
		2:BEBAN HIDL	-40.677	-235.768	0.553	-0.021	0.002	0.451			
		3:BEBAN GEM	322.814	9.719	-15.778	0.029	-0.087	0.318			
		4:KOMBINASI	-207.769	-1.28E 3	3.087	-0.024	0.014	2.712			
		5:KOMB B. MA	195.643	-883.347	-14.400	0.027	-0.081	2.264			
22570	15586	1:BEBAN MATI	166.349	624.399	-0.876	0.023	0.007	8.168			
		2:BEBAN HIDL	55.378	112.176	-0.154	0.063	0.001	1.847			
		3:BEBAN GEM	-378.559	3.164	11.863	-0.030	-0.113	-0.003			
		4:KOMBINASI	288.224	928.760	-1.298	0.129	0.011	12.757			
		5:KOMB B. MA	-197.911	695.027	11.488	0.029	-0.110	9.273			
	16415	1:BEBAN MATI	-166.349	-278.421	0.876	-0.023	0.008	-0.200			
		2:BEBAN HIDL	-55.378	-112.176	0.154	-0.063	0.002	0.133			
		3:BEBAN GEM	378.559	-3.164	-11.863	0.030	-0.097	0.059			
		4:KOMBINASI	-288.224	-513.587	1.298	-0.129	0.012	-0.026			
		5:KOMB B. MA	197.911	-349.049	-11.488	-0.029	-0.092	-0.058			
22571	15620	1:BEBAN MATI	211.182	-81.783	0.602	0.047	-0.005	-8.684			
		2:BEBAN HIDL	66.970	-41.382	0.259	0.046	-0.002	-1.903			
		3:BEBAN GEM	-519.599	-12.639	10.001	0.108	-0.078	0.143			
		4:KOMBINASI	360.571	-164.350	1.136	0.131	-0.009	-13.466			
		5:KOMB B. MA	-294.215	-119.883	11.258	0.189	-0.088	-9.676			
	16422	1:BEBAN MATI	-211.182	370.098	-0.602	-0.047	-0.004	5.361			
		2:BEBAN HIDL	-66.970	41.382	-0.259	-0.046	-0.002	1.294			
		3:BEBAN GEM	519.599	12.639	-10.001	-0.108	-0.069	-0.329			
		4:KOMBINASI	-360.571	510.328	-1.136	-0.131	-0.008	8.503			
		5:KOMB B. MA	294.215	408.198	-11.258	-0.189	-0.078	5.792			



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Job No 1	Sheet No 544	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22572	15581	1:BEBAN MATI	251.000	1.2E 3	-0.028	0.056	0.001	13.218			
		2:BEBAN HIDL	79.924	242.147	0.084	0.015	-0.000	2.846			
		3:BEBAN GEM	-679.122	-5.907	8.128	-0.099	-0.066	-0.339			
		4:KOMBINASI	429.078	1.82E 3	0.100	0.091	0.000	20.414			
		5:KOMB B. MA	-414.124	1.33E 3	8.557	-0.039	-0.068	14.570			
16423	16423	1:BEBAN MATI	-251.000	-907.239	0.028	-0.056	-0.001	2.248			
		2:BEBAN HIDL	-79.924	-242.147	-0.084	-0.015	-0.001	0.716			
		3:BEBAN GEM	679.122	5.907	-8.128	0.099	-0.054	0.252			
		4:KOMBINASI	-429.078	-1.48E 3	-0.100	-0.091	-0.002	3.844			
		5:KOMB B. MA	414.124	-1.05E 3	-8.557	0.039	-0.058	2.942			
22573	15621	1:BEBAN MATI	241.978	-175.013	0.178	-0.021	-0.002	-7.157			
		2:BEBAN HIDL	75.660	-58.961	0.030	0.003	-0.000	-1.641			
		3:BEBAN GEM	-782.556	-4.637	4.150	0.118	-0.040	0.097			
		4:KOMBINASI	411.430	-304.354	0.262	-0.021	-0.003	-11.214			
		5:KOMB B. MA	-534.310	-215.259	4.554	0.104	-0.044	-8.040			
16032	16032	1:BEBAN MATI	-241.978	463.327	-0.178	0.021	-0.001	2.462			
		2:BEBAN HIDL	-75.660	58.961	-0.030	-0.003	-0.000	0.774			
		3:BEBAN GEM	782.556	4.637	-4.150	-0.118	-0.021	-0.165			
		4:KOMBINASI	-411.430	650.331	-0.262	0.021	-0.001	4.193			
		5:KOMB B. MA	534.310	503.573	-4.554	-0.104	-0.023	2.753			
22574	15576	1:BEBAN MATI	249.202	1.15E 3	-0.303	0.010	0.003	13.161			
		2:BEBAN HIDL	79.254	233.096	-0.048	-0.004	0.000	2.849			
		3:BEBAN GEM	-746.598	0.204	-4.208	-0.102	0.030	-0.187			
		4:KOMBINASI	425.849	1.75E 3	-0.439	0.005	0.004	20.352			
		5:KOMB B. MA	-487.174	1.29E 3	-4.750	-0.099	0.035	14.675			
16031	16031	1:BEBAN MATI	-249.202	-857.620	0.303	-0.010	0.002	1.575			
		2:BEBAN HIDL	-79.254	-233.096	0.048	0.004	0.000	0.580			
		3:BEBAN GEM	746.598	-0.204	4.208	0.102	0.032	0.190			
		4:KOMBINASI	-425.849	-1.4E 3	0.439	-0.005	0.002	2.817			
		5:KOMB B. MA	487.174	-997.692	4.750	0.099	0.035	2.122			
22575	15622	1:BEBAN MATI	241.702	-228.717	-0.177	-0.079	0.001	-8.674			
		2:BEBAN HIDL	76.067	-67.545	-0.143	-0.024	0.001	-1.913			
		3:BEBAN GEM	-634.539	-8.846	-5.605	0.115	0.039	0.127			
		4:KOMBINASI	411.749	-382.533	-0.440	-0.133	0.003	-13.470			
		5:KOMB B. MA	-378.924	-278.533	-6.147	0.027	0.043	-9.688			
16020	16020	1:BEBAN MATI	-241.702	517.032	0.177	0.079	0.002	3.189			
		2:BEBAN HIDL	-76.067	67.545	0.143	0.024	0.001	0.920			
		3:BEBAN GEM	634.539	8.846	5.605	-0.115	0.043	-0.257			
		4:KOMBINASI	-411.749	728.510	0.440	0.133	0.004	5.298			
		5:KOMB B. MA	378.924	566.848	6.147	-0.027	0.048	3.471			
22576	15572	1:BEBAN MATI	185.521	1.05E 3	-0.594	-0.046	0.006	8.777			
		2:BEBAN HIDL	60.580	214.973	-0.243	-0.052	0.002	2.034			
		3:BEBAN GEM	-488.880	-9.265	-9.117	-0.088	0.066	-0.415			
		4:KOMBINASI	319.553	1.61E 3	-1.102	-0.139	0.011	13.786			
		5:KOMB B. MA	-291.455	1.17E 3	-10.313	-0.170	0.077	9.561			
16019	16019	1:BEBAN MATI	-185.521	-765.724	0.594	0.046	0.002	4.608			
		2:BEBAN HIDL	-60.580	-214.973	0.243	0.052	0.001	1.128			
		3:BEBAN GEM	488.880	9.265	9.117	0.088	0.068	0.279			



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Job No

1

Sheet No

545

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-319.553	-1.26E 3	1.102	0.139	0.005	7.335			
		5:KOMB B. MA	291.455	-884.980	10.313	0.170	0.075	5.577			
22577	15567	1:BEBAN MATI	140.303	591.812	0.277	-0.075	-0.003	7.531			
		2:BEBAN HIDL	46.816	119.084	-0.031	-0.066	0.000	1.967			
		3:BEBAN GEM	-423.381	5.735	-8.590	0.060	0.076	0.089			
		4:KOMBINASI	243.269	900.709	0.282	-0.196	-0.003	12.185			
		5:KOMB B. MA	-276.158	669.284	-8.762	-0.052	0.077	8.805			
	16011	1:BEBAN MATI	-140.303	-245.834	-0.277	0.075	-0.002	-0.138			
		2:BEBAN HIDL	-46.816	-119.084	0.031	0.066	0.000	0.135			
		3:BEBAN GEM	423.381	-5.735	8.590	-0.060	0.075	0.012			
		4:KOMBINASI	-243.269	-485.536	-0.282	0.196	-0.002	0.050			
		5:KOMB B. MA	276.158	-323.307	8.762	0.052	0.077	-0.044			
22578	15562	1:BEBAN MATI	102.873	1.03E 3	-1.384	-0.063	0.011	9.484			
		2:BEBAN HIDL	35.045	236.163	-0.414	-0.014	0.003	2.270			
		3:BEBAN GEM	-192.424	-7.539	-5.586	-0.013	0.037	-0.333			
		4:KOMBINASI	179.519	1.61E 3	-2.324	-0.098	0.018	15.012			
		5:KOMB B. MA	-78.145	1.16E 3	-7.498	-0.085	0.052	10.496			
	15936	1:BEBAN MATI	-102.873	-796.207	1.384	0.063	0.006	1.243			
		2:BEBAN HIDL	-35.045	-236.163	0.414	0.014	0.001	0.510			
		3:BEBAN GEM	192.424	7.539	5.586	0.013	0.028	0.244			
		4:KOMBINASI	-179.519	-1.33E 3	2.324	0.098	0.009	2.307			
		5:KOMB B. MA	78.145	-929.989	7.498	0.085	0.036	1.805			
22579	15622	1:BEBAN MATI	180.758	-95.028	-0.501	0.085	0.002	-3.484			
		2:BEBAN HIDL	54.306	-62.039	-0.210	0.043	0.001	-0.718			
		3:BEBAN GEM	267.421	-35.885	11.607	-0.040	-0.072	0.106			
		4:KOMBINASI	303.799	-213.296	-0.938	0.171	0.003	-5.330			
		5:KOMB B. MA	494.133	-169.930	11.560	0.069	-0.073	-3.803			
	16022	1:BEBAN MATI	-180.758	325.679	0.501	-0.085	0.004	1.008			
		2:BEBAN HIDL	-54.306	62.039	0.210	-0.043	0.002	-0.012			
		3:BEBAN GEM	-267.421	35.885	-11.607	0.040	-0.065	-0.528			
		4:KOMBINASI	-303.799	490.078	0.938	-0.171	0.008	1.191			
		5:KOMB B. MA	-494.133	400.581	-11.560	-0.069	-0.063	0.446			
22580	15611	1:BEBAN MATI	210.804	979.557	-0.033	-0.002	0.001	11.314			
		2:BEBAN HIDL	62.590	201.028	0.027	0.011	0.000	2.600			
		3:BEBAN GEM	279.665	9.177	12.216	0.025	-0.078	-0.255			
		4:KOMBINASI	353.108	1.5E 3	0.004	0.015	0.001	17.736			
		5:KOMB B. MA	542.006	1.11E 3	12.810	0.031	-0.081	12.606			
	16016	1:BEBAN MATI	-210.804	-748.906	0.033	0.002	-0.001	-1.143			
		2:BEBAN HIDL	-62.590	-201.028	-0.027	-0.011	-0.000	-0.234			
		3:BEBAN GEM	-279.665	-9.177	-12.216	-0.025	-0.065	0.362			
		4:KOMBINASI	-353.108	-1.22E 3	-0.004	-0.015	-0.001	-1.747			
		5:KOMB B. MA	-542.006	-879.158	-12.810	-0.031	-0.070	-0.903			
22581	15619	1:BEBAN MATI	238.522	-175.078	-0.016	-0.059	-0.001	-8.546			
		2:BEBAN HIDL	70.238	-67.165	0.008	-0.005	-0.000	-2.109			
		3:BEBAN GEM	247.739	-35.506	7.705	-0.035	-0.058	0.085			
		4:KOMBINASI	398.607	-317.558	-0.007	-0.079	-0.001	-13.630			
		5:KOMB B. MA	540.790	-252.659	8.079	-0.099	-0.062	-9.722			
	15879	1:BEBAN MATI	-238.522	463.393	0.016	0.059	0.001	3.850			



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Job No 1	Sheet No 546	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-70.238	67.165	-0.008	0.005	0.000	1.121			
		3:BEBAN GEM	-247.739	35.506	-7.705	0.035	-0.055	-0.608			
		4:KOMBINASI	-398.607	663.536	0.007	0.079	0.001	6.414			
		5:KOMB B. MA	-540.790	540.973	-8.079	0.099	-0.057	3.885			
22582	15608	1:BEBAN MATI	238.961	1.21E 3	-0.490	-0.003	0.004	13.284			
		2:BEBAN HIDL	70.723	264.139	-0.132	-0.008	0.001	3.162			
		3:BEBAN GEM	241.911	3.469	6.568	0.027	-0.053	-0.591			
		4:KOMBINASI	399.910	1.88E 3	-0.799	-0.017	0.007	21.000			
		5:KOMB B. MA	535.401	1.38E 3	6.327	0.020	-0.050	14.561			
	15873	1:BEBAN MATI	-238.961	-925.682	0.490	0.003	0.003	2.454			
		2:BEBAN HIDL	-70.723	-264.139	0.132	0.008	0.001	0.723			
		3:BEBAN GEM	-241.911	-3.469	-6.568	-0.027	-0.044	0.642			
		4:KOMBINASI	-399.910	-1.53E 3	0.799	0.017	0.004	4.101			
		5:KOMB B. MA	-535.401	-1.09E 3	-6.327	-0.020	-0.043	3.562			
22583	15616	1:BEBAN MATI	249.671	-197.332	0.004	-0.065	-0.001	-7.860			
		2:BEBAN HIDL	72.853	-73.144	-0.026	-0.029	-0.000	-1.887			
		3:BEBAN GEM	205.449	-25.363	4.749	-0.043	-0.032	0.127			
		4:KOMBINASI	416.170	-353.830	-0.037	-0.125	-0.001	-12.451			
		5:KOMB B. MA	509.105	-267.850	4.975	-0.128	-0.034	-8.859			
	15867	1:BEBAN MATI	-249.671	485.647	-0.004	0.065	0.001	2.837			
		2:BEBAN HIDL	-72.853	73.144	0.026	0.029	0.000	0.811			
		3:BEBAN GEM	-205.449	25.363	-4.749	0.043	-0.038	-0.500			
		4:KOMBINASI	-416.170	699.807	0.037	0.125	0.002	4.701			
		5:KOMB B. MA	-509.105	556.164	-4.975	0.128	-0.039	2.798			
22584	15605	1:BEBAN MATI	217.632	1.22E 3	0.160	-0.055	0.001	13.972			
		2:BEBAN HIDL	63.217	266.366	0.043	-0.025	0.000	3.439			
		3:BEBAN GEM	-21.899	11.646	15.801	0.031	-0.124	-0.286			
		4:KOMBINASI	362.306	1.88E 3	0.261	-0.105	0.001	22.269			
		5:KOMB B. MA	232.569	1.39E 3	16.777	-0.037	-0.129	15.736			
	15861	1:BEBAN MATI	-217.632	-926.977	-0.160	0.055	-0.003	1.784			
		2:BEBAN HIDL	-63.217	-266.366	-0.043	0.025	-0.001	0.479			
		3:BEBAN GEM	21.899	-11.646	-15.801	-0.031	-0.109	0.457			
		4:KOMBINASI	-362.306	-1.54E 3	-0.261	0.105	-0.005	2.908			
		5:KOMB B. MA	-232.569	-1.1E 3	-16.777	0.037	-0.118	2.551			
22585	15623	1:BEBAN MATI	231.021	-290.128	0.959	-0.088	-0.009	-9.754			
		2:BEBAN HIDL	66.385	-103.828	0.248	-0.018	-0.002	-2.459			
		3:BEBAN GEM	-176.766	-36.937	21.936	0.007	-0.164	0.125			
		4:KOMBINASI	383.441	-514.278	1.548	-0.133	-0.015	-15.639			
		5:KOMB B. MA	85.247	-391.208	24.141	-0.091	-0.183	-11.097			
	15855	1:BEBAN MATI	-231.021	578.442	-0.959	0.088	-0.005	3.365			
		2:BEBAN HIDL	-66.385	103.828	-0.248	0.018	-0.001	0.932			
		3:BEBAN GEM	176.766	36.937	-21.936	-0.007	-0.158	-0.669			
		4:KOMBINASI	-383.441	860.255	-1.548	0.133	-0.008	5.529			
		5:KOMB B. MA	-85.247	679.523	-24.141	0.091	-0.172	3.222			
22586	15602	1:BEBAN MATI	132.442	1.16E 3	-0.852	-0.203	0.008	10.695			
		2:BEBAN HIDL	38.008	246.339	-0.289	-0.058	0.003	2.299			
		3:BEBAN GEM	-132.699	-8.478	16.451	0.077	-0.127	-0.867			
		4:KOMBINASI	219.744	1.79E 3	-1.485	-0.335	0.014	16.513			



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Job No 1	Sheet No 547	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	15.913	1.3E 3	16.248	-0.156	-0.124	11.164			
	15849	1:BEBAN MATI	-132.442	-874.771	0.852	0.203	0.005	4.293			
		2:BEBAN HIDL	-38.008	-246.339	0.289	0.058	0.002	1.324			
		3:BEBAN GEM	132.699	8.478	-16.451	-0.077	-0.115	0.742			
		4:KOMBINASI	-219.744	-1.44E 3	1.485	0.335	0.008	7.271			
		5:KOMB B. MA	-15.913	-1.01E 3	-16.248	0.156	-0.115	5.867			
22587	15620	1:BEBAN MATI	180.758	-95.028	0.501	-0.085	-0.002	-3.484			
		2:BEBAN HIDL	54.306	-62.039	0.210	-0.043	-0.001	-0.718			
		3:BEBAN GEM	254.353	-33.879	-15.406	-0.038	0.095	0.152			
		4:KOMBINASI	303.799	-213.296	0.938	-0.171	-0.003	-5.330			
		5:KOMB B. MA	480.412	-167.825	-15.549	-0.151	0.097	-3.755			
	16425	1:BEBAN MATI	-180.758	325.679	-0.501	0.085	-0.004	1.008			
		2:BEBAN HIDL	-54.306	62.039	-0.210	0.043	-0.002	-0.012			
		3:BEBAN GEM	-254.353	33.879	15.406	0.038	0.087	-0.551			
		4:KOMBINASI	-303.799	490.078	-0.938	0.171	-0.008	1.191			
		5:KOMB B. MA	-480.412	398.476	15.549	0.151	0.086	0.422			
22588	15609	1:BEBAN MATI	210.803	979.557	0.033	0.002	-0.001	11.314			
		2:BEBAN HIDL	62.590	201.028	-0.027	-0.011	-0.000	2.600			
		3:BEBAN GEM	255.764	5.946	-18.530	0.032	0.116	-0.283			
		4:KOMBINASI	353.108	1.5E 3	-0.004	-0.015	-0.001	17.736			
		5:KOMB B. MA	516.910	1.11E 3	-19.440	0.028	0.121	12.576			
	16420	1:BEBAN MATI	-210.803	-748.905	-0.033	-0.002	0.001	-1.143			
		2:BEBAN HIDL	-62.590	-201.028	0.027	0.011	0.000	-0.234			
		3:BEBAN GEM	-255.764	-5.946	18.530	-0.032	0.102	0.353			
		4:KOMBINASI	-353.108	-1.22E 3	0.004	0.015	0.001	-1.747			
		5:KOMB B. MA	-516.910	-875.765	19.440	-0.028	0.108	-0.913			
22589	15617	1:BEBAN MATI	238.522	-175.078	0.016	0.059	0.001	-8.546			
		2:BEBAN HIDL	70.238	-67.165	-0.008	0.005	0.000	-2.109			
		3:BEBAN GEM	169.433	-33.377	-13.483	-0.040	0.100	0.115			
		4:KOMBINASI	398.607	-317.558	0.007	0.079	0.001	-13.629			
		5:KOMB B. MA	458.570	-250.423	-14.145	0.021	0.106	-9.691			
	16283	1:BEBAN MATI	-238.522	463.393	-0.016	-0.059	-0.001	3.850			
		2:BEBAN HIDL	-70.238	67.165	0.008	-0.005	-0.000	1.121			
		3:BEBAN GEM	-169.433	33.377	13.483	0.040	0.098	-0.606			
		4:KOMBINASI	-398.607	663.536	-0.007	-0.079	-0.001	6.414			
		5:KOMB B. MA	-458.570	538.737	14.145	-0.021	0.102	3.887			
22590	15606	1:BEBAN MATI	238.961	1.21E 3	0.490	0.003	-0.004	13.284			
		2:BEBAN HIDL	70.723	264.138	0.132	0.008	-0.001	3.162			
		3:BEBAN GEM	-24.237	1.805	-11.100	0.030	0.091	-0.608			
		4:KOMBINASI	399.910	1.88E 3	0.799	0.017	-0.007	21.000			
		5:KOMB B. MA	255.945	1.37E 3	-11.086	0.040	0.091	14.543			
	16277	1:BEBAN MATI	-238.961	-925.681	-0.490	-0.003	-0.003	2.454			
		2:BEBAN HIDL	-70.723	-264.138	-0.132	-0.008	-0.001	0.723			
		3:BEBAN GEM	24.237	-1.805	11.100	-0.030	0.072	0.634			
		4:KOMBINASI	-399.910	-1.53E 3	-0.799	-0.017	-0.004	4.101			
		5:KOMB B. MA	-255.945	-1.09E 3	11.086	-0.040	0.072	3.554			
22591	15614	1:BEBAN MATI	249.671	-197.332	-0.004	0.065	0.001	-7.860			
		2:BEBAN HIDL	72.853	-73.144	0.026	0.029	0.000	-1.887			



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Job No

1

Sheet No

548

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-147.675	-24.070	-5.324	-0.033	0.046	0.150			
		4:KOMBINASI	416.171	-353.829	0.037	0.125	0.001	-12.451			
		5:KOMB B. MA	138.324	-266.493	-5.579	0.048	0.049	-8.835			
	16271	1:BEBAN MATI	-249.671	485.647	0.004	-0.065	-0.001	2.837			
		2:BEBAN HIDL	-72.853	73.144	-0.026	-0.029	-0.000	0.811			
		3:BEBAN GEM	147.675	24.070	5.324	0.033	0.033	-0.504			
		4:KOMBINASI	-416.171	699.807	-0.037	-0.125	-0.002	4.701			
		5:KOMB B. MA	-138.324	554.807	5.579	-0.048	0.033	2.794			
22592	15603	1:BEBAN MATI	217.633	1.22E 3	-0.160	0.055	-0.001	13.972			
		2:BEBAN HIDL	63.217	266.366	-0.043	0.025	-0.000	3.439			
		3:BEBAN GEM	-183.705	9.388	-9.925	0.024	0.074	-0.330			
		4:KOMBINASI	362.307	1.88E 3	-0.261	0.105	-0.001	22.269			
		5:KOMB B. MA	62.673	1.38E 3	-10.607	0.095	0.077	15.689			
	16265	1:BEBAN MATI	-217.633	-926.976	0.160	-0.055	0.003	1.784			
		2:BEBAN HIDL	-63.217	-266.366	0.043	-0.025	0.001	0.479			
		3:BEBAN GEM	183.705	-9.388	9.925	-0.024	0.072	0.468			
		4:KOMBINASI	-362.307	-1.54E 3	0.261	-0.105	0.005	2.908			
		5:KOMB B. MA	-62.673	-1.1E 3	10.607	-0.095	0.079	2.563			
22593	15624	1:BEBAN MATI	231.021	-290.128	-0.959	0.088	0.009	-9.754			
		2:BEBAN HIDL	66.385	-103.828	-0.248	0.018	0.002	-2.459			
		3:BEBAN GEM	-150.097	-35.265	-14.416	-0.082	0.110	0.139			
		4:KOMBINASI	383.441	-514.278	-1.548	0.133	0.015	-15.639			
		5:KOMB B. MA	113.250	-389.452	-16.244	0.013	0.126	-11.083			
	16259	1:BEBAN MATI	-231.021	578.442	0.959	-0.088	0.005	3.365			
		2:BEBAN HIDL	-66.385	103.828	0.248	-0.018	0.001	0.932			
		3:BEBAN GEM	150.097	35.265	14.416	0.082	0.102	-0.658			
		4:KOMBINASI	-383.441	860.255	1.548	-0.133	0.008	5.529			
		5:KOMB B. MA	-113.250	677.767	16.244	-0.013	0.113	3.233			
22594	15600	1:BEBAN MATI	132.442	1.16E 3	0.852	0.203	-0.008	10.695			
		2:BEBAN HIDL	38.008	246.338	0.289	0.058	-0.003	2.299			
		3:BEBAN GEM	-119.175	-16.575	-9.110	-0.020	0.070	-1.060			
		4:KOMBINASI	219.744	1.79E 3	1.485	0.335	-0.014	16.513			
		5:KOMB B. MA	30.113	1.29E 3	-8.540	0.216	0.064	10.962			
	16253	1:BEBAN MATI	-132.442	-874.771	-0.852	-0.203	-0.005	4.293			
		2:BEBAN HIDL	-38.008	-246.338	-0.289	-0.058	-0.002	1.324			
		3:BEBAN GEM	119.175	16.575	9.110	0.020	0.064	0.816			
		4:KOMBINASI	-219.744	-1.44E 3	-1.485	-0.335	-0.008	7.271			
		5:KOMB B. MA	-30.113	-1.01E 3	8.540	-0.216	0.062	5.945			
22595	15552	1:BEBAN MATI	318.001	-473.564	5.874	-2.250	-0.039	-12.164			
		2:BEBAN HIDL	76.438	-151.927	1.495	-0.730	-0.011	-2.464			
		3:BEBAN GEM	292.350	-478.191	1.940	0.278	-0.001	1.191			
		4:KOMBINASI	503.902	-811.359	9.442	-3.869	-0.063	-18.539			
		5:KOMB B. MA	670.831	-1.07E 3	8.809	-2.396	-0.046	-12.392			
	15705	1:BEBAN MATI	-318.001	833.956	-5.874	2.250	-0.030	4.470			
		2:BEBAN HIDL	-76.438	151.927	-1.495	0.730	-0.007	0.676			
		3:BEBAN GEM	-292.350	478.191	-1.940	-0.278	-0.022	-6.818			
		4:KOMBINASI	-503.902	1.24E 3	-9.442	3.869	-0.048	6.446			
		5:KOMB B. MA	-670.831	1.43E 3	-8.809	2.396	-0.058	-2.283			



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Job No 1	Sheet No 549	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22596	15481	1:BEBAN MATI	248.731	1.71E 3	-23.984	2.072	0.136	16.855			
		2:BEBAN HIDL	81.932	261.275	-9.947	0.649	0.058	2.656			
		3:BEBAN GEM	-15.933	-496.628	13.991	-0.317	-0.102	-10.402			
		4:KOMBINASI	429.568	2.47E 3	-44.695	3.525	0.257	24.475			
		5:KOMB B. MA	281.160	1.34E 3	-15.261	2.128	0.064	7.526			
15695	15695	1:BEBAN MATI	-248.731	-1.35E 3	23.984	-2.072	0.146	1.141			
		2:BEBAN HIDL	-81.932	-261.275	9.947	-0.649	0.059	0.419			
		3:BEBAN GEM	15.933	496.628	-13.991	0.317	-0.063	4.558			
		4:KOMBINASI	-429.568	-2.04E 3	44.695	-3.525	0.269	2.040			
		5:KOMB B. MA	-281.160	-984.390	15.261	-2.128	0.115	6.179			
22597	15550	1:BEBAN MATI	361.970	-575.743	1.176	-1.670	-0.016	-17.306			
		2:BEBAN HIDL	101.794	-147.525	0.431	-0.554	-0.006	-3.716			
		3:BEBAN GEM	370.950	-349.279	1.424	0.221	-0.002	0.047			
		4:KOMBINASI	597.234	-926.931	2.101	-2.890	-0.028	-26.713			
		5:KOMB B. MA	812.544	-1.03E 3	2.930	-1.770	-0.022	-19.487			
15788	15788	1:BEBAN MATI	-361.970	876.070	-1.176	1.670	0.004	10.187			
		2:BEBAN HIDL	-101.794	147.525	-0.431	0.554	0.002	2.269			
		3:BEBAN GEM	-370.950	349.279	-1.424	-0.221	-0.012	-3.472			
		4:KOMBINASI	-597.234	1.29E 3	-2.101	2.890	0.008	15.856			
		5:KOMB B. MA	-812.544	1.33E 3	-2.930	1.770	-0.007	7.904			
22598	15504	1:BEBAN MATI	518.093	2.12E 3	-47.612	3.307	0.256	24.609			
		2:BEBAN HIDL	163.795	385.123	-16.682	1.136	0.090	5.006			
		3:BEBAN GEM	-111.496	-368.569	17.367	-0.346	-0.116	-10.569			
		4:KOMBINASI	883.784	3.17E 3	-83.827	5.786	0.451	37.541			
		5:KOMB B. MA	499.299	1.97E 3	-39.386	3.626	0.188	16.515			
15775	15775	1:BEBAN MATI	-518.093	-1.82E 3	47.612	-3.307	0.211	-5.248			
		2:BEBAN HIDL	-163.795	-385.123	16.682	-1.136	0.074	-1.230			
		3:BEBAN GEM	111.496	368.569	-17.367	0.346	-0.054	6.955			
		4:KOMBINASI	-883.784	-2.81E 3	83.827	-5.786	0.371	-8.265			
		5:KOMB B. MA	-499.299	-1.67E 3	39.386	-3.626	0.198	1.317			
22599	15548	1:BEBAN MATI	370.965	-601.747	0.219	-1.654	-0.012	-16.576			
		2:BEBAN HIDL	105.066	-161.289	0.122	-0.522	-0.004	-3.427			
		3:BEBAN GEM	213.632	-327.196	2.192	0.213	-0.008	-0.017			
		4:KOMBINASI	613.264	-980.158	0.458	-2.820	-0.021	-25.375			
		5:KOMB B. MA	658.318	-1.04E 3	2.594	-1.743	-0.023	-18.651			
15762	15762	1:BEBAN MATI	-370.965	902.074	-0.219	1.654	0.010	9.202			
		2:BEBAN HIDL	-105.066	161.289	-0.122	0.522	0.003	1.846			
		3:BEBAN GEM	-213.632	327.196	-2.192	-0.213	-0.013	-3.191			
		4:KOMBINASI	-613.264	1.34E 3	-0.458	2.820	0.017	13.996			
		5:KOMB B. MA	-658.318	1.34E 3	-2.594	1.743	-0.002	6.959			
22600	15502	1:BEBAN MATI	566.836	2.1E 3	-48.651	3.363	0.263	24.652			
		2:BEBAN HIDL	171.506	371.170	-16.740	1.133	0.090	4.887			
		3:BEBAN GEM	-299.836	-346.126	18.028	-0.336	-0.120	-9.965			
		4:KOMBINASI	954.612	3.12E 3	-85.166	5.849	0.460	37.401			
		5:KOMB B. MA	354.912	1.96E 3	-39.766	3.690	0.191	17.120			
15749	15749	1:BEBAN MATI	-566.836	-1.8E 3	48.651	-3.363	0.214	-5.517			
		2:BEBAN HIDL	-171.506	-371.170	16.740	-1.133	0.074	-1.247			
		3:BEBAN GEM	299.836	346.126	-18.028	0.336	-0.057	6.571			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-954.612	-2.76E 3	85.166	-5.849	0.376	-8.615			
		5:KOMB B. MA	-354.912	-1.66E 3	39.766	-3.690	0.199	0.635			
22601	15553	1:BEBAN MATI	318.001	-473.564	-5.874	2.250	0.039	-12.164			
		2:BEBAN HIDL	76.438	-151.927	-1.495	0.730	0.011	-2.464			
		3:BEBAN GEM	205.831	-469.130	-2.620	0.124	0.007	1.116			
		4:KOMBINASI	503.902	-811.360	-9.442	3.869	0.063	-18.539			
		5:KOMB B. MA	579.986	-1.06E 3	-9.523	2.819	0.053	-12.470			
	16151	1:BEBAN MATI	-318.001	833.957	5.874	-2.250	0.030	4.470			
		2:BEBAN HIDL	-76.438	151.927	1.495	-0.730	0.007	0.676			
		3:BEBAN GEM	-205.831	469.130	2.620	-0.124	0.023	-6.637			
		4:KOMBINASI	-503.902	1.24E 3	9.442	-3.869	0.048	6.446			
		5:KOMB B. MA	-579.986	1.42E 3	9.523	-2.819	0.059	-2.093			
22602	15499	1:BEBAN MATI	248.731	1.71E 3	23.984	-2.072	-0.136	16.855			
		2:BEBAN HIDL	81.932	261.275	9.947	-0.649	-0.058	2.656			
		3:BEBAN GEM	-134.772	-486.933	-6.274	-0.217	0.054	-10.211			
		4:KOMBINASI	429.568	2.47E 3	44.695	-3.525	-0.257	24.475			
		5:KOMB B. MA	156.380	1.35E 3	23.364	-2.690	-0.115	7.727			
	16141	1:BEBAN MATI	-248.731	-1.35E 3	-23.984	2.072	-0.146	1.141			
		2:BEBAN HIDL	-81.932	-261.275	-9.947	0.649	-0.059	0.419			
		3:BEBAN GEM	134.772	486.933	6.274	0.217	0.020	4.481			
		4:KOMBINASI	-429.568	-2.04E 3	-44.695	3.525	-0.269	2.040			
		5:KOMB B. MA	-156.380	-994.570	-23.364	2.690	-0.160	6.098			
22603	15551	1:BEBAN MATI	361.970	-575.743	-1.176	1.670	0.016	-17.306			
		2:BEBAN HIDL	101.794	-147.525	-0.431	0.554	0.006	-3.716			
		3:BEBAN GEM	63.682	-339.569	-3.020	0.079	0.018	-0.001			
		4:KOMBINASI	597.234	-926.931	-2.101	2.890	0.028	-26.713			
		5:KOMB B. MA	489.912	-1.02E 3	-4.605	2.085	0.038	-19.537			
	16234	1:BEBAN MATI	-361.970	876.070	1.176	-1.670	-0.004	10.187			
		2:BEBAN HIDL	-101.794	147.525	0.431	-0.554	-0.002	2.269			
		3:BEBAN GEM	-63.682	339.569	3.020	-0.079	0.012	-3.329			
		4:KOMBINASI	-597.234	1.29E 3	2.101	-2.890	-0.008	15.856			
		5:KOMB B. MA	-489.912	1.32E 3	4.605	-2.085	0.007	8.054			
22604	15505	1:BEBAN MATI	518.093	2.12E 3	47.613	-3.307	-0.256	24.609			
		2:BEBAN HIDL	163.795	385.123	16.682	-1.136	-0.090	5.006			
		3:BEBAN GEM	-478.736	-360.828	-8.733	-0.172	0.073	-10.306			
		4:KOMBINASI	883.784	3.17E 3	83.827	-5.786	-0.451	37.541			
		5:KOMB B. MA	113.697	1.98E 3	48.452	-4.170	-0.233	16.791			
	16221	1:BEBAN MATI	-518.093	-1.82E 3	-47.613	3.307	-0.211	-5.248			
		2:BEBAN HIDL	-163.795	-385.123	-16.682	1.136	-0.074	-1.230			
		3:BEBAN GEM	478.736	360.828	8.733	0.172	0.013	6.768			
		4:KOMBINASI	-883.784	-2.81E 3	-83.827	5.786	-0.371	-8.265			
		5:KOMB B. MA	-113.697	-1.68E 3	-48.452	4.170	-0.242	1.120			
22605	15549	1:BEBAN MATI	370.965	-601.747	-0.219	1.654	0.012	-16.576			
		2:BEBAN HIDL	105.066	-161.288	-0.122	0.522	0.004	-3.427			
		3:BEBAN GEM	-243.756	-319.339	-4.345	0.086	0.029	-0.061			
		4:KOMBINASI	613.264	-980.158	-0.458	2.820	0.021	-25.375			
		5:KOMB B. MA	178.060	-1.03E 3	-4.854	2.057	0.044	-18.696			
	16208	1:BEBAN MATI	-370.965	902.075	0.219	-1.654	-0.010	9.202			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 551	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-105.066	161.288	0.122	-0.522	-0.003	1.846			
		3:BEBAN GEM	243.756	319.339	4.345	-0.086	0.014	-3.071			
		4:KOMBINASI	-613.264	1.34E 3	0.458	-2.820	-0.017	13.996			
		5:KOMB B. MA	-178.060	1.33E 3	4.854	-2.057	0.003	7.085			
22606	15503	1:BEBAN MATI	566.836	2.1E 3	48.651	-3.363	-0.263	24.652			
		2:BEBAN HIDL	171.506	371.171	16.740	-1.133	-0.090	4.887			
		3:BEBAN GEM	-643.987	-339.818	-8.284	-0.182	0.068	-9.741			
		4:KOMBINASI	954.612	3.12E 3	85.166	-5.849	-0.460	37.401			
		5:KOMB B. MA	-6.446	1.97E 3	49.997	-4.234	-0.245	17.356			
	16195	1:BEBAN MATI	-566.836	-1.8E 3	-48.651	3.363	-0.214	-5.517			
		2:BEBAN HIDL	-171.506	-371.171	-16.740	1.133	-0.074	-1.247			
		3:BEBAN GEM	643.987	339.818	8.284	0.182	0.013	6.408			
		4:KOMBINASI	-954.612	-2.76E 3	-85.166	5.849	-0.376	-8.615			
		5:KOMB B. MA	6.446	-1.67E 3	-49.997	4.234	-0.245	0.464			
22607	15598	1:BEBAN MATI	39.846	1.23E 3	-0.037	0.035	0.000	10.415			
		2:BEBAN HIDL	17.006	295.187	0.026	-0.002	-0.000	2.400			
		3:BEBAN GEM	54.232	-1.209	5.772	-0.012	-0.034	0.007			
		4:KOMBINASI	75.025	1.95E 3	-0.003	0.039	0.000	16.338			
		5:KOMB B. MA	106.993	1.41E 3	6.039	0.021	-0.036	11.863			
	16180	1:BEBAN MATI	-39.846	-999.042	0.037	-0.035	0.000	2.699			
		2:BEBAN HIDL	-17.006	-295.187	-0.026	0.002	-0.000	1.073			
		3:BEBAN GEM	-54.232	1.209	-5.772	0.012	-0.033	-0.022			
		4:KOMBINASI	-75.025	-1.67E 3	0.003	-0.039	-0.000	4.956			
		5:KOMB B. MA	-106.993	-1.17E 3	-6.039	-0.021	-0.035	3.320			
22608	15593	1:BEBAN MATI	-12.835	893.126	0.148	-0.006	-0.001	3.508			
		2:BEBAN HIDL	-2.970	221.380	0.057	0.002	-0.000	0.968			
		3:BEBAN GEM	27.036	-5.840	4.424	-0.041	-0.034	-0.238			
		4:KOMBINASI	-20.154	1.43E 3	0.269	-0.004	-0.002	5.759			
		5:KOMB B. MA	13.770	1.02E 3	4.827	-0.047	-0.037	3.839			
	16360	1:BEBAN MATI	12.835	-662.474	-0.148	0.006	-0.001	5.645			
		2:BEBAN HIDL	2.970	-221.380	-0.057	-0.002	-0.000	1.637			
		3:BEBAN GEM	-27.036	5.840	-4.424	0.041	-0.018	0.169			
		4:KOMBINASI	20.154	-1.15E 3	-0.269	0.004	-0.002	9.393			
		5:KOMB B. MA	-13.770	-789.170	-4.827	0.047	-0.020	6.805			
22609	15624	1:BEBAN MATI	55.539	18.122	-1.267	-0.010	0.011	-10.330			
		2:BEBAN HIDL	15.136	-24.813	-0.427	-0.006	0.004	-2.430			
		3:BEBAN GEM	146.582	-13.168	11.145	0.175	-0.084	-0.072			
		4:KOMBINASI	90.864	-17.955	-2.205	-0.022	0.018	-16.283			
		5:KOMB B. MA	218.532	-10.592	10.178	0.170	-0.075	-11.863			
	16255	1:BEBAN MATI	-55.539	270.193	1.267	0.010	0.008	8.476			
		2:BEBAN HIDL	-15.136	24.813	0.427	0.006	0.003	2.065			
		3:BEBAN GEM	-146.582	13.168	-11.145	-0.175	-0.080	-0.122			
		4:KOMBINASI	-90.864	363.932	2.205	0.022	0.014	13.474			
		5:KOMB B. MA	-218.532	298.907	-10.178	-0.170	-0.074	9.586			
22610	15584	1:BEBAN MATI	144.418	1.28E 3	0.160	-0.116	-0.001	13.937			
		2:BEBAN HIDL	39.503	274.489	0.025	-0.030	-0.000	3.170			
		3:BEBAN GEM	460.234	6.925	9.903	-0.061	-0.078	-0.047			
		4:KOMBINASI	236.507	1.98E 3	0.232	-0.188	-0.002	21.796			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 552	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	651.365	1.46E 3	10.573	-0.199	-0.083	15.789			
	16256	1:BEBAN MATI	-144.418	-996.286	-0.160	0.116	-0.001	2.839			
		2:BEBAN HIDL	-39.503	-274.489	-0.025	0.030	-0.000	0.868			
		3:BEBAN GEM	-460.234	-6.925	-9.903	0.061	-0.068	0.149			
		4:KOMBINASI	-236.507	-1.63E 3	-0.232	0.188	-0.001	4.796			
		5:KOMB B. MA	-651.365	-1.17E 3	-10.573	0.199	-0.072	3.516			
22611	15625	1:BEBAN MATI	153.906	-200.046	0.153	-0.039	-0.001	-7.707			
		2:BEBAN HIDL	44.126	-75.384	0.033	-0.007	-0.000	-1.987			
		3:BEBAN GEM	738.551	-7.729	2.423	0.127	-0.032	0.099			
		4:KOMBINASI	255.289	-360.670	0.236	-0.057	-0.001	-12.427			
		5:KOMB B. MA	955.860	-253.392	2.717	0.090	-0.035	-8.795			
	15803	1:BEBAN MATI	-153.906	488.360	-0.153	0.039	-0.001	2.643			
		2:BEBAN HIDL	-44.126	75.384	-0.033	0.007	-0.000	0.878			
		3:BEBAN GEM	-738.551	7.729	-2.423	-0.127	-0.003	-0.213			
		4:KOMBINASI	-255.289	706.647	-0.236	0.057	-0.002	4.577			
		5:KOMB B. MA	-955.860	541.706	-2.717	-0.090	-0.005	2.947			
22612	15579	1:BEBAN MATI	151.175	1.2E 3	-0.172	0.084	0.001	13.604			
		2:BEBAN HIDL	42.066	259.822	-0.027	0.018	0.000	3.116			
		3:BEBAN GEM	595.399	4.220	-9.661	-0.116	0.069	0.007			
		4:KOMBINASI	248.716	1.86E 3	-0.249	0.130	0.001	21.311			
		5:KOMB B. MA	801.584	1.36E 3	-10.332	-0.027	0.074	15.481			
	15802	1:BEBAN MATI	-151.175	-912.526	0.172	-0.084	0.002	1.940			
		2:BEBAN HIDL	-42.066	-259.822	0.027	-0.018	0.000	0.705			
		3:BEBAN GEM	-595.399	-4.220	9.661	0.116	0.073	0.055			
		4:KOMBINASI	-248.716	-1.51E 3	0.249	-0.130	0.002	3.457			
		5:KOMB B. MA	-801.584	-1.07E 3	10.332	0.027	0.078	2.421			
22613	15623	1:BEBAN MATI	123.360	-306.460	0.336	0.115	-0.002	-10.296			
		2:BEBAN HIDL	33.833	-93.613	0.132	0.035	-0.001	-2.441			
		3:BEBAN GEM	250.569	-17.379	-16.632	0.076	0.121	-0.046			
		4:KOMBINASI	202.165	-517.533	0.614	0.194	-0.003	-16.261			
		5:KOMB B. MA	406.757	-380.875	-17.049	0.216	0.125	-11.809			
	15852	1:BEBAN MATI	-123.360	594.774	-0.336	-0.115	-0.003	3.667			
		2:BEBAN HIDL	-33.833	93.613	-0.132	-0.035	-0.001	1.064			
		3:BEBAN GEM	-250.569	17.379	16.632	-0.076	0.124	-0.210			
		4:KOMBINASI	-202.165	863.510	-0.614	-0.194	-0.006	6.103			
		5:KOMB B. MA	-406.757	669.189	17.049	-0.216	0.126	4.086			
22614	15575	1:BEBAN MATI	13.446	930.301	1.401	-0.052	-0.011	3.736			
		2:BEBAN HIDL	3.397	193.164	0.482	-0.012	-0.004	0.939			
		3:BEBAN GEM	57.928	-0.576	-17.739	-0.139	0.157	-0.341			
		4:KOMBINASI	21.570	1.43E 3	2.451	-0.082	-0.020	5.985			
		5:KOMB B. MA	76.309	1.05E 3	-16.937	-0.204	0.151	3.941			
	15851	1:BEBAN MATI	-13.446	-641.986	-1.401	0.052	-0.009	7.828			
		2:BEBAN HIDL	-3.397	-193.164	-0.482	0.012	-0.003	1.903			
		3:BEBAN GEM	-57.928	0.576	17.739	0.139	0.104	0.332			
		4:KOMBINASI	-21.570	-1.08E 3	-2.451	0.082	-0.016	12.439			
		5:KOMB B. MA	-76.309	-757.279	16.937	0.204	0.098	9.319			
22615	15565	1:BEBAN MATI	36.370	1.19E 3	0.035	-0.000	-0.000	10.461			
		2:BEBAN HIDL	15.511	288.022	-0.032	0.001	0.000	2.443			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 553	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	13.989	-6.971	-12.369	-0.012	0.080	-0.242			
		4:KOMBINASI	68.462	1.89E 3	-0.009	0.002	-0.000	16.461			
		5:KOMB B. MA	60.365	1.36E 3	-12.972	-0.012	0.084	11.672			
	15954	1:BEBAN MATI	-36.370	-963.624	-0.035	0.000	-0.000	2.236			
		2:BEBAN HIDL	-15.511	-288.022	0.032	-0.001	0.000	0.947			
		3:BEBAN GEM	-13.989	6.971	12.369	0.012	0.066	0.160			
		4:KOMBINASI	-68.462	-1.62E 3	0.009	-0.002	0.000	4.199			
		5:KOMB B. MA	-60.365	-1.13E 3	12.972	0.012	0.069	2.973			
22616	15496	1:BEBAN MATI	340.213	1.4E 3	55.567	-2.166	-0.329	11.004			
		2:BEBAN HIDL	112.444	203.009	19.206	-0.789	-0.114	1.393			
		3:BEBAN GEM	-56.029	-138.036	-16.319	0.494	0.106	-2.744			
		4:KOMBINASI	588.167	2.01E 3	97.410	-3.861	-0.578	15.434			
		5:KOMB B. MA	348.849	1.38E 3	49.957	-2.120	-0.287	8.959			
	16093	1:BEBAN MATI	-340.213	-1.04E 3	-55.567	2.166	-0.325	3.355			
		2:BEBAN HIDL	-112.444	-203.009	-19.206	0.789	-0.112	0.996			
		3:BEBAN GEM	56.029	138.036	16.319	-0.494	0.086	1.119			
		4:KOMBINASI	-588.167	-1.57E 3	-97.410	3.861	-0.569	5.620			
		5:KOMB B. MA	-348.849	-1.02E 3	-49.957	2.120	-0.301	5.128			
22617	15494	1:BEBAN MATI	455.444	1.35E 3	45.814	-3.374	-0.282	10.471			
		2:BEBAN HIDL	148.592	221.963	15.410	-1.105	-0.095	1.853			
		3:BEBAN GEM	-86.290	-177.934	-17.029	0.538	0.116	-4.389			
		4:KOMBINASI	784.280	1.98E 3	79.632	-5.817	-0.490	15.529			
		5:KOMB B. MA	453.995	1.3E 3	37.179	-3.472	-0.217	6.974			
	16304	1:BEBAN MATI	-455.444	-991.184	-45.814	3.374	-0.257	3.314			
		2:BEBAN HIDL	-148.592	-221.963	-15.410	1.105	-0.087	0.759			
		3:BEBAN GEM	86.290	177.934	17.029	-0.538	0.084	2.295			
		4:KOMBINASI	-784.280	-1.54E 3	-79.632	5.817	-0.447	5.192			
		5:KOMB B. MA	-453.995	-937.532	-37.179	3.472	-0.221	6.179			
22618	15492	1:BEBAN MATI	282.228	980.551	15.795	-2.238	-0.091	8.235			
		2:BEBAN HIDL	76.646	180.456	4.251	-0.591	-0.024	2.191			
		3:BEBAN GEM	11.565	-69.562	-6.381	0.401	0.018	-1.763			
		4:KOMBINASI	461.307	1.47E 3	25.756	-3.631	-0.148	13.388			
		5:KOMB B. MA	340.358	1.02E 3	11.645	-2.172	-0.087	7.699			
	16130	1:BEBAN MATI	-282.228	-620.158	-15.795	2.238	-0.095	1.184			
		2:BEBAN HIDL	-76.646	-180.456	-4.251	0.591	-0.026	-0.068			
		3:BEBAN GEM	-11.565	69.562	6.381	-0.401	0.058	0.944			
		4:KOMBINASI	-461.307	-1.03E 3	-25.756	3.631	-0.155	1.312			
		5:KOMB B. MA	-340.358	-655.390	-11.645	2.172	-0.050	2.134			
22619	15542	1:BEBAN MATI	410.402	2.08E 3	-37.462	4.476	0.275	23.499			
		2:BEBAN HIDL	140.677	376.971	-13.359	1.636	0.098	4.573			
		3:BEBAN GEM	-755.346	-102.576	-8.076	0.511	0.041	-2.777			
		4:KOMBINASI	717.566	3.1E 3	-66.329	7.989	0.486	35.516			
		5:KOMB B. MA	-298.305	2.2E 3	-53.957	5.994	0.376	23.327			
	16072	1:BEBAN MATI	-410.402	-1.63E 3	37.462	-4.476	0.276	3.771			
		2:BEBAN HIDL	-140.677	-376.971	13.359	-1.636	0.099	0.972			
		3:BEBAN GEM	755.346	102.576	8.076	-0.511	0.078	1.268			
		4:KOMBINASI	-717.566	-2.56E 3	66.329	-7.989	0.489	6.082			
		5:KOMB B. MA	298.305	-1.75E 3	53.957	-5.994	0.417	5.686			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 554	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22620	15621	1:BEBAN MATI	173.178	-73.297	0.000	-0.000	-0.000	-0.000	-3.072		
		2:BEBAN HIDL	54.292	-56.277	0.000	-0.000	-0.000	-0.628			
		3:BEBAN GEM	806.813	-33.585	-1.697	-0.042	0.010	0.136			
		4:KOMBINASI	294.680	-178.000	0.000	-0.000	-0.000	-4.691			
		5:KOMB B. MA	1.05E 3	-142.328	-1.782	-0.044	0.011	-3.306			
16034	16034	1:BEBAN MATI	-173.178	303.948	-0.000	0.000	-0.000	0.852			
		2:BEBAN HIDL	-54.292	56.277	-0.000	0.000	-0.000	-0.034			
		3:BEBAN GEM	-806.813	33.585	1.697	0.042	0.010	-0.531			
		4:KOMBINASI	-294.680	454.781	-0.000	0.000	-0.000	0.968			
		5:KOMB B. MA	-1.05E 3	372.979	1.782	0.044	0.010	0.274			
22621	15610	1:BEBAN MATI	199.396	962.847	-0.000	0.000	0.000	11.355			
		2:BEBAN HIDL	58.512	197.064	0.000	0.000	-0.000	2.616			
		3:BEBAN GEM	1.22E 3	7.800	-3.350	0.030	0.020	-0.257			
		4:KOMBINASI	332.894	1.47E 3	0.000	0.000	-0.000	17.812			
		5:KOMB B. MA	1.51E 3	1.09E 3	-3.517	0.031	0.021	12.655			
16028	16028	1:BEBAN MATI	-199.396	-732.195	0.000	-0.000	0.000	-1.381			
		2:BEBAN HIDL	-58.512	-197.064	-0.000	-0.000	-0.000	-0.297			
		3:BEBAN GEM	-1.22E 3	-7.800	3.350	-0.030	0.020	0.349			
		4:KOMBINASI	-332.894	-1.19E 3	-0.000	-0.000	0.000	-2.133			
		5:KOMB B. MA	-1.51E 3	-858.624	3.517	-0.031	0.021	-1.194			
22622	15618	1:BEBAN MATI	217.913	-170.738	-0.000	-0.000	0.000	-8.415			
		2:BEBAN HIDL	62.959	-64.958	-0.000	0.000	0.000	-2.034			
		3:BEBAN GEM	2.07E 3	-33.719	-5.940	-0.035	0.044	0.105			
		4:KOMBINASI	362.231	-308.819	-0.000	-0.000	0.000	-13.352			
		5:KOMB B. MA	2.43E 3	-245.118	-6.238	-0.037	0.047	-9.525			
15834	15834	1:BEBAN MATI	-217.913	459.053	0.000	0.000	0.000	3.783			
		2:BEBAN HIDL	-62.959	64.958	0.000	-0.000	0.000	1.079			
		3:BEBAN GEM	-2.07E 3	33.719	5.940	0.035	0.043	-0.601			
		4:KOMBINASI	-362.231	654.796	0.000	0.000	0.000	6.265			
		5:KOMB B. MA	-2.43E 3	533.433	6.238	0.037	0.045	3.799			
22623	15607	1:BEBAN MATI	236.194	1.21E 3	0.000	0.000	-0.000	13.181			
		2:BEBAN HIDL	67.295	262.773	0.000	0.000	-0.000	3.183			
		3:BEBAN GEM	4.8E 3	3.026	-37.776	0.029	0.317	-0.570			
		4:KOMBINASI	391.106	1.87E 3	0.000	0.000	-0.000	20.911			
		5:KOMB B. MA	5.32E 3	1.37E 3	-39.665	0.030	0.333	14.492			
15827	15827	1:BEBAN MATI	-236.194	-919.162	-0.000	-0.000	-0.000	2.460			
		2:BEBAN HIDL	-67.295	-262.773	-0.000	-0.000	-0.000	0.682			
		3:BEBAN GEM	-4.8E 3	-3.026	37.776	-0.029	0.238	0.615			
		4:KOMBINASI	-391.106	-1.52E 3	-0.000	-0.000	-0.000	4.044			
		5:KOMB B. MA	-5.32E 3	-1.08E 3	39.665	-0.030	0.250	3.515			
22624	15615	1:BEBAN MATI	239.887	-192.260	-0.000	-0.000	0.000	-7.736			
		2:BEBAN HIDL	67.774	-74.361	-0.000	-0.000	0.000	-1.870			
		3:BEBAN GEM	-9.94E 3	-26.910	125.752	-0.035	-0.971	0.096			
		4:KOMBINASI	396.303	-349.690	-0.000	-0.000	0.000	-12.275			
		5:KOMB B. MA	-10.2E 3	-265.132	132.040	-0.037	-1.020	-8.757			
15820	15820	1:BEBAN MATI	-239.887	480.574	0.000	0.000	0.000	2.788			
		2:BEBAN HIDL	-67.774	74.361	0.000	0.000	0.000	0.776			
		3:BEBAN GEM	9.94E 3	26.910	-125.752	0.035	-0.879	-0.492			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 555	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-396.303	695.667	0.000	0.000	0.000	0.000	4.587		
		5:KOMB B. MA	10.2E 3	553.447	-132.040	0.037	-0.923	2.736			
22625	15604	1:BEBAN MATI	248.577	1.2E 3	0.000	0.000	-0.000	13.604			
		2:BEBAN HIDL	69.577	260.513	0.000	0.000	-0.000	3.276			
		3:BEBAN GEM	-2.76E 3	6.436	13.792	0.030	-0.094	-0.454			
		4:KOMBINASI	409.616	1.85E 3	0.000	0.000	-0.000	21.566			
		5:KOMB B. MA	-2.6E 3	1.36E 3	14.482	0.031	-0.099	15.093			
	15813	1:BEBAN MATI	-248.577	-909.115	-0.000	-0.000	-0.000	1.890			
		2:BEBAN HIDL	-69.577	-260.513	-0.000	-0.000	0.000	0.557			
		3:BEBAN GEM	2.76E 3	-6.436	-13.792	-0.030	-0.109	0.549			
		4:KOMBINASI	-409.616	-1.51E 3	-0.000	-0.000	-0.000	3.158			
		5:KOMB B. MA	2.6E 3	-1.07E 3	-14.482	-0.031	-0.114	2.800			
22626	15625	1:BEBAN MATI	266.550	-205.150	-0.000	-0.000	0.000	-7.897			
		2:BEBAN HIDL	73.969	-81.376	-0.000	-0.000	0.000	-1.983			
		3:BEBAN GEM	-1.27E 3	-28.731	4.126	-0.031	-0.030	0.138			
		4:KOMBINASI	438.211	-376.383	-0.000	-0.000	0.000	-12.650			
		5:KOMB B. MA	-1.03E 3	-284.144	4.332	-0.033	-0.031	-8.942			
	15806	1:BEBAN MATI	-266.550	493.465	0.000	0.000	0.000	2.759			
		2:BEBAN HIDL	-73.969	81.376	0.000	0.000	0.000	0.786			
		3:BEBAN GEM	1.27E 3	28.731	-4.126	0.031	-0.031	-0.561			
		4:KOMBINASI	-438.211	722.360	0.000	0.000	0.000	4.568			
		5:KOMB B. MA	1.03E 3	572.458	-4.332	0.033	-0.032	2.642			
22627	15601	1:BEBAN MATI	267.439	1.2E 3	0.000	0.000	-0.000	13.431			
		2:BEBAN HIDL	70.171	252.724	0.000	-0.000	-0.000	2.893			
		3:BEBAN GEM	-705.833	4.591	2.090	0.030	-0.017	-0.493			
		4:KOMBINASI	433.201	1.85E 3	0.000	0.000	-0.000	20.746			
		5:KOMB B. MA	-431.583	1.36E 3	2.195	0.032	-0.018	14.649			
	15799	1:BEBAN MATI	-267.439	-913.837	-0.000	-0.000	-0.000	2.132			
		2:BEBAN HIDL	-70.171	-252.724	-0.000	0.000	-0.000	0.824			
		3:BEBAN GEM	705.833	-4.591	-2.090	-0.030	-0.014	0.561			
		4:KOMBINASI	-433.201	-1.5E 3	-0.000	-0.000	-0.000	3.878			
		5:KOMB B. MA	431.583	-1.07E 3	-2.195	-0.032	-0.015	3.216			
22628	15613	1:BEBAN MATI	223.921	-319.905	0.000	-0.000	-0.000	-10.594			
		2:BEBAN HIDL	57.114	-94.008	-0.000	-0.000	0.000	-2.637			
		3:BEBAN GEM	-511.545	-41.737	0.929	-0.051	-0.007	-0.256			
		4:KOMBINASI	360.087	-534.300	0.000	-0.000	-0.000	-16.932			
		5:KOMB B. MA	-278.933	-420.134	0.976	-0.054	-0.007	-12.445			
	15688	1:BEBAN MATI	-223.921	608.220	-0.000	0.000	-0.000	3.768			
		2:BEBAN HIDL	-57.114	94.008	0.000	0.000	-0.000	1.254			
		3:BEBAN GEM	511.545	41.737	-0.929	0.051	-0.007	-0.358			
		4:KOMBINASI	-360.087	880.277	-0.000	0.000	-0.000	6.528			
		5:KOMB B. MA	278.933	708.449	-0.976	0.054	-0.008	4.144			
22629	15626	1:BEBAN MATI	229.179	608.739	6.803	-2.107	-0.034	-4.665			
		2:BEBAN HIDL	66.405	114.084	1.690	-0.635	-0.008	-0.790			
		3:BEBAN GEM	3.488	-121.672	-1.872	0.148	0.010	-1.736			
		4:KOMBINASI	381.263	913.022	10.868	-3.544	-0.054	-6.862			
		5:KOMB B. MA	272.685	549.434	5.851	-2.333	-0.029	-6.961			
	15629	1:BEBAN MATI	-229.179	-248.346	-6.803	2.107	-0.046	9.708			



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Job No 1	Sheet No 556	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-66.405	-114.084	-1.690	0.635	-0.012	2.133			
		3:BEBAN GEM	-3.488	121.672	1.872	-0.148	0.012	0.304			
		4:KOMBINASI	-381.263	-480.550	-10.868	3.544	-0.074	15.061			
		5:KOMB B. MA	-272.685	-189.041	-5.851	2.333	-0.040	11.306			
22630	15628	1:BEBAN MATI	725.062	1.68E 3	-9.193	3.790	0.025	4.136			
		2:BEBAN HIDL	171.381	329.588	-2.519	1.246	0.006	1.131			
		3:BEBAN GEM	-270.542	-370.607	3.005	-0.212	-0.015	-9.112			
		4:KOMBINASI	1.14E 3	2.54E 3	-15.062	6.542	0.039	6.772			
		5:KOMB B. MA	543.822	1.49E 3	-7.550	4.315	0.013	-4.754			
	15635	1:BEBAN MATI	-725.062	-1.46E 3	9.193	-3.790	0.043	7.398			
		2:BEBAN HIDL	-171.381	-329.588	2.519	-1.246	0.013	1.294			
		3:BEBAN GEM	270.542	370.607	-3.005	0.212	-0.007	6.387			
		4:KOMBINASI	-1.14E 3	-2.27E 3	15.062	-6.542	0.072	10.947			
		5:KOMB B. MA	-543.822	-1.26E 3	7.550	-4.315	0.043	14.880			
22631	15629	1:BEBAN MATI	188.925	-313.008	-7.143	0.354	0.044	-9.797			
		2:BEBAN HIDL	58.497	-80.245	-2.502	0.199	0.015	-2.158			
		3:BEBAN GEM	15.223	-117.698	1.538	-0.169	-0.008	-0.286			
		4:KOMBINASI	320.305	-504.001	-12.574	0.743	0.076	-15.210			
		5:KOMB B. MA	240.007	-484.737	-7.029	0.296	0.044	-11.393			
	15631	1:BEBAN MATI	-188.925	673.401	7.143	-0.354	0.040	3.993			
		2:BEBAN HIDL	-58.497	80.245	2.502	-0.199	0.015	1.214			
		3:BEBAN GEM	-15.223	117.698	-1.538	0.169	-0.010	-1.099			
		4:KOMBINASI	-320.305	936.473	12.574	-0.743	0.072	6.734			
		5:KOMB B. MA	-240.007	845.130	7.029	-0.296	0.039	3.568			
22632	15631	1:BEBAN MATI	340.212	-1.04E 3	-55.567	2.166	0.325	-3.355			
		2:BEBAN HIDL	112.444	-203.009	-19.206	0.789	0.112	-0.996			
		3:BEBAN GEM	4.450	-125.446	11.707	-0.463	-0.070	1.067			
		4:KOMBINASI	588.165	-1.57E 3	-97.410	3.861	0.569	-5.620			
		5:KOMB B. MA	412.351	-1.29E 3	-54.799	2.153	0.319	-2.832			
	15482	1:BEBAN MATI	-340.212	1.4E 3	55.567	-2.166	0.329	-11.004			
		2:BEBAN HIDL	-112.444	203.009	19.206	-0.789	0.114	-1.393			
		3:BEBAN GEM	-4.450	125.446	-11.707	0.463	-0.068	-2.544			
		4:KOMBINASI	-588.165	2.01E 3	97.410	-3.861	0.578	-15.434			
		5:KOMB B. MA	-412.351	1.65E 3	54.799	-2.153	0.326	-14.511			
22633	15633	1:BEBAN MATI	789.184	2.87E 3	1.017	-0.081	-0.004	5.832			
		2:BEBAN HIDL	270.119	726.016	0.203	-0.009	-0.001	2.749			
		3:BEBAN GEM	-177.057	-360.787	0.623	-0.217	-0.002	-8.841			
		4:KOMBINASI	1.38E 3	4.61E 3	1.546	-0.111	-0.007	11.398			
		5:KOMB B. MA	765.345	2.93E 3	1.793	-0.313	-0.007	-1.801			
	15638	1:BEBAN MATI	-789.184	-2.65E 3	-1.017	0.081	-0.003	14.475			
		2:BEBAN HIDL	-270.119	-726.016	-0.203	0.009	-0.000	2.590			
		3:BEBAN GEM	177.057	360.787	-0.623	0.217	-0.003	6.187			
		4:KOMBINASI	-1.38E 3	-4.34E 3	-1.546	0.111	-0.005	21.515			
		5:KOMB B. MA	-765.345	-2.71E 3	-1.793	0.313	-0.006	22.526			
22634	15635	1:BEBAN MATI	584.044	1.14E 3	-7.127	2.762	0.019	-7.827			
		2:BEBAN HIDL	136.776	218.260	-2.049	0.892	0.005	-1.412			
		3:BEBAN GEM	-222.012	-365.828	2.088	-0.120	-0.010	-6.314			
		4:KOMBINASI	919.695	1.71E 3	-11.831	4.742	0.031	-11.651			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 557	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	432.997	881.918	-6.164	3.171	0.011	-15.304			
	15640	1:BEBAN MATI	-584.044	-909.836	7.127	-2.762	0.033	15.348			
		2:BEBAN HIDL	-136.776	-218.260	2.049	-0.892	0.010	3.017			
		3:BEBAN GEM	222.012	365.828	-2.088	0.120	-0.005	3.623			
		4:KOMBINASI	-919.695	-1.44E 3	11.831	-4.742	0.056	23.244			
		5:KOMB B. MA	-432.997	-656.673	6.164	-3.171	0.034	20.962			
22635	15638	1:BEBAN MATI	630.836	1.99E 3	1.185	-0.119	-0.005	-14.917			
		2:BEBAN HIDL	213.501	492.544	0.320	-0.017	-0.002	-2.698			
		3:BEBAN GEM	-129.400	-348.183	0.570	-0.165	-0.003	-6.101			
		4:KOMBINASI	1.1E 3	3.18E 3	1.933	-0.170	-0.008	-22.217			
		5:KOMB B. MA	623.067	1.92E 3	1.975	-0.303	-0.009	-22.941			
	15643	1:BEBAN MATI	-630.836	-1.77E 3	-1.185	0.119	-0.004	28.744			
		2:BEBAN HIDL	-213.501	-492.544	-0.320	0.017	-0.001	6.320			
		3:BEBAN GEM	129.400	348.183	-0.570	0.165	-0.001	3.540			
		4:KOMBINASI	-1.1E 3	-2.91E 3	-1.933	0.170	-0.006	44.606			
		5:KOMB B. MA	-623.067	-1.7E 3	-1.975	0.303	-0.006	36.253			
22636	15640	1:BEBAN MATI	501.622	605.140	-4.663	1.884	0.007	-15.733			
		2:BEBAN HIDL	118.041	119.579	-1.308	0.606	0.001	-3.119			
		3:BEBAN GEM	-185.086	-362.431	1.450	-0.061	-0.008	-3.555			
		4:KOMBINASI	790.812	917.495	-7.688	3.230	0.011	-23.870			
		5:KOMB B. MA	378.107	296.335	-3.925	2.183	-0.001	-21.337			
	15546	1:BEBAN MATI	-501.622	-379.894	4.663	-1.884	0.027	19.355			
		2:BEBAN HIDL	-118.041	-119.579	1.308	-0.606	0.008	3.999			
		3:BEBAN GEM	185.086	362.431	-1.450	0.061	-0.002	0.889			
		4:KOMBINASI	-790.812	-647.200	7.688	-3.230	0.046	29.624			
		5:KOMB B. MA	-378.107	-71.089	3.925	-2.183	0.029	22.688			
22637	15643	1:BEBAN MATI	547.227	1.2E 3	1.225	-0.134	-0.005	-29.250			
		2:BEBAN HIDL	182.052	304.268	0.527	-0.018	-0.002	-6.456			
		3:BEBAN GEM	-96.880	-343.111	2.015	-0.117	-0.008	-3.440			
		4:KOMBINASI	947.955	1.92E 3	2.313	-0.188	-0.010	-45.430			
		5:KOMB B. MA	554.734	1.02E 3	3.657	-0.267	-0.015	-36.736			
	15566	1:BEBAN MATI	-547.227	-972.575	-1.225	0.134	-0.004	37.232			
		2:BEBAN HIDL	-182.052	-304.268	-0.527	0.018	-0.002	8.694			
		3:BEBAN GEM	96.880	343.111	-2.015	0.117	-0.007	0.916			
		4:KOMBINASI	-947.955	-1.65E 3	-2.313	0.188	-0.007	58.589			
		5:KOMB B. MA	-554.734	-794.869	-3.657	0.267	-0.012	43.411			
22638	15644	1:BEBAN MATI	44.378	376.307	0.209	0.058	0.001	-7.424			
		2:BEBAN HIDL	15.022	85.706	-0.119	-0.041	0.001	-2.102			
		3:BEBAN GEM	25.165	-8.132	-0.961	-0.026	0.005	-0.260			
		4:KOMBINASI	77.289	588.698	0.061	0.004	0.003	-12.271			
		5:KOMB B. MA	79.814	419.192	-0.871	0.006	0.007	-8.958			
	15645	1:BEBAN MATI	-44.378	-145.656	-0.209	-0.058	-0.003	10.495			
		2:BEBAN HIDL	-15.022	-85.706	0.119	0.041	-0.000	3.110			
		3:BEBAN GEM	-25.165	8.132	0.961	0.026	0.006	0.164			
		4:KOMBINASI	-77.289	-311.916	-0.061	-0.004	-0.004	17.570			
		5:KOMB B. MA	-79.814	-188.541	0.871	-0.006	0.003	12.533			
22639	15645	1:BEBAN MATI	71.281	-442.081	-0.281	0.053	0.003	-10.417			
		2:BEBAN HIDL	23.741	-151.436	-0.287	-0.044	0.002	-3.095			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	38.393	-9.393	-1.020	0.013	0.006	-0.156			
		4:KOMBINASI	123.522	-772.794	-0.796	-0.007	0.007	-17.452			
		5:KOMB B. MA	125.838	-542.805	-1.523	0.040	0.011	-12.438			
	15646	1:BEBAN MATI	-71.281	672.732	0.281	-0.053	0.000	3.858			
		2:BEBAN HIDL	-23.741	151.436	0.287	0.044	0.001	1.313			
		3:BEBAN GEM	-38.393	9.393	1.020	-0.013	0.006	0.046			
		4:KOMBINASI	-123.522	1.05E 3	0.796	0.007	0.002	6.729			
		5:KOMB B. MA	-125.838	773.456	1.523	-0.040	0.007	4.693			
22640	15646	1:BEBAN MATI	70.646	-954.040	-1.448	0.036	0.006	-2.577			
		2:BEBAN HIDL	24.343	-286.554	-0.736	-0.029	0.003	-0.918			
		3:BEBAN GEM	55.251	-1.639	-1.181	0.005	0.008	-0.030			
		4:KOMBINASI	123.724	-1.6E 3	-2.916	-0.003	0.013	-4.561			
		5:KOMB B. MA	143.265	-1.13E 3	-3.131	0.024	0.017	-3.159			
	15566	1:BEBAN MATI	-70.646	1.18E 3	1.448	-0.036	0.011	-10.007			
		2:BEBAN HIDL	-24.343	286.554	0.736	0.029	0.005	-2.454			
		3:BEBAN GEM	-55.251	1.639	1.181	-0.005	0.005	0.010			
		4:KOMBINASI	-123.724	1.88E 3	2.916	0.003	0.022	-15.935			
		5:KOMB B. MA	-143.265	1.36E 3	3.131	-0.024	0.020	-11.469			
22641	15648	1:BEBAN MATI	464.594	-1.18E 3	-0.432	-2.113	-0.012	-13.295			
		2:BEBAN HIDL	119.364	-250.010	-0.047	-0.631	-0.005	-2.822			
		3:BEBAN GEM	-91.545	-367.641	2.143	0.221	-0.010	1.861			
		4:KOMBINASI	748.496	-1.82E 3	-0.593	-3.545	-0.022	-20.469			
		5:KOMB B. MA	440.091	-1.72E 3	1.790	-2.259	-0.025	-13.034			
	15653	1:BEBAN MATI	-464.594	1.41E 3	0.432	2.113	0.015	3.779			
		2:BEBAN HIDL	-119.364	250.010	0.047	0.631	0.005	0.984			
		3:BEBAN GEM	91.545	367.641	-2.143	-0.221	-0.006	-4.565			
		4:KOMBINASI	-748.496	2.09E 3	0.593	3.545	0.026	6.108			
		5:KOMB B. MA	-440.091	1.94E 3	-1.790	2.259	0.012	-0.425			
22642	15651	1:BEBAN MATI	475.349	-2.39E 3	0.338	-0.151	-0.001	-23.790			
		2:BEBAN HIDL	150.724	-536.272	0.410	-0.018	-0.002	-5.889			
		3:BEBAN GEM	-30.444	-344.267	3.935	0.168	-0.019	1.766			
		4:KOMBINASI	811.578	-3.73E 3	1.062	-0.210	-0.005	-37.971			
		5:KOMB B. MA	533.817	-3.07E 3	4.716	0.014	-0.022	-25.469			
	15656	1:BEBAN MATI	-475.349	2.62E 3	-0.338	0.151	-0.001	5.375			
		2:BEBAN HIDL	-150.724	536.272	-0.410	0.018	-0.001	1.945			
		3:BEBAN GEM	30.444	344.267	-3.935	-0.168	-0.010	-4.298			
		4:KOMBINASI	-811.578	4E 3	-1.062	0.210	-0.003	9.562			
		5:KOMB B. MA	-533.817	3.3E 3	-4.716	-0.014	-0.012	2.028			
22643	15653	1:BEBAN MATI	497.882	-1.69E 3	0.504	-2.947	-0.026	-3.355			
		2:BEBAN HIDL	137.000	-351.362	0.271	-0.950	-0.011	-0.866			
		3:BEBAN GEM	-22.631	-374.682	3.463	0.202	-0.010	4.579			
		4:KOMBINASI	816.658	-2.59E 3	1.039	-5.057	-0.049	-5.412			
		5:KOMB B. MA	556.320	-2.29E 3	4.302	-3.305	-0.044	0.933			
	15658	1:BEBAN MATI	-497.882	1.91E 3	-0.504	2.947	0.023	-9.885			
		2:BEBAN HIDL	-137.000	351.362	-0.271	0.950	0.009	-1.718			
		3:BEBAN GEM	22.631	374.682	-3.463	-0.202	-0.015	-7.335			
		4:KOMBINASI	-816.658	2.86E 3	-1.039	5.057	0.041	-14.611			
		5:KOMB B. MA	-556.320	2.52E 3	-4.302	3.305	0.012	-18.617			



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Job No 1	Sheet No 559	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22644	15656	1:BEBAN MATI	462.332	-3.22E 3	0.052	-0.115	0.001	-4.727			
		2:BEBAN HIDL	143.124	-746.789	0.434	-0.013	-0.001	-1.827			
		3:BEBAN GEM	26.770	-359.702	5.998	0.215	-0.025	4.382			
		4:KOMBINASI	783.797	-5.06E 3	0.756	-0.159	-0.001	-8.595			
		5:KOMB B. MA	576.314	-4.05E 3	6.610	0.102	-0.025	-1.222			
	15661	1:BEBAN MATI	-462.332	3.45E 3	-0.052	0.115	-0.002	-19.799			
		2:BEBAN HIDL	-143.124	746.789	-0.434	0.013	-0.002	-3.666			
		3:BEBAN GEM	-26.770	359.702	-5.998	-0.215	-0.019	-7.027			
		4:KOMBINASI	-783.797	5.33E 3	-0.756	0.159	-0.005	-29.624			
		5:KOMB B. MA	-576.314	4.27E 3	-6.610	-0.102	-0.023	-29.377			
22645	15658	1:BEBAN MATI	623.430	-2.06E 3	62.486	-3.421	-0.176	10.414			
		2:BEBAN HIDL	189.565	-404.637	24.670	-1.130	-0.070	1.870			
		3:BEBAN GEM	77.221	-390.927	6.578	0.157	-0.003	7.341			
		4:KOMBINASI	1.05E 3	-3.12E 3	114.455	-5.913	-0.323	15.488			
		5:KOMB B. MA	818.251	-2.72E 3	84.195	-3.934	-0.221	19.244			
	15500	1:BEBAN MATI	-623.430	2.29E 3	-62.486	3.421	-0.283	-26.414			
		2:BEBAN HIDL	-189.565	404.637	-24.670	1.130	-0.112	-4.846			
		3:BEBAN GEM	-77.221	390.927	-6.578	-0.157	-0.045	-10.216			
		4:KOMBINASI	-1.05E 3	3.39E 3	-114.455	5.913	-0.519	-39.450			
		5:KOMB B. MA	-818.251	2.94E 3	-84.195	3.934	-0.398	-40.048			
22646	15661	1:BEBAN MATI	461.530	-3.9E 3	-0.660	-0.045	0.006	20.481			
		2:BEBAN HIDL	139.423	-884.836	1.639	-0.006	-0.004	3.808			
		3:BEBAN GEM	130.821	-394.806	5.830	0.294	-0.022	7.082			
		4:KOMBINASI	776.913	-6.09E 3	1.831	-0.063	0.000	30.671			
		5:KOMB B. MA	682.545	-4.84E 3	6.445	0.260	-0.020	30.203			
	15508	1:BEBAN MATI	-461.530	4.12E 3	0.660	0.045	-0.001	-49.970			
		2:BEBAN HIDL	-139.423	884.836	-1.639	0.006	-0.008	-10.316			
		3:BEBAN GEM	-130.821	394.806	-5.830	-0.294	-0.021	-9.986			
		4:KOMBINASI	-776.913	6.36E 3	-1.831	0.063	-0.014	-76.470			
		5:KOMB B. MA	-682.545	5.07E 3	-6.445	-0.260	-0.027	-66.645			
22647	15662	1:BEBAN MATI	322.826	842.412	-0.656	0.085	0.004	-9.280			
		2:BEBAN HIDL	130.365	257.367	-0.360	-0.019	0.002	-1.487			
		3:BEBAN GEM	46.027	-111.125	-7.237	0.211	0.048	-1.693			
		4:KOMBINASI	595.976	1.42E 3	-1.363	0.072	0.009	-13.515			
		5:KOMB B. MA	449.373	880.151	-8.471	0.295	0.057	-11.950			
	15663	1:BEBAN MATI	-322.826	-482.019	0.656	-0.085	0.003	17.073			
		2:BEBAN HIDL	-130.365	-257.367	0.360	0.019	0.002	4.515			
		3:BEBAN GEM	-46.027	111.125	7.237	-0.211	0.037	0.386			
		4:KOMBINASI	-595.976	-990.210	1.363	-0.072	0.007	27.713			
		5:KOMB B. MA	-449.373	-519.758	8.471	-0.295	0.043	20.188			
22648	15663	1:BEBAN MATI	233.101	-684.255	-0.064	0.043	0.001	-17.016			
		2:BEBAN HIDL	90.895	-140.224	-0.275	-0.021	0.002	-4.525			
		3:BEBAN GEM	126.579	-113.131	-1.305	-0.191	0.012	-0.355			
		4:KOMBINASI	425.154	-1.05E 3	-0.516	0.018	0.004	-27.658			
		5:KOMB B. MA	420.546	-887.177	-1.599	-0.171	0.015	-20.103			
	15664	1:BEBAN MATI	-233.101	1.04E 3	0.064	-0.043	-0.000	6.843			
		2:BEBAN HIDL	-90.895	140.224	0.275	0.021	0.001	2.874			
		3:BEBAN GEM	-126.579	113.131	1.305	0.191	0.003	-0.977			



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Job No 1	Sheet No 560	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-425.154	1.48E 3	0.516	-0.018	0.002	12.810			
		5:KOMB B. MA	-420.546	1.25E 3	1.599	0.171	0.003	7.542			
22649	15664	1:BEBAN MATI	199.034	-1.93E 3	0.562	0.020	-0.005	-5.932			
		2:BEBAN HIDL	70.754	-425.675	-0.413	-0.016	0.002	-2.592			
		3:BEBAN GEM	238.290	-127.544	7.105	-0.632	-0.049	0.990			
		4:KOMBINASI	352.047	-3E 3	0.013	-0.002	-0.003	-11.266			
		5:KOMB B. MA	491.691	-2.32E 3	7.774	-0.653	-0.056	-6.448			
	15508	1:BEBAN MATI	-199.034	2.29E 3	-0.562	-0.020	-0.002	-18.951			
		2:BEBAN HIDL	-70.754	425.675	0.413	0.016	0.003	-2.417			
		3:BEBAN GEM	-238.290	127.544	-7.105	0.632	-0.034	-2.491			
		4:KOMBINASI	-352.047	3.43E 3	-0.013	0.002	0.003	-26.608			
		5:KOMB B. MA	-491.691	2.68E 3	-7.774	0.653	-0.036	-23.016			
22650	15665	1:BEBAN MATI	134.374	44.666	1.027	1.318	-0.007	-3.390			
		2:BEBAN HIDL	38.487	-67.802	0.548	0.247	-0.003	-0.917			
		3:BEBAN GEM	49.720	-258.456	-0.896	0.048	0.005	-1.050			
		4:KOMBINASI	222.828	-54.884	2.109	1.977	-0.014	-5.535			
		5:KOMB B. MA	209.672	-267.394	0.415	1.517	-0.004	-5.043			
	15668	1:BEBAN MATI	-134.374	315.727	-1.027	-1.318	-0.005	1.795			
		2:BEBAN HIDL	-38.487	67.802	-0.548	-0.247	-0.003	0.119			
		3:BEBAN GEM	-49.720	258.456	0.896	-0.048	0.006	-1.991			
		4:KOMBINASI	-222.828	487.356	-2.109	-1.977	-0.011	2.344			
		5:KOMB B. MA	-209.672	627.787	-0.415	-1.517	-0.001	-0.224			
22651	15667	1:BEBAN MATI	591.683	2.04E 3	31.514	-2.538	-0.069	-2.564			
		2:BEBAN HIDL	196.147	491.153	11.254	-0.779	-0.025	0.169			
		3:BEBAN GEM	-110.773	-362.742	27.998	-0.098	-0.090	-7.681			
		4:KOMBINASI	1.02E 3	3.23E 3	55.823	-4.291	-0.123	-2.807			
		5:KOMB B. MA	593.060	1.95E 3	67.665	-3.108	-0.179	-10.528			
	15906	1:BEBAN MATI	-591.683	-1.89E 3	-31.514	2.538	-0.086	12.196			
		2:BEBAN HIDL	-196.147	-491.153	-11.254	0.779	-0.030	2.239			
		3:BEBAN GEM	110.773	362.742	-27.998	0.098	-0.047	5.902			
		4:KOMBINASI	-1.02E 3	-3.05E 3	-55.823	4.291	-0.151	18.218			
		5:KOMB B. MA	-593.060	-1.8E 3	-67.665	3.108	-0.153	19.736			
22652	15668	1:BEBAN MATI	282.228	-620.158	-15.795	2.238	0.095	-1.184			
		2:BEBAN HIDL	76.646	-180.456	-4.251	0.591	0.026	0.068			
		3:BEBAN GEM	184.772	-238.822	2.704	-0.378	-0.064	2.042			
		4:KOMBINASI	461.307	-1.03E 3	-25.756	3.631	0.155	-1.312			
		5:KOMB B. MA	522.226	-979.195	-15.506	2.196	0.043	1.000			
	15486	1:BEBAN MATI	-282.228	980.551	15.795	-2.238	0.091	-8.235			
		2:BEBAN HIDL	-76.646	180.456	4.251	-0.591	0.024	-2.191			
		3:BEBAN GEM	-184.772	238.822	-2.704	0.378	0.032	-4.852			
		4:KOMBINASI	-461.307	1.47E 3	25.756	-3.631	0.148	-13.388			
		5:KOMB B. MA	-522.226	1.34E 3	15.506	-2.196	0.139	-14.644			
22653	15670	1:BEBAN MATI	213.730	501.383	4.948	0.600	-0.016	-1.196			
		2:BEBAN HIDL	51.201	97.701	1.221	0.165	-0.003	0.004			
		3:BEBAN GEM	-508.418	-799.406	-0.193	0.100	0.018	-5.697			
		4:KOMBINASI	338.397	757.981	7.890	0.985	-0.024	-1.430			
		5:KOMB B. MA	-289.389	-279.372	5.477	0.804	0.001	-7.176			
	15674	1:BEBAN MATI	-213.730	-201.055	-4.948	-0.600	-0.032	4.641			



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By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-51.201	-97.701	-1.221	-0.165	-0.009	0.954			
		3:BEBAN GEM	508.418	799.406	0.193	-0.100	-0.016	-2.143			
		4:KOMBINASI	-338.397	-397.588	-7.890	-0.985	-0.054	7.096			
		5:KOMB B. MA	289.389	579.700	-5.477	-0.804	-0.055	2.963			
22654	15672	1:BEBAN MATI	505.569	1.17E 3	68.164	-2.078	-0.085	-19.715			
		2:BEBAN HIDL	163.013	283.872	26.154	-0.660	-0.034	-4.112			
		3:BEBAN GEM	0.382	-336.206	77.267	0.019	-0.148	-4.052			
		4:KOMBINASI	867.504	1.86E 3	123.643	-3.550	-0.157	-30.238			
		5:KOMB B. MA	603.778	985.890	164.987	-2.454	-0.261	-26.438			
	15910	1:BEBAN MATI	-505.569	-1.09E 3	-68.164	2.078	-0.082	22.488			
		2:BEBAN HIDL	-163.013	-283.872	-26.154	0.660	-0.030	4.808			
		3:BEBAN GEM	-0.382	336.206	-77.267	-0.019	-0.042	3.228			
		4:KOMBINASI	-867.504	-1.77E 3	-123.643	3.550	-0.146	34.679			
		5:KOMB B. MA	-603.778	-910.808	-164.987	2.454	-0.144	28.763			
22655	15674	1:BEBAN MATI	140.198	-142.441	1.383	2.100	0.008	-4.352			
		2:BEBAN HIDL	40.896	-14.256	-4.321	0.612	0.022	-0.857			
		3:BEBAN GEM	-556.205	-831.466	19.293	0.348	0.010	2.225			
		4:KOMBINASI	233.672	-193.739	-5.254	3.499	0.045	-6.594			
		5:KOMB B. MA	-419.279	-1.02E 3	19.048	2.833	0.032	-2.530			
	15544	1:BEBAN MATI	-140.198	442.769	-1.383	-2.100	-0.022	1.482			
		2:BEBAN HIDL	-40.896	14.256	4.321	-0.612	0.020	0.717			
		3:BEBAN GEM	556.205	831.466	-19.293	-0.348	-0.199	-10.379			
		4:KOMBINASI	-233.672	554.132	5.254	-3.499	0.006	2.927			
		5:KOMB B. MA	419.279	1.32E 3	-19.048	-2.833	-0.219	-8.985			
22656	15675	1:BEBAN MATI	64.006	-148.945	-0.119	-0.276	0.002	-1.693			
		2:BEBAN HIDL	37.818	-65.039	-0.174	-0.035	0.001	-0.440			
		3:BEBAN GEM	247.689	-33.663	0.536	-0.394	0.007	0.230			
		4:KOMBINASI	137.317	-282.797	-0.421	-0.388	0.004	-2.736			
		5:KOMB B. MA	346.770	-223.315	0.339	-0.711	0.010	-1.715			
	15676	1:BEBAN MATI	-64.006	379.596	0.119	0.276	-0.000	-1.417			
		2:BEBAN HIDL	-37.818	65.039	0.174	0.035	0.001	-0.325			
		3:BEBAN GEM	-247.689	33.663	-0.536	0.394	-0.013	-0.626			
		4:KOMBINASI	-137.317	559.578	0.421	0.388	0.001	-2.220			
		5:KOMB B. MA	-346.770	453.966	-0.339	0.711	-0.014	-2.270			
22657	15676	1:BEBAN MATI	63.753	-932.725	0.341	-0.454	0.000	2.251			
		2:BEBAN HIDL	53.098	-274.883	-0.514	-0.083	0.003	0.592			
		3:BEBAN GEM	423.815	-49.020	18.451	-0.597	-0.084	0.634			
		4:KOMBINASI	161.461	-1.56E 3	-0.413	-0.678	0.006	3.648			
		5:KOMB B. MA	540.618	-1.15E 3	19.406	-1.131	-0.087	3.272			
	15544	1:BEBAN MATI	-63.753	1.16E 3	-0.341	0.454	-0.004	-14.584			
		2:BEBAN HIDL	-53.098	274.883	0.514	0.083	0.003	-3.827			
		3:BEBAN GEM	-423.815	49.020	-18.451	0.597	-0.133	-1.211			
		4:KOMBINASI	-161.461	1.84E 3	0.413	0.678	-0.001	-23.624			
		5:KOMB B. MA	-540.618	1.38E 3	-19.406	1.131	-0.142	-18.152			
22658	15677	1:BEBAN MATI	325.174	1.17E 3	8.319	-2.278	-0.057	-8.706			
		2:BEBAN HIDL	59.301	191.172	2.019	-0.683	-0.014	-1.691			
		3:BEBAN GEM	50.209	-102.439	5.222	0.624	-0.045	-1.404			
		4:KOMBINASI	485.091	1.71E 3	13.213	-3.827	-0.091	-13.153			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 562	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	413.474	1.18E 3	15.013	-2.033	-0.113	-11.195			
	15560	1:BEBAN MATI	-325.174	-721.286	-8.319	2.278	-0.065	22.630			
		2:BEBAN HIDL	-59.301	-191.172	-2.019	0.683	-0.016	4.503			
		3:BEBAN GEM	-50.209	102.439	-5.222	-0.624	-0.032	-0.103			
		4:KOMBINASI	-485.091	-1.17E 3	-13.213	3.827	-0.104	34.360			
		5:KOMB B. MA	-413.474	-728.428	-15.013	2.033	-0.108	25.224			
22659	15679	1:BEBAN MATI	989.130	1.97E 3	6.842	-0.484	-0.034	-7.716			
		2:BEBAN HIDL	244.097	407.288	1.683	0.035	-0.008	-0.966			
		3:BEBAN GEM	72.741	-320.945	60.055	-0.261	-0.484	-5.713			
		4:KOMBINASI	1.58E 3	3.01E 3	10.903	-0.525	-0.053	-10.806			
		5:KOMB B. MA	1.21E 3	1.88E 3	70.909	-0.737	-0.547	-14.295			
	15580	1:BEBAN MATI	-989.130	-1.52E 3	-6.842	0.484	-0.067	33.361			
		2:BEBAN HIDL	-244.097	-407.288	-1.683	-0.035	-0.017	6.958			
		3:BEBAN GEM	-72.741	320.945	-60.055	0.261	-0.399	0.992			
		4:KOMBINASI	-1.58E 3	-2.47E 3	-10.903	0.525	-0.107	51.165			
		5:KOMB B. MA	-1.21E 3	-1.43E 3	-70.909	0.737	-0.496	38.577			
22660	15680	1:BEBAN MATI	105.595	263.219	0.000	-0.000	-0.000	-8.865			
		2:BEBAN HIDL	26.898	29.585	0.000	-0.000	-0.000	-2.191			
		3:BEBAN GEM	-311.685	-38.818	1.079	0.030	-0.007	-1.065			
		4:KOMBINASI	169.750	363.200	0.000	-0.000	-0.000	-14.143			
		5:KOMB B. MA	-205.536	240.212	1.133	0.031	-0.008	-11.297			
	15613	1:BEBAN MATI	-105.595	25.095	-0.000	0.000	-0.000	10.616			
		2:BEBAN HIDL	-26.898	-29.585	-0.000	0.000	-0.000	2.626			
		3:BEBAN GEM	311.685	38.818	-1.079	-0.030	-0.009	0.494			
		4:KOMBINASI	-169.750	-17.222	-0.000	0.000	-0.000	16.941			
		5:KOMB B. MA	205.536	48.103	-1.133	-0.031	-0.009	12.710			
22661	15681	1:BEBAN MATI	618.166	-1.67E 3	-32.412	3.864	0.281	-7.788			
		2:BEBAN HIDL	127.549	-355.936	-7.625	1.175	0.068	-1.436			
		3:BEBAN GEM	145.679	-114.808	-12.040	-0.872	0.075	1.576			
		4:KOMBINASI	945.878	-2.57E 3	-51.095	6.517	0.446	-11.643			
		5:KOMB B. MA	847.658	-2E 3	-49.629	3.654	0.400	-6.995			
	15490	1:BEBAN MATI	-618.166	2.12E 3	32.412	-3.864	0.195	-20.087			
		2:BEBAN HIDL	-127.549	355.936	7.625	-1.175	0.044	-3.800			
		3:BEBAN GEM	-145.679	114.808	12.040	0.872	0.103	-3.265			
		4:KOMBINASI	-945.878	3.11E 3	51.095	-6.517	0.305	-30.184			
		5:KOMB B. MA	-847.658	2.45E 3	49.629	-3.654	0.330	-25.795			
22662	15683	1:BEBAN MATI	989.130	1.97E 3	-6.842	0.484	0.034	-7.716			
		2:BEBAN HIDL	244.097	407.288	-1.683	-0.035	0.008	-0.966			
		3:BEBAN GEM	-110.491	-388.383	-52.612	-0.446	0.440	-5.906			
		4:KOMBINASI	1.58E 3	3.01E 3	-10.903	0.525	0.053	-10.806			
		5:KOMB B. MA	1.02E 3	1.81E 3	-63.094	-0.006	0.501	-14.497			
	15585	1:BEBAN MATI	-989.130	-1.52E 3	6.842	-0.484	0.067	33.361			
		2:BEBAN HIDL	-244.097	-407.288	1.683	0.035	0.017	6.958			
		3:BEBAN GEM	110.491	388.383	52.612	0.446	0.334	0.193			
		4:KOMBINASI	-1.58E 3	-2.47E 3	10.903	-0.525	0.107	51.165			
		5:KOMB B. MA	-1.02E 3	-1.35E 3	63.094	0.006	0.428	37.737			
22663	15684	1:BEBAN MATI	215.561	513.349	0.033	0.034	0.004	-5.586			
		2:BEBAN HIDL	50.687	79.504	0.067	0.012	0.000	-1.609			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 563	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.04E 3	-3.610	-3.108	-0.112	0.025	-0.029			
		4:KOMBINASI	339.773	743.225	0.146	0.059	0.005	-9.277			
		5:KOMB B. MA	1.34E 3	557.261	-3.191	-0.077	0.030	-6.581			
	15613	1:BEBAN MATI	-215.561	-225.035	-0.033	-0.034	-0.004	11.016			
		2:BEBAN HIDL	-50.687	-79.504	-0.067	-0.012	-0.001	2.778			
		3:BEBAN GEM	-1.04E 3	3.610	3.108	0.112	0.021	-0.024			
		4:KOMBINASI	-339.773	-397.248	-0.146	-0.059	-0.007	17.665			
		5:KOMB B. MA	-1.34E 3	-268.947	3.191	0.077	0.017	12.658			
22664	15685	1:BEBAN MATI	188.975	-936.364	-1.093	-0.184	-0.000	-4.783			
		2:BEBAN HIDL	43.805	-262.174	-0.397	-0.038	0.001	-1.409			
		3:BEBAN GEM	1.23E 3	16.180	7.454	0.127	-0.038	0.113			
		4:KOMBINASI	296.859	-1.54E 3	-1.947	-0.282	0.001	-7.994			
		5:KOMB B. MA	1.5E 3	-1.08E 3	6.495	-0.074	-0.039	-5.510			
	15585	1:BEBAN MATI	-188.975	1.22E 3	1.093	0.184	0.016	-11.112			
		2:BEBAN HIDL	-43.805	262.174	0.397	0.038	0.005	-2.447			
		3:BEBAN GEM	-1.23E 3	-16.180	-7.454	-0.127	-0.072	0.125			
		4:KOMBINASI	-296.859	1.89E 3	1.947	0.282	0.028	-17.250			
		5:KOMB B. MA	-1.5E 3	1.36E 3	-6.495	0.074	-0.056	-12.449			
22665	15687	1:BEBAN MATI	401.608	-2.93E 3	5.490	-1.670	-0.042	-6.434			
		2:BEBAN HIDL	83.683	-623.588	1.905	-0.456	-0.014	-2.210			
		3:BEBAN GEM	-56.211	-384.725	7.704	0.255	-0.048	3.762			
		4:KOMBINASI	615.822	-4.52E 3	9.637	-2.733	-0.073	-11.257			
		5:KOMB B. MA	392.796	-3.71E 3	14.722	-1.675	-0.101	-3.810			
	15517	1:BEBAN MATI	-401.608	3.38E 3	-5.490	1.670	-0.039	-40.005			
		2:BEBAN HIDL	-83.683	623.588	-1.905	0.456	-0.014	-6.963			
		3:BEBAN GEM	56.211	384.725	-7.704	-0.255	-0.065	-9.421			
		4:KOMBINASI	-615.822	5.06E 3	-9.637	2.733	-0.069	-59.146			
		5:KOMB B. MA	-392.796	4.16E 3	-14.722	1.675	-0.116	-54.075			
22666	15688	1:BEBAN MATI	255.931	-1E 3	-0.000	0.000	-0.000	-2.895			
		2:BEBAN HIDL	65.807	-274.294	-0.000	-0.000	0.000	-1.050			
		3:BEBAN GEM	-608.469	-6.800	0.939	-0.042	-0.008	0.394			
		4:KOMBINASI	412.408	-1.64E 3	-0.000	-0.000	0.000	-5.154			
		5:KOMB B. MA	-343.478	-1.18E 3	0.986	-0.044	-0.008	-3.112			
	15601	1:BEBAN MATI	-255.931	1.29E 3	0.000	-0.000	0.000	-14.008			
		2:BEBAN HIDL	-65.807	274.294	0.000	0.000	0.000	-2.985			
		3:BEBAN GEM	608.469	6.800	-0.939	0.042	-0.006	-0.494			
		4:KOMBINASI	-412.408	1.99E 3	0.000	0.000	0.000	-21.585			
		5:KOMB B. MA	343.478	1.46E 3	-0.986	0.044	-0.006	-16.317			
22667	15690	1:BEBAN MATI	401.608	-2.93E 3	-5.490	1.670	0.042	-6.434			
		2:BEBAN HIDL	83.683	-623.587	-1.905	0.456	0.014	-2.210			
		3:BEBAN GEM	-132.302	-367.703	-7.819	0.325	0.047	4.080			
		4:KOMBINASI	615.822	-4.52E 3	-9.637	2.733	0.073	-11.257			
		5:KOMB B. MA	312.901	-3.69E 3	-14.843	2.285	0.100	-3.476			
	15520	1:BEBAN MATI	-401.608	3.38E 3	5.490	-1.670	0.039	-40.005			
		2:BEBAN HIDL	-83.683	623.587	1.905	-0.456	0.014	-6.963			
		3:BEBAN GEM	132.302	367.703	7.819	-0.325	0.068	-9.489			
		4:KOMBINASI	-615.822	5.06E 3	9.637	-2.733	0.069	-59.146			
		5:KOMB B. MA	-312.901	4.14E 3	14.843	-2.285	0.119	-54.146			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 564	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22668	15691	1:BEBAN MATI	277.225	2.18E 3	-0.067	0.385	0.001	-7.554			
		2:BEBAN HIDL	79.868	435.781	0.232	0.067	-0.002	-2.008			
		3:BEBAN GEM	1.39E 3	-73.799	-6.854	0.560	0.032	-0.945			
		4:KOMBINASI	460.459	3.31E 3	0.291	0.568	-0.002	-12.278			
		5:KOMB B. MA	1.79E 3	2.36E 3	-7.125	1.013	0.033	-9.752			
	15601	1:BEBAN MATI	-277.225	-1.73E 3	0.067	-0.385	0.000	36.243			
		2:BEBAN HIDL	-79.868	-435.781	-0.232	-0.067	-0.002	8.418			
		3:BEBAN GEM	-1.39E 3	73.799	6.854	-0.560	0.069	-0.140			
		4:KOMBINASI	-460.459	-2.77E 3	-0.291	-0.568	-0.002	56.961			
		5:KOMB B. MA	-1.79E 3	-1.91E 3	7.125	-1.013	0.072	41.147			
22669	15692	1:BEBAN MATI	306.109	-3.25E 3	-1.084	-0.579	0.004	-6.685			
		2:BEBAN HIDL	91.638	-775.057	-1.265	-0.089	0.009	-1.802			
		3:BEBAN GEM	1.39E 3	-105.742	10.232	-0.944	-0.096	1.380			
		4:KOMBINASI	513.951	-5.14E 3	-3.325	-0.837	0.019	-10.905			
		5:KOMB B. MA	1.82E 3	-3.83E 3	8.900	-1.623	-0.092	-6.317			
	15520	1:BEBAN MATI	-306.109	3.7E 3	1.084	0.579	0.012	-44.487			
		2:BEBAN HIDL	-91.638	775.057	1.265	0.089	0.010	-9.599			
		3:BEBAN GEM	-1.39E 3	105.742	-10.232	0.944	-0.054	-2.935			
		4:KOMBINASI	-513.951	5.68E 3	3.325	0.837	0.030	-68.743			
		5:KOMB B. MA	-1.82E 3	4.28E 3	-8.900	1.623	-0.039	-53.328			
22670	15693	1:BEBAN MATI	319.929	789.214	-1.215	0.439	0.007	-8.806			
		2:BEBAN HIDL	122.790	226.656	-0.199	0.193	0.001	-1.412			
		3:BEBAN GEM	-93.868	-121.102	-7.152	0.208	0.045	-1.786			
		4:KOMBINASI	580.379	1.31E 3	-1.777	0.835	0.009	-12.827			
		5:KOMB B. MA	295.041	798.050	-8.844	0.773	0.054	-11.528			
	15696	1:BEBAN MATI	-319.929	-428.821	1.215	-0.439	0.008	15.973			
		2:BEBAN HIDL	-122.790	-226.656	0.199	-0.193	0.002	4.080			
		3:BEBAN GEM	93.868	121.102	7.152	-0.208	0.039	0.361			
		4:KOMBINASI	-580.379	-877.234	1.777	-0.835	0.012	25.695			
		5:KOMB B. MA	-295.041	-437.657	8.844	-0.773	0.050	18.799			
22671	15695	1:BEBAN MATI	230.790	1.07E 3	-0.643	1.471	-0.002	-1.750			
		2:BEBAN HIDL	60.768	164.502	-0.669	0.424	0.002	-0.587			
		3:BEBAN GEM	173.062	-478.205	4.834	-0.133	-0.021	-4.472			
		4:KOMBINASI	374.177	1.54E 3	-1.842	2.444	0.001	-3.039			
		5:KOMB B. MA	448.965	664.000	4.031	1.586	-0.023	-6.798			
	15552	1:BEBAN MATI	-230.790	-707.021	0.643	-1.471	0.009	12.191			
		2:BEBAN HIDL	-60.768	-164.502	0.669	-0.424	0.006	2.523			
		3:BEBAN GEM	-173.062	478.205	-4.834	0.133	-0.036	-1.155			
		4:KOMBINASI	-374.177	-1.11E 3	1.842	-2.444	0.020	18.665			
		5:KOMB B. MA	-448.965	-303.607	-4.031	-1.586	-0.025	12.492			
22672	15696	1:BEBAN MATI	242.834	-664.010	1.792	-0.084	-0.010	-15.892			
		2:BEBAN HIDL	88.184	-143.742	0.870	-0.001	-0.005	-4.081			
		3:BEBAN GEM	-90.452	-120.508	-2.844	-0.189	0.020	-0.329			
		4:KOMBINASI	432.495	-1.03E 3	3.542	-0.101	-0.020	-25.600			
		5:KOMB B. MA	200.770	-876.789	-0.673	-0.283	0.007	-18.686			
	15698	1:BEBAN MATI	-242.834	1.02E 3	-1.792	0.084	-0.011	5.958			
		2:BEBAN HIDL	-88.184	143.742	-0.870	0.001	-0.005	2.389			
		3:BEBAN GEM	90.452	120.508	2.844	0.189	0.014	-1.089			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

565

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-432.495	1.46E 3	-3.542	0.101	-0.021	10.972			
		5:KOMB B. MA	-200.770	1.24E 3	0.673	0.283	0.001	6.248			
22673	15698	1:BEBAN MATI	216.852	-1.9E 3	8.956	-0.434	-0.054	-5.195			
		2:BEBAN HIDL	70.791	-422.692	3.849	-0.141	-0.023	-2.151			
		3:BEBAN GEM	-79.077	-130.895	6.657	-0.644	-0.043	1.107			
		4:KOMBINASI	373.488	-2.96E 3	16.905	-0.747	-0.100	-9.675			
		5:KOMB B. MA	176.295	-2.29E 3	18.255	-1.195	-0.112	-5.323			
	15483	1:BEBAN MATI	-216.852	2.26E 3	-8.956	0.434	-0.052	-19.329			
		2:BEBAN HIDL	-70.791	422.692	-3.849	0.141	-0.023	-2.824			
		3:BEBAN GEM	79.077	130.895	-6.657	0.644	-0.035	-2.647			
		4:KOMBINASI	-373.488	3.39E 3	-16.905	0.747	-0.098	-27.713			
		5:KOMB B. MA	-176.295	2.66E 3	-18.255	1.195	-0.103	-23.803			
22674	15700	1:BEBAN MATI	269.816	2.09E 3	0.769	-0.053	-0.006	-1.427			
		2:BEBAN HIDL	87.148	366.839	-0.131	-0.047	0.000	-1.156			
		3:BEBAN GEM	4.340	-451.703	9.388	-0.182	-0.048	-4.170			
		4:KOMBINASI	463.216	3.09E 3	0.713	-0.139	-0.006	-3.563			
		5:KOMB B. MA	326.662	1.83E 3	10.547	-0.272	-0.056	-6.500			
	15562	1:BEBAN MATI	-269.816	-1.73E 3	-0.769	0.053	-0.003	23.890			
		2:BEBAN HIDL	-87.148	-366.839	0.131	0.047	0.001	5.473			
		3:BEBAN GEM	-4.340	451.703	-9.388	0.182	-0.062	-1.145			
		4:KOMBINASI	-463.216	-2.66E 3	-0.713	0.139	-0.002	37.425			
		5:KOMB B. MA	-326.662	-1.47E 3	-10.547	0.272	-0.068	25.971			
22675	15701	1:BEBAN MATI	50.676	305.589	-0.374	-0.039	0.000	-6.133			
		2:BEBAN HIDL	17.044	61.736	0.078	0.054	-0.001	-1.630			
		3:BEBAN GEM	-56.100	-16.134	-1.527	-0.038	0.007	-0.334			
		4:KOMBINASI	88.082	465.485	-0.324	0.039	-0.002	-9.967			
		5:KOMB B. MA	1.998	325.690	-1.930	-0.047	0.007	-7.461			
	15702	1:BEBAN MATI	-50.676	-74.938	0.374	0.039	0.004	8.372			
		2:BEBAN HIDL	-17.044	-61.736	-0.078	-0.054	0.000	2.356			
		3:BEBAN GEM	56.100	16.134	1.527	0.038	0.011	0.144			
		4:KOMBINASI	-88.082	-188.704	0.324	-0.039	0.005	13.817			
		5:KOMB B. MA	-1.998	-95.039	1.930	0.047	0.016	9.937			
22676	15702	1:BEBAN MATI	88.476	-345.242	-0.161	-0.030	-0.002	-8.347			
		2:BEBAN HIDL	29.270	-115.030	0.251	0.061	-0.002	-2.352			
		3:BEBAN GEM	-98.667	-13.787	-1.966	0.024	0.010	-0.142			
		4:KOMBINASI	153.003	-598.339	0.208	0.062	-0.005	-13.780			
		5:KOMB B. MA	2.438	-428.736	-2.075	0.032	0.008	-9.908			
	15703	1:BEBAN MATI	-88.476	575.893	0.161	0.030	0.003	2.928			
		2:BEBAN HIDL	-29.270	115.030	-0.251	-0.061	-0.001	0.998			
		3:BEBAN GEM	98.667	13.787	1.966	-0.024	0.013	-0.020			
		4:KOMBINASI	-153.003	875.121	-0.208	-0.062	0.003	5.110			
		5:KOMB B. MA	-2.438	659.388	2.075	-0.032	0.017	3.506			
22677	15703	1:BEBAN MATI	93.373	-875.814	0.655	0.007	-0.002	-2.036			
		2:BEBAN HIDL	31.146	-255.707	0.542	0.048	-0.002	-0.720			
		3:BEBAN GEM	-140.394	0.152	-2.169	0.003	0.014	0.025			
		4:KOMBINASI	161.882	-1.46E 3	1.653	0.086	-0.005	-3.595			
		5:KOMB B. MA	-35.352	-1.03E 3	-1.298	0.040	0.012	-2.442			
	15562	1:BEBAN MATI	-93.373	1.11E 3	-0.655	-0.007	-0.006	-9.628			



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Job No 1	Sheet No 566	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-31.146	255.707	-0.542	-0.048	-0.004	-2.289			
		3:BEBAN GEM	140.394	-0.152	2.169	-0.003	0.011	-0.023			
		4:KOMBINASI	-161.882	1.74E 3	-1.653	-0.086	-0.014	-15.216			
		5:KOMB B. MA	35.352	1.26E 3	1.298	-0.040	0.003	-11.026			
22678	15705	1:BEBAN MATI	534.876	-1.18E 3	24.892	-3.101	-0.137	-3.834			
		2:BEBAN HIDL	129.086	-263.534	6.135	-0.993	-0.034	-0.492			
		3:BEBAN GEM	399.115	-488.498	9.179	0.260	-0.013	6.826			
		4:KOMBINASI	848.390	-1.83E 3	39.686	-5.310	-0.219	-5.388			
		5:KOMB B. MA	1.03E 3	-1.85E 3	38.211	-3.424	-0.171	3.038			
	15530	1:BEBAN MATI	-534.876	1.54E 3	-24.892	3.101	-0.156	-12.132			
		2:BEBAN HIDL	-129.086	263.534	-6.135	0.993	-0.038	-2.609			
		3:BEBAN GEM	-399.115	488.498	-9.179	-0.260	-0.095	-12.574			
		4:KOMBINASI	-848.390	2.27E 3	-39.686	5.310	-0.248	-18.733			
		5:KOMB B. MA	-1.03E 3	2.21E 3	-38.211	3.424	-0.278	-26.901			
22679	15708	1:BEBAN MATI	594.003	-2.14E 3	0.462	0.135	0.000	-8.580			
		2:BEBAN HIDL	212.179	-598.538	0.097	-0.014	-0.000	-1.049			
		3:BEBAN GEM	260.041	-471.085	0.917	0.327	0.008	6.573			
		4:KOMBINASI	1.05E 3	-3.53E 3	0.710	0.139	-0.000	-11.974			
		5:KOMB B. MA	994.355	-3E 3	1.484	0.470	0.008	-2.308			
	15531	1:BEBAN MATI	-594.003	2.51E 3	-0.462	-0.135	-0.005	-18.781			
		2:BEBAN HIDL	-212.179	598.538	-0.097	0.014	-0.001	-5.995			
		3:BEBAN GEM	-260.041	471.085	-0.917	-0.327	-0.019	-12.117			
		4:KOMBINASI	-1.05E 3	3.96E 3	-0.710	-0.139	-0.008	-32.129			
		5:KOMB B. MA	-994.355	3.36E 3	-1.484	-0.470	-0.026	-35.100			
22680	15709	1:BEBAN MATI	259.437	585.522	-3.325	1.344	0.015	-4.364			
		2:BEBAN HIDL	63.667	98.163	-0.880	0.450	0.003	-0.766			
		3:BEBAN GEM	-172.296	-131.372	1.076	0.197	-0.012	-2.007			
		4:KOMBINASI	413.192	859.688	-5.398	2.333	0.023	-6.463			
		5:KOMB B. MA	116.726	506.479	-2.723	1.821	0.004	-6.931			
	15710	1:BEBAN MATI	-259.437	-225.129	3.325	-1.344	0.024	9.134			
		2:BEBAN HIDL	-63.667	-98.163	0.880	-0.450	0.007	1.921			
		3:BEBAN GEM	172.296	131.372	-1.076	-0.197	-0.001	0.461			
		4:KOMBINASI	-413.192	-427.216	5.398	-2.333	0.041	14.035			
		5:KOMB B. MA	-116.726	-146.086	2.723	-1.821	0.028	10.771			
22681	15710	1:BEBAN MATI	199.537	-265.030	2.203	-0.380	-0.019	-9.178			
		2:BEBAN HIDL	53.938	-69.817	0.804	-0.136	-0.006	-1.935			
		3:BEBAN GEM	-145.151	-135.424	3.165	-0.121	-0.019	-0.449			
		4:KOMBINASI	325.745	-429.743	3.930	-0.674	-0.033	-14.110			
		5:KOMB B. MA	79.491	-449.115	6.008	-0.589	-0.043	-10.810			
	15711	1:BEBAN MATI	-199.537	625.423	-2.203	0.380	-0.007	3.938			
		2:BEBAN HIDL	-53.938	69.817	-0.804	0.136	-0.003	1.114			
		3:BEBAN GEM	145.151	135.424	-3.165	0.121	-0.018	-1.145			
		4:KOMBINASI	-325.745	862.214	-3.930	0.674	-0.013	6.508			
		5:KOMB B. MA	-79.491	809.508	-6.008	0.589	-0.028	3.404			
22682	15711	1:BEBAN MATI	269.259	-996.295	31.663	-1.622	-0.180	-3.471			
		2:BEBAN HIDL	85.350	-194.844	11.387	-0.554	-0.064	-0.955			
		3:BEBAN GEM	-79.562	-150.549	17.274	-0.528	-0.087	1.195			
		4:KOMBINASI	459.670	-1.51E 3	56.216	-2.832	-0.319	-5.693			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	236.928	-1.27E 3	56.634	-2.509	-0.310	-2.789			
	15531	1:BEAN MATI	-269.259	1.36E 3	-31.663	1.622	-0.192	-10.374			
		2:BEAN HIDL	-85.350	194.844	-11.387	0.554	-0.070	-1.338			
		3:BEAN GEM	79.562	150.549	-17.274	0.528	-0.116	-2.967			
		4:KOMBINASI	-459.670	1.94E 3	-56.216	2.832	-0.342	-14.589			
		5:KOMB B. MA	-236.928	1.63E 3	-56.634	2.509	-0.356	-14.292			
22683	15713	1:BEAN MATI	416.009	-2.04E 3	34.233	1.375	-0.082	-13.264			
		2:BEAN HIDL	135.019	-472.014	13.322	0.327	-0.032	-3.100			
		3:BEAN GEM	136.923	-331.406	84.277	0.289	-0.224	2.402			
		4:KOMBINASI	715.242	-3.21E 3	62.394	2.173	-0.148	-20.877			
		5:KOMB B. MA	640.790	-2.67E 3	130.717	1.875	-0.336	-12.602			
	15921	1:BEAN MATI	-416.009	2.19E 3	-34.233	-1.375	-0.086	2.881			
		2:BEAN HIDL	-135.019	472.014	-13.322	-0.327	-0.034	0.786			
		3:BEAN GEM	-136.923	331.406	-84.277	-0.289	-0.189	-4.027			
		4:KOMBINASI	-715.242	3.39E 3	-62.394	-2.173	-0.158	4.714			
		5:KOMB B. MA	-640.790	2.82E 3	-130.717	-1.875	-0.305	-0.876			
22684	15715	1:BEAN MATI	272.322	63.133	-93.141	3.078	0.217	-0.405			
		2:BEAN HIDL	95.691	35.386	-23.811	0.686	0.058	0.095			
		3:BEAN GEM	-1.32E 3	-729.627	-341.849	-0.241	0.738	-3.879			
		4:KOMBINASI	479.892	132.377	-149.866	4.790	0.354	-0.334			
		5:KOMB B. MA	-1.06E 3	-681.744	-466.368	3.236	1.027	-4.421			
	15841	1:BEAN MATI	-272.322	87.031	93.141	-3.078	0.239	0.347			
		2:BEAN HIDL	-95.691	-35.386	23.811	-0.686	0.059	0.079			
		3:BEAN GEM	1.32E 3	729.627	341.849	0.241	0.938	0.302			
		4:KOMBINASI	-479.892	47.819	149.866	-4.790	0.381	0.542			
		5:KOMB B. MA	1.06E 3	831.907	466.368	-3.236	1.260	0.710			
22685	15717	1:BEAN MATI	437.589	-2.76E 3	62.501	2.005	-0.071	10.524			
		2:BEAN HIDL	142.462	-620.000	23.986	0.595	-0.026	2.263			
		3:BEAN GEM	470.741	-364.604	217.378	0.232	-0.334	5.762			
		4:KOMBINASI	753.045	-4.31E 3	113.380	3.358	-0.126	16.250			
		5:KOMB B. MA	1.02E 3	-3.52E 3	305.139	2.606	-0.436	17.932			
	15925	1:BEAN MATI	-437.589	2.84E 3	-62.501	-2.005	-0.083	-17.385			
		2:BEAN HIDL	-142.462	620.000	-23.986	-0.595	-0.033	-3.784			
		3:BEAN GEM	-470.741	364.604	-217.378	-0.232	-0.199	-6.656			
		4:KOMBINASI	-753.045	4.4E 3	-113.380	-3.358	-0.152	-26.916			
		5:KOMB B. MA	-1.02E 3	3.59E 3	-305.139	-2.606	-0.312	-26.645			
22686	15719	1:BEAN MATI	76.930	-861.371	-7.622	1.041	0.054	3.175			
		2:BEAN HIDL	42.138	-171.941	-2.136	0.133	0.015	0.663			
		3:BEAN GEM	-809.098	-723.259	-21.818	-0.031	0.238	3.349			
		4:KOMBINASI	159.737	-1.31E 3	-12.565	1.462	0.089	4.871			
		5:KOMB B. MA	-747.340	-1.72E 3	-31.813	1.088	0.313	7.089			
	15514	1:BEAN MATI	-76.930	1.16E 3	7.622	-1.041	0.020	-13.094			
		2:BEAN HIDL	-42.138	171.941	2.136	-0.133	0.006	-2.349			
		3:BEAN GEM	809.098	723.259	21.818	0.031	-0.024	-10.441			
		4:KOMBINASI	-159.737	1.67E 3	12.565	-1.462	0.034	-19.472			
		5:KOMB B. MA	747.340	2.02E 3	31.813	-1.088	-0.001	-25.468			
22687	15720	1:BEAN MATI	-6.483	28.363	-5.341	-1.422	0.031	-2.075			
		2:BEAN HIDL	-6.570	-77.303	-1.515	-0.296	0.009	-1.252			



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Job No 1	Sheet No 568	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	749.189	-15.213	-55.308	0.130	0.332	-0.135			
		4:KOMBINASI	-18.292	-89.649	-8.832	-2.181	0.052	-4.494			
		5:KOMB B. MA	776.224	-33.992	-64.323	-1.463	0.385	-2.969			
	15721	1:BEBAN MATI	6.483	332.030	5.341	1.422	0.032	0.289			
		2:BEBAN HIDL	6.570	77.303	1.515	0.296	0.009	0.343			
		3:BEBAN GEM	-749.189	15.213	55.308	-0.130	0.319	-0.044			
		4:KOMBINASI	18.292	522.121	8.832	2.181	0.052	0.895			
		5:KOMB B. MA	-776.224	394.385	64.323	1.463	0.372	0.448			
22688	15721	1:BEBAN MATI	-17.896	-1.81E 3	-6.790	5.113	0.038	-0.239			
		2:BEBAN HIDL	-8.491	-591.362	-1.161	2.019	0.006	-0.321			
		3:BEBAN GEM	832.179	-23.162	-71.992	-0.368	0.534	0.019			
		4:KOMBINASI	-35.061	-3.12E 3	-10.005	9.366	0.055	-0.800			
		5:KOMB B. MA	850.797	-2.19E 3	-83.078	5.937	0.603	-0.412			
	15514	1:BEBAN MATI	17.896	2.17E 3	6.790	-5.113	0.042	-23.220			
		2:BEBAN HIDL	8.491	591.362	1.161	-2.019	0.008	-6.639			
		3:BEBAN GEM	-832.179	23.162	71.992	0.368	0.313	-0.291			
		4:KOMBINASI	35.061	3.55E 3	10.005	-9.366	0.063	-38.485			
		5:KOMB B. MA	-850.797	2.55E 3	83.078	-5.937	0.375	-27.509			
22689	15723	1:BEBAN MATI	439.962	1.58E 3	-2.784	2.546	0.003	5.537			
		2:BEBAN HIDL	130.045	281.358	-1.089	0.884	0.001	0.876			
		3:BEBAN GEM	-386.674	-339.436	2.183	-0.168	-0.017	-6.638			
		4:KOMBINASI	736.026	2.34E 3	-5.083	4.469	0.006	8.046			
		5:KOMB B. MA	111.981	1.39E 3	-1.145	2.899	-0.014	-0.907			
	15728	1:BEBAN MATI	-439.962	-1.28E 3	2.784	-2.546	0.024	8.452			
		2:BEBAN HIDL	-130.045	-281.358	1.089	-0.884	0.009	1.883			
		3:BEBAN GEM	386.674	339.436	-2.183	0.168	-0.004	3.310			
		4:KOMBINASI	-736.026	-1.98E 3	5.083	-4.469	0.044	13.156			
		5:KOMB B. MA	-111.981	-1.09E 3	1.145	-2.899	0.025	13.058			
22690	15726	1:BEBAN MATI	430.202	2.87E 3	1.002	0.043	-0.004	11.481			
		2:BEBAN HIDL	136.548	617.388	0.391	0.029	-0.002	1.974			
		3:BEBAN GEM	-249.741	-329.739	16.104	-0.181	-0.085	-6.424			
		4:KOMBINASI	734.719	4.43E 3	1.829	0.099	-0.007	16.937			
		5:KOMB B. MA	249.902	2.89E 3	18.147	-0.129	-0.093	5.921			
	15731	1:BEBAN MATI	-430.202	-2.56E 3	-1.002	-0.043	-0.006	15.145			
		2:BEBAN HIDL	-136.548	-617.388	-0.391	-0.029	-0.002	4.080			
		3:BEBAN GEM	249.741	329.739	-16.104	0.181	-0.073	3.190			
		4:KOMBINASI	-734.719	-4.07E 3	-1.829	-0.099	-0.011	24.702			
		5:KOMB B. MA	-249.902	-2.59E 3	-18.147	0.129	-0.084	20.942			
22691	15728	1:BEBAN MATI	410.434	913.738	0.302	1.587	-0.010	-8.788			
		2:BEBAN HIDL	119.110	156.428	-0.034	0.526	-0.003	-1.970			
		3:BEBAN GEM	-219.411	-333.600	2.272	-0.076	-0.010	-3.245			
		4:KOMBINASI	683.097	1.35E 3	0.307	2.746	-0.017	-13.697			
		5:KOMB B. MA	251.519	657.315	2.666	1.823	-0.022	-13.377			
	15558	1:BEBAN MATI	-410.434	-613.410	-0.302	-1.587	0.007	16.276			
		2:BEBAN HIDL	-119.110	-156.428	0.034	-0.526	0.003	3.504			
		3:BEBAN GEM	219.411	333.600	-2.272	0.076	-0.012	-0.026			
		4:KOMBINASI	-683.097	-986.377	-0.307	-2.746	0.014	25.137			
		5:KOMB B. MA	-251.519	-356.987	-2.666	-1.823	-0.004	18.351			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 569	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22692	15731	1:BEBAN MATI	442.158	1.83E 3	0.233	0.057	-0.000	-15.587			
		2:BEBAN HIDL	140.237	373.245	0.228	0.021	-0.001	-4.132			
		3:BEBAN GEM	-147.134	-319.079	19.460	-0.121	-0.089	-3.108			
		4:KOMBINASI	754.968	2.79E 3	0.644	0.102	-0.002	-25.316			
		5:KOMB B. MA	371.809	1.72E 3	20.803	-0.058	-0.094	-21.330			
15565	15565	1:BEBAN MATI	-442.158	-1.53E 3	-0.233	-0.057	-0.002	32.063			
		2:BEBAN HIDL	-140.237	-373.245	-0.228	-0.021	-0.001	7.792			
		3:BEBAN GEM	147.134	319.079	-19.460	0.121	-0.102	-0.021			
		4:KOMBINASI	-754.968	-2.43E 3	-0.644	-0.102	-0.004	50.943			
		5:KOMB B. MA	-371.809	-1.42E 3	-20.803	0.058	-0.110	36.716			
22693	15732	1:BEBAN MATI	-1.149	354.067	0.081	-0.048	-0.000	-7.701			
		2:BEBAN HIDL	2.393	85.138	-0.008	0.004	0.000	-2.150			
		3:BEBAN GEM	8.234	-8.725	-5.327	-0.025	0.032	-0.255			
		4:KOMBINASI	2.450	561.101	0.083	-0.051	-0.000	-12.682			
		5:KOMB B. MA	8.933	395.989	-5.518	-0.072	0.034	-9.259			
	15733	15733	1:BEBAN MATI	1.149	-123.415	-0.081	0.048	-0.001	10.510		
			2:BEBAN HIDL	-2.393	-85.138	0.008	-0.004	0.000	3.152		
			3:BEBAN GEM	-8.234	8.725	5.327	0.025	0.030	0.152		
			4:KOMBINASI	-2.450	-284.319	-0.083	0.051	-0.001	17.656		
			5:KOMB B. MA	-8.933	-165.337	5.518	0.072	0.031	12.561		
22694	15733	1:BEBAN MATI	22.625	-451.910	0.053	-0.051	-0.000	-10.455			
		2:BEBAN HIDL	11.074	-148.133	-0.010	0.004	0.000	-3.147			
		3:BEBAN GEM	8.465	-8.826	-6.874	0.021	0.039	-0.143			
		4:KOMBINASI	44.868	-779.305	0.047	-0.055	-0.000	-17.581			
		5:KOMB B. MA	38.158	-550.058	-7.171	-0.027	0.041	-12.493			
	15734	15734	1:BEBAN MATI	-22.625	682.562	-0.053	0.051	-0.000	3.779		
			2:BEBAN HIDL	-11.074	148.133	0.010	-0.004	0.000	1.404		
			3:BEBAN GEM	-8.465	8.826	6.874	-0.021	0.042	0.039		
			4:KOMBINASI	-44.868	1.06E 3	-0.047	0.055	-0.000	6.781		
			5:KOMB B. MA	-38.158	780.710	7.171	0.027	0.043	4.662		
22695	15734	1:BEBAN MATI	39.845	-999.042	0.037	-0.035	-0.000	-2.699			
		2:BEBAN HIDL	17.006	-295.187	-0.026	0.002	0.000	-1.073			
		3:BEBAN GEM	10.633	-1.248	-9.448	0.011	0.054	-0.027			
		4:KOMBINASI	75.025	-1.67E 3	0.003	-0.039	0.000	-4.956			
		5:KOMB B. MA	61.214	-1.18E 3	-9.899	-0.023	0.056	-3.371			
	15565	15565	1:BEBAN MATI	-39.845	1.23E 3	-0.037	0.035	-0.000	-10.415		
			2:BEBAN HIDL	-17.006	295.187	0.026	-0.002	0.000	-2.400		
			3:BEBAN GEM	-10.633	1.248	9.448	-0.011	0.057	0.012		
			4:KOMBINASI	-75.025	1.95E 3	-0.003	0.039	-0.000	-16.338		
			5:KOMB B. MA	-61.214	1.41E 3	9.899	0.023	0.060	-11.842		
22696	15736	1:BEBAN MATI	442.971	-1.24E 3	3.289	-2.578	-0.027	-8.873			
		2:BEBAN HIDL	133.149	-290.662	1.161	-0.884	-0.010	-1.786			
		3:BEBAN GEM	107.144	-338.575	1.859	0.210	-0.004	3.350			
		4:KOMBINASI	744.603	-1.95E 3	5.805	-4.507	-0.048	-13.505			
		5:KOMB B. MA	635.362	-1.77E 3	5.938	-2.888	-0.037	-6.427			
	15741	15741	1:BEBAN MATI	-442.971	1.54E 3	-3.289	2.578	-0.005	-4.749		
			2:BEBAN HIDL	-133.149	290.662	-1.161	0.884	-0.002	-1.064		
		3:BEBAN GEM	-107.144	338.575	-1.859	-0.210	-0.014	-6.670			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 570	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-744.603	2.31E 3	-5.805	4.507	-0.009	-7.402			
		5:KOMB B. MA	-635.362	2.07E 3	-5.938	2.888	-0.021	-12.392			
22697	15739	1:BEBAN MATI	426.389	-2.43E 3	-1.635	0.018	0.009	-16.448			
		2:BEBAN HIDL	135.607	-634.897	-0.326	-0.028	0.002	-3.901			
		3:BEBAN GEM	45.517	-322.970	16.830	0.186	-0.079	3.241			
		4:KOMBINASI	728.637	-3.93E 3	-2.483	-0.023	0.014	-25.979			
		5:KOMB B. MA	555.546	-3.15E 3	15.841	0.196	-0.072	-15.385			
	15744	1:BEBAN MATI	-426.389	2.73E 3	1.635	-0.018	0.007	-8.848			
		2:BEBAN HIDL	-135.607	634.897	0.326	0.028	0.001	-2.325			
		3:BEBAN GEM	-45.517	322.970	-16.830	-0.186	-0.086	-6.409			
		4:KOMBINASI	-728.637	4.29E 3	2.483	0.023	0.010	-14.337			
		5:KOMB B. MA	-555.546	3.45E 3	-15.841	-0.196	-0.083	-16.972			
22698	15741	1:BEBAN MATI	567.463	-1.79E 3	48.297	-3.312	-0.214	5.471			
		2:BEBAN HIDL	178.390	-377.380	16.848	-1.154	-0.074	1.292			
		3:BEBAN GEM	301.855	-354.697	8.268	0.164	-0.011	6.668			
		4:KOMBINASI	966.379	-2.75E 3	84.914	-5.820	-0.375	8.632			
		5:KOMB B. MA	991.444	-2.38E 3	67.088	-3.832	-0.269	13.248			
	15502	1:BEBAN MATI	-567.463	2.09E 3	-48.297	3.312	-0.260	-24.450			
		2:BEBAN HIDL	-178.390	377.380	-16.848	1.154	-0.091	-4.993			
		3:BEBAN GEM	-301.855	354.697	-8.268	-0.164	-0.071	-10.147			
		4:KOMBINASI	-966.379	3.11E 3	-84.914	5.820	-0.458	-37.329			
		5:KOMB B. MA	-991.444	2.68E 3	-67.088	3.832	-0.389	-38.100			
22699	15744	1:BEBAN MATI	409.201	-3.34E 3	-3.136	0.056	0.017	9.759			
		2:BEBAN HIDL	131.360	-839.719	-0.243	-0.025	0.002	2.588			
		3:BEBAN GEM	186.455	-357.803	18.658	0.273	-0.076	6.455			
		4:KOMBINASI	701.218	-5.35E 3	-4.152	0.027	0.023	15.852			
		5:KOMB B. MA	683.795	-4.22E 3	16.309	0.328	-0.062	18.089			
	15507	1:BEBAN MATI	-409.201	3.64E 3	3.136	-0.056	0.014	-44.001			
		2:BEBAN HIDL	-131.360	839.719	0.243	0.025	0.001	-10.823			
		3:BEBAN GEM	-186.455	357.803	-18.658	-0.273	-0.107	-9.964			
		4:KOMBINASI	-701.218	5.71E 3	4.152	-0.027	0.018	-70.118			
		5:KOMB B. MA	-683.795	4.52E 3	-16.309	-0.328	-0.098	-60.957			
22700	15745	1:BEBAN MATI	370.558	900.254	0.709	-0.017	-0.004	-8.384			
		2:BEBAN HIDL	130.084	254.549	0.191	0.013	-0.001	-1.541			
		3:BEBAN GEM	-52.021	-113.598	-9.312	0.210	0.063	-1.707			
		4:KOMBINASI	652.804	1.49E 3	1.156	0.001	-0.007	-12.527			
		5:KOMB B. MA	393.987	933.706	-8.955	0.212	0.061	-11.101			
	15746	1:BEBAN MATI	-370.558	-539.861	-0.709	0.017	-0.004	16.858			
		2:BEBAN HIDL	-130.084	-254.549	-0.191	-0.013	-0.001	4.537			
		3:BEBAN GEM	52.021	113.598	9.312	-0.210	0.047	0.370			
		4:KOMBINASI	-652.804	-1.06E 3	-1.156	-0.001	-0.006	27.488			
		5:KOMB B. MA	-393.987	-573.313	8.955	-0.212	0.045	19.968			
22701	15746	1:BEBAN MATI	265.952	-624.771	0.768	-0.004	-0.004	-16.801			
		2:BEBAN HIDL	91.987	-145.552	0.310	0.010	-0.002	-4.538			
		3:BEBAN GEM	-39.747	-113.820	-5.110	-0.184	0.035	-0.341			
		4:KOMBINASI	466.323	-982.609	1.418	0.012	-0.008	-27.423			
		5:KOMB B. MA	279.410	-831.613	-4.411	-0.191	0.031	-19.883			
	15747	1:BEBAN MATI	-265.952	985.164	-0.768	0.004	-0.005	7.329			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-91.987	145.552	-0.310	-0.010	-0.002	2.825			
		3:BEBAN GEM	39.747	113.820	5.110	0.184	0.025	-0.998			
		4:KOMBINASI	-466.323	1.42E 3	-1.418	-0.012	-0.009	13.315			
		5:KOMB B. MA	-279.410	1.19E 3	4.411	0.191	0.021	7.976			
22702	15747	1:BEBAN MATI	227.462	-1.88E 3	0.890	0.013	-0.004	-6.507			
		2:BEBAN HIDL	74.728	-438.560	0.582	0.004	-0.003	-2.563			
		3:BEBAN GEM	-16.550	-129.383	1.031	-0.621	-0.014	1.013			
		4:KOMBINASI	392.519	-2.96E 3	1.999	0.022	-0.010	-11.909			
		5:KOMB B. MA	254.920	-2.28E 3	2.322	-0.637	-0.021	-6.981			
	15507	1:BEBAN MATI	-227.462	2.24E 3	-0.890	-0.013	-0.006	-17.792			
		2:BEBAN HIDL	-74.728	438.560	-0.582	-0.004	-0.004	-2.598			
		3:BEBAN GEM	16.550	129.383	-1.031	0.621	0.002	-2.535			
		4:KOMBINASI	-392.519	3.4E 3	-1.999	-0.022	-0.013	-25.507			
		5:KOMB B. MA	-254.920	2.64E 3	-2.322	0.637	-0.006	-22.013			
22703	15749	1:BEBAN MATI	424.000	1.56E 3	-3.185	2.628	0.004	4.790			
		2:BEBAN HIDL	123.075	284.753	-1.074	0.866	0.001	1.021			
		3:BEBAN GEM	-86.301	-330.186	2.610	-0.166	-0.012	-6.513			
		4:KOMBINASI	705.720	2.32E 3	-5.541	4.539	0.006	7.381			
		5:KOMB B. MA	407.229	1.38E 3	-1.090	2.973	-0.009	-1.436			
	15754	1:BEBAN MATI	-424.000	-1.26E 3	3.185	-2.628	0.028	8.991			
		2:BEBAN HIDL	-123.075	-284.753	1.074	-0.866	0.009	1.772			
		3:BEBAN GEM	86.301	330.186	-2.610	0.166	-0.013	3.275			
		4:KOMBINASI	-705.720	-1.96E 3	5.541	-4.539	0.048	13.624			
		5:KOMB B. MA	-407.229	-1.08E 3	1.090	-2.973	0.019	13.492			
22704	15752	1:BEBAN MATI	418.685	2.72E 3	-0.499	-0.063	0.002	9.257			
		2:BEBAN HIDL	125.434	611.664	-0.294	0.006	0.001	2.300			
		3:BEBAN GEM	-164.741	-318.799	15.914	-0.188	-0.077	-6.259			
		4:KOMBINASI	703.116	4.25E 3	-1.069	-0.065	0.005	14.788			
		5:KOMB B. MA	320.967	2.76E 3	16.034	-0.257	-0.078	4.064			
	15757	1:BEBAN MATI	-418.685	-2.42E 3	0.499	0.063	0.003	15.989			
		2:BEBAN HIDL	-125.434	-611.664	0.294	-0.006	0.002	3.699			
		3:BEBAN GEM	164.741	318.799	-15.914	0.188	-0.079	3.133			
		4:KOMBINASI	-703.116	-3.89E 3	1.069	0.065	0.006	25.104			
		5:KOMB B. MA	-320.967	-2.46E 3	-16.034	0.257	-0.079	21.497			
22705	15754	1:BEBAN MATI	377.068	888.901	-0.286	1.635	-0.010	-9.338			
		2:BEBAN HIDL	107.099	160.393	-0.173	0.512	-0.003	-1.857			
		3:BEBAN GEM	73.652	-324.357	3.690	-0.074	-0.011	-3.212			
		4:KOMBINASI	623.840	1.32E 3	-0.619	2.782	-0.016	-14.176			
		5:KOMB B. MA	518.662	644.562	3.485	1.865	-0.023	-13.824			
	15548	1:BEBAN MATI	-377.068	-588.573	0.286	-1.635	0.012	16.583			
		2:BEBAN HIDL	-107.099	-160.393	0.173	-0.512	0.005	3.430			
		3:BEBAN GEM	-73.652	324.357	-3.690	0.074	-0.025	0.031			
		4:KOMBINASI	-623.840	-962.917	0.619	-2.782	0.022	25.386			
		5:KOMB B. MA	-518.662	-344.235	-3.485	-1.865	-0.011	18.673			
22706	15757	1:BEBAN MATI	423.445	1.7E 3	-1.282	-0.016	0.004	-16.377			
		2:BEBAN HIDL	128.195	371.113	-0.448	0.018	0.001	-3.746			
		3:BEBAN GEM	-81.960	-308.092	16.776	-0.126	-0.072	-3.054			
		4:KOMBINASI	713.245	2.64E 3	-2.255	0.009	0.007	-25.646			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	414.304	1.6E 3	16.064	-0.138	-0.071	-21.832			
	15564	1:BEBAN MATI	-423.445	-1.4E 3	1.282	0.016	0.009	31.624			
		2:BEBAN HIDL	-128.195	-371.113	0.448	-0.018	0.003	7.385			
		3:BEBAN GEM	81.960	308.092	-16.776	0.126	-0.092	0.033			
		4:KOMBINASI	-713.245	-2.28E 3	2.255	-0.009	0.015	49.766			
		5:KOMB B. MA	-414.304	-1.3E 3	-16.064	0.138	-0.086	36.090			
22707	15758	1:BEBAN MATI	15.067	362.170	0.217	0.004	-0.001	-7.656			
		2:BEBAN HIDL	6.821	84.143	0.062	0.001	-0.000	-2.159			
		3:BEBAN GEM	-21.175	-8.673	-4.131	-0.026	0.026	-0.258			
		4:KOMBINASI	28.994	569.233	0.360	0.005	-0.002	-12.642			
		5:KOMB B. MA	-3.074	403.550	-4.083	-0.024	0.025	-9.223			
	15759	1:BEBAN MATI	-15.067	-131.519	-0.217	-0.004	-0.001	10.561			
		2:BEBAN HIDL	-6.821	-84.143	-0.062	-0.001	-0.000	3.149			
		3:BEBAN GEM	21.175	8.673	4.131	0.026	0.023	0.156			
		4:KOMBINASI	-28.994	-292.451	-0.360	-0.005	-0.002	17.712			
		5:KOMB B. MA	3.074	-172.898	4.083	0.024	0.023	12.615			
22708	15759	1:BEBAN MATI	49.905	-442.423	0.275	-0.001	-0.002	-10.510			
		2:BEBAN HIDL	19.145	-148.854	0.077	-0.002	-0.000	-3.143			
		3:BEBAN GEM	-30.507	-8.787	-5.514	0.019	0.032	-0.146			
		4:KOMBINASI	90.518	-769.075	0.453	-0.005	-0.003	-17.640			
		5:KOMB B. MA	29.360	-540.962	-5.469	0.018	0.032	-12.549			
	15760	1:BEBAN MATI	-49.905	673.075	-0.275	0.001	-0.002	3.946			
		2:BEBAN HIDL	-19.145	148.854	-0.077	0.002	-0.000	1.391			
		3:BEBAN GEM	30.507	8.787	5.514	-0.019	0.033	0.043			
		4:KOMBINASI	-90.518	1.05E 3	-0.453	0.005	-0.003	6.961			
		5:KOMB B. MA	-29.360	771.614	5.469	-0.018	0.033	4.826			
22709	15760	1:BEBAN MATI	79.621	-989.118	0.424	-0.011	-0.002	-2.871			
		2:BEBAN HIDL	29.793	-295.148	0.120	-0.007	-0.001	-1.059			
		3:BEBAN GEM	-38.444	-0.913	-8.030	0.011	0.046	-0.031			
		4:KOMBINASI	143.213	-1.66E 3	0.701	-0.024	-0.004	-5.138			
		5:KOMB B. MA	57.131	-1.17E 3	-7.936	-0.004	0.046	-3.538			
	15564	1:BEBAN MATI	-79.621	1.22E 3	-0.424	0.011	-0.003	-10.126			
		2:BEBAN HIDL	-29.793	295.148	-0.120	0.007	-0.001	-2.415			
		3:BEBAN GEM	38.444	0.913	8.030	-0.011	0.048	0.020			
		4:KOMBINASI	-143.213	1.94E 3	-0.701	0.024	-0.004	-16.015			
		5:KOMB B. MA	-57.131	1.4E 3	7.936	0.004	0.047	-11.554			
22710	15762	1:BEBAN MATI	405.933	-1.27E 3	3.239	-2.645	-0.028	-8.852			
		2:BEBAN HIDL	116.973	-285.688	1.060	-0.875	-0.009	-1.760			
		3:BEBAN GEM	351.880	-329.613	2.047	0.214	-0.003	3.199			
		4:KOMBINASI	674.277	-1.98E 3	5.583	-4.575	-0.049	-13.438			
		5:KOMB B. MA	845.592	-1.79E 3	6.024	-2.946	-0.037	-6.550			
	15767	1:BEBAN MATI	-405.933	1.57E 3	-3.239	2.645	-0.004	-5.056			
		2:BEBAN HIDL	-116.973	285.688	-1.060	0.875	-0.001	-1.042			
		3:BEBAN GEM	-351.880	329.613	-2.047	-0.214	-0.017	-6.431			
		4:KOMBINASI	-674.277	2.34E 3	-5.583	4.575	-0.006	-7.734			
		5:KOMB B. MA	-845.592	2.09E 3	-6.024	2.946	-0.022	-12.434			
22711	15765	1:BEBAN MATI	417.809	-2.44E 3	-1.272	0.160	0.006	-15.884			
		2:BEBAN HIDL	126.042	-610.068	-0.242	0.045	0.001	-3.743			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 573	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	85.920	-311.848	12.561	0.194	-0.057	3.071			
		4:KOMBINASI	703.038	-3.9E 3	-1.913	0.263	0.009	-25.050			
		5:KOMB B. MA	583.650	-3.13E 3	11.772	0.390	-0.053	-14.905			
	15770	1:BEBAN MATI	-417.809	2.74E 3	1.272	-0.160	0.006	-9.506			
		2:BEBAN HIDL	-126.042	610.068	0.242	-0.045	0.001	-2.240			
		3:BEBAN GEM	-85.920	311.848	-12.561	-0.194	-0.066	-6.130			
		4:KOMBINASI	-703.038	4.26E 3	1.913	-0.263	0.010	-14.991			
		5:KOMB B. MA	-583.650	3.43E 3	-11.772	-0.390	-0.062	-17.286			
22712	15767	1:BEBAN MATI	536.813	-1.81E 3	48.279	-3.375	-0.213	5.787			
		2:BEBAN HIDL	161.068	-371.793	16.534	-1.141	-0.073	1.269			
		3:BEBAN GEM	522.271	-346.112	8.738	0.170	-0.012	6.427			
		4:KOMBINASI	901.885	-2.77E 3	84.390	-5.876	-0.373	8.974			
		5:KOMB B. MA	1.18E 3	-2.4E 3	67.374	-3.882	-0.270	13.296			
	15504	1:BEBAN MATI	-536.813	2.11E 3	-48.279	3.375	-0.260	-25.040			
		2:BEBAN HIDL	-161.068	371.793	-16.534	1.141	-0.089	-4.915			
		3:BEBAN GEM	-522.271	346.112	-8.738	-0.170	-0.074	-9.821			
		4:KOMBINASI	-901.885	3.13E 3	-84.390	5.876	-0.454	-37.912			
		5:KOMB B. MA	-1.18E 3	2.7E 3	-67.374	3.882	-0.391	-38.301			
22713	15770	1:BEBAN MATI	413.854	-3.36E 3	-1.329	0.152	0.009	10.421			
		2:BEBAN HIDL	122.751	-817.122	0.482	0.029	-0.002	2.498			
		3:BEBAN GEM	227.280	-346.951	14.131	0.283	-0.055	6.173			
		4:KOMBINASI	693.026	-5.34E 3	-0.823	0.229	0.008	16.503			
		5:KOMB B. MA	726.149	-4.22E 3	13.798	0.467	-0.050	18.402			
	15506	1:BEBAN MATI	-413.854	3.66E 3	1.329	-0.152	0.004	-44.851			
		2:BEBAN HIDL	-122.751	817.122	-0.482	-0.029	-0.003	-10.511			
		3:BEBAN GEM	-227.280	346.951	-14.131	-0.283	-0.084	-9.576			
		4:KOMBINASI	-693.026	5.7E 3	0.823	-0.229	0.000	-70.640			
		5:KOMB B. MA	-726.149	4.52E 3	-13.798	-0.467	-0.085	-61.213			
22714	15771	1:BEBAN MATI	374.754	884.032	0.149	0.018	-0.001	-8.384			
		2:BEBAN HIDL	130.384	246.798	0.090	-0.008	-0.001	-1.519			
		3:BEBAN GEM	-54.036	-116.347	-8.382	0.216	0.056	-1.732			
		4:KOMBINASI	658.318	1.46E 3	0.322	0.009	-0.003	-12.491			
		5:KOMB B. MA	396.246	909.947	-8.598	0.240	0.057	-11.114			
	15772	1:BEBAN MATI	-374.754	-523.639	-0.149	-0.018	-0.000	16.667			
		2:BEBAN HIDL	-130.384	-246.798	-0.090	0.008	-0.000	4.423			
		3:BEBAN GEM	54.036	116.347	8.382	-0.216	0.043	0.363			
		4:KOMBINASI	-658.318	-1.02E 3	-0.322	-0.009	-0.001	27.078			
		5:KOMB B. MA	-396.246	-549.554	8.598	-0.240	0.044	19.702			
22715	15772	1:BEBAN MATI	270.272	-644.825	0.449	-0.001	-0.003	-16.606			
		2:BEBAN HIDL	91.594	-154.157	0.056	-0.008	-0.000	-4.423			
		3:BEBAN GEM	-25.918	-115.521	-4.045	-0.184	0.029	-0.334			
		4:KOMBINASI	470.876	-1.02E 3	0.628	-0.015	-0.004	-27.004			
		5:KOMB B. MA	298.014	-858.617	-3.764	-0.200	0.027	-19.610			
	15773	1:BEBAN MATI	-270.272	1.01E 3	-0.449	0.001	-0.003	6.897			
		2:BEBAN HIDL	-91.594	154.157	-0.056	0.008	-0.000	2.609			
		3:BEBAN GEM	25.918	115.521	4.045	0.184	0.019	-1.025			
		4:KOMBINASI	-470.876	1.45E 3	-0.628	0.015	-0.003	12.450			
		5:KOMB B. MA	-298.014	1.22E 3	3.764	0.200	0.017	7.386			



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Job No 1	Sheet No 574	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22716	15773	1:BEBAN MATI	227.027	-1.91E 3	1.285	-0.022	-0.007	-6.073			
		2:BEBAN HIDL	71.411	-448.562	0.026	-0.007	0.000	-2.345			
		3:BEBAN GEM	15.534	-129.934	2.969	-0.627	-0.024	1.041			
		4:KOMBINASI	386.691	-3.01E 3	1.584	-0.037	-0.009	-11.040			
		5:KOMB B. MA	286.185	-2.32E 3	4.419	-0.685	-0.032	-6.387			
15506	15506	1:BEBAN MATI	-227.027	2.27E 3	-1.285	0.022	-0.008	-18.536			
		2:BEBAN HIDL	-71.411	448.562	-0.026	0.007	-0.000	-2.933			
		3:BEBAN GEM	-15.534	129.934	-2.969	0.627	-0.011	-2.570			
		4:KOMBINASI	-386.691	3.44E 3	-1.584	0.037	-0.010	-26.936			
		5:KOMB B. MA	-286.185	2.68E 3	-4.419	0.685	-0.020	-22.994			
22717	15775	1:BEBAN MATI	388.074	1.58E 3	-2.850	2.580	0.002	4.522			
		2:BEBAN HIDL	115.883	298.580	-1.046	0.868	0.001	1.002			
		3:BEBAN GEM	88.859	-352.519	2.369	-0.172	-0.011	-6.893			
		4:KOMBINASI	651.101	2.37E 3	-5.093	4.484	0.004	7.030			
		5:KOMB B. MA	550.905	1.39E 3	-0.989	2.920	-0.009	-2.115			
15780	15780	1:BEBAN MATI	-388.074	-1.28E 3	2.850	-2.580	0.026	9.494			
		2:BEBAN HIDL	-115.883	-298.580	1.046	-0.868	0.009	1.926			
		3:BEBAN GEM	-88.859	352.519	-2.369	0.172	-0.013	3.436			
		4:KOMBINASI	-651.101	-2.01E 3	5.093	-4.484	0.046	14.474			
		5:KOMB B. MA	-550.905	-1.09E 3	0.989	-2.920	0.018	14.258			
22718	15778	1:BEBAN MATI	400.446	2.76E 3	0.171	-0.122	-0.001	8.629			
		2:BEBAN HIDL	131.903	638.678	-0.169	-0.002	0.001	2.162			
		3:BEBAN GEM	-110.322	-342.483	14.711	-0.194	-0.071	-6.655			
		4:KOMBINASI	691.581	4.33E 3	-0.066	-0.149	0.000	13.814			
		5:KOMB B. MA	363.750	2.78E 3	15.516	-0.327	-0.075	2.939			
15783	15783	1:BEBAN MATI	-400.446	-2.46E 3	-0.171	0.122	-0.001	16.971			
		2:BEBAN HIDL	-131.903	-638.678	0.169	0.002	0.001	4.102			
		3:BEBAN GEM	110.322	342.483	-14.711	0.194	-0.073	3.296			
		4:KOMBINASI	-691.581	-3.97E 3	0.066	0.149	0.001	26.928			
		5:KOMB B. MA	-363.750	-2.48E 3	-15.516	0.327	-0.077	22.893			
22719	15780	1:BEBAN MATI	352.967	913.271	0.117	1.593	-0.011	-9.840			
		2:BEBAN HIDL	101.050	173.992	-0.112	0.512	-0.003	-2.012			
		3:BEBAN GEM	239.653	-346.580	3.938	-0.077	-0.011	-3.370			
		4:KOMBINASI	585.240	1.37E 3	-0.039	2.732	-0.019	-15.027			
		5:KOMB B. MA	665.232	653.757	4.185	1.819	-0.025	-14.585			
15550	15550	1:BEBAN MATI	-352.967	-612.944	-0.117	-1.593	0.010	17.323			
		2:BEBAN HIDL	-101.050	-173.992	0.112	-0.512	0.004	3.718			
		3:BEBAN GEM	-239.653	346.580	-3.938	0.077	-0.028	-0.029			
		4:KOMBINASI	-585.240	-1.01E 3	0.039	-2.732	0.019	26.738			
		5:KOMB B. MA	-665.232	-353.430	-4.185	-1.819	-0.016	19.524			
22720	15783	1:BEBAN MATI	410.972	1.74E 3	-0.589	-0.092	0.000	-17.374			
		2:BEBAN HIDL	135.639	396.898	-0.314	-0.003	0.001	-4.160			
		3:BEBAN GEM	-15.667	-331.545	15.877	-0.130	-0.067	-3.211			
		4:KOMBINASI	710.189	2.72E 3	-1.210	-0.115	0.001	-27.504			
		5:KOMB B. MA	475.905	1.63E 3	15.893	-0.230	-0.070	-23.241			
15563	15563	1:BEBAN MATI	-410.972	-1.44E 3	0.589	0.092	0.005	32.979			
		2:BEBAN HIDL	-135.639	-396.898	0.314	0.003	0.003	8.052			
		3:BEBAN GEM	15.667	331.545	-15.877	0.130	-0.089	-0.040			



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Job No 1	Sheet No 575	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-710.189	-2.36E 3	1.210	0.115	0.011	52.458			
		5:KOMB B. MA	-475.905	-1.33E 3	-15.893	0.230	-0.086	37.767			
22721	15784	1:BEBAN MATI	19.905	357.319	0.015	0.034	-0.001	-7.661			
		2:BEBAN HIDL	8.599	83.903	0.052	0.002	-0.000	-2.131			
		3:BEBAN GEM	-30.961	-9.229	-4.100	-0.025	0.025	-0.266			
		4:KOMBINASI	37.644	563.027	0.100	0.044	-0.002	-12.603			
		5:KOMB B. MA	-7.444	397.970	-4.260	0.009	0.025	-9.219			
	15785	1:BEBAN MATI	-19.905	-126.668	-0.015	-0.034	0.000	10.509			
		2:BEBAN HIDL	-8.599	-83.903	-0.052	-0.002	-0.000	3.118			
		3:BEBAN GEM	30.961	9.229	4.100	0.025	0.024	0.157			
		4:KOMBINASI	-37.644	-286.245	-0.100	-0.044	0.000	17.600			
		5:KOMB B. MA	7.444	-167.319	4.260	-0.009	0.025	12.545			
22722	15785	1:BEBAN MATI	52.338	-451.926	0.116	0.051	-0.001	-10.454			
		2:BEBAN HIDL	19.795	-150.774	0.074	0.006	-0.001	-3.112			
		3:BEBAN GEM	-41.460	-9.353	-5.384	0.022	0.031	-0.147			
		4:KOMBINASI	94.476	-783.549	0.258	0.071	-0.002	-17.523			
		5:KOMB B. MA	20.682	-552.210	-5.492	0.077	0.031	-12.475			
	15786	1:BEBAN MATI	-52.338	682.577	-0.116	-0.051	-0.000	3.778			
		2:BEBAN HIDL	-19.795	150.774	-0.074	-0.006	-0.000	1.337			
		3:BEBAN GEM	41.460	9.353	5.384	-0.022	0.032	0.037			
		4:KOMBINASI	-94.476	1.06E 3	-0.258	-0.071	-0.001	6.674			
		5:KOMB B. MA	-20.682	782.862	5.492	-0.077	0.034	4.620			
22723	15786	1:BEBAN MATI	77.610	-998.339	0.425	0.044	-0.002	-2.694			
		2:BEBAN HIDL	28.320	-297.488	0.181	0.007	-0.001	-1.004			
		3:BEBAN GEM	-53.361	-1.275	-7.408	0.011	0.043	-0.025			
		4:KOMBINASI	138.443	-1.67E 3	0.801	0.064	-0.004	-4.839			
		5:KOMB B. MA	38.573	-1.18E 3	-7.244	0.060	0.043	-3.322			
	15563	1:BEBAN MATI	-77.610	1.23E 3	-0.425	-0.044	-0.003	-10.412			
		2:BEBAN HIDL	-28.320	297.488	-0.181	-0.007	-0.001	-2.497			
		3:BEBAN GEM	53.361	1.275	7.408	-0.011	0.044	0.010			
		4:KOMBINASI	-138.443	1.95E 3	-0.801	-0.064	-0.006	-16.489			
		5:KOMB B. MA	-38.573	1.41E 3	7.244	-0.060	0.043	-11.900			
22724	15788	1:BEBAN MATI	417.381	-1.25E 3	3.989	-2.667	-0.029	-9.849			
		2:BEBAN HIDL	118.958	-274.071	1.366	-0.920	-0.010	-2.183			
		3:BEBAN GEM	499.481	-351.588	1.989	0.223	-0.000	3.480			
		4:KOMBINASI	691.190	-1.93E 3	6.972	-4.673	-0.052	-15.311			
		5:KOMB B. MA	1.01E 3	-1.78E 3	6.896	-2.985	-0.036	-7.504			
	15793	1:BEBAN MATI	-417.381	1.55E 3	-3.989	2.667	-0.010	-3.836			
		2:BEBAN HIDL	-118.958	274.071	-1.366	0.920	-0.003	-0.505			
		3:BEBAN GEM	-499.481	351.588	-1.989	-0.223	-0.019	-6.928			
		4:KOMBINASI	-691.190	2.29E 3	-6.972	4.673	-0.017	-5.411			
		5:KOMB B. MA	-1.01E 3	2.08E 3	-6.896	2.985	-0.032	-11.414			
22725	15791	1:BEBAN MATI	438.762	-2.43E 3	-0.578	0.076	0.002	-17.423			
		2:BEBAN HIDL	148.232	-592.624	-0.147	-0.006	0.001	-4.602			
		3:BEBAN GEM	168.811	-335.521	10.362	0.198	-0.046	3.386			
		4:KOMBINASI	763.685	-3.86E 3	-0.929	0.082	0.004	-28.271			
		5:KOMB B. MA	704.953	-3.14E 3	10.214	0.281	-0.045	-16.629			
	15796	1:BEBAN MATI	-438.762	2.73E 3	0.578	-0.076	0.003	-7.877			



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Job No

1

Sheet No

576

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-148.232	592.624	0.147	0.006	0.001	-1.210			
		3:BEBAN GEM	-168.811	335.521	-10.362	-0.198	-0.056	-6.676			
		4:KOMBINASI	-763.685	4.22E 3	0.929	-0.082	0.005	-11.388			
		5:KOMB B. MA	-704.953	3.44E 3	-10.214	-0.281	-0.055	-15.613			
22726	15793	1:BEBAN MATI	572.927	-1.81E 3	44.732	-3.428	-0.189	4.547			
		2:BEBAN HIDL	171.531	-366.636	16.538	-1.210	-0.071	0.729			
		3:BEBAN GEM	660.151	-368.076	9.316	0.179	-0.011	6.926			
		4:KOMBINASI	961.962	-2.75E 3	80.140	-6.051	-0.340	6.623			
		5:KOMB B. MA	1.37E 3	-2.41E 3	64.438	-3.966	-0.243	12.256			
	15481	1:BEBAN MATI	-572.927	2.11E 3	-44.732	3.428	-0.249	-23.729			
		2:BEBAN HIDL	-171.531	366.636	-16.538	1.210	-0.091	-4.325			
		3:BEBAN GEM	-660.151	368.076	-9.316	-0.179	-0.081	-10.535			
		4:KOMBINASI	-961.962	3.11E 3	-80.140	6.051	-0.446	-35.394			
		5:KOMB B. MA	-1.37E 3	2.71E 3	-64.438	3.966	-0.389	-37.386			
22727	15796	1:BEBAN MATI	486.701	-3.38E 3	-0.622	0.084	0.005	8.765			
		2:BEBAN HIDL	168.737	-809.338	0.542	-0.021	-0.002	1.453			
		3:BEBAN GEM	317.602	-371.149	9.957	0.291	-0.035	6.725			
		4:KOMBINASI	854.020	-5.35E 3	0.121	0.067	0.002	12.843			
		5:KOMB B. MA	921.425	-4.26E 3	10.159	0.377	-0.033	16.699			
	15483	1:BEBAN MATI	-486.701	3.68E 3	0.622	-0.084	0.001	-43.394			
		2:BEBAN HIDL	-168.737	809.338	-0.542	0.021	-0.003	-9.390			
		3:BEBAN GEM	-317.602	371.149	-9.957	-0.291	-0.063	-10.365			
		4:KOMBINASI	-854.020	5.71E 3	-0.121	-0.067	-0.004	-67.097			
		5:KOMB B. MA	-921.425	4.56E 3	-10.159	-0.377	-0.067	-59.911			
22728	15798	1:BEBAN MATI	412.696	2.14E 3	1.027	-0.526	-0.009	-7.090			
		2:BEBAN HIDL	123.386	418.497	0.090	-0.106	-0.001	-2.059			
		3:BEBAN GEM	-813.317	-294.800	30.533	-0.132	-0.220	-4.414			
		4:KOMBINASI	692.653	3.24E 3	1.377	-0.801	-0.012	-11.803			
		5:KOMB B. MA	-367.256	2.08E 3	33.141	-0.728	-0.241	-12.961			
	15579	1:BEBAN MATI	-412.696	-1.69E 3	-1.027	0.526	-0.006	35.299			
		2:BEBAN HIDL	-123.386	-418.497	-0.090	0.106	-0.000	8.215			
		3:BEBAN GEM	813.317	294.800	-30.533	0.132	-0.229	0.078			
		4:KOMBINASI	-692.653	-2.7E 3	-1.377	0.801	-0.008	55.504			
		5:KOMB B. MA	367.256	-1.63E 3	-33.141	0.728	-0.246	40.310			
22729	15799	1:BEBAN MATI	268.601	487.056	0.000	0.000	-0.000	-2.807			
		2:BEBAN HIDL	72.530	67.624	-0.000	0.000	0.000	-0.985			
		3:BEBAN GEM	-906.883	-29.998	2.577	0.038	-0.019	-0.537			
		4:KOMBINASI	438.368	692.666	0.000	0.000	-0.000	-4.944			
		5:KOMB B. MA	-640.109	496.133	2.706	0.040	-0.020	-3.962			
	15625	1:BEBAN MATI	-268.601	-198.742	-0.000	-0.000	-0.000	7.851			
		2:BEBAN HIDL	-72.530	-67.624	0.000	-0.000	-0.000	1.980			
		3:BEBAN GEM	906.883	29.998	-2.577	-0.038	-0.019	0.096			
		4:KOMBINASI	-438.368	-346.689	-0.000	-0.000	-0.000	12.588			
		5:KOMB B. MA	640.109	-207.819	-2.706	-0.040	-0.020	9.139			
22730	15801	1:BEBAN MATI	412.696	2.14E 3	-1.027	0.526	0.009	-7.090			
		2:BEBAN HIDL	123.386	418.497	-0.090	0.106	0.001	-2.059			
		3:BEBAN GEM	-773.084	-293.492	-16.976	-0.172	0.119	-4.354			
		4:KOMBINASI	692.653	3.24E 3	-1.377	0.801	0.012	-11.803			



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Job No

1

Sheet No

577

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-325.011	2.09E 3	-18.907	0.409	0.135	-12.897			
	15584	1:BEBAN MATI	-412.696	-1.69E 3	1.027	-0.526	0.006	35.299			
		2:BEBAN HIDL	-123.386	-418.497	0.090	-0.106	0.000	8.215			
		3:BEBAN GEM	773.084	293.492	16.976	0.172	0.130	0.036			
		4:KOMBINASI	-692.653	-2.7E 3	1.377	-0.801	0.008	55.503			
		5:KOMB B. MA	325.011	-1.64E 3	18.907	-0.409	0.143	40.267			
22731	15802	1:BEBAN MATI	153.906	488.360	-0.153	0.039	0.001	-2.643			
		2:BEBAN HIDL	44.126	75.384	-0.033	0.007	0.000	-0.878			
		3:BEBAN GEM	731.018	-5.861	-5.802	-0.135	0.027	-0.049			
		4:KOMBINASI	255.289	706.647	-0.236	0.057	0.002	-4.577			
		5:KOMB B. MA	947.950	527.437	-6.264	-0.098	0.030	-3.222			
	15625	1:BEBAN MATI	-153.906	-200.046	0.153	-0.039	0.001	7.707			
		2:BEBAN HIDL	-44.126	-75.384	0.033	-0.007	0.000	1.987			
		3:BEBAN GEM	-731.018	5.861	5.802	0.135	0.058	-0.037			
		4:KOMBINASI	-255.289	-360.670	0.236	-0.057	0.001	12.427			
		5:KOMB B. MA	-947.950	-239.122	6.264	0.098	0.062	8.860			
22732	15803	1:BEBAN MATI	151.175	-912.527	0.172	-0.084	-0.002	-1.940			
		2:BEBAN HIDL	42.066	-259.822	0.027	-0.018	-0.000	-0.705			
		3:BEBAN GEM	625.056	1.250	5.350	0.111	-0.042	0.218			
		4:KOMBINASI	248.716	-1.51E 3	0.249	-0.130	-0.002	-3.457			
		5:KOMB B. MA	832.724	-1.07E 3	5.805	0.021	-0.046	-2.134			
	15584	1:BEBAN MATI	-151.175	1.2E 3	-0.172	0.084	-0.001	-13.604			
		2:BEBAN HIDL	-42.066	259.822	-0.027	0.018	-0.000	-3.116			
		3:BEBAN GEM	-625.056	-1.250	-5.350	-0.111	-0.036	-0.200			
		4:KOMBINASI	-248.716	1.86E 3	-0.249	0.130	-0.001	-21.311			
		5:KOMB B. MA	-832.724	1.36E 3	-5.805	-0.021	-0.039	-15.684			
22733	15805	1:BEBAN MATI	375.934	-3.26E 3	0.902	0.019	-0.006	-5.455			
		2:BEBAN HIDL	113.501	-797.442	0.338	-0.017	-0.002	-1.242			
		3:BEBAN GEM	-955.637	-362.781	53.745	0.316	-0.372	4.375			
		4:KOMBINASI	632.723	-5.19E 3	1.623	-0.004	-0.011	-8.533			
		5:KOMB B. MA	-559.384	-4.12E 3	57.537	0.341	-0.398	-1.606			
	15516	1:BEBAN MATI	-375.934	3.71E 3	-0.902	-0.019	-0.007	-45.783			
		2:BEBAN HIDL	-113.501	797.442	-0.338	0.017	-0.003	-10.488			
		3:BEBAN GEM	955.637	362.781	-53.745	-0.316	-0.419	-9.712			
		4:KOMBINASI	-632.723	5.73E 3	-1.623	0.004	-0.013	-71.721			
		5:KOMB B. MA	559.384	4.57E 3	-57.537	-0.341	-0.449	-62.273			
22734	15806	1:BEBAN MATI	257.162	-916.033	-0.000	-0.000	0.000	-2.025			
		2:BEBAN HIDL	71.762	-264.706	-0.000	-0.000	0.000	-0.604			
		3:BEBAN GEM	-1.8E 3	5.539	6.260	-0.026	-0.045	0.581			
		4:KOMBINASI	423.415	-1.52E 3	-0.000	-0.000	0.000	-3.396			
		5:KOMB B. MA	-1.59E 3	-1.07E 3	6.573	-0.028	-0.048	-1.777			
	15604	1:BEBAN MATI	-257.162	1.2E 3	0.000	0.000	0.000	-13.571			
		2:BEBAN HIDL	-71.762	264.706	0.000	0.000	0.000	-3.290			
		3:BEBAN GEM	1.8E 3	-5.539	-6.260	0.026	-0.047	-0.499			
		4:KOMBINASI	-423.415	1.87E 3	0.000	0.000	0.000	-21.549			
		5:KOMB B. MA	1.59E 3	1.36E 3	-6.573	0.028	-0.049	-16.069			
22735	15808	1:BEBAN MATI	375.934	-3.26E 3	-0.902	-0.019	0.006	-5.455			
		2:BEBAN HIDL	113.501	-797.442	-0.338	0.017	0.002	-1.242			



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Job No 1	Sheet No 578	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-845.853	-355.340	-33.472	0.213	0.229	4.334			
		4:KOMBINASI	632.723	-5.19E 3	-1.623	0.004	0.011	-8.533			
		5:KOMB B. MA	-444.111	-4.11E 3	-36.250	0.215	0.248	-1.650			
	15519	1:BEBAN MATI	-375.934	3.71E 3	0.902	0.019	0.007	-45.783			
		2:BEBAN HIDL	-113.501	797.442	0.338	-0.017	0.003	-10.488			
		3:BEBAN GEM	845.853	355.340	33.472	-0.213	0.264	-9.561			
		4:KOMBINASI	-632.723	5.73E 3	1.623	-0.004	0.013	-71.721			
		5:KOMB B. MA	444.111	4.56E 3	36.250	-0.215	0.286	-62.115			
22736	15809	1:BEBAN MATI	302.113	2.12E 3	-0.123	-0.016	0.001	-5.379			
		2:BEBAN HIDL	90.591	432.273	-0.089	0.009	0.001	-1.542			
		3:BEBAN GEM	1.24E 3	-78.033	-20.905	0.531	0.073	-1.116			
		4:KOMBINASI	507.482	3.23E 3	-0.291	-0.005	0.003	-8.922			
		5:KOMB B. MA	1.66E 3	2.3E 3	-22.127	0.546	0.078	-7.476			
	15604	1:BEBAN MATI	-302.113	-1.67E 3	0.123	0.016	0.001	33.224			
		2:BEBAN HIDL	-90.591	-432.273	0.089	-0.009	0.000	7.901			
		3:BEBAN GEM	-1.24E 3	78.033	20.905	-0.531	0.235	-0.032			
		4:KOMBINASI	-507.482	-2.69E 3	0.291	0.005	0.002	52.510			
		5:KOMB B. MA	-1.66E 3	-1.85E 3	22.127	-0.546	0.247	37.931			
22737	15810	1:BEBAN MATI	306.531	-3.17E 3	-0.117	0.016	0.002	-4.516			
		2:BEBAN HIDL	92.817	-769.475	0.209	-0.018	-0.001	-1.335			
		3:BEBAN GEM	1.05E 3	-94.384	41.461	-0.902	-0.303	1.170			
		4:KOMBINASI	516.345	-5.04E 3	0.193	-0.010	-0.000	-7.555			
		5:KOMB B. MA	1.46E 3	-3.73E 3	43.542	-0.942	-0.317	-4.089			
	15519	1:BEBAN MATI	-306.531	3.62E 3	0.117	-0.016	0.000	-45.463			
		2:BEBAN HIDL	-92.817	769.475	-0.209	0.018	-0.002	-9.984			
		3:BEBAN GEM	-1.05E 3	94.384	-41.461	0.902	-0.307	-2.558			
		4:KOMBINASI	-516.345	5.58E 3	-0.193	0.010	-0.003	-70.530			
		5:KOMB B. MA	-1.46E 3	4.18E 3	-43.542	0.942	-0.323	-54.139			
22738	15812	1:BEBAN MATI	381.700	2.16E 3	0.646	-0.039	-0.005	-5.382			
		2:BEBAN HIDL	104.576	433.812	0.119	-0.015	-0.001	-1.275			
		3:BEBAN GEM	-345.104	-285.323	11.744	-0.148	-0.144	-4.174			
		4:KOMBINASI	625.361	3.28E 3	0.967	-0.071	-0.008	-8.499			
		5:KOMB B. MA	82.086	2.12E 3	13.049	-0.203	-0.156	-10.530			
	15578	1:BEBAN MATI	-381.700	-1.7E 3	-0.646	0.039	-0.004	33.770			
		2:BEBAN HIDL	-104.576	-433.812	-0.119	0.015	-0.001	7.656			
		3:BEBAN GEM	345.104	285.323	-11.744	0.148	-0.029	-0.023			
		4:KOMBINASI	-625.361	-2.74E 3	-0.967	0.071	-0.007	52.773			
		5:KOMB B. MA	-82.086	-1.67E 3	-13.049	0.203	-0.035	38.339			
22739	15813	1:BEBAN MATI	243.096	491.947	0.000	0.000	-0.000	-2.613			
		2:BEBAN HIDL	68.398	77.055	-0.000	0.000	0.000	-0.732			
		3:BEBAN GEM	-4.65E 3	-27.140	41.879	0.035	-0.263	-0.527			
		4:KOMBINASI	401.151	713.625	0.000	0.000	0.000	-4.307			
		5:KOMB B. MA	-4.6E 3	509.683	43.973	0.037	-0.276	-3.606			
	15615	1:BEBAN MATI	-243.096	-203.633	-0.000	-0.000	-0.000	7.729			
		2:BEBAN HIDL	-68.398	-77.055	0.000	-0.000	-0.000	1.865			
		3:BEBAN GEM	4.65E 3	27.140	-41.879	-0.035	-0.353	0.128			
		4:KOMBINASI	-401.151	-367.647	-0.000	-0.000	-0.000	12.260			
		5:KOMB B. MA	4.6E 3	-221.368	-43.973	-0.037	-0.371	8.983			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

579

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22740	15815	1:BEBAN MATI	381.700	2.16E 3	-0.646	0.039	0.005	-5.382			
		2:BEBAN HIDL	104.576	433.811	-0.119	0.015	0.001	-1.275			
		3:BEBAN GEM	-750.577	-290.076	11.805	-0.168	-0.075	-4.177			
		4:KOMBINASI	625.361	3.28E 3	-0.967	0.071	0.008	-8.499			
		5:KOMB B. MA	-343.661	2.11E 3	11.677	-0.128	-0.073	-10.533			
15583	15583	1:BEBAN MATI	-381.700	-1.7E 3	0.646	-0.039	0.004	33.770			
		2:BEBAN HIDL	-104.576	-433.811	0.119	-0.015	0.001	7.656			
		3:BEBAN GEM	750.577	290.076	-11.805	0.168	-0.099	-0.090			
		4:KOMBINASI	-625.361	-2.74E 3	0.967	-0.071	0.007	52.773			
		5:KOMB B. MA	343.661	-1.66E 3	-11.677	0.128	-0.099	38.269			
22741	15816	1:BEBAN MATI	219.687	489.368	0.024	0.003	-0.000	-2.527			
		2:BEBAN HIDL	65.504	73.669	0.011	0.003	-0.000	-0.826			
		3:BEBAN GEM	1.45E 3	-5.955	-46.965	-0.125	0.386	-0.129			
		4:KOMBINASI	368.431	705.113	0.047	0.007	-0.000	-4.354			
		5:KOMB B. MA	1.79E 3	527.317	-49.283	-0.127	0.405	-3.158			
15615	15615	1:BEBAN MATI	-219.687	-201.054	-0.024	-0.003	-0.000	7.605			
		2:BEBAN HIDL	-65.504	-73.669	-0.011	-0.003	-0.000	1.910			
		3:BEBAN GEM	-1.45E 3	5.955	46.965	0.125	0.305	0.042			
		4:KOMBINASI	-368.431	-359.135	-0.047	-0.007	-0.000	12.182			
		5:KOMB B. MA	-1.79E 3	-239.003	49.283	0.127	0.320	8.794			
22742	15817	1:BEBAN MATI	219.500	-906.987	-0.124	-0.004	0.001	-1.801			
		2:BEBAN HIDL	65.740	-256.634	-0.047	-0.005	0.000	-0.652			
		3:BEBAN GEM	387.853	3.833	61.235	0.104	-0.444	0.114			
		4:KOMBINASI	368.585	-1.5E 3	-0.224	-0.014	0.002	-3.204			
		5:KOMB B. MA	666.191	-1.06E 3	64.145	0.101	-0.465	-2.072			
15583	15583	1:BEBAN MATI	-219.500	1.2E 3	0.124	0.004	0.001	-13.662			
		2:BEBAN HIDL	-65.740	256.634	0.047	0.005	0.000	-3.123			
		3:BEBAN GEM	-387.853	-3.833	-61.235	-0.104	-0.457	-0.058			
		4:KOMBINASI	-368.585	1.84E 3	0.224	0.014	0.001	-21.390			
		5:KOMB B. MA	-666.191	1.35E 3	-64.145	-0.101	-0.479	-15.596			
22743	15819	1:BEBAN MATI	393.895	-3.19E 3	-0.433	0.024	0.004	-4.885			
		2:BEBAN HIDL	106.784	-763.857	-0.068	-0.023	0.001	-1.170			
		3:BEBAN GEM	937.887	-346.639	-33.680	0.258	0.339	4.203			
		4:KOMBINASI	643.529	-5.06E 3	-0.628	-0.008	0.005	-7.734			
		5:KOMB B. MA	1.44E 3	-4.02E 3	-35.838	0.281	0.360	-1.174			
15515	15515	1:BEBAN MATI	-393.895	3.64E 3	0.433	-0.024	0.003	-45.414			
		2:BEBAN HIDL	-106.784	763.857	0.068	0.023	0.000	-10.066			
		3:BEBAN GEM	-937.887	346.639	33.680	-0.258	0.157	-9.302			
		4:KOMBINASI	-643.529	5.6E 3	0.628	0.008	0.004	-70.602			
		5:KOMB B. MA	-1.44E 3	4.47E 3	35.838	-0.281	0.167	-61.220			
22744	15820	1:BEBAN MATI	238.431	-897.687	-0.000	-0.000	0.000	-2.069			
		2:BEBAN HIDL	67.557	-257.894	-0.000	-0.000	0.000	-0.600			
		3:BEBAN GEM	10.2E 3	7.217	-122.967	-0.029	0.860	0.515			
		4:KOMBINASI	394.208	-1.49E 3	-0.000	-0.000	0.000	-3.442			
		5:KOMB B. MA	11E 3	-1.04E 3	-129.115	-0.031	0.903	-1.888			
15607	15607	1:BEBAN MATI	-238.431	1.19E 3	0.000	0.000	0.000	-13.257			
		2:BEBAN HIDL	-67.557	257.894	0.000	0.000	0.000	-3.194			
		3:BEBAN GEM	-10.2E 3	-7.217	122.967	0.029	0.948	-0.409			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

580

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-394.208	1.84E 3	0.000	0.000	0.000	0.000	-21.018		
		5:KOMB B. MA	-11E 3	1.33E 3	129.115	0.031	0.996	-15.602			
22745	15822	1:BEBAN MATI	393.895	-3.19E 3	0.433	-0.024	-0.004	-4.885			
		2:BEBAN HIDL	106.784	-763.857	0.068	0.023	-0.001	-1.170			
		3:BEBAN GEM	168.326	-339.820	25.681	0.271	-0.208	4.197			
		4:KOMBINASI	643.529	-5.06E 3	0.628	0.008	-0.005	-7.734			
		5:KOMB B. MA	634.708	-4.01E 3	27.438	0.274	-0.223	-1.180			
	15518	1:BEBAN MATI	-393.895	3.64E 3	-0.433	0.024	-0.003	-45.414			
		2:BEBAN HIDL	-106.784	763.857	-0.068	-0.023	-0.000	-10.066			
		3:BEBAN GEM	-168.326	339.820	-25.681	-0.271	-0.170	-9.196			
		4:KOMBINASI	-643.529	5.6E 3	-0.628	-0.008	-0.004	-70.602			
		5:KOMB B. MA	-634.708	4.46E 3	-27.438	-0.274	-0.181	-61.109			
22746	15823	1:BEBAN MATI	357.094	2.11E 3	-0.099	0.040	0.001	-5.241			
		2:BEBAN HIDL	109.231	430.008	0.034	0.006	-0.000	-1.416			
		3:BEBAN GEM	-1.6E 3	-80.020	-218.341	0.551	1.403	-1.134			
		4:KOMBINASI	603.282	3.22E 3	-0.064	0.057	0.001	-8.555			
		5:KOMB B. MA	-1.26E 3	2.29E 3	-229.337	0.621	1.474	-7.282			
	15607	1:BEBAN MATI	-357.094	-1.66E 3	0.099	-0.040	0.001	33.026			
		2:BEBAN HIDL	-109.231	-430.008	-0.034	-0.006	-0.000	7.741			
		3:BEBAN GEM	1.6E 3	80.020	218.341	-0.551	1.809	-0.043			
		4:KOMBINASI	-603.282	-2.68E 3	0.064	-0.057	0.000	52.018			
		5:KOMB B. MA	1.26E 3	-1.84E 3	229.337	-0.621	1.900	37.626			
22747	15824	1:BEBAN MATI	354.017	-3.16E 3	0.532	-0.066	-0.004	-4.372			
		2:BEBAN HIDL	108.846	-765.815	-0.093	-0.010	0.001	-1.208			
		3:BEBAN GEM	1.37E 3	-91.110	213.776	-0.926	-1.531	1.134			
		4:KOMBINASI	598.973	-5.02E 3	0.489	-0.095	-0.003	-7.179			
		5:KOMB B. MA	1.86E 3	-3.72E 3	224.941	-1.044	-1.611	-3.906			
	15518	1:BEBAN MATI	-354.017	3.61E 3	-0.532	0.066	-0.004	-45.483			
		2:BEBAN HIDL	-108.846	765.815	0.093	0.010	0.001	-10.057			
		3:BEBAN GEM	-1.37E 3	91.110	-213.776	0.926	-1.613	-2.474			
		4:KOMBINASI	-598.973	5.56E 3	-0.489	0.095	-0.004	-70.671			
		5:KOMB B. MA	-1.86E 3	4.17E 3	-224.941	1.044	-1.698	-54.115			
22748	15826	1:BEBAN MATI	384.186	2.14E 3	0.016	-0.060	-0.001	-7.021			
		2:BEBAN HIDL	112.901	438.353	-0.026	-0.012	0.000	-1.596			
		3:BEBAN GEM	1.25E 3	-299.226	26.856	-0.159	-0.193	-4.405			
		4:KOMBINASI	641.664	3.27E 3	-0.023	-0.091	-0.001	-10.979			
		5:KOMB B. MA	1.76E 3	2.09E 3	28.199	-0.234	-0.204	-12.604			
	15577	1:BEBAN MATI	-384.186	-1.69E 3	-0.016	0.060	0.000	35.165			
		2:BEBAN HIDL	-112.901	-438.353	0.026	0.012	0.000	8.044			
		3:BEBAN GEM	-1.25E 3	299.226	-26.856	0.159	-0.202	0.003			
		4:KOMBINASI	-641.664	-2.73E 3	0.023	0.091	0.001	55.069			
		5:KOMB B. MA	-1.76E 3	-1.64E 3	-28.199	0.234	-0.211	39.995			
22749	15827	1:BEBAN MATI	231.180	499.731	0.000	0.000	-0.000	-3.184			
		2:BEBAN HIDL	66.292	79.617	0.000	0.000	-0.000	-0.858			
		3:BEBAN GEM	3E 3	-31.621	-11.938	0.035	0.095	-0.589			
		4:KOMBINASI	383.484	727.063	0.000	0.000	-0.000	-5.194			
		5:KOMB B. MA	3.42E 3	514.299	-12.535	0.037	0.100	-4.317			
	15618	1:BEBAN MATI	-231.180	-211.416	-0.000	-0.000	-0.000	8.414			



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Job No

1

Sheet No

581

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-66.292	-79.617	-0.000	-0.000	-0.000	-0.000	2.029		
		3:BEBAN GEM	-3E 3	31.621	11.938	-0.035	0.081	0.124			
		4:KOMBINASI	-383.484	-381.086	-0.000	-0.000	-0.000	13.344			
		5:KOMB B. MA	-3.42E 3	-225.984	12.535	-0.037	0.085	9.762			
22750	15829	1:BEBAN MATI	384.186	2.14E 3	-0.016	0.060	0.001	-7.021			
		2:BEBAN HIDL	112.901	438.353	0.026	0.012	-0.000	-1.596			
		3:BEBAN GEM	1.3E 3	-303.613	-64.172	-0.156	0.457	-4.382			
		4:KOMBINASI	641.664	3.27E 3	0.023	0.091	0.001	-10.979			
		5:KOMB B. MA	1.82E 3	2.08E 3	-67.381	-0.097	0.480	-12.579			
	15582	1:BEBAN MATI	-384.186	-1.69E 3	0.016	-0.060	-0.000	35.165			
		2:BEBAN HIDL	-112.901	-438.353	-0.026	-0.012	-0.000	8.044			
		3:BEBAN GEM	-1.3E 3	303.613	64.172	0.156	0.487	-0.084			
		4:KOMBINASI	-641.664	-2.73E 3	-0.023	-0.091	-0.001	55.069			
		5:KOMB B. MA	-1.82E 3	-1.63E 3	67.381	0.097	0.511	39.903			
22751	15830	1:BEBAN MATI	236.051	493.883	-0.055	-0.001	0.000	-2.445			
		2:BEBAN HIDL	72.760	76.422	-0.015	0.002	0.000	-0.775			
		3:BEBAN GEM	-866.071	-6.879	-9.750	-0.126	0.042	-0.116			
		4:KOMBINASI	399.677	714.935	-0.090	0.001	0.000	-4.173			
		5:KOMB B. MA	-629.667	532.513	-10.302	-0.133	0.044	-3.031			
	15618	1:BEBAN MATI	-236.051	-205.568	0.055	0.001	0.001	7.589			
		2:BEBAN HIDL	-72.760	-76.422	0.015	-0.002	0.000	1.899			
		3:BEBAN GEM	866.071	6.879	9.750	0.126	0.102	0.015			
		4:KOMBINASI	-399.677	-368.957	0.090	-0.001	0.001	12.145			
		5:KOMB B. MA	629.667	-244.198	10.302	0.133	0.108	8.744			
22752	15831	1:BEBAN MATI	229.424	-912.564	0.073	0.000	-0.000	-1.709			
		2:BEBAN HIDL	70.605	-260.037	0.021	-0.001	-0.000	-0.596			
		3:BEBAN GEM	-493.556	4.838	15.616	0.102	-0.106	0.122			
		4:KOMBINASI	388.277	-1.51E 3	0.120	-0.002	-0.000	-3.005			
		5:KOMB B. MA	-246.446	-1.06E 3	16.482	0.106	-0.111	-1.939			
	15582	1:BEBAN MATI	-229.424	1.2E 3	-0.073	-0.000	-0.001	-13.836			
		2:BEBAN HIDL	-70.605	260.037	-0.021	0.001	-0.000	-3.229			
		3:BEBAN GEM	493.556	-4.838	-15.616	-0.102	-0.124	-0.050			
		4:KOMBINASI	-388.277	1.86E 3	-0.120	0.002	-0.002	-21.769			
		5:KOMB B. MA	246.446	1.35E 3	-16.482	-0.106	-0.131	-15.826			
22753	15833	1:BEBAN MATI	474.026	-3.25E 3	-0.539	0.060	0.004	-5.746			
		2:BEBAN HIDL	136.496	-775.217	-0.082	0.012	0.001	-1.462			
		3:BEBAN GEM	1.58E 3	-359.927	26.251	0.272	-0.199	4.395			
		4:KOMBINASI	787.224	-5.14E 3	-0.777	0.091	0.007	-9.235			
		5:KOMB B. MA	2.22E 3	-4.09E 3	26.976	0.352	-0.204	-2.009			
	15489	1:BEBAN MATI	-474.026	3.7E 3	0.539	-0.060	0.003	-45.345			
		2:BEBAN HIDL	-136.496	775.217	0.082	-0.012	0.000	-9.941			
		3:BEBAN GEM	-1.58E 3	359.927	-26.251	-0.272	-0.187	-9.690			
		4:KOMBINASI	-787.224	5.68E 3	0.777	-0.091	0.005	-70.320			
		5:KOMB B. MA	-2.22E 3	4.54E 3	-26.976	-0.352	-0.193	-61.484			
22754	15834	1:BEBAN MATI	208.436	-871.337	-0.000	0.000	0.000	-3.076			
		2:BEBAN HIDL	60.492	-247.044	-0.000	0.000	0.000	-0.909			
		3:BEBAN GEM	1.55E 3	-0.712	-4.198	-0.029	0.030	0.626			
		4:KOMBINASI	346.911	-1.44E 3	-0.000	0.000	0.000	-5.145			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 582	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	1.87E 3	-1.02E 3	-4.408	-0.031	0.032	-2.963			
	15610	1:BEAN MATI	-208.436	1.16E 3	0.000	-0.000	0.000	-11.862			
		2:BEAN HIDL	-60.492	247.044	0.000	-0.000	0.000	-2.725			
		3:BEAN GEM	-1.55E 3	0.712	4.198	0.029	0.032	-0.637			
		4:KOMBINASI	-346.911	1.79E 3	0.000	-0.000	0.000	-18.595			
		5:KOMB B. MA	-1.87E 3	1.31E 3	4.408	0.031	0.033	-14.166			
22755	15836	1:BEAN MATI	474.026	-3.25E 3	0.539	-0.060	-0.004	-5.746			
		2:BEAN HIDL	136.496	-775.216	0.082	-0.012	-0.001	-1.462			
		3:BEAN GEM	1.65E 3	-351.630	-48.469	0.267	0.361	4.390			
		4:KOMBINASI	787.224	-5.14E 3	0.777	-0.091	-0.007	-9.235			
		5:KOMB B. MA	2.29E 3	-4.08E 3	-50.305	0.213	0.374	-2.015			
	15491	1:BEAN MATI	-474.026	3.7E 3	-0.539	0.060	-0.003	-45.345			
		2:BEAN HIDL	-136.496	775.216	-0.082	0.012	-0.000	-9.941			
		3:BEAN GEM	-1.65E 3	351.630	48.469	-0.267	0.352	-9.562			
		4:KOMBINASI	-787.224	5.68E 3	-0.777	0.091	-0.005	-70.320			
		5:KOMB B. MA	-2.29E 3	4.53E 3	50.305	-0.213	0.366	-61.350			
22756	15837	1:BEAN MATI	372.815	1.94E 3	-1.789	0.405	0.015	-4.839			
		2:BEAN HIDL	117.388	376.723	-0.514	0.113	0.005	-1.305			
		3:BEAN GEM	-1.2E 3	-76.463	-8.309	0.517	0.028	-1.146			
		4:KOMBINASI	635.198	2.93E 3	-2.969	0.667	0.026	-7.895			
		5:KOMB B. MA	-820.511	2.09E 3	-10.822	1.016	0.047	-6.825			
	15610	1:BEAN MATI	-372.815	-1.49E 3	1.789	-0.405	0.011	30.093			
		2:BEAN HIDL	-117.388	-376.723	0.514	-0.113	0.003	6.847			
		3:BEAN GEM	1.2E 3	76.463	8.309	-0.517	0.095	0.021			
		4:KOMBINASI	-635.198	-2.39E 3	2.969	-0.667	0.018	47.067			
		5:KOMB B. MA	820.511	-1.64E 3	10.822	-1.016	0.112	34.224			
22757	15838	1:BEAN MATI	366.801	-2.92E 3	6.596	-0.673	-0.050	-3.992			
		2:BEAN HIDL	116.730	-690.507	1.917	-0.177	-0.015	-1.110			
		3:BEAN GEM	-947.649	-96.395	23.976	-0.902	-0.184	1.150			
		4:KOMBINASI	626.928	-4.61E 3	10.982	-1.090	-0.084	-6.566			
		5:KOMB B. MA	-558.193	-3.43E 3	32.921	-1.726	-0.252	-3.450			
	15491	1:BEAN MATI	-366.801	3.37E 3	-6.596	0.673	-0.047	-42.237			
		2:BEAN HIDL	-116.730	690.507	-1.917	0.177	-0.013	-9.048			
		3:BEAN GEM	947.649	96.395	-23.976	0.902	-0.169	-2.568			
		4:KOMBINASI	-626.928	5.15E 3	-10.982	1.090	-0.078	-65.160			
		5:KOMB B. MA	558.193	3.88E 3	-32.921	1.726	-0.232	-50.362			
22758	15839	1:BEAN MATI	96.066	728.474	1.881	0.028	-0.012	1.040			
		2:BEAN HIDL	10.221	118.519	0.637	-0.042	-0.004	0.281			
		3:BEAN GEM	1.19E 3	-26.331	-3.593	0.242	0.018	-0.723			
		4:KOMBINASI	131.633	1.06E 3	3.277	-0.035	-0.022	1.698			
		5:KOMB B. MA	1.35E 3	771.938	-1.509	0.256	0.004	0.450			
	15555	1:BEAN MATI	-96.066	-440.160	-1.881	-0.028	-0.015	7.555			
		2:BEAN HIDL	-10.221	-118.519	-0.637	0.042	-0.005	1.462			
		3:BEAN GEM	-1.19E 3	26.331	3.593	-0.242	0.035	0.336			
		4:KOMBINASI	-131.633	-717.822	-3.277	0.035	-0.027	11.406			
		5:KOMB B. MA	-1.35E 3	-483.623	1.509	-0.256	0.018	8.785			
22759	15841	1:BEAN MATI	93.803	-590.306	106.856	0.353	-0.319	-0.542			
		2:BEAN HIDL	43.484	-128.791	28.814	-0.058	-0.087	-0.099			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

583

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-151.011	-722.693	394.819	-0.038	-1.116	-0.254			
		4:KOMBINASI	182.138	-914.433	174.330	0.331	-0.521	-0.809			
		5:KOMB B. MA	-38.668	-1.43E 3	538.705	0.278	-1.543	-0.868			
	15719	1:BEBAN MATI	-93.803	740.470	-106.856	-0.353	-0.205	-2.720			
		2:BEBAN HIDL	-43.484	128.791	-28.814	0.058	-0.055	-0.533			
		3:BEBAN GEM	151.011	722.693	-394.819	0.038	-0.820	-3.290			
		4:KOMBINASI	-182.138	1.09E 3	-174.330	-0.331	-0.334	-4.117			
		5:KOMB B. MA	38.668	1.58E 3	-538.705	-0.278	-1.099	-6.494			
22760	15842	1:BEBAN MATI	49.686	-545.457	-0.246	-0.543	0.003	-0.742			
		2:BEBAN HIDL	15.073	-168.250	0.003	-0.082	0.000	-0.526			
		3:BEBAN GEM	-140.144	7.163	7.703	-0.035	-0.056	0.142			
		4:KOMBINASI	83.741	-923.748	-0.290	-0.783	0.004	-1.732			
		5:KOMB B. MA	-88.421	-638.885	7.844	-0.629	-0.056	-0.909			
	15602	1:BEBAN MATI	-49.686	833.771	0.246	0.543	0.001	-9.402			
		2:BEBAN HIDL	-15.073	168.250	-0.003	0.082	-0.000	-1.949			
		3:BEBAN GEM	140.144	-7.163	-7.703	0.035	-0.057	-0.036			
		4:KOMBINASI	-83.741	1.27E 3	0.290	0.783	0.000	-14.401			
		5:KOMB B. MA	88.421	927.200	-7.844	0.629	-0.060	-10.610			
22761	15843	1:BEBAN MATI	182.102	-775.835	-9.702	-0.222	0.076	-2.106			
		2:BEBAN HIDL	39.030	-188.417	-2.294	-0.010	0.018	-0.378			
		3:BEBAN GEM	1.91E 3	-5.611	-23.287	0.115	0.125	0.337			
		4:KOMBINASI	280.971	-1.23E 3	-15.313	-0.283	0.120	-3.131			
		5:KOMB B. MA	2.21E 3	-894.776	-35.531	-0.107	0.218	-1.978			
	15580	1:BEBAN MATI	-182.102	1.06E 3	9.702	0.222	0.067	-11.427			
		2:BEBAN HIDL	-39.030	188.417	2.294	0.010	0.016	-2.394			
		3:BEBAN GEM	-1.91E 3	5.611	23.287	-0.115	0.218	-0.420			
		4:KOMBINASI	-280.971	1.58E 3	15.313	0.283	0.105	-17.543			
		5:KOMB B. MA	-2.21E 3	1.18E 3	35.531	0.107	0.305	-13.304			
22762	15845	1:BEBAN MATI	388.778	1.95E 3	5.061	-0.206	-0.035	-5.967			
		2:BEBAN HIDL	100.027	423.439	1.560	-0.085	-0.011	-0.617			
		3:BEBAN GEM	740.175	-147.878	-28.800	0.445	0.201	-2.272			
		4:KOMBINASI	626.577	3.01E 3	8.569	-0.383	-0.059	-8.147			
		5:KOMB B. MA	1.23E 3	2.05E 3	-24.243	0.210	0.169	-8.723			
	15602	1:BEBAN MATI	-388.778	-1.5E 3	-5.061	0.206	-0.039	31.303			
		2:BEBAN HIDL	-100.027	-423.439	-1.560	0.085	-0.012	6.846			
		3:BEBAN GEM	-740.175	147.878	28.800	-0.445	0.223	0.097			
		4:KOMBINASI	-626.577	-2.47E 3	-8.569	0.383	-0.067	48.517			
		5:KOMB B. MA	-1.23E 3	-1.6E 3	24.243	-0.210	0.187	35.513			
22763	15846	1:BEBAN MATI	212.818	-2.89E 3	-3.637	1.712	0.026	-6.335			
		2:BEBAN HIDL	44.551	-645.247	-1.801	0.462	0.013	-1.842			
		3:BEBAN GEM	1.1E 3	-147.683	-8.181	-0.938	0.026	1.778			
		4:KOMBINASI	326.663	-4.51E 3	-7.246	2.792	0.052	-10.549			
		5:KOMB B. MA	1.4E 3	-3.44E 3	-13.308	1.004	0.061	-5.574			
	15517	1:BEBAN MATI	-212.818	3.34E 3	3.637	-1.712	0.028	-39.553			
		2:BEBAN HIDL	-44.551	645.247	1.801	-0.462	0.013	-7.650			
		3:BEBAN GEM	-1.1E 3	147.683	8.181	0.938	0.094	-3.950			
		4:KOMBINASI	-326.663	5.05E 3	7.246	-2.792	0.055	-59.703			
		5:KOMB B. MA	-1.4E 3	3.89E 3	13.308	-1.004	0.134	-48.290			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 584	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22764	15848	1:BEBAN MATI	329.945	1.05E 3	-4.737	2.838	0.033	-7.274			
		2:BEBAN HIDL	97.704	148.845	-1.266	0.796	0.009	-1.938			
		3:BEBAN GEM	-975.913	-344.957	2.442	-0.117	-0.040	-4.983			
		4:KOMBINASI	552.260	1.5E 3	-7.711	4.680	0.055	-11.830			
		5:KOMB B. MA	-636.142	776.310	-2.933	3.193	-0.004	-13.670			
15575	15575	1:BEBAN MATI	-329.945	-598.717	4.737	-2.838	0.036	19.395			
		2:BEBAN HIDL	-97.704	-148.845	1.266	-0.796	0.010	4.127			
		3:BEBAN GEM	975.913	344.957	-2.442	0.117	0.005	-0.091			
		4:KOMBINASI	-552.260	-956.612	7.711	-4.680	0.059	29.878			
		5:KOMB B. MA	636.142	-325.818	2.933	-3.193	0.047	21.776			
22765	15849	1:BEBAN MATI	199.063	465.668	-0.259	-0.110	-0.000	-5.119			
		2:BEBAN HIDL	56.804	65.402	-0.138	-0.043	0.001	-1.525			
		3:BEBAN GEM	-137.375	-41.140	19.028	0.096	-0.143	-0.710			
		4:KOMBINASI	329.762	663.445	-0.531	-0.200	0.001	-8.583			
		5:KOMB B. MA	88.902	461.712	19.638	-0.034	-0.150	-6.779			
15623	15623	1:BEBAN MATI	-199.063	-177.353	0.259	0.110	0.004	9.848			
		2:BEBAN HIDL	-56.804	-65.402	0.138	0.043	0.002	2.487			
		3:BEBAN GEM	137.375	41.140	-19.028	-0.096	-0.137	0.105			
		4:KOMBINASI	-329.762	-317.468	0.531	0.200	0.007	15.798			
		5:KOMB B. MA	-88.902	-173.398	-19.638	0.034	-0.139	11.451			
22766	15851	1:BEBAN MATI	55.540	270.193	1.267	0.010	-0.008	-8.476			
		2:BEBAN HIDL	15.136	24.813	0.427	0.006	-0.003	-2.065			
		3:BEBAN GEM	123.203	-13.156	-16.641	-0.172	0.121	-0.322			
		4:KOMBINASI	90.865	363.933	2.205	0.022	-0.014	-13.474			
		5:KOMB B. MA	193.984	271.268	-15.950	-0.167	0.117	-10.053			
15623	15623	1:BEBAN MATI	-55.540	18.121	-1.267	-0.010	-0.011	10.330			
		2:BEBAN HIDL	-15.136	-24.813	-0.427	-0.006	-0.004	2.430			
		3:BEBAN GEM	-123.203	13.156	16.641	0.172	0.124	0.129			
		4:KOMBINASI	-90.865	-17.956	-2.205	-0.022	-0.018	16.283			
		5:KOMB B. MA	-193.984	17.047	15.950	0.167	0.117	11.923			
22767	15852	1:BEBAN MATI	144.419	-996.289	-0.160	0.116	0.001	-2.839			
		2:BEBAN HIDL	39.503	-274.490	-0.025	0.030	0.000	-0.868			
		3:BEBAN GEM	408.980	-6.055	-15.673	0.063	0.108	0.223			
		4:KOMBINASI	236.507	-1.63E 3	-0.232	0.188	0.001	-4.796			
		5:KOMB B. MA	597.549	-1.17E 3	-16.631	0.201	0.114	-3.125			
15579	15579	1:BEBAN MATI	-144.419	1.28E 3	0.160	-0.116	0.001	-13.937			
		2:BEBAN HIDL	-39.503	274.490	0.025	-0.030	0.000	-3.170			
		3:BEBAN GEM	-408.980	6.055	15.673	-0.063	0.123	-0.312			
		4:KOMBINASI	-236.507	1.98E 3	0.232	-0.188	0.002	-21.796			
		5:KOMB B. MA	-597.549	1.46E 3	16.631	-0.201	0.131	-16.167			
22768	15854	1:BEBAN MATI	330.977	-1.78E 3	33.027	-3.873	-0.241	-2.885			
		2:BEBAN HIDL	88.862	-382.256	9.320	-1.095	-0.068	-0.598			
		3:BEBAN GEM	1.37E 3	-373.140	40.129	0.143	-0.205	5.102			
		4:KOMBINASI	539.352	-2.74E 3	54.544	-6.400	-0.398	-4.419			
		5:KOMB B. MA	1.82E 3	-2.4E 3	80.755	-4.380	-0.497	2.113			
15513	15513	1:BEBAN MATI	-330.977	2.23E 3	-33.027	3.873	-0.245	-26.545			
		2:BEBAN HIDL	-88.862	382.256	-9.320	1.095	-0.069	-5.025			
		3:BEBAN GEM	-1.37E 3	373.140	-40.129	-0.143	-0.385	-10.591			



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Job No 1	Sheet No 585	Rev
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By Jeronio.G	Date 26-Mar-15	Chd
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Client Teknik Sipil

Job Title Skripsi Value Enggining

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-539.352	3.28E 3	-54.544	6.400	-0.404	-39.893			
		5:KOMB B. MA	-1.82E 3	2.85E 3	-80.755	4.380	-0.691	-40.680			
22769	15855	1:BEBAN MATI	217.711	-988.949	1.315	-0.060	-0.009	-2.520			
		2:BEBAN HIDL	63.121	-285.169	0.365	-0.011	-0.002	-0.720			
		3:BEBAN GEM	-142.765	-1.274	20.852	0.000	-0.148	0.701			
		4:KOMBINASI	362.248	-1.64E 3	2.162	-0.089	-0.014	-4.177			
		5:KOMB B. MA	105.681	-1.16E 3	23.428	-0.066	-0.166	-2.216			
	15605	1:BEBAN MATI	-217.711	1.28E 3	-1.315	0.060	-0.011	-14.148			
		2:BEBAN HIDL	-63.121	285.169	-0.365	0.011	-0.003	-3.475			
		3:BEBAN GEM	142.765	1.274	-20.852	-0.000	-0.158	-0.720			
		4:KOMBINASI	-362.248	1.99E 3	-2.162	0.089	-0.018	-22.537			
		5:KOMB B. MA	-105.681	1.45E 3	-23.428	0.066	-0.179	-16.988			
22770	15857	1:BEBAN MATI	475.564	2.07E 3	1.469	0.307	-0.012	-10.704			
		2:BEBAN HIDL	134.105	452.815	0.625	0.065	-0.005	-1.962			
		3:BEBAN GEM	148.020	-79.521	-46.393	0.544	0.342	-1.308			
		4:KOMBINASI	785.245	3.21E 3	2.762	0.472	-0.023	-15.984			
		5:KOMB B. MA	711.449	2.26E 3	-46.870	0.917	0.344	-13.255			
	15605	1:BEBAN MATI	-475.564	-1.62E 3	-1.469	-0.307	-0.009	37.901			
		2:BEBAN HIDL	-134.105	-452.815	-0.625	-0.065	-0.004	8.623			
		3:BEBAN GEM	-148.020	79.521	46.393	-0.544	0.340	0.139			
		4:KOMBINASI	-785.245	-2.67E 3	-2.762	-0.472	-0.018	59.277			
		5:KOMB B. MA	-711.449	-1.81E 3	46.870	-0.917	0.345	43.220			
22771	15858	1:BEBAN MATI	344.555	-3.35E 3	-0.988	0.004	0.008	-6.645			
		2:BEBAN HIDL	96.285	-783.280	0.051	-0.011	-0.000	-1.830			
		3:BEBAN GEM	408.465	-110.690	-39.467	-0.963	0.286	1.239			
		4:KOMBINASI	567.521	-5.27E 3	-1.104	-0.013	0.009	-10.902			
		5:KOMB B. MA	831.213	-3.93E 3	-42.398	-1.014	0.309	-6.442			
	15516	1:BEBAN MATI	-344.555	3.8E 3	0.988	-0.004	0.007	-45.887			
		2:BEBAN HIDL	-96.285	783.280	-0.051	0.011	-0.001	-9.692			
		3:BEBAN GEM	-408.465	110.690	39.467	0.963	0.294	-2.867			
		4:KOMBINASI	-567.521	5.81E 3	1.104	0.013	0.007	-70.572			
		5:KOMB B. MA	-831.213	4.38E 3	42.398	1.014	0.315	-54.713			
22772	15860	1:BEBAN MATI	444.319	1.82E 3	-0.542	0.314	0.007	-5.590			
		2:BEBAN HIDL	134.291	380.085	-0.044	0.095	0.001	-1.026			
		3:BEBAN GEM	233.120	-293.978	20.630	-0.076	-0.148	-4.172			
		4:KOMBINASI	748.048	2.79E 3	-0.720	0.529	0.011	-8.349			
		5:KOMB B. MA	769.669	1.74E 3	21.093	0.291	-0.147	-10.586			
	15574	1:BEBAN MATI	-444.319	-1.37E 3	0.542	-0.314	0.001	29.032			
		2:BEBAN HIDL	-134.291	-380.085	0.044	-0.095	-0.001	6.617			
		3:BEBAN GEM	-233.120	293.978	-20.630	0.076	-0.156	-0.153			
		4:KOMBINASI	-748.048	-2.25E 3	0.720	-0.529	0.000	45.425			
		5:KOMB B. MA	-769.669	-1.29E 3	-21.093	-0.291	-0.163	32.842			
22773	15861	1:BEBAN MATI	237.837	506.280	0.044	-0.029	-0.001	-2.525			
		2:BEBAN HIDL	68.845	82.818	-0.002	-0.029	-0.000	-0.662			
		3:BEBAN GEM	125.281	-23.064	9.499	0.033	-0.065	-0.437			
		4:KOMBINASI	395.557	740.045	0.049	-0.081	-0.002	-4.090			
		5:KOMB B. MA	410.689	531.754	10.016	-0.011	-0.070	-3.381			
	15616	1:BEBAN MATI	-237.837	-217.965	-0.044	0.029	0.001	7.852			



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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-68.845	-82.818	0.002	0.029	0.000	1.881			
		3:BEBAN GEM	-125.281	23.064	-9.499	-0.033	-0.074	0.098			
		4:KOMBINASI	-395.557	-394.068	-0.049	0.081	0.002	12.431			
		5:KOMB B. MA	-410.689	-243.440	-10.016	0.011	-0.077	9.083			
22774	15863	1:BEBAN MATI	181.286	400.714	0.516	0.044	-0.003	-5.661			
		2:BEBAN HIDL	53.876	59.000	0.197	0.030	-0.001	-1.317			
		3:BEBAN GEM	-360.566	-11.961	-22.332	-0.122	0.158	-0.209			
		4:KOMBINASI	303.745	575.257	0.934	0.100	-0.006	-8.901			
		5:KOMB B. MA	-164.983	423.555	-22.814	-0.067	0.162	-6.671			
	15616	1:BEBAN MATI	-181.286	-112.400	-0.516	-0.044	-0.004	9.435			
		2:BEBAN HIDL	-53.876	-59.000	-0.197	-0.030	-0.002	2.185			
		3:BEBAN GEM	360.566	11.961	22.332	0.122	0.170	0.033			
		4:KOMBINASI	-303.745	-229.280	-0.934	-0.100	-0.007	14.818			
		5:KOMB B. MA	164.983	-135.241	22.814	0.067	0.174	10.780			
22775	15864	1:BEBAN MATI	219.376	-963.818	0.328	0.026	-0.002	-2.624			
		2:BEBAN HIDL	65.520	-265.324	0.125	0.019	-0.001	-0.793			
		3:BEBAN GEM	-670.797	0.170	-51.194	0.107	0.355	0.186			
		4:KOMBINASI	368.083	-1.58E 3	0.594	0.062	-0.004	-4.417			
		5:KOMB B. MA	-445.649	-1.12E 3	-53.350	0.149	0.370	-2.904			
	15578	1:BEBAN MATI	-219.376	1.25E 3	-0.328	-0.026	-0.002	-13.675			
		2:BEBAN HIDL	-65.520	265.324	-0.125	-0.019	-0.001	-3.110			
		3:BEBAN GEM	670.797	-0.170	51.194	-0.107	0.398	-0.184			
		4:KOMBINASI	-368.083	1.93E 3	-0.594	-0.062	-0.005	-21.386			
		5:KOMB B. MA	445.649	1.41E 3	53.350	-0.149	0.415	-15.734			
22776	15866	1:BEBAN MATI	414.936	-2.75E 3	14.034	-1.037	-0.108	-4.834			
		2:BEBAN HIDL	120.655	-657.328	3.619	-0.283	-0.028	-1.316			
		3:BEBAN GEM	384.494	-324.333	17.705	0.205	-0.118	4.376			
		4:KOMBINASI	690.972	-4.35E 3	22.631	-1.696	-0.174	-7.907			
		5:KOMB B. MA	891.048	-3.49E 3	34.795	-0.992	-0.248	-1.029			
	15512	1:BEBAN MATI	-414.936	3.2E 3	-14.034	1.037	-0.099	-38.951			
		2:BEBAN HIDL	-120.655	657.328	-3.619	0.283	-0.025	-8.353			
		3:BEBAN GEM	-384.494	324.333	-17.705	-0.205	-0.142	-9.147			
		4:KOMBINASI	-690.972	4.89E 3	-22.631	1.696	-0.159	-60.106			
		5:KOMB B. MA	-891.048	3.94E 3	-34.795	0.992	-0.264	-53.567			
22777	15867	1:BEBAN MATI	239.320	-904.134	0.040	-0.038	0.000	-2.101			
		2:BEBAN HIDL	70.594	-257.334	-0.018	-0.020	0.000	-0.633			
		3:BEBAN GEM	232.040	8.767	6.230	-0.036	-0.036	0.522			
		4:KOMBINASI	400.135	-1.5E 3	0.018	-0.078	0.001	-3.535			
		5:KOMB B. MA	525.318	-1.05E 3	6.571	-0.088	-0.037	-1.933			
	15608	1:BEBAN MATI	-239.320	1.19E 3	-0.040	0.038	-0.001	-13.319			
		2:BEBAN HIDL	-70.594	257.334	0.018	0.020	-0.000	-3.152			
		3:BEBAN GEM	-232.040	-8.767	-6.230	0.036	-0.056	-0.393			
		4:KOMBINASI	-400.135	1.84E 3	-0.018	0.078	-0.001	-21.026			
		5:KOMB B. MA	-525.318	1.34E 3	-6.571	0.088	-0.059	-15.623			
22778	15869	1:BEBAN MATI	443.779	1.99E 3	0.526	0.049	-0.004	-10.942			
		2:BEBAN HIDL	126.849	413.997	0.242	0.019	-0.002	-2.250			
		3:BEBAN GEM	-509.942	-94.242	-33.025	0.567	0.243	-1.348			
		4:KOMBINASI	735.494	3.05E 3	1.018	0.089	-0.007	-16.731			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-15.550	2.14E 3	-34.005	0.656	0.250	-13.708			
	15608	1:BEBAN MATI	-443.779	-1.54E 3	-0.526	-0.049	-0.004	36.899			
		2:BEBAN HIDL	-126.849	-413.997	-0.242	-0.019	-0.002	8.340			
		3:BEBAN GEM	509.942	94.242	33.025	-0.567	0.243	-0.038			
		4:KOMBINASI	-735.494	-2.51E 3	-1.018	-0.089	-0.008	57.623			
		5:KOMB B. MA	15.550	-1.69E 3	34.005	-0.656	0.250	41.862			
22779	15870	1:BEBAN MATI	384.368	-3.32E 3	1.229	-0.004	-0.009	-5.976			
		2:BEBAN HIDL	112.773	-785.196	0.134	0.032	-0.001	-1.517			
		3:BEBAN GEM	-648.769	-104.739	-50.553	-0.915	0.364	1.330			
		4:KOMBINASI	641.680	-5.24E 3	1.690	0.047	-0.012	-9.599			
		5:KOMB B. MA	-229.175	-3.9E 3	-51.771	-0.945	0.373	-5.490			
	15515	1:BEBAN MATI	-384.368	3.77E 3	-1.229	0.004	-0.009	-46.182			
		2:BEBAN HIDL	-112.773	785.196	-0.134	-0.032	-0.001	-10.033			
		3:BEBAN GEM	648.769	104.739	50.553	0.915	0.380	-2.871			
		4:KOMBINASI	-641.680	5.78E 3	-1.690	-0.047	-0.013	-71.472			
		5:KOMB B. MA	229.175	4.35E 3	51.771	0.945	0.388	-55.217			
22780	15872	1:BEBAN MATI	406.740	1.82E 3	-4.073	0.288	0.033	-6.321			
		2:BEBAN HIDL	126.733	370.664	-1.008	0.072	0.008	-1.572			
		3:BEBAN GEM	13.394	-325.987	16.995	-0.069	-0.125	-4.699			
		4:KOMBINASI	690.860	2.78E 3	-6.500	0.461	0.053	-10.101			
		5:KOMB B. MA	496.843	1.7E 3	13.167	0.259	-0.093	-12.198			
	15573	1:BEBAN MATI	-406.740	-1.37E 3	4.073	-0.288	0.027	29.783			
		2:BEBAN HIDL	-126.733	-370.664	1.008	-0.072	0.007	7.025			
		3:BEBAN GEM	-13.394	325.987	-16.995	0.069	-0.125	-0.097			
		4:KOMBINASI	-690.860	-2.24E 3	6.500	-0.461	0.043	46.979			
		5:KOMB B. MA	-496.843	-1.25E 3	-13.167	-0.259	-0.100	33.897			
22781	15873	1:BEBAN MATI	248.050	507.399	-0.382	0.011	0.002	-3.199			
		2:BEBAN HIDL	72.970	81.446	-0.099	-0.003	0.001	-0.905			
		3:BEBAN GEM	246.800	-31.797	6.839	0.039	-0.051	-0.617			
		4:KOMBINASI	414.413	739.193	-0.617	0.008	0.003	-5.286			
		5:KOMB B. MA	550.973	522.881	6.739	0.050	-0.051	-4.390			
	15619	1:BEBAN MATI	-248.050	-219.085	0.382	-0.011	0.004	8.542			
		2:BEBAN HIDL	-72.970	-81.446	0.099	0.003	0.001	2.103			
		3:BEBAN GEM	-246.800	31.797	-6.839	-0.039	-0.050	0.150			
		4:KOMBINASI	-414.413	-393.216	0.617	-0.008	0.006	13.615			
		5:KOMB B. MA	-550.973	-234.566	-6.739	-0.050	-0.048	9.961			
22782	15875	1:BEBAN MATI	189.409	404.145	0.073	0.025	-0.001	-5.721			
		2:BEBAN HIDL	59.025	58.603	0.006	0.007	-0.000	-1.365			
		3:BEBAN GEM	-219.131	-14.745	-13.145	-0.134	0.094	-0.256			
		4:KOMBINASI	321.731	578.739	0.097	0.042	-0.001	-9.050			
		5:KOMB B. MA	-5.263	423.825	-13.725	-0.112	0.098	-6.810			
	15619	1:BEBAN MATI	-189.409	-115.831	-0.073	-0.025	-0.000	9.546			
		2:BEBAN HIDL	-59.025	-58.603	-0.006	-0.007	-0.000	2.227			
		3:BEBAN GEM	219.131	14.745	13.145	0.134	0.099	0.039			
		4:KOMBINASI	-321.731	-232.762	-0.097	-0.042	-0.001	15.018			
		5:KOMB B. MA	5.263	-135.510	13.725	0.112	0.103	10.923			
22783	15876	1:BEBAN MATI	223.829	-972.416	0.282	0.021	-0.002	-2.537			
		2:BEBAN HIDL	68.830	-270.425	0.062	0.002	-0.000	-0.738			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 588	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-368.591	-0.409	-15.036	0.102	0.113	0.197			
		4:KOMBINASI	378.723	-1.6E 3	0.438	0.028	-0.002	-4.226			
		5:KOMB B. MA	-121.893	-1.14E 3	-15.469	0.129	0.117	-2.774			
	15577	1:BEBAN MATI	-223.829	1.26E 3	-0.282	-0.021	-0.003	-13.887			
		2:BEBAN HIDL	-68.830	270.425	-0.062	-0.002	-0.001	-3.240			
		3:BEBAN GEM	368.591	0.409	15.036	-0.102	0.108	-0.203			
		4:KOMBINASI	-378.723	1.95E 3	-0.438	-0.028	-0.004	-21.848			
		5:KOMB B. MA	121.893	1.42E 3	15.469	-0.129	0.110	-16.044			
22784	15878	1:BEBAN MATI	492.329	-2.78E 3	10.060	-1.086	-0.079	-5.442			
		2:BEBAN HIDL	150.113	-677.039	2.702	-0.272	-0.021	-1.547			
		3:BEBAN GEM	162.971	-347.700	14.820	0.206	-0.103	4.685			
		4:KOMBINASI	830.975	-4.42E 3	16.395	-1.738	-0.129	-9.006			
		5:KOMB B. MA	753.516	-3.55E 3	27.242	-1.033	-0.200	-1.451			
	15487	1:BEBAN MATI	-492.329	3.23E 3	-10.060	1.086	-0.069	-38.806			
		2:BEBAN HIDL	-150.113	677.039	-2.702	0.272	-0.018	-8.412			
		3:BEBAN GEM	-162.971	347.700	-14.820	-0.206	-0.115	-9.800			
		4:KOMBINASI	-830.975	4.96E 3	-16.395	1.738	-0.112	-60.027			
		5:KOMB B. MA	-753.516	4E 3	-27.242	1.033	-0.200	-54.144			
22785	15879	1:BEBAN MATI	220.743	-874.465	0.151	-0.038	-0.000	-3.122			
		2:BEBAN HIDL	65.372	-249.050	0.054	0.001	-0.000	-0.945			
		3:BEBAN GEM	268.796	-1.688	9.842	-0.030	-0.072	0.635			
		4:KOMBINASI	369.487	-1.45E 3	0.269	-0.044	-0.001	-5.257			
		5:KOMB B. MA	542.202	-1.03E 3	10.518	-0.069	-0.076	-3.022			
	15611	1:BEBAN MATI	-220.743	1.16E 3	-0.151	0.038	-0.002	-11.862			
		2:BEBAN HIDL	-65.372	249.050	-0.054	-0.001	-0.001	-2.719			
		3:BEBAN GEM	-268.796	1.688	-9.842	0.030	-0.073	-0.660			
		4:KOMBINASI	-369.487	1.79E 3	-0.269	0.044	-0.003	-18.585			
		5:KOMB B. MA	-542.202	1.31E 3	-10.518	0.069	-0.079	-14.187			
22786	15881	1:BEBAN MATI	430.735	1.82E 3	-1.863	0.480	0.016	-10.533			
		2:BEBAN HIDL	129.287	364.159	-0.656	0.108	0.006	-2.103			
		3:BEBAN GEM	-596.001	-91.057	-21.272	0.543	0.155	-1.430			
		4:KOMBINASI	723.741	2.76E 3	-3.286	0.749	0.029	-16.004			
		5:KOMB B. MA	-117.494	1.94E 3	-24.592	1.115	0.182	-13.296			
	15611	1:BEBAN MATI	-430.735	-1.36E 3	1.863	-0.480	0.011	33.924			
		2:BEBAN HIDL	-129.287	-364.159	0.656	-0.108	0.004	7.459			
		3:BEBAN GEM	596.001	91.057	21.272	-0.543	0.158	0.090			
		4:KOMBINASI	-723.741	-2.22E 3	3.286	-0.749	0.019	52.644			
		5:KOMB B. MA	117.494	-1.49E 3	24.592	-1.115	0.179	38.494			
22787	15882	1:BEBAN MATI	396.066	-3.08E 3	6.224	-0.670	-0.048	-5.454			
		2:BEBAN HIDL	120.932	-712.254	1.743	-0.198	-0.013	-1.404			
		3:BEBAN GEM	-824.817	-113.505	-5.031	-0.907	0.024	1.342			
		4:KOMBINASI	668.770	-4.84E 3	10.257	-1.120	-0.078	-8.790			
		5:KOMB B. MA	-397.432	-3.63E 3	1.986	-1.740	-0.031	-4.887			
	15489	1:BEBAN MATI	-396.066	3.53E 3	-6.224	0.670	-0.044	-43.178			
		2:BEBAN HIDL	-120.932	712.254	-1.743	0.198	-0.012	-9.074			
		3:BEBAN GEM	824.817	113.505	5.031	0.907	0.050	-3.011			
		4:KOMBINASI	-668.770	5.38E 3	-10.257	1.120	-0.072	-66.331			
		5:KOMB B. MA	397.432	4.08E 3	-1.986	1.740	0.002	-51.784			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 589	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22788	15883	1:BEBAN MATI	-165.325	-171.537	-14.689	1.327	0.133	3.190			
		2:BEBAN HIDL	-47.883	-83.442	-4.499	0.361	0.041	0.864			
		3:BEBAN GEM	703.530	-141.476	-21.033	-0.148	0.168	0.125			
		4:KOMBINASI	-275.002	-339.351	-24.825	2.170	0.225	5.211			
		5:KOMB B. MA	544.652	-370.152	-39.473	1.389	0.335	3.840			
	15513	1:BEBAN MATI	165.325	712.127	14.689	-1.327	0.126	-10.989			
		2:BEBAN HIDL	47.883	83.442	4.499	-0.361	0.039	-2.337			
		3:BEBAN GEM	-703.530	141.476	21.033	0.148	0.203	-2.622			
		4:KOMBINASI	275.002	988.059	24.825	-2.170	0.213	-16.926			
		5:KOMB B. MA	-544.652	910.742	39.473	-1.389	0.362	-15.145			
22789	15885	1:BEBAN MATI	404.381	2.07E 3	64.014	-1.328	-0.177	-4.771			
		2:BEBAN HIDL	130.054	483.700	23.354	-0.458	-0.065	-0.711			
		3:BEBAN GEM	126.427	-302.968	-6.774	-0.123	0.016	-4.628			
		4:KOMBINASI	693.344	3.25E 3	114.183	-2.327	-0.316	-6.863			
		5:KOMB B. MA	615.162	2.04E 3	70.914	-1.733	-0.200	-10.057			
	15975	1:BEBAN MATI	-404.381	-1.92E 3	-64.014	1.328	-0.137	14.534			
		2:BEBAN HIDL	-130.054	-483.700	-23.354	0.458	-0.050	3.082			
		3:BEBAN GEM	-126.427	302.968	6.774	0.123	0.018	3.142			
		4:KOMBINASI	-693.344	-3.07E 3	-114.183	2.327	-0.243	22.373			
		5:KOMB B. MA	-615.162	-1.89E 3	-70.914	1.733	-0.148	19.683			
22790	15886	1:BEBAN MATI	154.038	-275.296	0.276	0.004	-0.001	0.637			
		2:BEBAN HIDL	48.154	-121.160	0.099	0.003	-0.001	0.016			
		3:BEBAN GEM	-180.779	3.722	-13.530	-0.032	0.117	0.037			
		4:KOMBINASI	261.891	-524.211	0.489	0.009	-0.003	0.791			
		5:KOMB B. MA	-6.889	-344.084	-13.871	-0.028	0.121	0.686			
	15574	1:BEBAN MATI	-154.038	621.274	-0.276	-0.004	-0.003	-8.550			
		2:BEBAN HIDL	-48.154	121.160	-0.099	-0.003	-0.001	-2.155			
		3:BEBAN GEM	180.779	-3.722	13.530	0.032	0.122	0.029			
		4:KOMBINASI	-261.891	939.385	-0.489	-0.009	-0.006	-13.709			
		5:KOMB B. MA	6.889	690.062	13.871	0.028	0.124	-9.813			
22791	15888	1:BEBAN MATI	391.991	-2.51E 3	83.143	-0.099	-0.213	-4.389			
		2:BEBAN HIDL	116.965	-598.036	29.107	0.036	-0.075	-1.164			
		3:BEBAN GEM	504.941	-329.239	-36.165	0.136	0.105	4.586			
		4:KOMBINASI	657.533	-3.97E 3	146.343	-0.061	-0.376	-7.128			
		5:KOMB B. MA	992.358	-3.21E 3	62.634	0.065	-0.149	-0.272			
	15986	1:BEBAN MATI	-391.991	2.66E 3	-83.143	0.099	-0.194	-8.274			
		2:BEBAN HIDL	-116.965	598.036	-29.107	-0.036	-0.068	-1.769			
		3:BEBAN GEM	-504.941	329.239	36.165	-0.136	0.073	-6.200			
		4:KOMBINASI	-657.533	4.15E 3	-146.343	0.061	-0.341	-12.759			
		5:KOMB B. MA	-992.358	3.36E 3	-62.634	-0.065	-0.159	-15.846			
22792	15889	1:BEBAN MATI	-103.149	-519.043	0.992	0.009	-0.008	-0.235			
		2:BEBAN HIDL	-18.208	-193.716	0.166	0.020	-0.001	-0.191			
		3:BEBAN GEM	-264.557	-143.627	-16.218	-0.367	0.141	0.053			
		4:KOMBINASI	-152.912	-932.796	1.455	0.043	-0.012	-0.588			
		5:KOMB B. MA	-391.859	-786.080	-15.938	-0.364	0.139	-0.295			
	15512	1:BEBAN MATI	103.149	1.06E 3	-0.992	-0.009	-0.009	-13.698			
		2:BEBAN HIDL	18.208	193.716	-0.166	-0.020	-0.002	-3.229			
		3:BEBAN GEM	264.557	143.627	16.218	0.367	0.146	-2.588			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 590	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	152.912	1.58E 3	-1.455	-0.043	-0.014	-21.604			
		5:KOMB B. MA	391.859	1.33E 3	15.938	0.364	0.143	-18.352			
22793	15891	1:BEBAN MATI	363.140	2.07E 3	97.824	-1.333	-0.278	-5.091			
		2:BEBAN HIDL	123.669	476.978	34.089	-0.448	-0.096	-1.248			
		3:BEBAN GEM	271.619	-322.996	-35.053	-0.107	0.088	-4.931			
		4:KOMBINASI	633.639	3.25E 3	171.930	-2.317	-0.488	-8.106			
		5:KOMB B. MA	722.541	2.02E 3	81.471	-1.714	-0.243	-11.017			
	15997	1:BEBAN MATI	-363.140	-1.92E 3	-97.824	1.333	-0.202	14.878			
		2:BEBAN HIDL	-123.669	-476.978	-34.089	0.448	-0.071	3.587			
		3:BEBAN GEM	-271.619	322.996	35.053	0.107	0.084	3.347			
		4:KOMBINASI	-633.639	-3.07E 3	-171.930	2.317	-0.355	23.592			
		5:KOMB B. MA	-722.541	-1.87E 3	-81.471	1.714	-0.156	20.544			
22794	15892	1:BEBAN MATI	144.345	-282.370	0.290	0.039	-0.002	0.535			
		2:BEBAN HIDL	46.624	-123.668	0.057	0.011	-0.000	-0.041			
		3:BEBAN GEM	-160.572	8.043	-8.987	-0.035	0.078	0.026			
		4:KOMBINASI	247.813	-536.713	0.438	0.065	-0.004	0.576			
		5:KOMB B. MA	3.719	-348.126	-9.113	0.010	0.079	0.537			
	15573	1:BEBAN MATI	-144.345	628.348	-0.290	-0.039	-0.003	-8.573			
		2:BEBAN HIDL	-46.624	123.668	-0.057	-0.011	-0.001	-2.142			
		3:BEBAN GEM	160.572	-8.043	8.987	0.035	0.080	0.116			
		4:KOMBINASI	-247.813	951.886	-0.438	-0.065	-0.004	-13.715			
		5:KOMB B. MA	-3.719	694.104	9.113	-0.010	0.081	-9.736			
22795	15894	1:BEBAN MATI	404.696	-2.49E 3	81.110	-0.125	-0.213	-5.152			
		2:BEBAN HIDL	136.695	-598.538	27.583	0.037	-0.072	-1.656			
		3:BEBAN GEM	503.184	-355.828	-98.291	0.119	0.278	4.966			
		4:KOMBINASI	704.348	-3.95E 3	141.465	-0.091	-0.371	-8.831			
		5:KOMB B. MA	1.02E 3	-3.23E 3	-5.546	0.022	0.036	-0.931			
	16008	1:BEBAN MATI	-404.696	2.64E 3	-81.110	0.125	-0.185	-7.437			
		2:BEBAN HIDL	-136.695	598.538	-27.583	-0.037	-0.063	-1.279			
		3:BEBAN GEM	-503.184	355.828	98.291	-0.119	0.204	-6.711			
		4:KOMBINASI	-704.348	4.13E 3	-141.465	0.091	-0.323	-10.972			
		5:KOMB B. MA	-1.02E 3	3.38E 3	5.546	-0.022	-0.009	-15.251			
22796	15895	1:BEBAN MATI	-41.972	-518.571	2.661	-0.162	-0.024	-0.215			
		2:BEBAN HIDL	-3.403	-184.722	0.613	-0.105	-0.006	-0.209			
		3:BEBAN GEM	-367.413	-134.960	-11.772	-0.363	0.094	0.067			
		4:KOMBINASI	-55.812	-917.840	4.174	-0.363	-0.038	-0.591			
		5:KOMB B. MA	-429.798	-771.112	-9.332	-0.607	0.071	-0.270			
	15487	1:BEBAN MATI	41.972	1.06E 3	-2.661	0.162	-0.023	-13.710			
		2:BEBAN HIDL	3.403	184.722	-0.613	0.105	-0.005	-3.052			
		3:BEBAN GEM	367.413	134.960	11.772	0.363	0.114	-2.449			
		4:KOMBINASI	55.812	1.57E 3	-4.174	0.363	-0.036	-21.336			
		5:KOMB B. MA	429.798	1.31E 3	9.332	0.607	0.093	-18.113			
22797	15896	1:BEBAN MATI	203.266	664.126	7.637	-0.701	-0.044	-3.444			
		2:BEBAN HIDL	72.759	96.398	2.682	-0.264	-0.016	-0.999			
		3:BEBAN GEM	-95.689	-131.417	-2.430	0.124	0.021	-1.698			
		4:KOMBINASI	360.334	951.187	13.455	-1.264	-0.078	-5.731			
		5:KOMB B. MA	146.448	583.977	6.694	-0.729	-0.031	-5.826			
	15898	1:BEBAN MATI	-203.266	-303.733	-7.637	0.701	-0.046	9.139			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 591	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-72.759	-96.398	-2.682	0.264	-0.016	2.133			
		3:BEBAN GEM	95.689	131.417	2.430	-0.124	0.008	0.151			
		4:KOMBINASI	-360.334	-518.716	-13.455	1.264	-0.081	14.380			
		5:KOMB B. MA	-146.448	-223.584	-6.694	0.729	-0.047	10.578			
22798	15898	1:BEBAN MATI	239.937	-248.265	-6.096	1.642	0.038	-9.093			
		2:BEBAN HIDL	80.951	-94.588	-2.019	0.540	0.013	-2.119			
		3:BEBAN GEM	-28.896	-126.869	0.990	-0.191	-0.001	-0.135			
		4:KOMBINASI	417.447	-449.258	-10.545	2.835	0.066	-14.302			
		5:KOMB B. MA	258.167	-438.230	-6.267	1.765	0.045	-10.506			
	15900	1:BEBAN MATI	-239.937	608.658	6.096	-1.642	0.034	4.051			
		2:BEBAN HIDL	-80.951	94.588	2.019	-0.540	0.011	1.006			
		3:BEBAN GEM	28.896	126.869	-0.990	0.191	-0.011	-1.358			
		4:KOMBINASI	-417.447	881.729	10.545	-2.835	0.058	6.470			
		5:KOMB B. MA	-258.167	798.622	6.267	-1.765	0.029	3.229			
22799	15900	1:BEBAN MATI	455.445	-991.185	-45.814	3.374	0.257	-3.314			
		2:BEBAN HIDL	148.592	-221.964	-15.410	1.105	0.087	-0.759			
		3:BEBAN GEM	29.511	-133.567	10.473	-0.483	-0.060	1.327			
		4:KOMBINASI	784.281	-1.54E 3	-79.632	5.817	0.447	-5.192			
		5:KOMB B. MA	575.586	-1.26E 3	-44.062	3.530	0.246	-2.376			
	15484	1:BEBAN MATI	-455.445	1.35E 3	45.814	-3.374	0.282	-10.471			
		2:BEBAN HIDL	-148.592	221.964	15.410	-1.105	0.095	-1.853			
		3:BEBAN GEM	-29.511	133.567	-10.473	0.483	-0.063	-2.899			
		4:KOMBINASI	-784.281	1.98E 3	79.632	-5.817	0.490	-15.529			
		5:KOMB B. MA	-575.586	1.63E 3	44.062	-3.530	0.273	-14.626			
22800	15902	1:BEBAN MATI	622.450	2.43E 3	-37.946	-1.603	0.031	3.440			
		2:BEBAN HIDL	216.118	601.379	-14.205	-0.449	0.012	1.685			
		3:BEBAN GEM	-292.561	-383.047	-7.735	-0.314	0.044	-8.686			
		4:KOMBINASI	1.09E 3	3.87E 3	-68.264	-2.642	0.057	6.824			
		5:KOMB B. MA	444.933	2.38E 3	-54.591	-2.203	0.085	-4.669			
	15667	1:BEBAN MATI	-622.450	-2.35E 3	37.946	1.603	0.062	2.414			
		2:BEBAN HIDL	-216.118	-601.379	14.205	0.449	0.023	-0.211			
		3:BEBAN GEM	292.561	383.047	7.735	0.314	-0.025	7.747			
		4:KOMBINASI	-1.09E 3	-3.78E 3	68.264	2.642	0.111	2.560			
		5:KOMB B. MA	-444.933	-2.31E 3	54.591	2.203	0.049	10.422			
22801	15906	1:BEBAN MATI	477.421	1.57E 3	-20.533	-1.395	0.045	-12.540			
		2:BEBAN HIDL	162.368	378.860	-8.314	-0.381	0.019	-2.325			
		3:BEBAN GEM	-186.569	-356.044	-11.384	-0.136	0.049	-5.881			
		4:KOMBINASI	832.693	2.49E 3	-37.943	-2.283	0.083	-18.767			
		5:KOMB B. MA	378.944	1.42E 3	-37.475	-1.765	0.108	-20.110			
	15672	1:BEBAN MATI	-477.421	-1.42E 3	20.533	1.395	0.056	19.876			
		2:BEBAN HIDL	-162.368	-378.860	8.314	0.381	0.022	4.182			
		3:BEBAN GEM	186.569	356.044	11.384	0.136	0.006	4.135			
		4:KOMBINASI	-832.693	-2.31E 3	37.943	2.283	0.103	30.542			
		5:KOMB B. MA	-378.944	-1.27E 3	37.475	1.765	0.076	26.727			
22802	15910	1:BEBAN MATI	426.379	806.084	-3.252	-1.122	0.024	-22.814			
		2:BEBAN HIDL	141.028	189.530	-2.115	-0.344	0.012	-4.892			
		3:BEBAN GEM	-98.093	-335.779	-0.110	0.011	0.019	-3.191			
		4:KOMBINASI	737.301	1.27E 3	-7.286	-1.896	0.048	-35.203			



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Job No 1	Sheet No 592	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	407.999	567.234	-4.637	-1.316	0.051	-29.099			
	15571	1:BEBAN MATI	-426.379	-580.838	3.252	1.122	-0.000	27.914			
		2:BEBAN HIDL	-141.028	-189.530	2.115	0.344	0.004	6.286			
		3:BEBAN GEM	98.093	335.779	0.110	-0.011	-0.019	0.721			
		4:KOMBINASI	-737.301	-1E 3	7.286	1.896	0.006	43.554			
		5:KOMB B. MA	-407.999	-341.989	4.637	1.316	-0.017	32.443			
22803	15911	1:BEBAN MATI	100.374	608.536	-0.356	0.110	0.004	-3.078			
		2:BEBAN HIDL	37.463	133.638	-0.129	0.062	0.001	-1.104			
		3:BEBAN GEM	93.262	-13.340	-2.302	-0.033	0.015	-0.182			
		4:KOMBINASI	180.389	944.064	-0.633	0.231	0.006	-5.461			
		5:KOMB B. MA	220.776	674.712	-2.850	0.113	0.020	-3.932			
	15912	1:BEBAN MATI	-100.374	-377.884	0.356	-0.110	0.001	8.882			
		2:BEBAN HIDL	-37.463	-133.638	0.129	-0.062	0.000	2.677			
		3:BEBAN GEM	-93.262	13.340	2.302	0.033	0.012	0.025			
		4:KOMBINASI	-180.389	-667.283	0.633	-0.231	0.001	14.942			
		5:KOMB B. MA	-220.776	-444.061	2.850	-0.113	0.014	10.515			
22804	15912	1:BEBAN MATI	99.336	-212.830	-0.692	0.052	0.005	-8.923			
		2:BEBAN HIDL	38.781	-106.177	-0.196	0.046	0.002	-2.683			
		3:BEBAN GEM	111.755	-14.193	-2.796	-0.006	0.018	-0.014			
		4:KOMBINASI	181.252	-425.279	-1.145	0.137	0.009	-15.000			
		5:KOMB B. MA	239.947	-291.439	-3.746	0.073	0.025	-10.547			
	15913	1:BEBAN MATI	-99.336	443.481	0.692	-0.052	0.003	5.062			
		2:BEBAN HIDL	-38.781	106.177	0.196	-0.046	0.001	1.433			
		3:BEBAN GEM	-111.755	14.193	2.796	0.006	0.015	-0.153			
		4:KOMBINASI	-181.252	702.061	1.145	-0.137	0.004	8.367			
		5:KOMB B. MA	-239.947	522.091	3.746	-0.073	0.019	5.761			
22805	15913	1:BEBAN MATI	83.320	-718.171	-1.612	-0.001	0.008	-3.916			
		2:BEBAN HIDL	35.523	-237.775	-0.452	0.028	0.002	-1.060			
		3:BEBAN GEM	143.897	-4.995	-3.558	-0.034	0.025	0.174			
		4:KOMBINASI	156.821	-1.24E 3	-2.658	0.044	0.013	-6.396			
		5:KOMB B. MA	255.726	-866.081	-5.618	-0.020	0.035	-4.369			
	15571	1:BEBAN MATI	-83.320	948.823	1.612	0.001	0.011	-5.892			
		2:BEBAN HIDL	-35.523	237.775	0.452	-0.028	0.003	-1.738			
		3:BEBAN GEM	-143.897	4.995	3.558	0.034	0.017	-0.233			
		4:KOMBINASI	-156.821	1.52E 3	2.658	-0.044	0.018	-9.851			
		5:KOMB B. MA	-255.726	1.1E 3	5.618	0.020	0.031	-7.180			
22806	15917	1:BEBAN MATI	386.811	-1.73E 3	-68.361	1.996	0.069	-17.611			
		2:BEBAN HIDL	127.426	-386.711	-28.676	0.550	0.028	-4.019			
		3:BEBAN GEM	-158.815	-320.158	-127.896	0.382	0.135	1.602			
		4:KOMBINASI	668.055	-2.7E 3	-127.916	3.276	0.128	-27.563			
		5:KOMB B. MA	296.511	-2.3E 3	-219.858	2.727	0.227	-18.340			
	15713	1:BEBAN MATI	-386.811	1.81E 3	68.361	-1.996	0.098	13.270			
		2:BEBAN HIDL	-127.426	386.711	28.676	-0.550	0.042	3.071			
		3:BEBAN GEM	158.815	320.158	127.896	-0.382	0.179	-2.387			
		4:KOMBINASI	-668.055	2.79E 3	127.916	-3.276	0.186	20.837			
		5:KOMB B. MA	-296.511	2.38E 3	219.858	-2.727	0.312	12.606			
22807	15921	1:BEBAN MATI	405.607	-2.48E 3	-35.392	2.442	0.084	-2.397			
		2:BEBAN HIDL	133.470	-574.096	-14.738	0.703	0.035	-0.667			



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Job No

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Sheet No

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Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-26.248	-338.777	-75.894	0.397	0.184	4.112			
		4:KOMBINASI	700.280	-3.89E 3	-66.052	4.055	0.157	-3.943			
		5:KOMB B. MA	458.129	-3.18E 3	-123.924	3.281	0.299	1.521			
	15717	1:BEBAN MATI	-405.607	2.63E 3	35.392	-2.442	0.089	-10.113			
		2:BEBAN HIDL	-133.470	574.096	14.738	-0.703	0.038	-2.148			
		3:BEBAN GEM	26.248	338.777	75.894	-0.397	0.188	-5.773			
		4:KOMBINASI	-700.280	4.07E 3	66.052	-4.055	0.167	-15.573			
		5:KOMB B. MA	-458.129	3.33E 3	123.924	-3.281	0.309	-17.464			
22808	15925	1:BEBAN MATI	459.216	-3.02E 3	-25.542	2.824	0.095	17.951			
		2:BEBAN HIDL	154.375	-682.430	-11.288	0.857	0.041	3.929			
		3:BEBAN GEM	280.143	-381.631	-4.899	0.398	0.088	6.726			
		4:KOMBINASI	798.058	-4.71E 3	-48.710	4.760	0.179	27.828			
		5:KOMB B. MA	845.991	-3.83E 3	-37.458	3.756	0.212	27.370			
	15511	1:BEBAN MATI	-459.216	3.24E 3	25.542	-2.824	0.093	-40.956			
		2:BEBAN HIDL	-154.375	682.430	11.288	-0.857	0.042	-8.949			
		3:BEBAN GEM	-280.143	381.631	4.899	-0.398	-0.052	-9.533			
		4:KOMBINASI	-798.058	4.98E 3	48.710	-4.760	0.179	-63.466			
		5:KOMB B. MA	-845.991	4.05E 3	37.458	-3.756	0.063	-56.335			
22809	15926	1:BEBAN MATI	159.429	835.203	-1.399	-0.024	0.009	-6.235			
		2:BEBAN HIDL	74.033	118.355	-0.499	-0.030	0.003	-2.491			
		3:BEBAN GEM	331.001	-142.623	-12.283	0.190	0.078	-1.454			
		4:KOMBINASI	309.767	1.19E 3	-2.477	-0.077	0.015	-11.467			
		5:KOMB B. MA	551.400	756.462	-14.596	0.158	0.092	-9.256			
	15927	1:BEBAN MATI	-159.429	-474.810	1.399	0.024	0.008	13.943			
		2:BEBAN HIDL	-74.033	-118.355	0.499	0.030	0.003	3.884			
		3:BEBAN GEM	-331.001	142.623	12.283	-0.190	0.066	-0.225			
		4:KOMBINASI	-309.767	-759.139	2.477	0.077	0.014	22.945			
		5:KOMB B. MA	-551.400	-396.069	14.596	-0.158	0.079	16.037			
22810	15927	1:BEBAN MATI	202.755	-706.976	-0.360	-0.111	0.003	-13.937			
		2:BEBAN HIDL	90.693	-281.172	-0.111	-0.045	0.001	-3.868			
		3:BEBAN GEM	505.480	-146.678	-7.552	-0.205	0.046	0.265			
		4:KOMBINASI	388.414	-1.3E 3	-0.610	-0.206	0.005	-22.914			
		5:KOMB B. MA	787.924	-1.03E 3	-8.356	-0.354	0.051	-15.980			
	15928	1:BEBAN MATI	-202.755	1.07E 3	0.360	0.111	0.001	3.497			
		2:BEBAN HIDL	-90.693	281.172	0.111	0.045	0.000	0.559			
		3:BEBAN GEM	-505.480	146.678	7.552	0.205	0.043	-1.991			
		4:KOMBINASI	-388.414	1.73E 3	0.610	0.206	0.002	5.091			
		5:KOMB B. MA	-787.924	1.39E 3	8.356	0.354	0.047	1.742			
22811	15928	1:BEBAN MATI	315.001	-2.07E 3	4.012	-0.268	-0.023	-2.741			
		2:BEBAN HIDL	137.909	-604.344	1.641	-0.091	-0.009	-0.285			
		3:BEBAN GEM	774.336	-163.152	9.343	-0.645	-0.023	2.015			
		4:KOMBINASI	598.655	-3.45E 3	7.441	-0.466	-0.042	-3.745			
		5:KOMB B. MA	1.21E 3	-2.6E 3	14.808	-1.000	-0.052	-0.796			
	15511	1:BEBAN MATI	-315.001	2.43E 3	-4.012	0.268	-0.025	-23.701			
		2:BEBAN HIDL	-137.909	604.344	-1.641	0.091	-0.010	-6.827			
		3:BEBAN GEM	-774.336	163.152	-9.343	0.645	-0.087	-3.935			
		4:KOMBINASI	-598.655	3.88E 3	-7.441	0.466	-0.045	-39.365			
		5:KOMB B. MA	-1.21E 3	2.96E 3	-14.808	1.000	-0.122	-31.929			



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Part 1a		
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By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22812	15929	1:BEBAN MATI	192.305	866.528	-1.287	0.203	0.008	-4.634			
		2:BEBAN HIDL	78.441	143.470	-0.524	0.077	0.003	-1.796			
		3:BEBAN GEM	-272.773	-136.045	-15.399	0.199	0.096	-1.539			
		4:KOMBINASI	356.271	1.27E 3	-2.383	0.367	0.015	-8.434			
		5:KOMB B. MA	-47.042	809.763	-17.770	0.458	0.111	-7.327			
15931	15931	1:BEBAN MATI	-192.305	-506.135	1.287	-0.203	0.007	12.711			
		2:BEBAN HIDL	-78.441	-143.470	0.524	-0.077	0.003	3.484			
		3:BEBAN GEM	272.773	136.045	15.399	-0.199	0.085	-0.062			
		4:KOMBINASI	-356.271	-836.915	2.383	-0.367	0.014	20.827			
		5:KOMB B. MA	47.042	-449.370	17.770	-0.458	0.098	14.736			
22813	15931	1:BEBAN MATI	212.150	-555.351	1.961	-0.306	-0.012	-12.715			
		2:BEBAN HIDL	85.319	-215.495	0.702	-0.127	-0.004	-3.476			
		3:BEBAN GEM	-285.659	-135.357	-10.912	-0.190	0.066	0.098			
		4:KOMBINASI	391.091	-1.01E 3	3.475	-0.572	-0.022	-20.820			
		5:KOMB B. MA	-36.600	-826.773	-9.076	-0.582	0.054	-14.698			
15933	15933	1:BEBAN MATI	-212.150	915.744	-1.961	0.306	-0.011	4.059			
		2:BEBAN HIDL	-85.319	215.495	-0.702	0.127	-0.004	0.940			
		3:BEBAN GEM	285.659	135.357	10.912	0.190	0.063	-1.691			
		4:KOMBINASI	-391.091	1.44E 3	-3.475	0.572	-0.019	6.375			
		5:KOMB B. MA	36.600	1.19E 3	9.076	0.582	0.053	2.848			
22814	15933	1:BEBAN MATI	256.955	-1.8E 3	7.260	-0.646	-0.044	-3.374			
		2:BEBAN HIDL	105.743	-503.282	2.706	-0.266	-0.016	-0.696			
		3:BEBAN GEM	-301.177	-146.706	-1.435	-0.640	0.004	1.711			
		4:KOMBINASI	477.535	-2.97E 3	13.041	-1.201	-0.079	-5.163			
		5:KOMB B. MA	4.166	-2.26E 3	7.377	-1.478	-0.050	-1.995			
15485	15485	1:BEBAN MATI	-256.955	2.16E 3	-7.260	0.646	-0.041	-19.948			
		2:BEBAN HIDL	-105.743	503.282	-2.706	0.266	-0.015	-5.226			
		3:BEBAN GEM	301.177	146.706	1.435	0.640	0.013	-3.437			
		4:KOMBINASI	-477.535	3.4E 3	-13.041	1.201	-0.074	-32.299			
		5:KOMB B. MA	-4.166	2.62E 3	-7.377	1.478	-0.036	-26.693			
22815	15935	1:BEBAN MATI	243.802	1.8E 3	1.876	-0.250	-0.012	-1.338			
		2:BEBAN HIDL	79.258	319.425	0.962	-0.031	-0.006	-1.019			
		3:BEBAN GEM	-60.021	-435.429	18.840	-0.211	-0.106	-4.255			
		4:KOMBINASI	419.375	2.68E 3	3.790	-0.350	-0.025	-3.236			
		5:KOMB B. MA	228.335	1.54E 3	22.236	-0.490	-0.127	-6.417			
15567	15567	1:BEBAN MATI	-243.802	-1.44E 3	-1.876	0.250	-0.010	20.443			
		2:BEBAN HIDL	-79.258	-319.425	-0.962	0.031	-0.005	4.778			
		3:BEBAN GEM	60.021	435.429	-18.840	0.211	-0.116	-0.869			
		4:KOMBINASI	-419.375	-2.24E 3	-3.790	0.350	-0.020	32.177			
		5:KOMB B. MA	-228.335	-1.18E 3	-22.236	0.490	-0.134	22.398			
22816	15936	1:BEBAN MATI	123.103	476.217	-0.257	-0.027	-0.001	-2.087			
		2:BEBAN HIDL	42.406	91.565	-0.078	-0.022	-0.000	-0.776			
		3:BEBAN GEM	-248.070	-21.022	-4.767	-0.030	0.027	-0.232			
		4:KOMBINASI	215.574	717.964	-0.433	-0.067	-0.002	-3.746			
		5:KOMB B. MA	-111.927	509.082	-5.308	-0.072	0.027	-2.796			
15937	15937	1:BEBAN MATI	-123.103	-245.565	0.257	0.027	0.004	6.334			
		2:BEBAN HIDL	-42.406	-91.565	0.078	0.022	0.001	1.854			
		3:BEBAN GEM	248.070	21.022	4.767	0.030	0.029	-0.015			



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Job No 1	Sheet No 595	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-215.574	-441.182	0.433	0.067	0.007	10.566			
		5:KOMB B. MA	111.927	-278.430	5.308	0.072	0.035	7.430			
22817	15937	1:BEBAN MATI	126.413	-211.236	0.099	0.002	-0.003	-6.333			
		2:BEBAN HIDL	43.721	-96.250	0.011	-0.016	-0.001	-1.852			
		3:BEBAN GEM	-312.699	-20.428	-6.641	0.039	0.036	0.018			
		4:KOMBINASI	221.649	-407.483	0.136	-0.023	-0.005	-10.563			
		5:KOMB B. MA	-175.688	-290.436	-6.867	0.034	0.035	-7.425			
	15938	1:BEBAN MATI	-126.413	441.888	-0.099	-0.002	0.002	2.490			
		2:BEBAN HIDL	-43.721	96.250	-0.011	0.016	0.001	0.719			
		3:BEBAN GEM	312.699	20.428	6.641	-0.039	0.042	-0.259			
		4:KOMBINASI	-221.649	684.265	-0.136	0.023	0.003	4.139			
		5:KOMB B. MA	175.688	521.087	6.867	-0.034	0.046	2.650			
22818	15938	1:BEBAN MATI	118.905	-752.092	1.835	0.008	-0.009	-1.659			
		2:BEBAN HIDL	40.677	-235.768	0.553	-0.021	-0.002	-0.451			
		3:BEBAN GEM	-372.779	-8.673	-10.022	0.029	0.056	0.265			
		4:KOMBINASI	207.769	-1.28E 3	3.087	-0.024	-0.014	-2.712			
		5:KOMB B. MA	-248.107	-902.660	-8.357	0.026	0.049	-1.652			
	15567	1:BEBAN MATI	-118.905	982.744	-1.835	-0.008	-0.013	-8.548			
		2:BEBAN HIDL	-40.677	235.768	-0.553	0.021	-0.004	-2.324			
		3:BEBAN GEM	372.779	8.673	10.022	-0.029	0.062	-0.367			
		4:KOMBINASI	-207.769	1.56E 3	-3.087	0.024	-0.022	-13.976			
		5:KOMB B. MA	248.107	1.13E 3	8.357	-0.026	0.049	-10.328			
22819	15942	1:BEBAN MATI	498.393	-1.9E 3	4.147	1.026	-0.021	-7.662			
		2:BEBAN HIDL	174.800	-532.770	1.419	0.349	-0.007	-1.038			
		3:BEBAN GEM	289.175	-483.734	2.119	0.194	0.029	6.464			
		4:KOMBINASI	877.752	-3.13E 3	7.247	1.789	-0.036	-10.855			
		5:KOMB B. MA	906.908	-2.72E 3	7.223	1.439	0.006	-1.497			
	15532	1:BEBAN MATI	-498.393	2.26E 3	-4.147	-1.026	-0.028	-16.781			
		2:BEBAN HIDL	-174.800	532.770	-1.419	-0.349	-0.010	-5.232			
		3:BEBAN GEM	-289.175	483.734	-2.119	-0.194	-0.054	-12.157			
		4:KOMBINASI	-877.752	3.56E 3	-7.247	-1.789	-0.049	-28.507			
		5:KOMB B. MA	-906.908	3.08E 3	-7.223	-1.439	-0.091	-32.685			
22820	15943	1:BEBAN MATI	113.206	515.684	-2.863	0.609	0.011	-2.953			
		2:BEBAN HIDL	42.035	46.114	-1.057	0.237	0.004	-0.812			
		3:BEBAN GEM	-447.348	-131.924	0.919	0.203	-0.005	-1.817			
		4:KOMBINASI	203.103	692.603	-5.128	1.110	0.020	-4.843			
		5:KOMB B. MA	-331.289	404.832	-2.533	0.964	0.009	-5.348			
	15944	1:BEBAN MATI	-113.206	-155.291	2.863	-0.609	0.023	6.901			
		2:BEBAN HIDL	-42.035	-46.114	1.057	-0.237	0.008	1.354			
		3:BEBAN GEM	447.348	131.924	-0.919	-0.203	-0.006	0.265			
		4:KOMBINASI	-203.103	-260.131	5.128	-1.110	0.041	10.449			
		5:KOMB B. MA	331.289	-44.439	2.533	-0.964	0.021	7.992			
22821	15944	1:BEBAN MATI	104.497	-310.842	3.145	-0.920	-0.025	-6.877			
		2:BEBAN HIDL	37.886	-115.933	1.050	-0.316	-0.008	-1.347			
		3:BEBAN GEM	-526.597	-134.193	2.044	-0.095	-0.012	-0.253			
		4:KOMBINASI	186.013	-558.503	5.454	-1.610	-0.043	-10.407			
		5:KOMB B. MA	-425.699	-521.304	5.921	-1.210	-0.042	-7.951			
	15945	1:BEBAN MATI	-104.497	671.235	-3.145	0.920	-0.012	1.098			



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Job No 1	Sheet No 596	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-37.886	115.933	-1.050	0.316	-0.004	-0.018			
		3:BEBAN GEM	526.597	134.193	-2.044	0.095	-0.012	-1.326			
		4:KOMBINASI	-186.013	990.974	-5.454	1.610	-0.021	1.290			
		5:KOMB B. MA	425.699	881.697	-5.921	1.210	-0.028	-0.305			
22822	15945	1:BEBAN MATI	195.552	-1.04E 3	30.944	-2.112	-0.172	-0.565			
		2:BEBAN HIDL	68.068	-242.820	10.690	-0.731	-0.060	0.198			
		3:BEBAN GEM	-581.444	-146.799	12.925	-0.484	-0.063	1.374			
		4:KOMBINASI	343.570	-1.64E 3	54.236	-3.704	-0.302	-0.362			
		5:KOMB B. MA	-374.124	-1.34E 3	50.929	-3.058	-0.274	0.996			
	15532	1:BEBAN MATI	-195.552	1.4E 3	-30.944	2.112	-0.192	-13.848			
		2:BEBAN HIDL	-68.068	242.820	-10.690	0.731	-0.066	-3.055			
		3:BEBAN GEM	581.444	146.799	-12.925	0.484	-0.089	-3.102			
		4:KOMBINASI	-343.570	2.07E 3	-54.236	3.704	-0.336	-21.506			
		5:KOMB B. MA	374.124	1.7E 3	-50.929	3.058	-0.325	-18.938			
22823	15949	1:BEBAN MATI	299.371	1.56E 3	1.991	-3.162	-0.000	5.689			
		2:BEBAN HIDL	85.418	259.773	0.828	-0.968	-0.000	0.369			
		3:BEBAN GEM	144.871	-335.837	8.452	-0.290	-0.040	-6.659			
		4:KOMBINASI	495.914	2.29E 3	3.714	-5.344	-0.001	7.417			
		5:KOMB B. MA	502.736	1.36E 3	11.362	-4.048	-0.042	-1.082			
	15953	1:BEBAN MATI	-299.371	-1.26E 3	-1.991	3.162	-0.019	8.120			
		2:BEBAN HIDL	-85.418	-259.773	-0.828	0.968	-0.008	2.179			
		3:BEBAN GEM	-144.871	335.837	-8.452	0.290	-0.043	3.365			
		4:KOMBINASI	-495.914	-1.93E 3	-3.714	5.344	-0.035	13.230			
		5:KOMB B. MA	-502.736	-1.06E 3	-11.362	4.048	-0.069	12.961			
22824	15953	1:BEBAN MATI	277.115	888.771	-0.206	-2.054	0.009	-8.540			
		2:BEBAN HIDL	76.249	134.726	0.065	-0.595	0.003	-2.274			
		3:BEBAN GEM	-127.694	-334.350	7.509	-0.281	-0.029	-3.368			
		4:KOMBINASI	454.537	1.28E 3	-0.142	-3.417	0.016	-13.887			
		5:KOMB B. MA	188.786	618.539	7.718	-2.706	-0.019	-13.441			
	15570	1:BEBAN MATI	-277.115	-588.444	0.206	2.054	-0.007	15.783			
		2:BEBAN HIDL	-76.249	-134.726	-0.065	0.595	-0.004	3.596			
		3:BEBAN GEM	127.694	334.350	-7.509	0.281	-0.045	0.089			
		4:KOMBINASI	-454.537	-921.694	0.142	3.417	-0.015	24.693			
		5:KOMB B. MA	-188.786	-318.212	-7.718	2.706	-0.057	18.034			
22825	15954	1:BEBAN MATI	17.717	649.777	-0.093	0.015	0.001	-3.291			
		2:BEBAN HIDL	8.661	143.397	-0.049	0.001	0.000	-1.276			
		3:BEBAN GEM	13.640	-15.325	-7.823	-0.019	0.047	-0.144			
		4:KOMBINASI	35.118	1.01E 3	-0.190	0.019	0.001	-5.990			
		5:KOMB B. MA	37.236	719.724	-8.337	-0.005	0.050	-4.208			
	15955	1:BEBAN MATI	-17.717	-419.126	0.093	-0.015	0.000	9.581			
		2:BEBAN HIDL	-8.661	-143.397	0.049	-0.001	0.000	2.963			
		3:BEBAN GEM	-13.640	15.325	7.823	0.019	0.045	-0.036			
		4:KOMBINASI	-35.118	-732.386	0.190	-0.019	0.001	16.238			
		5:KOMB B. MA	-37.236	-489.073	8.337	0.005	0.048	11.320			
22826	15955	1:BEBAN MATI	-2.374	-140.544	-0.144	0.017	0.001	-9.614			
		2:BEBAN HIDL	1.202	-86.175	-0.055	0.001	0.000	-2.966			
		3:BEBAN GEM	13.066	-14.758	-5.980	0.032	0.030	0.049			
		4:KOMBINASI	-0.925	-306.532	-0.260	0.022	0.002	-16.283			



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Job No 1	Sheet No 597	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	12.067	-207.745	-6.456	0.051	0.033	-11.342			
	15956	1:BEBAN MATI	2.374	371.195	0.144	-0.017	0.001	6.603			
		2:BEBAN HIDL	-1.202	86.175	0.055	-0.001	0.000	1.952			
		3:BEBAN GEM	-13.066	14.758	5.980	-0.032	0.040	-0.223			
		4:KOMBINASI	0.925	583.314	0.260	-0.022	0.001	11.047			
		5:KOMB B. MA	-12.067	438.396	6.456	-0.051	0.043	7.540			
22827	15956	1:BEBAN MATI	-12.835	-662.474	-0.148	0.006	0.001	-5.645			
		2:BEBAN HIDL	-2.970	-221.380	-0.057	-0.002	0.000	-1.637			
		3:BEBAN GEM	13.269	-4.420	-7.394	0.036	0.030	0.240			
		4:KOMBINASI	-20.154	-1.15E 3	-0.269	0.004	0.002	-9.393			
		5:KOMB B. MA	-0.685	-799.943	-7.946	0.043	0.032	-6.375			
	15570	1:BEBAN MATI	12.835	893.126	0.148	-0.006	0.001	-3.508			
		2:BEBAN HIDL	2.970	221.380	0.057	0.002	0.000	-0.968			
		3:BEBAN GEM	-13.269	4.420	7.394	-0.036	0.057	-0.292			
		4:KOMBINASI	20.154	1.43E 3	0.269	-0.004	0.002	-5.759			
		5:KOMB B. MA	0.685	1.03E 3	7.946	-0.043	0.061	-4.396			
22828	15960	1:BEBAN MATI	290.852	-1.25E 3	-2.244	3.312	0.021	-8.199			
		2:BEBAN HIDL	81.143	-308.936	-0.874	1.006	0.008	-1.691			
		3:BEBAN GEM	-650.783	-342.558	6.240	0.127	-0.025	3.267			
		4:KOMBINASI	478.851	-2E 3	-4.091	5.584	0.039	-12.544			
		5:KOMB B. MA	-343.784	-1.8E 3	3.784	4.050	0.000	-5.783			
	15964	1:BEBAN MATI	-290.852	1.55E 3	2.244	-3.312	0.001	-5.563			
		2:BEBAN HIDL	-81.143	308.936	0.874	-1.006	0.000	-1.338			
		3:BEBAN GEM	650.783	342.558	-6.240	-0.127	-0.036	-6.626			
		4:KOMBINASI	-478.851	2.36E 3	4.091	-5.584	0.001	-8.818			
		5:KOMB B. MA	343.784	2.1E 3	-3.784	-4.050	-0.037	-13.324			
22829	15964	1:BEBAN MATI	366.271	-1.8E 3	-36.442	4.210	0.157	6.391			
		2:BEBAN HIDL	109.608	-394.422	-13.774	1.303	0.060	1.587			
		3:BEBAN GEM	-1.03E 3	-359.026	48.075	0.299	-0.156	6.681			
		4:KOMBINASI	614.898	-2.79E 3	-65.769	7.136	0.283	10.209			
		5:KOMB B. MA	-649.803	-2.41E 3	5.773	5.305	0.028	14.359			
	15510	1:BEBAN MATI	-366.271	2.1E 3	36.442	-4.210	0.201	-25.472			
		2:BEBAN HIDL	-109.608	394.422	13.774	-1.303	0.076	-5.455			
		3:BEBAN GEM	1.03E 3	359.026	-48.075	-0.299	-0.315	-10.202			
		4:KOMBINASI	-614.898	3.15E 3	65.769	-7.136	0.362	-39.295			
		5:KOMB B. MA	649.803	2.71E 3	-5.773	-5.305	-0.085	-39.458			
22830	15965	1:BEBAN MATI	190.180	796.603	1.027	-0.159	-0.006	-6.266			
		2:BEBAN HIDL	78.393	119.861	0.214	-0.026	-0.001	-2.382			
		3:BEBAN GEM	-169.774	-128.333	-17.096	0.202	0.107	-1.527			
		4:KOMBINASI	353.645	1.15E 3	1.575	-0.232	-0.009	-11.330			
		5:KOMB B. MA	58.953	733.769	-16.795	0.037	0.106	-9.298			
	15966	1:BEBAN MATI	-190.180	-436.210	-1.027	0.159	-0.006	13.520			
		2:BEBAN HIDL	-78.393	-119.861	-0.214	0.026	-0.001	3.793			
		3:BEBAN GEM	169.774	128.333	17.096	-0.202	0.094	0.016			
		4:KOMBINASI	-353.645	-715.229	-1.575	0.232	-0.010	22.292			
		5:KOMB B. MA	-58.953	-373.376	16.795	-0.037	0.091	15.812			
22831	15966	1:BEBAN MATI	239.453	-722.004	-0.857	-0.268	0.003	-13.509			
		2:BEBAN HIDL	97.019	-278.584	-0.375	-0.057	0.002	-3.779			



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Job No

1

Sheet No

598

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-165.823	-128.366	-15.627	-0.187	0.088	0.017			
		4:KOMBINASI	442.574	-1.31E 3	-1.627	-0.413	0.007	-22.257			
		5:KOMB B. MA	123.551	-1.02E 3	-17.490	-0.498	0.096	-15.758			
	15967	1:BEBAN MATI	-239.453	1.08E 3	0.857	0.268	0.007	2.892			
		2:BEBAN HIDL	-97.019	278.584	0.375	0.057	0.003	0.500			
		3:BEBAN GEM	165.823	128.366	15.627	0.187	0.096	-1.528			
		4:KOMBINASI	-442.574	1.74E 3	1.627	0.413	0.012	4.271			
		5:KOMB B. MA	-123.551	1.38E 3	17.490	0.498	0.109	1.588			
22832	15967	1:BEBAN MATI	370.248	-2.06E 3	-10.578	-0.310	0.060	-2.159			
		2:BEBAN HIDL	148.999	-600.897	-3.740	-0.064	0.021	-0.240			
		3:BEBAN GEM	-164.761	-143.700	-15.562	-0.629	0.111	1.548			
		4:KOMBINASI	682.697	-3.43E 3	-18.679	-0.474	0.105	-2.975			
		5:KOMB B. MA	286.649	-2.57E 3	-29.163	-1.009	0.188	-0.678			
	15510	1:BEBAN MATI	-370.248	2.42E 3	10.578	0.310	0.065	-24.152			
		2:BEBAN HIDL	-148.999	600.897	3.740	0.064	0.023	-6.831			
		3:BEBAN GEM	164.761	143.700	15.562	0.629	0.073	-3.239			
		4:KOMBINASI	-682.697	3.86E 3	18.679	0.474	0.115	-39.912			
		5:KOMB B. MA	-286.649	2.93E 3	29.163	1.009	0.155	-31.651			
22833	15971	1:BEBAN MATI	621.522	2.68E 3	-63.276	0.261	0.145	8.237			
		2:BEBAN HIDL	191.173	640.281	-21.632	0.017	0.050	2.476			
		3:BEBAN GEM	-1.04E 3	-312.627	73.644	-0.259	-0.155	-6.230			
		4:KOMBINASI	1.05E 3	4.24E 3	-110.542	0.339	0.255	13.846			
		5:KOMB B. MA	-359.803	2.73E 3	1.071	-0.001	0.013	3.180			
	15885	1:BEBAN MATI	-621.522	-2.53E 3	63.276	-0.261	0.165	4.517			
		2:BEBAN HIDL	-191.173	-640.281	21.632	-0.017	0.056	0.664			
		3:BEBAN GEM	1.04E 3	312.627	-73.644	0.259	-0.206	4.697			
		4:KOMBINASI	-1.05E 3	-4.06E 3	110.542	-0.339	0.287	6.483			
		5:KOMB B. MA	359.803	-2.58E 3	-1.071	0.001	-0.018	9.848			
22834	15975	1:BEBAN MATI	447.947	1.57E 3	-21.478	0.039	0.112	-14.757			
		2:BEBAN HIDL	139.655	364.929	-6.986	-0.009	0.037	-3.129			
		3:BEBAN GEM	-453.545	-299.961	27.816	-0.131	-0.121	-3.131			
		4:KOMBINASI	760.985	2.47E 3	-36.951	0.032	0.194	-22.715			
		5:KOMB B. MA	55.518	1.47E 3	3.537	-0.104	0.008	-19.922			
	15569	1:BEBAN MATI	-447.947	-1.27E 3	21.478	-0.039	0.099	28.677			
		2:BEBAN HIDL	-139.655	-364.929	6.986	0.009	0.031	6.708			
		3:BEBAN GEM	453.545	299.961	-27.816	0.131	-0.152	0.189			
		4:KOMBINASI	-760.985	-2.11E 3	36.951	-0.032	0.169	45.146			
		5:KOMB B. MA	-55.518	-1.17E 3	-3.537	0.104	-0.042	32.901			
22835	15976	1:BEBAN MATI	98.126	535.675	0.493	-0.062	-0.003	-2.596			
		2:BEBAN HIDL	35.763	114.323	0.121	-0.035	-0.001	-1.033			
		3:BEBAN GEM	-41.254	-15.154	-10.300	-0.023	0.061	-0.168			
		4:KOMBINASI	174.971	825.726	0.786	-0.129	-0.004	-4.768			
		5:KOMB B. MA	76.267	588.357	-10.249	-0.107	0.061	-3.392			
	15977	1:BEBAN MATI	-98.126	-305.024	-0.493	0.062	-0.003	7.543			
		2:BEBAN HIDL	-35.763	-114.323	-0.121	0.035	-0.001	2.379			
		3:BEBAN GEM	41.254	15.154	10.300	0.023	0.060	-0.010			
		4:KOMBINASI	-174.971	-548.944	-0.786	0.129	-0.005	12.857			
		5:KOMB B. MA	-76.267	-357.706	10.249	0.107	0.059	8.959			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 599	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22836	15977	1:BEBAN MATI	106.673	-294.316	0.830	-0.059	-0.005	-7.536			
		2:BEBAN HIDL	38.203	-126.282	0.229	-0.033	-0.001	-2.372			
		3:BEBAN GEM	-45.008	-15.414	-13.293	0.021	0.075	0.023			
		4:KOMBINASI	189.132	-555.231	1.362	-0.123	-0.008	-12.839			
		5:KOMB B. MA	82.337	-386.271	-12.990	-0.057	0.073	-8.935			
15978	15978	1:BEBAN MATI	-106.673	524.968	-0.830	0.059	-0.005	2.716			
		2:BEBAN HIDL	-38.203	126.282	-0.229	0.033	-0.001	0.886			
		3:BEBAN GEM	45.008	15.414	13.293	-0.021	0.081	-0.205			
		4:KOMBINASI	-189.132	832.013	-1.362	0.123	-0.008	4.677			
		5:KOMB B. MA	-82.337	616.922	12.990	0.057	0.079	3.033			
22837	15978	1:BEBAN MATI	147.949	-873.635	0.730	-0.039	-0.006	-1.734			
		2:BEBAN HIDL	51.463	-277.606	0.202	-0.022	-0.002	-0.566			
		3:BEBAN GEM	-66.425	-7.129	-19.998	0.014	0.117	0.221			
		4:KOMBINASI	259.881	-1.49E 3	1.200	-0.082	-0.010	-2.986			
		5:KOMB B. MA	109.081	-1.05E 3	-20.146	-0.038	0.116	-1.842			
15569	15569	1:BEBAN MATI	-147.949	1.1E 3	-0.730	0.039	-0.003	-9.904			
		2:BEBAN HIDL	-51.463	277.606	-0.202	0.022	-0.001	-2.701			
		3:BEBAN GEM	66.425	7.129	19.998	-0.014	0.118	-0.305			
		4:KOMBINASI	-259.881	1.77E 3	-1.200	0.082	-0.005	-16.207			
		5:KOMB B. MA	-109.081	1.28E 3	20.146	0.038	0.121	-11.845			
22838	15982	1:BEBAN MATI	431.154	-1.92E 3	-101.994	1.348	0.208	-14.435			
		2:BEBAN HIDL	133.572	-448.309	-35.246	0.463	0.073	-3.405			
		3:BEBAN GEM	-544.134	-320.520	94.803	0.202	-0.203	3.028			
		4:KOMBINASI	731.100	-3.02E 3	-178.787	2.358	0.366	-22.771			
		5:KOMB B. MA	-60.043	-2.53E 3	-23.598	1.837	0.039	-13.299			
15888	15888	1:BEBAN MATI	-431.154	2.07E 3	101.994	-1.348	0.292	4.653			
		2:BEBAN HIDL	-133.572	448.309	35.246	-0.463	0.100	1.207			
		3:BEBAN GEM	544.134	320.520	-94.803	-0.202	-0.262	-4.600			
		4:KOMBINASI	-731.100	3.2E 3	178.787	-2.358	0.511	7.515			
		5:KOMB B. MA	60.043	2.68E 3	23.598	-1.837	0.077	0.548			
22839	15986	1:BEBAN MATI	425.375	-2.94E 3	-24.325	1.128	0.129	8.807			
		2:BEBAN HIDL	128.102	-695.037	-9.419	0.413	0.049	1.928			
		3:BEBAN GEM	-4.677	-346.006	40.146	0.311	-0.170	6.256			
		4:KOMBINASI	715.413	-4.64E 3	-44.261	2.016	0.234	13.653			
		5:KOMB B. MA	497.326	-3.72E 3	12.177	1.704	-0.020	16.532			
15509	15509	1:BEBAN MATI	-425.375	3.24E 3	24.325	-1.128	0.110	-39.137			
		2:BEBAN HIDL	-128.102	695.037	9.419	-0.413	0.043	-8.744			
		3:BEBAN GEM	4.677	346.006	-40.146	-0.311	-0.224	-9.649			
		4:KOMBINASI	-715.413	5E 3	44.261	-2.016	0.200	-60.954			
		5:KOMB B. MA	-497.326	4.02E 3	-12.177	-1.704	-0.100	-54.514			
22840	15987	1:BEBAN MATI	186.014	864.605	0.616	-0.017	-0.004	-5.274			
		2:BEBAN HIDL	76.141	155.792	0.257	-0.023	-0.002	-1.937			
		3:BEBAN GEM	-102.491	-133.127	-17.933	0.197	0.114	-1.545			
		4:KOMBINASI	345.042	1.29E 3	1.151	-0.057	-0.007	-9.429			
		5:KOMB B. MA	124.082	818.297	-18.059	0.176	0.115	-8.059			
15988	15988	1:BEBAN MATI	-186.014	-504.212	-0.616	0.017	-0.003	13.328			
		2:BEBAN HIDL	-76.141	-155.792	-0.257	0.023	-0.001	3.771			
		3:BEBAN GEM	102.491	133.127	17.933	-0.197	0.097	-0.022			



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Job No

1

Sheet No

600

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-345.042	-854.322	-1.151	0.057	-0.006	22.027			
		5:KOMB B. MA	-124.082	-457.904	18.059	-0.176	0.098	15.568			
22841	15988	1:BEBAN MATI	205.620	-631.569	1.041	-0.027	-0.006	-13.322			
		2:BEBAN HIDL	83.239	-235.018	0.200	-0.014	-0.001	-3.763			
		3:BEBAN GEM	-94.293	-131.998	-14.819	-0.197	0.088	0.056			
		4:KOMBINASI	379.926	-1.13E 3	1.568	-0.055	-0.009	-22.008			
		5:KOMB B. MA	156.556	-911.178	-14.399	-0.242	0.085	-15.521			
	15989	1:BEBAN MATI	-205.620	991.962	-1.041	0.027	-0.006	3.769			
		2:BEBAN HIDL	-83.239	235.018	-0.200	0.014	-0.001	0.997			
		3:BEBAN GEM	94.293	131.998	14.819	0.197	0.086	-1.610			
		4:KOMBINASI	-379.926	1.57E 3	-1.568	0.055	-0.009	6.119			
		5:KOMB B. MA	-156.556	1.27E 3	14.399	0.242	0.084	2.678			
22842	15989	1:BEBAN MATI	277.345	-1.92E 3	2.022	-0.031	-0.012	-3.018			
		2:BEBAN HIDL	112.849	-540.565	0.091	-0.001	-0.000	-0.737			
		3:BEBAN GEM	-107.706	-145.781	-13.120	-0.642	0.071	1.631			
		4:KOMBINASI	513.373	-3.16E 3	2.573	-0.039	-0.015	-4.800			
		5:KOMB B. MA	231.964	-2.39E 3	-11.699	-0.705	0.062	-1.747			
	15509	1:BEBAN MATI	-277.345	2.28E 3	-2.022	0.031	-0.012	-21.658			
		2:BEBAN HIDL	-112.849	540.565	-0.091	0.001	-0.001	-5.625			
		3:BEBAN GEM	107.706	145.781	13.120	0.642	0.084	-3.347			
		4:KOMBINASI	-513.373	3.6E 3	-2.573	0.039	-0.015	-34.988			
		5:KOMB B. MA	-231.964	2.75E 3	11.699	0.705	0.076	-28.547			
22843	15993	1:BEBAN MATI	423.107	2.66E 3	-89.907	0.100	0.206	7.854			
		2:BEBAN HIDL	135.430	626.995	-30.660	-0.026	0.070	1.879			
		3:BEBAN GEM	-683.905	-334.937	102.406	-0.257	-0.209	-6.636			
		4:KOMBINASI	724.416	4.19E 3	-156.944	0.079	0.360	12.430			
		5:KOMB B. MA	-213.736	2.68E 3	-0.776	-0.185	0.029	2.014			
	15891	1:BEBAN MATI	-423.107	-2.51E 3	89.907	-0.100	0.235	4.816			
		2:BEBAN HIDL	-135.430	-626.995	30.660	0.026	0.080	1.196			
		3:BEBAN GEM	683.905	334.937	-102.406	0.257	-0.293	4.993			
		4:KOMBINASI	-724.416	-4.01E 3	156.944	-0.079	0.410	7.693			
		5:KOMB B. MA	213.736	-2.53E 3	0.776	0.185	-0.025	10.777			
22844	15997	1:BEBAN MATI	389.129	1.58E 3	-21.325	-0.008	0.117	-15.097			
		2:BEBAN HIDL	127.690	359.415	-7.068	-0.024	0.039	-3.630			
		3:BEBAN GEM	-230.649	-319.622	35.500	-0.115	-0.160	-3.332			
		4:KOMBINASI	671.259	2.47E 3	-36.899	-0.048	0.204	-23.924			
		5:KOMB B. MA	223.562	1.46E 3	11.709	-0.143	-0.027	-20.773			
	15568	1:BEBAN MATI	-389.129	-1.28E 3	21.325	0.008	0.092	29.077			
		2:BEBAN HIDL	-127.690	-359.415	7.068	0.024	0.030	7.154			
		3:BEBAN GEM	230.649	319.622	-35.500	0.115	-0.188	0.197			
		4:KOMBINASI	-671.259	-2.11E 3	36.899	0.048	0.158	46.339			
		5:KOMB B. MA	-223.562	-1.16E 3	-11.709	0.143	-0.088	33.576			
22845	15998	1:BEBAN MATI	101.671	550.899	0.428	-0.018	-0.003	-2.471			
		2:BEBAN HIDL	36.563	120.577	0.118	-0.001	-0.001	-0.997			
		3:BEBAN GEM	-79.787	-16.039	-8.851	-0.024	0.053	-0.157			
		4:KOMBINASI	180.506	854.003	0.703	-0.024	-0.005	-4.561			
		5:KOMB B. MA	39.832	606.405	-8.794	-0.044	0.052	-3.234			
	15999	1:BEBAN MATI	-101.671	-320.248	-0.428	0.018	-0.002	7.597			



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Job No 1	Sheet No 601	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-36.563	-120.577	-0.118	0.001	-0.001	2.416			
		3:BEBAN GEM	79.787	16.039	8.851	0.024	0.052	-0.032			
		4:KOMBINASI	-180.506	-577.221	-0.703	0.024	-0.003	12.982			
		5:KOMB B. MA	-39.832	-375.753	8.794	0.044	0.052	9.013			
22846	15999	1:BEBAN MATI	116.767	-283.438	0.512	-0.001	-0.003	-7.597			
		2:BEBAN HIDL	41.422	-121.765	0.122	0.004	-0.001	-2.413			
		3:BEBAN GEM	-105.497	-16.468	-10.840	0.020	0.060	0.045			
		4:KOMBINASI	206.395	-534.950	0.810	0.005	-0.005	-12.977			
		5:KOMB B. MA	30.848	-373.789	-10.797	0.023	0.060	-8.997			
	16000	1:BEBAN MATI	-116.767	514.090	-0.512	0.001	-0.003	2.905			
		2:BEBAN HIDL	-41.422	121.765	-0.122	-0.004	-0.001	0.980			
		3:BEBAN GEM	105.497	16.468	10.840	-0.020	0.067	-0.239			
		4:KOMBINASI	-206.395	811.731	-0.810	-0.005	-0.004	5.053			
		5:KOMB B. MA	-30.848	604.440	10.797	-0.023	0.068	3.241			
22847	16000	1:BEBAN MATI	159.962	-866.754	0.835	0.011	-0.005	-1.924			
		2:BEBAN HIDL	55.429	-274.442	0.195	0.007	-0.001	-0.660			
		3:BEBAN GEM	-161.347	-8.460	-15.478	0.012	0.090	0.255			
		4:KOMBINASI	280.640	-1.48E 3	1.314	0.023	-0.007	-3.366			
		5:KOMB B. MA	23.805	-1.04E 3	-15.300	0.027	0.089	-2.053			
	15568	1:BEBAN MATI	-159.962	1.1E 3	-0.835	-0.011	-0.005	-9.633			
		2:BEBAN HIDL	-55.429	274.442	-0.195	-0.007	-0.001	-2.569			
		3:BEBAN GEM	161.347	8.460	15.478	-0.012	0.093	-0.355			
		4:KOMBINASI	-280.640	1.76E 3	-1.314	-0.023	-0.008	-15.670			
		5:KOMB B. MA	-23.805	1.27E 3	15.300	-0.027	0.091	-11.547			
22848	16004	1:BEBAN MATI	417.238	-1.9E 3	-98.097	1.299	0.203	-15.105			
		2:BEBAN HIDL	138.786	-448.401	-33.606	0.453	0.070	-3.896			
		3:BEBAN GEM	-360.782	-345.954	146.805	0.201	-0.316	3.279			
		4:KOMBINASI	722.742	-3E 3	-171.486	2.283	0.355	-24.361			
		5:KOMB B. MA	121.687	-2.53E 3	35.884	1.781	-0.087	-14.001			
	15894	1:BEBAN MATI	-417.238	2.05E 3	98.097	-1.299	0.278	5.409			
		2:BEBAN HIDL	-138.786	448.401	33.606	-0.453	0.095	1.698			
		3:BEBAN GEM	360.782	345.954	-146.805	-0.201	-0.404	-4.975			
		4:KOMBINASI	-722.742	3.18E 3	171.486	-2.283	0.486	9.207			
		5:KOMB B. MA	-121.687	2.68E 3	-35.884	-1.781	-0.089	1.204			
22849	16008	1:BEBAN MATI	452.543	-2.94E 3	-22.342	1.134	0.118	7.951			
		2:BEBAN HIDL	154.614	-702.129	-8.549	0.434	0.045	1.434			
		3:BEBAN GEM	102.732	-372.681	51.008	0.301	-0.231	6.769			
		4:KOMBINASI	790.434	-4.65E 3	-40.488	2.056	0.213	11.836			
		5:KOMB B. MA	653.180	-3.75E 3	26.086	1.711	-0.098	15.919			
	15485	1:BEBAN MATI	-452.543	3.24E 3	22.342	-1.134	0.101	-38.275			
		2:BEBAN HIDL	-154.614	702.129	8.549	-0.434	0.039	-8.319			
		3:BEBAN GEM	-102.732	372.681	-51.008	-0.301	-0.269	-10.423			
		4:KOMBINASI	-790.434	5.01E 3	40.488	-2.056	0.184	-59.240			
		5:KOMB B. MA	-653.180	4.05E 3	-26.086	-1.711	-0.158	-54.211			
22850	16010	1:BEBAN MATI	298.153	1.68E 3	-5.787	0.363	0.033	-0.727			
		2:BEBAN HIDL	85.357	307.435	-1.485	0.192	0.009	-0.465			
		3:BEBAN GEM	-278.291	-413.704	20.611	-0.190	-0.119	-4.693			
		4:KOMBINASI	494.356	2.51E 3	-9.321	0.744	0.054	-1.616			



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Job No 1	Sheet No 602	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial	Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)	
		5:KOMB B. MA	57.162	1.43E 3	14.963	0.279	-0.086	-5.933	
	15572	1:BEAN MATI	-298.153	-1.32E 3	5.787	-0.363	0.035	18.421	
		2:BEAN HIDL	-85.357	-307.435	1.485	-0.192	0.009	4.082	
		3:BEAN GEM	278.291	413.704	-20.611	0.190	-0.124	-0.176	
		4:KOMBINASI	-494.356	-2.08E 3	9.321	-0.744	0.056	28.637	
		5:KOMB B. MA	-57.162	-1.07E 3	-14.963	-0.279	-0.090	20.686	
22851	16011	1:BEAN MATI	166.349	-278.421	0.876	-0.023	-0.008	0.200	
		2:BEAN HIDL	55.378	-112.176	0.154	-0.063	-0.002	-0.133	
		3:BEAN GEM	-444.437	7.228	-8.240	0.033	0.067	0.041	
		4:KOMBINASI	288.224	-513.587	1.298	-0.129	-0.012	0.026	
		5:KOMB B. MA	-267.082	-338.137	-7.683	-0.026	0.061	0.163	
	15572	1:BEAN MATI	-166.349	624.399	-0.876	0.023	-0.007	-8.168	
		2:BEAN HIDL	-55.378	112.176	-0.154	0.063	-0.001	-1.847	
		3:BEAN GEM	444.437	-7.228	8.240	-0.033	0.079	0.087	
		4:KOMBINASI	-288.224	928.760	-1.298	0.129	-0.011	-12.757	
		5:KOMB B. MA	267.082	684.115	7.683	0.026	0.075	-9.185	
22852	16013	1:BEAN MATI	504.593	-2.19E 3	20.093	-0.380	-0.118	-2.630	
		2:BEAN HIDL	136.233	-518.601	6.575	-0.015	-0.038	-0.391	
		3:BEAN GEM	-391.543	-418.410	2.813	0.158	-0.048	4.836	
		4:KOMBINASI	823.485	-3.45E 3	34.631	-0.481	-0.202	-3.781	
		5:KOMB B. MA	175.212	-2.94E 3	26.992	-0.224	-0.191	2.213	
	15533	1:BEAN MATI	-504.593	2.55E 3	-20.093	0.380	-0.119	-25.221	
		2:BEAN HIDL	-136.233	518.601	-6.575	0.015	-0.039	-5.712	
		3:BEAN GEM	391.543	418.410	-2.813	-0.158	0.015	-9.760	
		4:KOMBINASI	-823.485	3.89E 3	-34.631	0.481	-0.205	-39.405	
		5:KOMB B. MA	-175.212	3.3E 3	-26.992	0.224	-0.126	-38.897	
22853	16014	1:BEAN MATI	-1.825	-120.028	13.346	-1.909	-0.122	2.502	
		2:BEAN HIDL	-2.454	-28.848	3.375	-0.539	-0.031	0.847	
		3:BEAN GEM	-1.79E 3	-273.879	-39.091	0.171	0.302	-0.048	
		4:KOMBINASI	-6.117	-190.190	21.415	-3.152	-0.195	4.358	
		5:KOMB B. MA	-1.88E 3	-424.909	-25.675	-2.053	0.177	2.959	
	15533	1:BEAN MATI	1.825	660.618	-13.346	1.909	-0.114	-9.392	
		2:BEAN HIDL	2.454	28.848	-3.375	0.539	-0.029	-1.357	
		3:BEAN GEM	1.79E 3	273.879	39.091	-0.171	0.388	-4.786	
		4:KOMBINASI	6.117	838.898	-21.415	3.152	-0.183	-13.440	
		5:KOMB B. MA	1.88E 3	965.499	25.675	2.053	0.276	-15.231	
22854	16016	1:BEAN MATI	207.090	477.416	-0.058	0.050	-0.000	0.795	
		2:BEAN HIDL	61.541	75.116	-0.005	0.024	-0.000	0.146	
		3:BEAN GEM	280.480	-23.996	11.641	0.038	-0.070	-0.353	
		4:KOMBINASI	346.973	693.084	-0.079	0.098	-0.001	1.187	
		5:KOMB B. MA	538.518	497.290	12.161	0.104	-0.074	0.511	
	15622	1:BEAN MATI	-207.090	-246.765	0.058	-0.050	0.001	3.466	
		2:BEAN HIDL	-61.541	-75.116	0.005	-0.024	0.000	0.738	
		3:BEAN GEM	-280.480	23.996	-11.641	-0.038	-0.067	0.071	
		4:KOMBINASI	-346.973	-416.303	0.079	-0.098	0.002	5.341	
		5:KOMB B. MA	-538.518	-266.639	-12.161	-0.104	-0.069	3.983	
22855	16018	1:BEAN MATI	223.225	1.96E 3	-0.046	-0.000	0.000	0.437	
		2:BEAN HIDL	59.190	378.147	-0.083	0.016	0.000	0.072	



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 603	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	1.06E 3	-398.585	23.995	-0.190	-0.148	-4.579			
		4:KOMBINASI	362.574	2.96E 3	-0.188	0.024	0.001	0.641			
		5:KOMB B. MA	1.37E 3	1.77E 3	25.099	-0.191	-0.155	-4.327			
	15576	1:BEBAN MATI	-223.225	-1.6E 3	0.046	0.000	0.000	20.539			
		2:BEBAN HIDL	-59.190	-378.147	0.083	-0.016	0.001	4.378			
		3:BEBAN GEM	-1.06E 3	398.585	-23.995	0.190	-0.135	-0.112			
		4:KOMBINASI	-362.574	-2.53E 3	0.188	-0.024	0.001	31.650			
		5:KOMB B. MA	-1.37E 3	-1.41E 3	-25.099	0.191	-0.141	23.048			
22856	16019	1:BEBAN MATI	211.182	370.098	-0.602	-0.047	0.004	-5.361			
		2:BEBAN HIDL	66.970	41.382	-0.259	-0.046	0.002	-1.294			
		3:BEBAN GEM	-563.340	-20.158	-6.945	-0.110	0.048	-0.253			
		4:KOMBINASI	360.571	510.328	-1.136	-0.131	0.008	-8.503			
		5:KOMB B. MA	-340.143	373.762	-8.049	-0.190	0.055	-6.403			
	15622	1:BEBAN MATI	-211.182	-81.784	0.602	0.047	0.005	8.684			
		2:BEBAN HIDL	-66.970	-41.382	0.259	0.046	0.002	1.903			
		3:BEBAN GEM	563.340	20.158	6.945	0.110	0.054	-0.043			
		4:KOMBINASI	-360.571	-164.351	1.136	0.131	0.009	13.466			
		5:KOMB B. MA	340.143	-85.447	8.049	0.190	0.063	9.781			
22857	16020	1:BEBAN MATI	251.000	-907.240	0.028	-0.056	0.001	-2.248			
		2:BEBAN HIDL	79.924	-242.147	-0.084	-0.015	0.001	-0.716			
		3:BEBAN GEM	-691.464	4.776	-5.343	0.097	0.035	0.269			
		4:KOMBINASI	429.078	-1.48E 3	-0.100	-0.091	0.002	-3.844			
		5:KOMB B. MA	-427.082	-1.05E 3	-5.632	0.037	0.038	-2.396			
	15576	1:BEBAN MATI	-251.000	1.2E 3	-0.028	0.056	-0.001	-13.218			
		2:BEBAN HIDL	-79.924	242.147	0.084	0.015	0.000	-2.846			
		3:BEBAN GEM	691.464	-4.776	5.343	-0.097	0.043	-0.198			
		4:KOMBINASI	-429.078	1.82E 3	0.100	0.091	-0.000	-20.414			
		5:KOMB B. MA	427.082	1.34E 3	5.632	-0.037	0.045	-15.133			
22858	16022	1:BEBAN MATI	146.268	-554.431	-0.888	0.124	0.008	-0.635			
		2:BEBAN HIDL	44.437	-172.834	-0.358	0.048	0.003	0.104			
		3:BEBAN GEM	236.690	-8.486	14.414	-0.031	-0.088	0.538			
		4:KOMBINASI	246.622	-941.852	-1.638	0.226	0.014	-0.595			
		5:KOMB B. MA	421.456	-667.042	14.032	0.120	-0.083	-0.008			
	15554	1:BEBAN MATI	-146.268	785.083	0.888	-0.124	0.003	-7.246			
		2:BEBAN HIDL	-44.437	172.834	0.358	-0.048	0.001	-2.138			
		3:BEBAN GEM	-236.690	8.486	-14.414	0.031	-0.082	-0.638			
		4:KOMBINASI	-246.622	1.22E 3	1.638	-0.226	0.006	-12.117			
		5:KOMB B. MA	-421.456	897.694	-14.032	-0.120	-0.082	-9.199			
22859	16024	1:BEBAN MATI	251.456	-2.57E 3	-0.859	0.111	0.007	-0.822			
		2:BEBAN HIDL	47.959	-581.742	-0.132	0.017	0.001	-0.038			
		3:BEBAN GEM	1.09E 3	-445.545	14.951	0.308	-0.090	4.737			
		4:KOMBINASI	378.481	-4.01E 3	-1.243	0.160	0.010	-1.047			
		5:KOMB B. MA	1.42E 3	-3.39E 3	14.760	0.445	-0.088	4.130			
	15534	1:BEBAN MATI	-251.456	2.93E 3	0.859	-0.111	0.004	-31.534			
		2:BEBAN HIDL	-47.959	581.742	0.132	-0.017	0.000	-6.808			
		3:BEBAN GEM	-1.09E 3	445.545	-14.951	-0.308	-0.085	-9.980			
		4:KOMBINASI	-378.481	4.45E 3	1.243	-0.160	0.005	-48.734			
		5:KOMB B. MA	-1.42E 3	3.75E 3	-14.760	-0.445	-0.086	-46.098			



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Job No 1	Sheet No 604	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22860	16025	1:BEBAN MATI	515.602	1.42E 3	-3.103	0.753	0.024	-11.609			
		2:BEBAN HIDL	165.557	315.682	-0.880	0.073	0.007	-2.848			
		3:BEBAN GEM	-1.24E 3	-77.385	-20.255	0.436	0.155	-1.130			
		4:KOMBINASI	883.613	2.2E 3	-5.132	1.020	0.040	-18.488			
		5:KOMB B. MA	-682.340	1.52E 3	-24.899	1.255	0.191	-14.505			
15554	16025	1:BEBAN MATI	-515.602	-965.299	3.103	-0.753	0.021	29.122			
		2:BEBAN HIDL	-165.557	-315.682	0.880	-0.073	0.006	7.492			
		3:BEBAN GEM	1.24E 3	77.385	20.255	-0.436	0.143	-0.008			
		4:KOMBINASI	-883.613	-1.66E 3	5.132	-1.020	0.035	46.934			
		5:KOMB B. MA	682.340	-1.07E 3	24.899	-1.255	0.175	33.609			
22861	16026	1:BEBAN MATI	394.513	-2.78E 3	-0.464	0.499	0.005	-6.407			
		2:BEBAN HIDL	122.313	-725.952	-1.578	0.366	0.013	-1.873			
		3:BEBAN GEM	-1.05E 3	-112.011	-2.508	-0.837	0.003	1.401			
		4:KOMBINASI	669.116	-4.5E 3	-3.081	1.185	0.026	-10.686			
		5:KOMB B. MA	-634.413	-3.34E 3	-4.044	-0.160	0.016	-6.060			
15534	16026	1:BEBAN MATI	-394.513	3.23E 3	0.464	-0.499	0.002	-37.850			
		2:BEBAN HIDL	-122.313	725.952	1.578	-0.366	0.011	-8.805			
		3:BEBAN GEM	1.05E 3	112.011	2.508	0.837	0.034	-3.049			
		4:KOMBINASI	-669.116	5.04E 3	3.081	-1.185	0.019	-59.509			
		5:KOMB B. MA	634.413	3.79E 3	4.044	0.160	0.044	-46.335			
22862	16028	1:BEBAN MATI	189.189	463.785	0.000	0.000	0.000	1.054			
		2:BEBAN HIDL	56.759	72.484	0.000	0.000	-0.000	0.216			
		3:BEBAN GEM	1.01E 3	-25.109	-2.296	0.039	0.013	-0.341			
		4:KOMBINASI	317.841	672.515	0.000	0.000	0.000	1.610			
		5:KOMB B. MA	1.29E 3	480.910	-2.410	0.040	0.014	0.825			
15621	16028	1:BEBAN MATI	-189.189	-233.133	-0.000	-0.000	-0.000	3.047			
		2:BEBAN HIDL	-56.759	-72.484	-0.000	-0.000	-0.000	0.637			
		3:BEBAN GEM	-1.01E 3	25.109	2.296	-0.039	0.014	0.046			
		4:KOMBINASI	-317.841	-395.734	-0.000	-0.000	-0.000	4.675			
		5:KOMB B. MA	-1.29E 3	-250.259	2.410	-0.040	0.014	3.477			
22863	16030	1:BEBAN MATI	223.225	1.96E 3	0.046	0.000	-0.000	0.437			
		2:BEBAN HIDL	59.190	378.147	0.083	-0.016	-0.000	0.072			
		3:BEBAN GEM	1.11E 3	-403.314	-32.129	-0.198	0.193	-4.569			
		4:KOMBINASI	362.574	2.96E 3	0.188	-0.024	-0.001	0.641			
		5:KOMB B. MA	1.42E 3	1.77E 3	-33.640	-0.216	0.202	-4.317			
15581	16030	1:BEBAN MATI	-223.225	-1.6E 3	-0.046	-0.000	-0.000	20.539			
		2:BEBAN HIDL	-59.190	-378.147	-0.083	0.016	-0.001	4.378			
		3:BEBAN GEM	-1.11E 3	403.314	32.129	0.198	0.185	-0.177			
		4:KOMBINASI	-362.574	-2.53E 3	-0.188	0.024	-0.001	31.650			
		5:KOMB B. MA	-1.42E 3	-1.41E 3	33.640	0.216	0.194	22.979			
22864	16031	1:BEBAN MATI	241.978	463.327	-0.178	0.021	0.001	-2.462			
		2:BEBAN HIDL	75.660	58.961	-0.030	-0.003	0.000	-0.774			
		3:BEBAN GEM	-780.516	-12.499	-2.002	-0.116	0.006	-0.170			
		4:KOMBINASI	411.430	650.330	-0.262	0.021	0.001	-4.193			
		5:KOMB B. MA	-532.167	485.580	-2.298	-0.103	0.007	-3.105			
15621	16031	1:BEBAN MATI	-241.978	-175.012	0.178	-0.021	0.002	7.157			
		2:BEBAN HIDL	-75.660	-58.961	0.030	0.003	0.000	1.641			
		3:BEBAN GEM	780.516	12.499	2.002	0.116	0.024	-0.014			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

605

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-411.430	-304.353	0.262	-0.021	0.003	11.214			
		5:KOMB B. MA	532.167	-197.265	2.298	0.103	0.027	8.127			
22865	16032	1:BEBAN MATI	249.202	-857.621	0.303	-0.010	-0.002	-1.575			
		2:BEBAN HIDL	79.254	-233.096	0.048	0.004	-0.000	-0.580			
		3:BEBAN GEM	-743.986	8.576	6.692	0.101	-0.050	0.172			
		4:KOMBINASI	425.849	-1.4E 3	0.439	-0.005	-0.002	-2.817			
		5:KOMB B. MA	-484.431	-988.474	7.358	0.099	-0.054	-1.742			
	15581	1:BEBAN MATI	-249.202	1.15E 3	-0.303	0.010	-0.003	-13.161			
		2:BEBAN HIDL	-79.254	233.096	-0.048	-0.004	-0.000	-2.849			
		3:BEBAN GEM	743.986	-8.576	-6.692	-0.101	-0.049	-0.046			
		4:KOMBINASI	-425.849	1.75E 3	-0.439	0.005	-0.004	-20.352			
		5:KOMB B. MA	484.431	1.28E 3	-7.358	-0.099	-0.054	-14.919			
22866	16034	1:BEBAN MATI	152.006	-531.360	0.000	-0.000	-0.000	-0.499			
		2:BEBAN HIDL	48.927	-167.281	0.000	-0.000	-0.000	0.126			
		3:BEBAN GEM	611.075	-6.238	-1.682	-0.034	0.009	0.536			
		4:KOMBINASI	260.690	-905.281	0.000	-0.000	-0.000	-0.397			
		5:KOMB B. MA	822.991	-638.279	-1.766	-0.036	0.009	0.139			
	15612	1:BEBAN MATI	-152.006	762.012	-0.000	0.000	-0.000	-7.111			
		2:BEBAN HIDL	-48.927	167.281	-0.000	0.000	-0.000	-2.094			
		3:BEBAN GEM	-611.075	6.238	1.682	0.034	0.011	-0.609			
		4:KOMBINASI	-260.690	1.18E 3	-0.000	0.000	-0.000	-11.885			
		5:KOMB B. MA	-822.991	868.930	1.766	0.036	0.012	-9.008			
22867	16036	1:BEBAN MATI	251.456	-2.57E 3	0.859	-0.111	-0.007	-0.822			
		2:BEBAN HIDL	47.959	-581.742	0.132	-0.017	-0.001	-0.038			
		3:BEBAN GEM	1.12E 3	-437.952	-30.127	0.305	0.176	4.736			
		4:KOMBINASI	378.480	-4.01E 3	1.243	-0.160	-0.010	-1.047			
		5:KOMB B. MA	1.46E 3	-3.38E 3	-30.694	0.199	0.178	4.128			
	15535	1:BEBAN MATI	-251.456	2.93E 3	-0.859	0.111	-0.004	-31.534			
		2:BEBAN HIDL	-47.959	581.742	-0.132	0.017	-0.000	-6.808			
		3:BEBAN GEM	-1.12E 3	437.952	30.127	-0.305	0.178	-9.890			
		4:KOMBINASI	-378.480	4.45E 3	-1.243	0.160	-0.005	-48.734			
		5:KOMB B. MA	-1.46E 3	3.74E 3	30.694	-0.199	0.184	-46.003			
22868	16037	1:BEBAN MATI	365.525	1.52E 3	-1.669	1.091	0.010	-5.711			
		2:BEBAN HIDL	117.795	327.004	-0.171	0.194	0.000	-1.701			
		3:BEBAN GEM	-1.2E 3	-75.730	-13.356	0.418	0.093	-1.236			
		4:KOMBINASI	627.103	2.35E 3	-2.277	1.619	0.012	-9.575			
		5:KOMB B. MA	-819.618	1.64E 3	-15.796	1.646	0.108	-8.030			
	15612	1:BEBAN MATI	-365.525	-1.07E 3	1.669	-1.091	0.014	24.743			
		2:BEBAN HIDL	-117.795	-327.004	0.171	-0.194	0.002	6.511			
		3:BEBAN GEM	1.2E 3	75.730	13.356	-0.418	0.103	0.122			
		4:KOMBINASI	-627.103	-1.81E 3	2.277	-1.619	0.021	40.110			
		5:KOMB B. MA	819.618	-1.19E 3	15.796	-1.646	0.124	28.778			
22869	16038	1:BEBAN MATI	365.884	-2.63E 3	-1.854	0.670	0.015	-4.484			
		2:BEBAN HIDL	118.547	-701.616	-2.050	0.421	0.016	-1.321			
		3:BEBAN GEM	-1.1E 3	-105.162	22.455	-0.828	-0.176	1.176			
		4:KOMBINASI	628.736	-4.27E 3	-5.505	1.478	0.043	-7.494			
		5:KOMB B. MA	-715.542	-3.16E 3	20.494	0.053	-0.160	-4.042			
	15535	1:BEBAN MATI	-365.884	3.08E 3	1.854	-0.670	0.013	-37.461			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 606	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-118.547	701.616	2.050	-0.421	0.014	-9.000			
		3:BEBAN GEM	1.1E 3	105.162	-22.455	0.828	-0.155	-2.723			
		4:KOMBINASI	-628.736	4.81E 3	5.505	-1.478	0.038	-59.353			
		5:KOMB B. MA	715.542	3.61E 3	-20.494	-0.053	-0.141	-45.720			
22870	16039	1:BEBAN MATI	747.054	-1.51E 3	23.741	-5.544	-0.168	-7.000			
		2:BEBAN HIDL	223.784	-384.914	7.540	-2.020	-0.055	-1.325			
		3:BEBAN GEM	326.635	-396.415	11.425	0.227	-0.047	6.502			
		4:KOMBINASI	1.25E 3	-2.43E 3	40.552	-9.884	-0.289	-10.520			
		5:KOMB B. MA	1.22E 3	-2.16E 3	40.261	-6.517	-0.250	-0.968			
	15540	1:BEBAN MATI	-747.054	1.96E 3	-23.741	5.544	-0.181	-18.524			
		2:BEBAN HIDL	-223.784	384.914	-7.540	2.020	-0.056	-4.337			
		3:BEBAN GEM	-326.635	396.415	-11.425	-0.227	-0.121	-12.334			
		4:KOMBINASI	-1.25E 3	2.97E 3	-40.552	9.884	-0.307	-29.167			
		5:KOMB B. MA	-1.22E 3	2.61E 3	-40.261	6.517	-0.342	-34.076			
22871	16041	1:BEBAN MATI	343.612	764.989	-4.987	2.887	0.035	-9.565			
		2:BEBAN HIDL	118.107	151.534	-1.466	1.007	0.010	-1.908			
		3:BEBAN GEM	-298.230	-102.065	8.848	0.172	-0.058	-1.829			
		4:KOMBINASI	601.305	1.16E 3	-8.330	5.075	0.059	-14.530			
		5:KOMB B. MA	101.334	748.741	3.424	3.671	-0.020	-12.629			
	16047	1:BEBAN MATI	-343.612	-314.497	4.987	-2.887	0.038	17.505			
		2:BEBAN HIDL	-118.107	-151.534	1.466	-1.007	0.011	4.137			
		3:BEBAN GEM	298.230	102.065	-8.848	-0.172	-0.072	0.327			
		4:KOMBINASI	-601.305	-619.852	8.330	-5.075	0.064	27.624			
		5:KOMB B. MA	-101.334	-298.250	-3.424	-3.671	-0.031	20.330			
22872	16042	1:BEBAN MATI	434.880	-401.325	4.663	-2.425	-0.033	-17.556			
		2:BEBAN HIDL	127.017	-156.559	1.525	-0.922	-0.011	-4.110			
		3:BEBAN GEM	92.200	-382.486	8.022	0.254	-0.042	0.876			
		4:KOMBINASI	725.083	-732.084	8.036	-4.385	-0.058	-27.643			
		5:KOMB B. MA	607.900	-896.871	14.001	-2.711	-0.084	-19.102			
	16039	1:BEBAN MATI	-434.880	851.816	-4.663	2.425	-0.035	8.339			
		2:BEBAN HIDL	-127.017	156.559	-1.525	0.922	-0.011	1.807			
		3:BEBAN GEM	-92.200	382.486	-8.022	-0.254	-0.076	-6.502			
		4:KOMBINASI	-725.083	1.27E 3	-8.036	4.385	-0.060	12.898			
		5:KOMB B. MA	-607.900	1.35E 3	-14.001	2.711	-0.121	2.596			
22873	16044	1:BEBAN MATI	332.850	983.938	-4.523	2.286	0.034	-6.355			
		2:BEBAN HIDL	97.711	179.418	-1.426	0.800	0.011	-1.467			
		3:BEBAN GEM	-297.962	-385.139	16.635	0.155	-0.127	-4.818			
		4:KOMBINASI	555.759	1.47E 3	-7.709	4.022	0.058	-9.974			
		5:KOMB B. MA	78.617	687.192	12.088	2.928	-0.093	-12.294			
	16042	1:BEBAN MATI	-332.850	-533.446	4.523	-2.286	0.032	17.516			
		2:BEBAN HIDL	-97.711	-179.418	1.426	-0.800	0.010	4.106			
		3:BEBAN GEM	297.962	385.139	-16.635	-0.155	-0.117	-0.848			
		4:KOMBINASI	-555.759	-927.203	7.709	-4.022	0.055	27.589			
		5:KOMB B. MA	-78.617	-236.701	-12.088	-2.928	-0.085	19.089			
22874	16047	1:BEBAN MATI	271.517	-615.060	4.555	-1.747	-0.033	-17.530			
		2:BEBAN HIDL	93.548	-182.154	1.780	-0.686	-0.013	-4.145			
		3:BEBAN GEM	-457.849	-103.924	10.240	-0.164	-0.076	-0.314			
		4:KOMBINASI	475.497	-1.03E 3	8.313	-3.194	-0.060	-27.668			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 607	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-153.096	-833.472	16.375	-2.331	-0.120	-20.347			
	16051	1:BEBAN MATI	-271.517	1.07E 3	-4.555	1.747	-0.034	5.169			
		2:BEBAN HIDL	-93.548	182.154	-1.780	0.686	-0.014	1.465			
		3:BEBAN GEM	457.849	103.924	-10.240	0.164	-0.075	-1.215			
		4:KOMBINASI	-475.497	1.57E 3	-8.313	3.194	-0.063	8.548			
		5:KOMB B. MA	153.096	1.28E 3	-16.375	2.331	-0.121	4.773			
22875	16051	1:BEBAN MATI	410.402	-1.63E 3	37.462	-4.476	-0.276	-3.771			
		2:BEBAN HIDL	140.677	-376.971	13.359	-1.636	-0.099	-0.972			
		3:BEBAN GEM	-607.684	-111.143	12.095	-0.580	-0.097	1.286			
		4:KOMBINASI	717.566	-2.56E 3	66.329	-7.989	-0.489	-6.082			
		5:KOMB B. MA	-143.260	-1.97E 3	58.177	-6.067	-0.437	-3.005			
	15541	1:BEBAN MATI	-410.402	2.08E 3	-37.462	4.476	-0.275	-23.499			
		2:BEBAN HIDL	-140.677	376.971	-13.359	1.636	-0.098	-4.573			
		3:BEBAN GEM	607.684	111.143	-12.095	0.580	-0.081	-2.921			
		4:KOMBINASI	-717.566	3.1E 3	-66.329	7.989	-0.486	-35.516			
		5:KOMB B. MA	143.260	2.42E 3	-58.177	6.067	-0.419	-29.310			
22876	16054	1:BEBAN MATI	984.536	-2.82E 3	-0.693	-0.023	0.007	-13.981			
		2:BEBAN HIDL	352.285	-857.271	-0.080	-0.013	0.001	-3.462			
		3:BEBAN GEM	335.501	-369.113	9.204	0.214	-0.053	6.035			
		4:KOMBINASI	1.75E 3	-4.75E 3	-0.960	-0.047	0.010	-22.316			
		5:KOMB B. MA	1.55E 3	-3.72E 3	8.923	0.194	-0.049	-9.721			
	15541	1:BEBAN MATI	-984.536	3.27E 3	0.693	0.023	0.003	-30.788			
		2:BEBAN HIDL	-352.285	857.271	0.080	0.013	0.000	-9.148			
		3:BEBAN GEM	-335.501	369.113	-9.204	-0.214	-0.082	-11.464			
		4:KOMBINASI	-1.75E 3	5.29E 3	0.960	0.047	0.005	-51.583			
		5:KOMB B. MA	-1.55E 3	4.17E 3	-8.923	-0.194	-0.083	-48.315			
22877	16055	1:BEBAN MATI	594.951	-874.053	-0.532	-0.021	0.003	-31.444			
		2:BEBAN HIDL	215.820	-338.434	-0.088	-0.004	0.000	-8.894			
		3:BEBAN GEM	359.835	-338.813	10.080	0.068	-0.070	0.983			
		4:KOMBINASI	1.06E 3	-1.59E 3	-0.780	-0.033	0.003	-51.964			
		5:KOMB B. MA	1.1E 3	-1.43E 3	9.999	0.047	-0.070	-35.748			
	16054	1:BEBAN MATI	-594.951	1.32E 3	0.532	0.021	0.005	15.273			
		2:BEBAN HIDL	-215.820	338.434	0.088	0.004	0.001	3.916			
		3:BEBAN GEM	-359.835	338.813	-10.080	-0.068	-0.079	-5.967			
		4:KOMBINASI	-1.06E 3	2.13E 3	0.780	0.033	0.008	24.594			
		5:KOMB B. MA	-1.1E 3	1.88E 3	-9.999	-0.047	-0.077	11.357			
22878	16056	1:BEBAN MATI	439.153	1.52E 3	-0.037	-0.035	-0.001	-12.251			
		2:BEBAN HIDL	165.887	360.260	-0.004	-0.005	-0.000	-3.571			
		3:BEBAN GEM	423.581	-341.683	11.287	-0.051	-0.083	-4.146			
		4:KOMBINASI	792.402	2.4E 3	-0.049	-0.050	-0.002	-20.415			
		5:KOMB B. MA	983.445	1.38E 3	11.813	-0.092	-0.089	-18.747			
	16055	1:BEBAN MATI	-439.153	-1.07E 3	0.037	0.035	0.002	31.344			
		2:BEBAN HIDL	-165.887	-360.260	0.004	0.005	0.000	8.870			
		3:BEBAN GEM	-423.581	341.683	-11.287	0.051	-0.083	-0.880			
		4:KOMBINASI	-792.402	-1.86E 3	0.049	0.050	0.003	51.805			
		5:KOMB B. MA	-983.445	-930.066	-11.813	0.092	-0.085	35.742			
22879	16058	1:BEBAN MATI	199.959	903.837	-6.035	2.204	0.045	-3.601			
		2:BEBAN HIDL	72.359	162.653	-2.161	0.806	0.016	-1.065			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 608	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-1.01E 3	-93.778	0.851	0.191	-0.021	-1.459			
		4:KOMBINASI	355.725	1.34E 3	-10.700	3.934	0.080	-6.025			
		5:KOMB B. MA	-814.579	902.961	-6.438	2.888	0.033	-5.772			
	15561	1:BEBAN MATI	-199.959	-453.345	6.035	-2.204	0.044	13.583			
		2:BEBAN HIDL	-72.359	-162.653	2.161	-0.806	0.015	3.458			
		3:BEBAN GEM	1.01E 3	93.778	-0.851	-0.191	0.008	0.080			
		4:KOMBINASI	-355.725	-804.258	10.700	-3.934	0.077	21.832			
		5:KOMB B. MA	814.579	-452.470	6.438	-2.888	0.062	15.741			
22880	16065	1:BEBAN MATI	372.073	-1.46E 3	38.884	-4.835	-0.288	-2.158			
		2:BEBAN HIDL	134.650	-355.694	13.902	-1.727	-0.103	-0.558			
		3:BEBAN GEM	-785.678	-104.419	4.881	-0.565	-0.041	1.415			
		4:KOMBINASI	661.928	-2.32E 3	68.904	-8.566	-0.510	-3.482			
		5:KOMB B. MA	-372.099	-1.78E 3	52.350	-6.465	-0.393	-1.007			
	15542	1:BEBAN MATI	-372.073	1.91E 3	-38.884	4.835	-0.284	-22.628			
		2:BEBAN HIDL	-134.650	355.694	-13.902	1.727	-0.102	-4.674			
		3:BEBAN GEM	785.678	104.419	-4.881	0.565	-0.031	-2.951			
		4:KOMBINASI	-661.928	2.86E 3	-68.904	8.566	-0.504	-34.632			
		5:KOMB B. MA	372.099	2.23E 3	-52.350	6.465	-0.377	-28.530			
22881	16068	1:BEBAN MATI	984.536	-2.82E 3	0.693	0.023	-0.007	-13.981			
		2:BEBAN HIDL	352.285	-857.271	0.080	0.013	-0.001	-3.462			
		3:BEBAN GEM	337.759	-368.371	-14.249	0.217	0.097	6.055			
		4:KOMBINASI	1.75E 3	-4.75E 3	0.960	0.047	-0.010	-22.316			
		5:KOMB B. MA	1.55E 3	-3.72E 3	-14.220	0.258	0.094	-9.700			
	15542	1:BEBAN MATI	-984.536	3.27E 3	-0.693	-0.023	-0.003	-30.788			
		2:BEBAN HIDL	-352.285	857.271	-0.080	-0.013	-0.000	-9.148			
		3:BEBAN GEM	-337.759	368.371	14.249	-0.217	0.113	-11.474			
		4:KOMBINASI	-1.75E 3	5.29E 3	-0.960	-0.047	-0.005	-51.583			
		5:KOMB B. MA	-1.55E 3	4.17E 3	14.220	-0.258	0.115	-48.324			
22882	16069	1:BEBAN MATI	594.951	-874.053	0.532	0.021	-0.003	-31.444			
		2:BEBAN HIDL	215.820	-338.434	0.088	0.004	-0.000	-8.894			
		3:BEBAN GEM	369.749	-339.269	-13.066	0.071	0.090	0.993			
		4:KOMBINASI	1.06E 3	-1.59E 3	0.780	0.033	-0.003	-51.964			
		5:KOMB B. MA	1.11E 3	-1.43E 3	-13.134	0.099	0.092	-35.738			
	16068	1:BEBAN MATI	-594.951	1.32E 3	-0.532	-0.021	-0.005	15.273			
		2:BEBAN HIDL	-215.820	338.434	-0.088	-0.004	-0.001	3.916			
		3:BEBAN GEM	-369.749	339.269	13.066	-0.071	0.102	-5.984			
		4:KOMBINASI	-1.06E 3	2.13E 3	-0.780	-0.033	-0.008	24.594			
		5:KOMB B. MA	-1.11E 3	1.88E 3	13.134	-0.099	0.102	11.340			
22883	16070	1:BEBAN MATI	439.152	1.52E 3	0.037	0.035	0.001	-12.251			
		2:BEBAN HIDL	165.887	360.260	0.004	0.005	0.000	-3.571			
		3:BEBAN GEM	442.036	-343.249	-12.555	-0.048	0.092	-4.162			
		4:KOMBINASI	792.402	2.4E 3	0.049	0.050	0.002	-20.415			
		5:KOMB B. MA	1E 3	1.38E 3	-13.144	-0.012	0.097	-18.764			
	16069	1:BEBAN MATI	-439.152	-1.07E 3	-0.037	-0.035	-0.002	31.344			
		2:BEBAN HIDL	-165.887	-360.260	-0.004	-0.005	-0.000	8.870			
		3:BEBAN GEM	-442.036	343.249	12.555	0.048	0.093	-0.887			
		4:KOMBINASI	-792.402	-1.86E 3	-0.049	-0.050	-0.003	51.805			
		5:KOMB B. MA	-1E 3	-928.422	13.144	0.012	0.096	35.735			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 609	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22884	16072	1:BEBAN MATI	271.516	1.07E 3	-4.555	1.747	0.034	-5.169			
		2:BEBAN HIDL	93.548	182.154	-1.780	0.686	0.014	-1.465			
		3:BEBAN GEM	-477.719	-100.743	-10.128	0.169	0.074	-1.318			
		4:KOMBINASI	475.497	1.57E 3	-8.313	3.194	0.063	-8.548			
		5:KOMB B. MA	-173.960	1.07E 3	-16.257	2.336	0.119	-7.433			
16077	16077	1:BEBAN MATI	-271.516	-615.060	4.555	-1.747	0.033	17.530			
		2:BEBAN HIDL	-93.548	-182.154	1.780	-0.686	0.013	4.145			
		3:BEBAN GEM	477.719	100.743	10.128	-0.169	0.075	-0.164			
		4:KOMBINASI	-475.497	-1.03E 3	8.313	-3.194	0.060	27.668			
		5:KOMB B. MA	173.960	-618.572	16.257	-2.336	0.120	19.845			
22885	16075	1:BEBAN MATI	424.347	1.67E 3	-2.502	1.337	0.017	-7.683			
		2:BEBAN HIDL	134.533	351.276	-0.351	0.278	0.002	-2.261			
		3:BEBAN GEM	-1.2E 3	-95.439	10.372	0.405	-0.074	-1.313			
		4:KOMBINASI	724.469	2.57E 3	-3.564	2.049	0.023	-12.837			
		5:KOMB B. MA	-752.283	1.78E 3	8.178	1.929	-0.059	-10.418			
15556	15556	1:BEBAN MATI	-424.347	-1.22E 3	2.502	-1.337	0.020	28.926			
		2:BEBAN HIDL	-134.533	-351.276	0.351	-0.278	0.004	7.429			
		3:BEBAN GEM	1.2E 3	95.439	-10.372	-0.405	-0.079	-0.091			
		4:KOMBINASI	-724.469	-2.02E 3	3.564	-2.049	0.029	46.597			
		5:KOMB B. MA	752.283	-1.33E 3	-8.178	-1.929	-0.061	33.288			
22886	16077	1:BEBAN MATI	343.612	-314.497	4.987	-2.887	-0.038	-17.505			
		2:BEBAN HIDL	118.107	-151.534	1.466	-1.007	-0.011	-4.137			
		3:BEBAN GEM	-216.587	-102.965	-9.018	-0.165	0.078	0.179			
		4:KOMBINASI	601.305	-619.851	8.330	-5.075	-0.064	-27.624			
		5:KOMB B. MA	187.059	-513.531	-3.603	-3.664	0.037	-19.798			
16081	16081	1:BEBAN MATI	-343.612	764.989	-4.987	2.887	-0.035	9.565			
		2:BEBAN HIDL	-118.107	151.534	-1.466	1.007	-0.010	1.908			
		3:BEBAN GEM	216.587	102.965	9.018	0.165	0.055	-1.694			
		4:KOMBINASI	-601.305	1.16E 3	-8.330	5.075	-0.059	14.530			
		5:KOMB B. MA	-187.059	964.023	3.603	3.664	0.016	8.931			
22887	16081	1:BEBAN MATI	629.568	-1.41E 3	23.449	-5.930	-0.178	-8.142			
		2:BEBAN HIDL	212.664	-377.072	7.462	-2.081	-0.055	-1.410			
		3:BEBAN GEM	-17.411	-110.631	-2.591	-0.585	0.024	1.765			
		4:KOMBINASI	1.1E 3	-2.29E 3	40.078	-10.446	-0.302	-12.026			
		5:KOMB B. MA	738.885	-1.75E 3	25.206	-7.792	-0.186	-7.134			
15543	15543	1:BEBAN MATI	-629.568	1.86E 3	-23.449	5.930	-0.167	-15.887			
		2:BEBAN HIDL	-212.664	377.072	-7.462	2.081	-0.054	-4.137			
		3:BEBAN GEM	17.411	110.631	2.591	0.585	0.014	-3.393			
		4:KOMBINASI	-1.1E 3	2.83E 3	-40.078	10.446	-0.287	-25.684			
		5:KOMB B. MA	-738.885	2.2E 3	-25.206	7.792	-0.184	-21.932			
22888	16084	1:BEBAN MATI	769.594	-2.63E 3	7.732	1.387	-0.051	-10.575			
		2:BEBAN HIDL	248.745	-725.864	1.907	0.671	-0.012	-2.523			
		3:BEBAN GEM	-1.54E 3	-124.843	26.607	-0.888	-0.198	1.713			
		4:KOMBINASI	1.32E 3	-4.32E 3	12.330	2.738	-0.081	-16.727			
		5:KOMB B. MA	-694.443	-3.19E 3	36.814	0.857	-0.266	-10.290			
15536	15536	1:BEBAN MATI	-769.594	3.08E 3	-7.732	-1.387	-0.062	-31.397			
		2:BEBAN HIDL	-248.745	725.864	-1.907	-0.671	-0.016	-8.155			
		3:BEBAN GEM	1.54E 3	124.843	-26.607	0.888	-0.194	-3.550			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 610	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-1.32E 3	4.86E 3	-12.330	-2.738	-0.100	-50.724			
		5:KOMB B. MA	694.443	3.65E 3	-36.814	-0.857	-0.275	-40.018			
22889	16085	1:BEBAN MATI	747.054	-1.51E 3	-23.741	5.544	0.168	-7.000			
		2:BEBAN HIDL	223.784	-384.914	-7.540	2.020	0.055	-1.325			
		3:BEBAN GEM	246.431	-365.003	-12.262	0.226	0.065	6.093			
		4:KOMBINASI	1.25E 3	-2.43E 3	-40.552	9.884	0.289	-10.520			
		5:KOMB B. MA	1.14E 3	-2.12E 3	-41.139	6.993	0.270	-1.397			
	15543	1:BEBAN MATI	-747.054	1.96E 3	23.741	-5.544	0.181	-18.524			
		2:BEBAN HIDL	-223.784	384.914	7.540	-2.020	0.056	-4.337			
		3:BEBAN GEM	-246.431	365.003	12.262	-0.226	0.115	-11.462			
		4:KOMBINASI	-1.25E 3	2.97E 3	40.552	-9.884	0.307	-29.167			
		5:KOMB B. MA	-1.14E 3	2.57E 3	41.139	-6.993	0.335	-33.161			
22890	16086	1:BEBAN MATI	434.880	-401.325	-4.663	2.425	0.033	-17.556			
		2:BEBAN HIDL	127.017	-156.559	-1.525	0.922	0.011	-4.110			
		3:BEBAN GEM	-28.288	-351.169	-8.785	-0.004	0.048	0.873			
		4:KOMBINASI	725.083	-732.084	-8.036	4.385	0.058	-27.643			
		5:KOMB B. MA	481.388	-863.988	-14.802	2.974	0.091	-19.105			
	16085	1:BEBAN MATI	-434.880	851.816	4.663	-2.425	0.035	8.339			
		2:BEBAN HIDL	-127.017	156.559	1.525	-0.922	0.011	1.807			
		3:BEBAN GEM	28.288	351.169	8.785	0.004	0.081	-6.039			
		4:KOMBINASI	-725.083	1.27E 3	8.036	-4.385	0.060	12.898			
		5:KOMB B. MA	-481.388	1.31E 3	14.802	-2.974	0.127	3.083			
22891	16087	1:BEBAN MATI	332.850	983.938	4.523	-2.286	-0.034	-6.355			
		2:BEBAN HIDL	97.712	179.418	1.426	-0.800	-0.011	-1.467			
		3:BEBAN GEM	-486.878	-352.010	-17.576	-0.089	0.137	-4.352			
		4:KOMBINASI	555.759	1.47E 3	7.709	-4.022	-0.058	-9.974			
		5:KOMB B. MA	-119.745	721.978	-13.076	-2.859	0.103	-11.805			
	16086	1:BEBAN MATI	-332.850	-533.446	-4.523	2.286	-0.032	17.516			
		2:BEBAN HIDL	-97.712	-179.418	-1.426	0.800	-0.010	4.106			
		3:BEBAN GEM	486.878	352.010	17.576	0.089	0.122	-0.826			
		4:KOMBINASI	-555.759	-927.203	-7.709	4.022	-0.055	27.589			
		5:KOMB B. MA	119.745	-271.486	13.076	2.859	0.090	19.112			
22892	16088	1:BEBAN MATI	459.795	-1.02E 3	-32.180	3.950	0.215	-3.887			
		2:BEBAN HIDL	127.016	-252.290	-8.079	1.228	0.053	-0.539			
		3:BEBAN GEM	162.234	-132.238	2.371	-0.481	-0.049	1.947			
		4:KOMBINASI	754.980	-1.62E 3	-51.544	6.705	0.343	-5.528			
		5:KOMB B. MA	706.350	-1.31E 3	-34.539	4.182	0.196	-2.167			
	15498	1:BEBAN MATI	-459.795	1.38E 3	32.180	-3.950	0.163	-10.180			
		2:BEBAN HIDL	-127.016	252.290	8.079	-1.228	0.042	-2.430			
		3:BEBAN GEM	-162.234	132.238	-2.371	0.481	0.021	-3.503			
		4:KOMBINASI	-754.980	2.05E 3	51.544	-6.705	0.263	-16.103			
		5:KOMB B. MA	-706.350	1.67E 3	34.539	-4.182	0.211	-15.315			
22893	16090	1:BEBAN MATI	725.062	1.68E 3	9.193	-3.790	-0.025	4.136			
		2:BEBAN HIDL	171.381	329.589	2.519	-1.246	-0.006	1.131			
		3:BEBAN GEM	-326.201	-366.805	-4.649	-0.231	0.029	-8.984			
		4:KOMBINASI	1.14E 3	2.54E 3	15.062	-6.542	-0.039	6.772			
		5:KOMB B. MA	485.380	1.49E 3	5.823	-4.781	0.002	-4.619			
	16097	1:BEBAN MATI	-725.062	-1.46E 3	-9.193	3.790	-0.043	7.398			



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Job No 1	Sheet No 611	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-171.381	-329.589	-2.519	1.246	-0.013	1.294			
		3:BEBAN GEM	326.201	366.805	4.649	0.231	0.005	6.287			
		4:KOMBINASI	-1.14E 3	-2.27E 3	-15.062	6.542	-0.072	10.947			
		5:KOMB B. MA	-485.380	-1.27E 3	-5.823	4.781	-0.045	14.775			
22894	16091	1:BEBAN MATI	229.180	-248.346	-6.803	2.107	0.046	-9.708			
		2:BEBAN HIDL	66.405	-114.084	-1.690	0.635	0.012	-2.133			
		3:BEBAN GEM	128.803	-126.800	0.872	-0.185	-0.011	0.481			
		4:KOMBINASI	381.264	-480.551	-10.868	3.544	0.074	-15.061			
		5:KOMB B. MA	404.267	-449.937	-6.902	2.294	0.041	-10.482			
	16088	1:BEBAN MATI	-229.180	608.740	6.803	-2.107	0.034	4.665			
		2:BEBAN HIDL	-66.405	114.084	1.690	-0.635	0.008	0.790			
		3:BEBAN GEM	-128.803	126.800	-0.872	0.185	0.001	-1.973			
		4:KOMBINASI	-381.264	913.023	10.868	-3.544	0.054	6.862			
		5:KOMB B. MA	-404.267	810.331	6.902	-2.294	0.040	3.067			
22895	16093	1:BEBAN MATI	188.925	673.402	7.143	-0.354	-0.040	-3.993			
		2:BEBAN HIDL	58.497	80.245	2.502	-0.199	-0.015	-1.214			
		3:BEBAN GEM	62.817	-130.648	-2.568	0.124	0.015	-1.073			
		4:KOMBINASI	320.306	936.474	12.574	-0.743	-0.072	-6.734			
		5:KOMB B. MA	289.982	584.369	5.948	-0.344	-0.034	-5.848			
	16091	1:BEBAN MATI	-188.925	-313.008	-7.143	0.354	-0.044	9.797			
		2:BEBAN HIDL	-58.497	-80.245	-2.502	0.199	-0.015	2.158			
		3:BEBAN GEM	-62.817	130.648	2.568	-0.124	0.015	-0.465			
		4:KOMBINASI	-320.306	-504.002	-12.574	0.743	-0.076	15.210			
		5:KOMB B. MA	-289.982	-223.975	-5.948	0.344	-0.036	10.604			
22896	16095	1:BEBAN MATI	789.184	2.87E 3	-1.017	0.081	0.004	5.832			
		2:BEBAN HIDL	270.119	726.016	-0.203	0.009	0.001	2.749			
		3:BEBAN GEM	-202.187	-351.157	1.683	-0.231	-0.004	-8.736			
		4:KOMBINASI	1.38E 3	4.61E 3	-1.546	0.111	0.007	11.398			
		5:KOMB B. MA	738.959	2.94E 3	0.628	-0.157	0.001	-1.691			
	16100	1:BEBAN MATI	-789.184	-2.65E 3	1.017	-0.081	0.003	14.475			
		2:BEBAN HIDL	-270.119	-726.016	0.203	-0.009	0.000	2.590			
		3:BEBAN GEM	202.187	351.157	-1.683	0.231	-0.009	6.154			
		4:KOMBINASI	-1.38E 3	-4.34E 3	1.546	-0.111	0.005	21.515			
		5:KOMB B. MA	-738.959	-2.72E 3	-0.628	0.157	-0.005	22.490			
22897	16097	1:BEBAN MATI	584.044	1.14E 3	7.127	-2.762	-0.019	-7.827			
		2:BEBAN HIDL	136.776	218.260	2.049	-0.892	-0.005	-1.412			
		3:BEBAN GEM	-293.877	-361.858	-3.189	-0.241	0.019	-6.276			
		4:KOMBINASI	919.695	1.71E 3	11.831	-4.742	-0.031	-11.651			
		5:KOMB B. MA	357.538	886.087	5.009	-3.551	-0.003	-15.265			
	16102	1:BEBAN MATI	-584.044	-909.837	-7.127	2.762	-0.033	15.348			
		2:BEBAN HIDL	-136.776	-218.260	-2.049	0.892	-0.010	3.017			
		3:BEBAN GEM	293.877	361.858	3.189	0.241	0.005	3.615			
		4:KOMBINASI	-919.695	-1.44E 3	-11.831	4.742	-0.056	23.244			
		5:KOMB B. MA	-357.538	-660.841	-5.009	3.551	-0.034	20.953			
22898	16100	1:BEBAN MATI	630.836	1.99E 3	-1.185	0.119	0.005	-14.917			
		2:BEBAN HIDL	213.501	492.545	-0.320	0.017	0.002	-2.698			
		3:BEBAN GEM	-166.215	-339.641	1.224	-0.177	-0.001	-6.071			
		4:KOMBINASI	1.1E 3	3.18E 3	-1.933	0.170	0.008	-22.217			



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Job No

1

Sheet No

612

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	584.411	1.93E 3	-0.091	-0.056	0.005	-22.910			
	16105	1:BEBAN MATI	-630.836	-1.77E 3	1.185	-0.119	0.004	28.744			
		2:BEBAN HIDL	-213.501	-492.545	0.320	-0.017	0.001	6.320			
		3:BEBAN GEM	166.215	339.641	-1.224	0.177	-0.008	3.573			
		4:KOMBINASI	-1.1E 3	-2.91E 3	1.933	-0.170	0.006	44.606			
		5:KOMB B. MA	-584.411	-1.71E 3	0.091	0.056	-0.004	36.288			
22899	16102	1:BEBAN MATI	501.622	605.140	4.663	-1.884	-0.007	-15.733			
		2:BEBAN HIDL	118.041	119.580	1.308	-0.606	-0.001	-3.119			
		3:BEBAN GEM	-271.163	-362.654	-1.163	-0.229	0.012	-3.597			
		4:KOMBINASI	790.812	917.495	7.688	-3.230	-0.011	-23.870			
		5:KOMB B. MA	287.725	296.102	4.226	-2.488	0.005	-21.381			
	15547	1:BEBAN MATI	-501.622	-379.895	-4.663	1.884	-0.027	19.355			
		2:BEBAN HIDL	-118.041	-119.580	-1.308	0.606	-0.008	3.999			
		3:BEBAN GEM	271.163	362.654	1.163	0.229	-0.004	0.930			
		4:KOMBINASI	-790.812	-647.201	-7.688	3.230	-0.046	29.624			
		5:KOMB B. MA	-287.725	-70.856	-4.226	2.488	-0.036	22.731			
22900	16105	1:BEBAN MATI	547.227	1.2E 3	-1.225	0.134	0.005	-29.250			
		2:BEBAN HIDL	182.052	304.268	-0.527	0.018	0.002	-6.456			
		3:BEBAN GEM	-145.593	-335.655	2.649	-0.128	-0.002	-3.478			
		4:KOMBINASI	947.955	1.92E 3	-2.313	0.189	0.010	-45.430			
		5:KOMB B. MA	503.585	1.03E 3	1.240	0.009	0.004	-36.776			
	15599	1:BEBAN MATI	-547.227	-972.576	1.225	-0.134	0.004	37.232			
		2:BEBAN HIDL	-182.052	-304.268	0.527	-0.018	0.002	8.694			
		3:BEBAN GEM	145.593	335.655	-2.649	0.128	-0.017	1.009			
		4:KOMBINASI	-947.955	-1.65E 3	2.313	-0.189	0.007	58.589			
		5:KOMB B. MA	-503.585	-802.699	-1.240	-0.009	-0.013	43.508			
22901	16106	1:BEBAN MATI	-0.279	-659.111	-1.106	-0.015	0.005	-6.333			
		2:BEBAN HIDL	1.399	-216.443	-0.092	0.040	0.000	-1.745			
		3:BEBAN GEM	24.003	-0.141	0.998	0.022	-0.004	0.296			
		4:KOMBINASI	1.904	-1.14E 3	-1.475	0.046	0.006	-10.391			
		5:KOMB B. MA	25.764	-789.125	-0.114	0.032	0.001	-7.069			
	15547	1:BEBAN MATI	0.279	889.763	1.106	0.015	0.008	-2.781			
		2:BEBAN HIDL	-1.399	216.443	0.092	-0.040	0.001	-0.802			
		3:BEBAN GEM	-24.003	0.141	-0.998	-0.022	-0.008	-0.298			
		4:KOMBINASI	-1.904	1.41E 3	1.475	-0.046	0.011	-4.621			
		5:KOMB B. MA	-25.764	1.02E 3	0.114	-0.032	0.001	-3.575			
22902	16107	1:BEBAN MATI	44.378	-145.656	-0.209	-0.058	0.003	-10.495			
		2:BEBAN HIDL	15.022	-85.706	0.119	0.041	0.000	-3.110			
		3:BEBAN GEM	47.333	-9.786	0.279	0.023	-0.003	0.161			
		4:KOMBINASI	77.289	-311.917	-0.061	-0.004	0.004	-17.570			
		5:KOMB B. MA	103.091	-207.354	0.154	-0.009	0.001	-12.191			
	16106	1:BEBAN MATI	-44.378	376.307	0.209	0.058	-0.001	7.424			
		2:BEBAN HIDL	-15.022	85.706	-0.119	-0.041	-0.001	2.102			
		3:BEBAN GEM	-47.333	9.786	-0.279	-0.023	-0.001	-0.277			
		4:KOMBINASI	-77.289	588.699	0.061	0.004	-0.003	12.271			
		5:KOMB B. MA	-103.091	438.006	-0.154	0.009	-0.002	8.394			
22903	16108	1:BEBAN MATI	71.281	672.733	0.281	-0.053	-0.000	-3.858			
		2:BEBAN HIDL	23.741	151.436	0.287	0.044	-0.001	-1.313			



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Job No 1	Sheet No 613	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	76.315	-8.604	-0.066	-0.017	-0.000	0.052			
		4:KOMBINASI	123.522	1.05E 3	0.796	0.007	-0.002	-6.729			
		5:KOMB B. MA	165.656	754.559	0.383	-0.044	-0.001	-4.591			
	16107	1:BEBAN MATI	-71.281	-442.081	-0.281	0.053	-0.003	10.417			
		2:BEBAN HIDL	-23.741	-151.436	-0.287	-0.044	-0.002	3.095			
		3:BEBAN GEM	-76.315	8.604	0.066	0.017	0.001	-0.153			
		4:KOMBINASI	-123.522	-772.794	-0.796	-0.007	-0.007	17.452			
		5:KOMB B. MA	-165.656	-523.908	-0.383	0.044	-0.003	12.113			
22904	16110	1:BEBAN MATI	464.594	-1.18E 3	0.432	2.113	0.012	-13.295			
		2:BEBAN HIDL	119.364	-250.011	0.047	0.631	0.005	-2.822			
		3:BEBAN GEM	-188.326	-361.288	-2.448	0.130	0.014	1.792			
		4:KOMBINASI	748.496	-1.82E 3	0.593	3.545	0.022	-20.469			
		5:KOMB B. MA	338.471	-1.71E 3	-2.111	2.628	0.029	-13.107			
	16115	1:BEBAN MATI	-464.594	1.41E 3	-0.432	-2.113	-0.015	3.779			
		2:BEBAN HIDL	-119.364	250.011	-0.047	-0.631	-0.005	0.984			
		3:BEBAN GEM	188.326	361.288	2.448	-0.130	0.004	-4.449			
		4:KOMBINASI	-748.496	2.09E 3	-0.593	-3.545	-0.026	6.108			
		5:KOMB B. MA	-338.471	1.94E 3	2.111	-2.628	-0.013	-0.302			
22905	16113	1:BEBAN MATI	475.349	-2.39E 3	-0.338	0.151	0.001	-23.790			
		2:BEBAN HIDL	150.724	-536.272	-0.410	0.018	0.002	-5.889			
		3:BEBAN GEM	-103.543	-346.715	-1.930	0.182	0.014	1.688			
		4:KOMBINASI	811.578	-3.73E 3	-1.062	0.210	0.005	-37.971			
		5:KOMB B. MA	457.063	-3.08E 3	-2.611	0.353	0.017	-25.551			
	16118	1:BEBAN MATI	-475.349	2.62E 3	0.338	-0.151	0.001	5.375			
		2:BEBAN HIDL	-150.724	536.272	0.410	-0.018	0.001	1.945			
		3:BEBAN GEM	103.543	346.715	1.930	-0.182	0.001	-4.238			
		4:KOMBINASI	-811.578	4E 3	1.062	-0.210	0.003	9.562			
		5:KOMB B. MA	-457.063	3.3E 3	2.611	-0.353	0.002	2.092			
22906	16115	1:BEBAN MATI	497.882	-1.69E 3	-0.504	2.947	0.026	-3.355			
		2:BEBAN HIDL	137.000	-351.362	-0.271	0.950	0.011	-0.866			
		3:BEBAN GEM	-117.907	-367.620	-3.671	0.225	0.016	4.522			
		4:KOMBINASI	816.659	-2.59E 3	-1.039	5.057	0.049	-5.412			
		5:KOMB B. MA	456.280	-2.28E 3	-4.521	3.754	0.050	0.873			
	16120	1:BEBAN MATI	-497.882	1.91E 3	0.504	-2.947	-0.023	-9.885			
		2:BEBAN HIDL	-137.000	351.362	0.271	-0.950	-0.009	-1.718			
		3:BEBAN GEM	117.907	367.620	3.671	-0.225	0.011	-7.226			
		4:KOMBINASI	-816.659	2.86E 3	1.039	-5.057	-0.041	-14.611			
		5:KOMB B. MA	-456.280	2.51E 3	4.521	-3.754	-0.017	-18.502			
22907	16118	1:BEBAN MATI	462.332	-3.22E 3	-0.052	0.115	-0.001	-4.727			
		2:BEBAN HIDL	143.124	-746.789	-0.434	0.013	0.001	-1.827			
		3:BEBAN GEM	-54.906	-362.692	-4.367	0.234	0.023	4.323			
		4:KOMBINASI	783.797	-5.06E 3	-0.756	0.159	0.001	-8.595			
		5:KOMB B. MA	490.555	-4.05E 3	-4.898	0.369	0.023	-1.284			
	16123	1:BEBAN MATI	-462.332	3.45E 3	0.052	-0.115	0.002	-19.799			
		2:BEBAN HIDL	-143.124	746.789	0.434	-0.013	0.002	-3.666			
		3:BEBAN GEM	54.906	362.692	4.367	-0.234	0.009	-6.990			
		4:KOMBINASI	-783.797	5.33E 3	0.756	-0.159	0.005	-29.624			
		5:KOMB B. MA	-490.555	4.28E 3	4.898	-0.369	0.013	-29.338			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 614	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22908	16120	1:BEBAN MATI	623.431	-2.06E 3	-62.486	3.421	0.176	10.414			
		2:BEBAN HIDL	189.565	-404.637	-24.670	1.130	0.070	1.870			
		3:BEBAN GEM	-0.030	-384.016	-20.469	0.377	0.041	7.292			
		4:KOMBINASI	1.05E 3	-3.12E 3	-114.455	5.913	0.323	15.488			
		5:KOMB B. MA	737.139	-2.71E 3	-98.780	4.495	0.261	19.192			
15501	16120	1:BEBAN MATI	-623.431	2.29E 3	62.486	-3.421	0.283	-26.414			
		2:BEBAN HIDL	-189.565	404.637	24.670	-1.130	0.112	-4.846			
		3:BEBAN GEM	0.030	384.016	20.469	-0.377	0.109	-10.116			
		4:KOMBINASI	-1.05E 3	3.39E 3	114.455	-5.913	0.519	-39.450			
		5:KOMB B. MA	-737.139	2.93E 3	98.780	-4.495	0.465	-39.944			
22909	16123	1:BEBAN MATI	461.530	-3.9E 3	0.660	0.045	-0.006	20.481			
		2:BEBAN HIDL	139.423	-884.836	-1.639	0.006	0.004	3.808			
		3:BEBAN GEM	41.155	-399.351	-18.310	0.315	0.063	7.045			
		4:KOMBINASI	776.913	-6.09E 3	-1.830	0.063	-0.000	30.671			
		5:KOMB B. MA	588.397	-4.85E 3	-19.549	0.379	0.063	30.163			
15529	16123	1:BEBAN MATI	-461.530	4.12E 3	-0.660	-0.045	0.001	-49.970			
		2:BEBAN HIDL	-139.423	884.836	1.639	-0.006	0.008	-10.316			
		3:BEBAN GEM	-41.155	399.351	18.310	-0.315	0.072	-9.982			
		4:KOMBINASI	-776.913	6.36E 3	1.830	-0.063	0.014	-76.470			
		5:KOMB B. MA	-588.397	5.07E 3	19.549	-0.379	0.081	-66.641			
22910	16124	1:BEBAN MATI	555.197	-1.8E 3	-0.138	-0.104	-0.003	-8.557			
		2:BEBAN HIDL	224.840	-577.424	0.028	0.016	-0.001	-1.216			
		3:BEBAN GEM	124.832	-136.646	13.296	-0.662	-0.096	1.831			
		4:KOMBINASI	1.03E 3	-3.09E 3	-0.121	-0.099	-0.004	-12.214			
		5:KOMB B. MA	821.174	-2.29E 3	13.840	-0.789	-0.103	-7.364			
15501	16124	1:BEBAN MATI	-555.197	2.16E 3	0.138	0.104	0.004	-14.780			
		2:BEBAN HIDL	-224.840	577.424	-0.028	-0.016	0.000	-5.579			
		3:BEBAN GEM	-124.832	136.646	-13.296	0.662	-0.061	-3.439			
		4:KOMBINASI	-1.03E 3	3.52E 3	0.121	0.099	0.006	-26.664			
		5:KOMB B. MA	-821.174	2.65E 3	-13.840	0.789	-0.059	-21.739			
22911	16125	1:BEBAN MATI	322.827	-482.020	0.656	-0.085	-0.003	-17.073			
		2:BEBAN HIDL	130.365	-257.367	0.360	0.019	-0.002	-4.515			
		3:BEBAN GEM	119.791	-122.025	5.905	-0.210	-0.031	0.379			
		4:KOMBINASI	595.976	-990.211	1.363	-0.072	-0.007	-27.713			
		5:KOMB B. MA	526.827	-764.566	7.073	-0.294	-0.037	-19.385			
16124	16125	1:BEBAN MATI	-322.827	842.413	-0.656	0.085	-0.004	9.280			
		2:BEBAN HIDL	-130.365	257.367	-0.360	-0.019	-0.002	1.487			
		3:BEBAN GEM	-119.791	122.025	-5.905	0.210	-0.038	-1.815			
		4:KOMBINASI	-595.976	1.42E 3	-1.363	0.072	-0.009	13.515			
		5:KOMB B. MA	-526.827	1.12E 3	-7.073	0.294	-0.046	8.267			
22912	16126	1:BEBAN MATI	233.102	1.04E 3	0.064	-0.043	0.000	-6.843			
		2:BEBAN HIDL	90.895	140.224	0.275	0.021	-0.001	-2.874			
		3:BEBAN GEM	136.322	-119.775	-0.458	0.185	0.006	-1.065			
		4:KOMBINASI	425.155	1.48E 3	0.516	-0.018	-0.002	-12.810			
		5:KOMB B. MA	430.778	1E 3	-0.252	0.164	0.006	-9.685			
16125	16126	1:BEBAN MATI	-233.102	-684.256	-0.064	0.043	-0.001	17.016			
		2:BEBAN HIDL	-90.895	-140.224	-0.275	-0.021	-0.002	4.525			
		3:BEBAN GEM	-136.322	119.775	0.458	-0.185	-0.001	-0.345			



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Job No 1	Sheet No 615	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-425.155	-1.05E 3	-0.516	0.018	-0.004	27.658			
		5:KOMB B. MA	-430.778	-642.627	0.252	-0.164	-0.003	19.368			
22913	16127	1:BEBAN MATI	127.945	-397.789	-34.664	-0.089	0.211	-3.180			
		2:BEBAN HIDL	46.264	-50.882	-12.115	0.156	0.073	-0.811			
		3:BEBAN GEM	54.560	-60.276	8.484	-0.279	-0.047	-0.323			
		4:KOMBINASI	227.556	-558.758	-60.981	0.143	0.370	-5.113			
		5:KOMB B. MA	212.991	-491.607	-33.025	-0.289	0.205	-4.006			
	15494	1:BEBAN MATI	-127.945	758.182	34.664	0.089	0.197	-3.622			
		2:BEBAN HIDL	-46.264	50.882	12.115	-0.156	0.069	0.212			
		3:BEBAN GEM	-54.560	60.276	-8.484	0.279	-0.053	-0.386			
		4:KOMBINASI	-227.556	991.230	60.981	-0.143	0.348	-4.007			
		5:KOMB B. MA	-212.991	852.001	33.025	0.289	0.184	-3.900			
22914	16129	1:BEBAN MATI	591.683	2.04E 3	-31.514	2.538	0.069	-2.564			
		2:BEBAN HIDL	196.146	491.153	-11.254	0.779	0.025	0.169			
		3:BEBAN GEM	-209.423	-330.135	-47.453	-0.444	0.136	-7.634			
		4:KOMBINASI	1.02E 3	3.23E 3	-55.823	4.291	0.123	-2.807			
		5:KOMB B. MA	489.477	1.99E 3	-88.092	2.538	0.227	-10.478			
	16310	1:BEBAN MATI	-591.683	-1.89E 3	31.514	-2.538	0.086	12.196			
		2:BEBAN HIDL	-196.146	-491.153	11.254	-0.779	0.030	2.239			
		3:BEBAN GEM	209.423	330.135	47.453	0.444	0.096	6.015			
		4:KOMBINASI	-1.02E 3	-3.05E 3	55.823	-4.291	0.151	18.218			
		5:KOMB B. MA	-489.477	-1.84E 3	88.092	-2.538	0.205	19.855			
22915	16130	1:BEBAN MATI	134.374	315.727	-1.027	-1.318	0.005	-1.795			
		2:BEBAN HIDL	38.487	67.802	-0.548	-0.247	0.003	-0.119			
		3:BEBAN GEM	37.997	-54.397	-0.355	0.020	0.008	-0.947			
		4:KOMBINASI	222.828	487.356	-2.109	-1.977	0.011	-2.344			
		5:KOMB B. MA	197.364	299.291	-1.729	-1.446	0.016	-2.861			
	16127	1:BEBAN MATI	-134.374	44.666	1.027	1.318	0.007	3.390			
		2:BEBAN HIDL	-38.487	-67.802	0.548	0.247	0.003	0.917			
		3:BEBAN GEM	-37.997	54.397	0.355	-0.020	-0.004	0.307			
		4:KOMBINASI	-222.828	-54.885	2.109	1.977	0.014	5.535			
		5:KOMB B. MA	-197.364	61.101	1.729	1.446	0.005	4.262			
22916	16132	1:BEBAN MATI	213.729	501.383	-4.948	-0.600	0.016	-1.196			
		2:BEBAN HIDL	51.201	97.701	-1.221	-0.165	0.003	0.004			
		3:BEBAN GEM	-303.982	-690.845	0.635	-0.107	-0.023	-5.323			
		4:KOMBINASI	338.397	757.981	-7.890	-0.985	0.024	-1.430			
		5:KOMB B. MA	-74.731	-165.384	-5.013	-0.812	-0.007	-6.783			
	16136	1:BEBAN MATI	-213.729	-201.055	4.948	0.600	0.032	4.641			
		2:BEBAN HIDL	-51.201	-97.701	1.221	0.165	0.009	0.954			
		3:BEBAN GEM	303.982	690.845	-0.635	0.107	0.017	-1.452			
		4:KOMBINASI	-338.397	-397.588	7.890	0.985	0.054	7.096			
		5:KOMB B. MA	74.731	465.712	5.013	0.812	0.056	3.688			
22917	16134	1:BEBAN MATI	505.569	1.17E 3	-68.164	2.078	0.085	-19.715			
		2:BEBAN HIDL	163.013	283.872	-26.154	0.660	0.034	-4.112			
		3:BEBAN GEM	-170.407	-315.020	-145.711	-0.424	0.258	-4.322			
		4:KOMBINASI	867.504	1.86E 3	-123.643	3.550	0.157	-30.238			
		5:KOMB B. MA	424.450	1.01E 3	-236.853	2.029	0.377	-26.721			
	16314	1:BEBAN MATI	-505.569	-1.09E 3	68.164	-2.078	0.082	22.488			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-163.013	-283.872	26.154	-0.660	0.030	4.808			
		3:BEBAN GEM	170.407	315.020	145.711	0.424	0.099	3.550			
		4:KOMBINASI	-867.504	-1.77E 3	123.643	-3.550	0.146	34.679			
		5:KOMB B. MA	-424.450	-933.053	236.853	-2.029	0.204	29.101			
22918	16136	1:BEBAN MATI	140.198	-142.441	-1.383	-2.100	-0.008	-4.352			
		2:BEBAN HIDL	40.896	-14.256	4.321	-0.612	-0.022	-0.857			
		3:BEBAN GEM	-186.810	-722.220	5.280	-0.187	-0.114	1.515			
		4:KOMBINASI	233.672	-193.739	5.254	-3.499	-0.045	-6.594			
		5:KOMB B. MA	-31.414	-909.326	6.754	-2.663	-0.141	-3.275			
	15545	1:BEBAN MATI	-140.198	442.769	1.383	2.100	0.022	1.482			
		2:BEBAN HIDL	-40.896	14.256	-4.321	0.612	-0.020	0.717			
		3:BEBAN GEM	186.810	722.220	-5.280	0.187	0.062	-8.598			
		4:KOMBINASI	-233.672	554.132	-5.254	3.499	-0.006	2.927			
		5:KOMB B. MA	31.414	1.21E 3	-6.754	2.663	0.075	-7.115			
22919	16137	1:BEBAN MATI	66.110	-311.541	0.679	0.065	-0.004	-1.164			
		2:BEBAN HIDL	32.587	-121.018	0.149	-0.017	-0.001	-0.245			
		3:BEBAN GEM	331.137	-29.259	-1.098	0.256	0.013	-0.224			
		4:KOMBINASI	131.470	-567.478	1.054	0.050	-0.007	-1.788			
		5:KOMB B. MA	433.355	-414.874	-0.385	0.324	0.009	-1.546			
	15594	1:BEBAN MATI	-66.110	542.192	-0.679	-0.065	-0.004	-3.860			
		2:BEBAN HIDL	-32.587	121.018	-0.149	0.017	-0.001	-1.179			
		3:BEBAN GEM	-331.137	29.259	1.098	-0.256	-0.000	-0.120			
		4:KOMBINASI	-131.470	844.260	-1.054	-0.050	-0.005	-6.519			
		5:KOMB B. MA	-433.355	645.525	0.385	-0.324	-0.004	-4.694			
22920	16138	1:BEBAN MATI	64.006	379.596	0.119	0.276	0.000	1.417			
		2:BEBAN HIDL	37.818	65.039	0.174	0.035	-0.001	0.325			
		3:BEBAN GEM	420.936	-41.674	-6.975	0.418	0.053	-0.751			
		4:KOMBINASI	137.317	559.577	0.421	0.388	-0.001	2.220			
		5:KOMB B. MA	528.680	374.862	-7.101	0.736	0.055	0.823			
	16137	1:BEBAN MATI	-64.006	-148.945	-0.119	-0.276	-0.002	1.693			
		2:BEBAN HIDL	-37.818	-65.039	-0.174	-0.035	-0.001	0.440			
		3:BEBAN GEM	-420.936	41.674	6.975	-0.418	0.029	0.261			
		4:KOMBINASI	-137.317	-282.796	-0.421	-0.388	-0.004	2.736			
		5:KOMB B. MA	-528.680	-144.210	7.101	-0.736	0.028	2.231			
22921	16139	1:BEBAN MATI	516.628	-1.71E 3	4.347	-0.807	-0.034	-8.188			
		2:BEBAN HIDL	201.737	-532.491	0.930	-0.314	-0.008	-1.177			
		3:BEBAN GEM	51.522	-122.903	17.437	-0.675	-0.112	1.760			
		4:KOMBINASI	942.733	-2.9E 3	6.705	-1.472	-0.055	-11.708			
		5:KOMB B. MA	691.768	-2.16E 3	23.214	-1.705	-0.157	-7.046			
	15499	1:BEBAN MATI	-516.628	2.07E 3	-4.347	0.807	-0.017	-14.054			
		2:BEBAN HIDL	-201.737	532.491	-0.930	0.314	-0.003	-5.089			
		3:BEBAN GEM	-51.522	122.903	-17.437	0.675	-0.093	-3.207			
		4:KOMBINASI	-942.733	3.34E 3	-6.705	1.472	-0.024	-25.008			
		5:KOMB B. MA	-691.768	2.52E 3	-23.214	1.705	-0.116	-20.475			
22922	16141	1:BEBAN MATI	230.790	1.07E 3	0.643	-1.471	0.002	-1.750			
		2:BEBAN HIDL	60.768	164.502	0.669	-0.424	-0.002	-0.587			
		3:BEBAN GEM	61.000	-472.125	-3.519	-0.248	0.015	-4.475			
		4:KOMBINASI	374.177	1.54E 3	1.842	-2.444	-0.001	-3.039			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	331.301	670.385	-2.651	-1.986	0.016	-6.801			
	15553	1:BEAN MATI	-230.790	-707.022	-0.643	1.471	-0.009	12.191			
		2:BEAN HIDL	-60.768	-164.502	-0.669	0.424	-0.006	2.523			
		3:BEAN GEM	-61.000	472.125	3.519	0.248	0.027	-1.081			
		4:KOMBINASI	-374.177	-1.11E 3	-1.842	2.444	-0.020	18.665			
		5:KOMB B. MA	-331.301	-309.992	2.651	1.986	0.015	12.570			
22923	16142	1:BEAN MATI	319.929	-428.821	1.215	-0.439	-0.008	-15.973			
		2:BEAN HIDL	122.790	-226.656	0.199	-0.193	-0.002	-4.080			
		3:BEAN GEM	-6.465	-113.781	9.795	-0.207	-0.052	0.404			
		4:KOMBINASI	580.379	-877.235	1.777	-0.835	-0.012	-25.695			
		5:KOMB B. MA	386.815	-684.285	11.619	-0.772	-0.063	-17.996			
	16139	1:BEAN MATI	-319.929	789.214	-1.215	0.439	-0.007	8.806			
		2:BEAN HIDL	-122.790	226.656	-0.199	0.193	-0.001	1.412			
		3:BEAN GEM	6.465	113.781	-9.795	0.207	-0.064	-1.743			
		4:KOMBINASI	-580.379	1.31E 3	-1.777	0.835	-0.009	12.827			
		5:KOMB B. MA	-386.815	1.04E 3	-11.619	0.772	-0.074	7.823			
22924	16144	1:BEAN MATI	242.834	1.02E 3	-1.792	0.084	0.011	-5.958			
		2:BEAN HIDL	88.184	143.743	-0.870	0.001	0.005	-2.389			
		3:BEAN GEM	-61.636	-114.558	6.477	0.186	-0.034	-0.972			
		4:KOMBINASI	432.496	1.46E 3	-3.542	0.101	0.021	-10.972			
		5:KOMB B. MA	231.027	990.364	4.486	0.280	-0.022	-8.412			
	16142	1:BEAN MATI	-242.834	-664.011	1.792	-0.084	0.010	15.892			
		2:BEAN HIDL	-88.184	-143.743	0.870	-0.001	0.005	4.081			
		3:BEAN GEM	61.636	114.558	-6.477	-0.186	-0.042	-0.376			
		4:KOMBINASI	-432.496	-1.03E 3	3.542	-0.101	0.020	25.600			
		5:KOMB B. MA	-231.027	-629.971	-4.486	-0.280	-0.031	17.946			
22925	16146	1:BEAN MATI	269.816	2.09E 3	-0.769	0.053	0.006	-1.427			
		2:BEAN HIDL	87.148	366.839	0.131	0.047	-0.000	-1.156			
		3:BEAN GEM	-55.047	-437.847	-13.489	-0.196	0.070	-4.111			
		4:KOMBINASI	463.216	3.09E 3	-0.713	0.139	0.006	-3.563			
		5:KOMB B. MA	264.305	1.85E 3	-14.853	-0.124	0.079	-6.437			
	15595	1:BEAN MATI	-269.816	-1.73E 3	0.769	-0.053	0.003	23.890			
		2:BEAN HIDL	-87.148	-366.839	-0.131	-0.047	-0.001	5.473			
		3:BEAN GEM	55.047	437.847	13.489	0.196	0.089	-1.042			
		4:KOMBINASI	-463.216	-2.66E 3	0.713	-0.139	0.002	37.425			
		5:KOMB B. MA	-264.305	-1.49E 3	14.853	0.124	0.096	26.080			
22926	16147	1:BEAN MATI	13.833	-586.238	1.532	-0.006	-0.007	-5.329			
		2:BEAN HIDL	5.381	-189.646	0.287	-0.050	-0.002	-1.365			
		3:BEAN GEM	-18.009	0.218	3.342	0.024	-0.015	0.335			
		4:KOMBINASI	25.210	-1.01E 3	2.298	-0.088	-0.010	-8.579			
		5:KOMB B. MA	-1.847	-699.797	5.213	-0.012	-0.023	-5.797			
	15553	1:BEAN MATI	-13.833	816.890	-1.532	0.006	-0.011	-2.927			
		2:BEAN HIDL	-5.381	189.646	-0.287	0.050	-0.002	-0.866			
		3:BEAN GEM	18.009	-0.218	-3.342	-0.024	-0.025	-0.332			
		4:KOMBINASI	-25.210	1.28E 3	-2.298	0.088	-0.017	-4.899			
		5:KOMB B. MA	1.847	930.449	-5.213	0.012	-0.038	-3.796			
22927	16148	1:BEAN MATI	50.676	-74.938	0.374	0.039	-0.004	-8.372			
		2:BEAN HIDL	17.044	-61.736	-0.078	-0.054	-0.000	-2.356			



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Job No 1	Sheet No 618	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-39.021	-13.183	2.485	0.042	-0.015	0.174			
		4:KOMBINASI	88.083	-188.704	0.324	-0.039	-0.005	-13.817			
		5:KOMB B. MA	19.931	-125.822	2.937	0.050	-0.020	-9.603			
	16147	1:BEBAN MATI	-50.676	305.590	-0.374	-0.039	-0.000	6.133			
		2:BEBAN HIDL	-17.044	61.736	0.078	0.054	0.001	1.630			
		3:BEBAN GEM	39.021	13.183	-2.485	-0.042	-0.014	-0.329			
		4:KOMBINASI	-88.083	465.486	-0.324	0.039	0.002	9.967			
		5:KOMB B. MA	-19.931	356.474	-2.937	-0.050	-0.014	6.765			
22928	16149	1:BEBAN MATI	88.477	575.894	0.161	0.030	-0.003	-2.928			
		2:BEBAN HIDL	29.270	115.030	-0.251	-0.061	0.001	-0.998			
		3:BEBAN GEM	-63.006	-14.819	3.407	-0.020	-0.021	-0.002			
		4:KOMBINASI	153.004	875.121	-0.208	-0.062	-0.003	-5.110			
		5:KOMB B. MA	39.882	629.352	3.588	-0.028	-0.025	-3.528			
	16148	1:BEBAN MATI	-88.477	-345.242	-0.161	-0.030	0.002	8.347			
		2:BEBAN HIDL	-29.270	-115.030	0.251	0.061	0.002	2.352			
		3:BEBAN GEM	63.006	14.819	-3.407	0.020	-0.019	-0.173			
		4:KOMBINASI	-153.004	-598.339	0.208	0.062	0.005	13.780			
		5:KOMB B. MA	-39.882	-398.700	-3.588	0.028	-0.017	9.577			
22929	16151	1:BEBAN MATI	534.876	-1.18E 3	-24.892	3.101	0.137	-3.834			
		2:BEBAN HIDL	129.086	-263.534	-6.135	0.993	0.034	-0.492			
		3:BEBAN GEM	347.894	-483.751	-11.611	0.303	0.042	6.726			
		4:KOMBINASI	848.390	-1.83E 3	-39.686	5.310	0.219	-5.388			
		5:KOMB B. MA	977.617	-1.84E 3	-40.764	4.015	0.201	2.933			
	15539	1:BEBAN MATI	-534.876	1.54E 3	24.892	-3.101	0.156	-12.132			
		2:BEBAN HIDL	-129.086	263.534	6.135	-0.993	0.038	-2.609			
		3:BEBAN GEM	-347.894	483.751	11.611	-0.303	0.095	-12.419			
		4:KOMBINASI	-848.390	2.27E 3	39.686	-5.310	0.248	-18.733			
		5:KOMB B. MA	-977.617	2.2E 3	40.764	-4.015	0.278	-26.737			
22930	16154	1:BEBAN MATI	594.003	-2.14E 3	-0.462	-0.135	-0.000	-8.580			
		2:BEBAN HIDL	212.179	-598.538	-0.097	0.014	0.000	-1.049			
		3:BEBAN GEM	241.033	-470.417	-11.345	0.300	0.061	6.448			
		4:KOMBINASI	1.05E 3	-3.53E 3	-0.710	-0.139	0.000	-11.974			
		5:KOMB B. MA	974.395	-3E 3	-12.433	0.188	0.064	-2.439			
	15538	1:BEBAN MATI	-594.003	2.51E 3	0.462	0.135	0.005	-18.781			
		2:BEBAN HIDL	-212.179	598.538	0.097	-0.014	0.001	-5.995			
		3:BEBAN GEM	-241.033	470.417	11.345	-0.300	0.073	-11.984			
		4:KOMBINASI	-1.05E 3	3.96E 3	0.710	0.139	0.008	-32.129			
		5:KOMB B. MA	-974.395	3.36E 3	12.433	-0.188	0.083	-34.961			
22931	16155	1:BEBAN MATI	453.772	-986.121	23.303	-2.682	-0.136	-3.787			
		2:BEBAN HIDL	110.645	-231.644	5.753	-0.874	-0.034	-0.575			
		3:BEBAN GEM	27.674	-140.109	6.917	-0.550	-0.055	1.822			
		4:KOMBINASI	721.558	-1.55E 3	37.169	-4.618	-0.217	-5.464			
		5:KOMB B. MA	549.216	-1.27E 3	34.018	-3.785	-0.214	-2.219			
	15539	1:BEBAN MATI	-453.772	1.35E 3	-23.303	2.682	-0.138	-9.938			
		2:BEBAN HIDL	-110.645	231.644	-5.753	0.874	-0.034	-2.151			
		3:BEBAN GEM	-27.674	140.109	-6.917	0.550	-0.026	-3.471			
		4:KOMBINASI	-721.558	1.99E 3	-37.169	4.618	-0.220	-15.368			
		5:KOMB B. MA	-549.216	1.63E 3	-34.018	3.785	-0.186	-14.873			



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Job No 1	Sheet No 619	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22932	16156	1:BEBAN MATI	259.437	-225.129	3.325	-1.344	-0.024	-9.134			
		2:BEBAN HIDL	63.667	-98.163	0.880	-0.450	-0.007	-1.921			
		3:BEBAN GEM	-50.810	-125.390	-0.072	-0.140	0.001	0.294			
		4:KOMBINASI	413.192	-427.216	5.398	-2.333	-0.041	-14.035			
		5:KOMB B. MA	244.287	-415.686	3.778	-1.761	-0.028	-9.978			
	16155	1:BEBAN MATI	-259.437	585.523	-3.325	1.344	-0.015	4.364			
		2:BEBAN HIDL	-63.667	98.163	-0.880	0.450	-0.003	0.766			
		3:BEBAN GEM	50.810	125.390	0.072	0.140	0.000	-1.769			
		4:KOMBINASI	-413.192	859.688	-5.398	2.333	-0.023	6.463			
		5:KOMB B. MA	-244.287	776.080	-3.778	1.761	-0.016	2.966			
22933	16157	1:BEBAN MATI	199.537	625.424	-2.203	0.380	0.007	-3.938			
		2:BEBAN HIDL	53.938	69.817	-0.804	0.136	0.003	-1.114			
		3:BEBAN GEM	-113.826	-121.772	-2.157	0.175	0.013	-1.155			
		4:KOMBINASI	325.746	862.216	-3.930	0.674	0.013	-6.508			
		5:KOMB B. MA	112.383	539.454	-4.951	0.646	0.023	-5.819			
	16156	1:BEBAN MATI	-199.537	-265.031	2.203	-0.380	0.019	9.178			
		2:BEBAN HIDL	-53.938	-69.817	0.804	-0.136	0.006	1.935			
		3:BEBAN GEM	113.826	121.772	2.157	-0.175	0.012	-0.278			
		4:KOMBINASI	-325.746	-429.744	3.930	-0.674	0.033	14.110			
		5:KOMB B. MA	-112.383	-179.060	4.951	-0.646	0.035	10.047			
22934	16159	1:BEBAN MATI	416.009	-2.04E 3	-34.233	-1.375	0.082	-13.264			
		2:BEBAN HIDL	135.019	-472.014	-13.322	-0.327	0.032	-3.100			
		3:BEBAN GEM	-5.681	-362.071	-131.349	0.155	0.353	2.180			
		4:KOMBINASI	715.241	-3.21E 3	-62.394	-2.173	0.148	-20.877			
		5:KOMB B. MA	491.055	-2.71E 3	-180.142	-1.409	0.472	-12.835			
	16325	1:BEBAN MATI	-416.009	2.19E 3	34.233	1.375	0.086	2.881			
		2:BEBAN HIDL	-135.019	472.014	13.322	0.327	0.034	0.786			
		3:BEBAN GEM	5.681	362.071	131.349	-0.155	0.291	-3.955			
		4:KOMBINASI	-715.241	3.39E 3	62.394	2.173	0.158	4.714			
		5:KOMB B. MA	-491.055	2.86E 3	180.142	1.409	0.412	-0.801			
22935	16161	1:BEBAN MATI	272.322	63.133	93.141	-3.078	-0.217	-0.405			
		2:BEBAN HIDL	95.691	35.386	23.811	-0.686	-0.058	0.095			
		3:BEBAN GEM	-895.566	-782.976	479.698	-0.181	-1.020	-4.364			
		4:KOMBINASI	479.892	132.377	149.866	-4.790	-0.354	-0.334			
		5:KOMB B. MA	-610.608	-737.761	611.111	-3.679	-1.324	-4.931			
	16245	1:BEBAN MATI	-272.322	87.031	-93.141	3.078	-0.239	0.347			
		2:BEBAN HIDL	-95.691	-35.386	-23.811	0.686	-0.059	0.079			
		3:BEBAN GEM	895.566	782.976	-479.698	0.181	-1.332	0.525			
		4:KOMBINASI	-479.892	47.820	-149.866	4.790	-0.381	0.542			
		5:KOMB B. MA	610.608	887.924	-611.111	3.679	-1.673	0.945			
22936	16163	1:BEBAN MATI	437.589	-2.76E 3	-62.501	-2.005	0.071	10.524			
		2:BEBAN HIDL	142.461	-620.000	-23.986	-0.595	0.026	2.263			
		3:BEBAN GEM	282.270	-395.740	-317.196	0.350	0.508	5.858			
		4:KOMBINASI	753.045	-4.31E 3	-113.379	-3.358	0.126	16.250			
		5:KOMB B. MA	819.449	-3.55E 3	-409.948	-1.995	0.619	18.033			
	16329	1:BEBAN MATI	-437.589	2.84E 3	62.501	2.005	0.083	-17.385			
		2:BEBAN HIDL	-142.461	620.000	23.986	0.595	0.033	-3.784			
		3:BEBAN GEM	-282.270	395.740	317.196	-0.350	0.270	-6.828			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 620	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-753.045	4.4E 3	113.379	3.358	0.152	-26.916			
		5:KOMB B. MA	-819.449	3.62E 3	409.948	1.995	0.386	-26.825			
22937	16165	1:BEBAN MATI	76.930	-861.371	7.622	-1.041	-0.054	3.175			
		2:BEBAN HIDL	42.138	-171.941	2.136	-0.133	-0.015	0.663			
		3:BEBAN GEM	-484.652	-769.198	51.719	-0.013	-0.387	3.374			
		4:KOMBINASI	159.737	-1.31E 3	12.565	-1.462	-0.089	4.871			
		5:KOMB B. MA	-406.672	-1.77E 3	63.209	-1.135	-0.469	7.115			
	15523	1:BEBAN MATI	-76.930	1.16E 3	-7.622	1.041	-0.020	-13.094			
		2:BEBAN HIDL	-42.138	171.941	-2.136	0.133	-0.006	-2.349			
		3:BEBAN GEM	484.652	769.198	-51.719	0.013	-0.121	-10.917			
		4:KOMBINASI	-159.737	1.67E 3	-12.565	1.462	-0.034	-19.472			
		5:KOMB B. MA	406.672	2.07E 3	-63.209	1.135	-0.151	-25.967			
22938	16166	1:BEBAN MATI	2.210	-1.57E 3	13.542	7.591	-0.083	-2.116			
		2:BEBAN HIDL	-6.733	-443.676	5.018	2.517	-0.031	-1.271			
		3:BEBAN GEM	1.23E 3	-280.749	78.685	-0.597	-0.499	1.289			
		4:KOMBINASI	-8.121	-2.6E 3	24.280	13.136	-0.149	-4.573			
		5:KOMB B. MA	1.29E 3	-2.13E 3	99.172	8.474	-0.626	-1.525			
	15526	1:BEBAN MATI	-2.210	1.93E 3	-13.542	-7.591	-0.076	-18.492			
		2:BEBAN HIDL	6.733	443.676	-5.018	-2.517	-0.028	-3.950			
		3:BEBAN GEM	-1.23E 3	280.749	-78.685	0.597	-0.427	-4.593			
		4:KOMBINASI	8.121	3.03E 3	-24.280	-13.136	-0.137	-28.511			
		5:KOMB B. MA	-1.29E 3	2.49E 3	-99.172	-8.474	-0.541	-25.685			
22939	16167	1:BEBAN MATI	-6.483	332.029	5.341	1.422	-0.032	-0.289			
		2:BEBAN HIDL	-6.570	77.303	1.515	0.296	-0.009	-0.343			
		3:BEBAN GEM	1.08E 3	-267.020	37.171	-0.114	-0.208	-1.921			
		4:KOMBINASI	-18.292	522.121	8.832	2.181	-0.052	-0.895			
		5:KOMB B. MA	1.13E 3	98.040	45.279	1.480	-0.256	-2.512			
	16166	1:BEBAN MATI	6.483	28.363	-5.341	-1.422	-0.031	2.075			
		2:BEBAN HIDL	6.570	-77.303	-1.515	-0.296	-0.009	1.252			
		3:BEBAN GEM	-1.08E 3	267.020	-37.171	0.114	-0.229	-1.221			
		4:KOMBINASI	18.292	-89.650	-8.832	-2.181	-0.052	4.494			
		5:KOMB B. MA	-1.13E 3	262.352	-45.279	-1.480	-0.277	1.545			
22940	16169	1:BEBAN MATI	439.962	1.58E 3	2.784	-2.546	-0.003	5.537			
		2:BEBAN HIDL	130.045	281.358	1.089	-0.884	-0.001	0.876			
		3:BEBAN GEM	-554.274	-333.609	-1.869	-0.222	0.017	-6.548			
		4:KOMBINASI	736.026	2.34E 3	5.083	-4.469	-0.006	8.046			
		5:KOMB B. MA	-63.999	1.4E 3	1.474	-3.309	0.014	-0.812			
	16174	1:BEBAN MATI	-439.962	-1.28E 3	-2.784	2.546	-0.024	8.452			
		2:BEBAN HIDL	-130.045	-281.358	-1.089	0.884	-0.009	1.883			
		3:BEBAN GEM	554.274	333.609	1.869	0.222	0.001	3.276			
		4:KOMBINASI	-736.026	-1.98E 3	-5.083	4.469	-0.044	13.156			
		5:KOMB B. MA	63.999	-1.09E 3	-1.474	3.309	-0.028	13.022			
22941	16172	1:BEBAN MATI	430.202	2.87E 3	-1.002	-0.043	0.004	11.481			
		2:BEBAN HIDL	136.548	617.388	-0.391	-0.029	0.002	1.974			
		3:BEBAN GEM	-353.292	-319.382	-7.711	-0.196	0.042	-6.302			
		4:KOMBINASI	734.719	4.43E 3	-1.829	-0.099	0.007	16.937			
		5:KOMB B. MA	141.174	2.9E 3	-9.333	-0.266	0.049	6.049			
	16177	1:BEBAN MATI	-430.202	-2.56E 3	1.002	0.043	0.006	15.145			



Software licensed to Snow Panther [LZ0]

Job No

1

Sheet No

621

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-136.548	-617.388	0.391	0.029	0.002	4.080			
		3:BEBAN GEM	353.292	319.382	7.711	0.196	0.034	3.170			
		4:KOMBINASI	-734.719	-4.07E 3	1.829	0.099	0.011	24.702			
		5:KOMB B. MA	-141.174	-2.6E 3	9.333	0.266	0.043	20.921			
22942	16174	1:BEBAN MATI	410.434	913.738	-0.302	-1.587	0.010	-8.788			
		2:BEBAN HIDL	119.110	156.428	0.034	-0.526	0.003	-1.970			
		3:BEBAN GEM	-441.493	-331.433	-0.987	-0.218	0.008	-3.270			
		4:KOMBINASI	683.097	1.35E 3	-0.307	-2.746	0.017	-13.697			
		5:KOMB B. MA	18.332	659.590	-1.318	-2.132	0.020	-13.403			
	15559	1:BEBAN MATI	-410.434	-613.410	0.302	1.587	-0.007	16.276			
		2:BEBAN HIDL	-119.110	-156.428	-0.034	0.526	-0.003	3.504			
		3:BEBAN GEM	441.493	331.433	0.987	0.218	0.001	0.019			
		4:KOMBINASI	-683.097	-986.378	0.307	2.746	-0.014	25.137			
		5:KOMB B. MA	-18.332	-359.263	1.318	2.132	-0.007	18.399			
22943	16177	1:BEBAN MATI	442.158	1.83E 3	-0.233	-0.057	0.000	-15.587			
		2:BEBAN HIDL	140.237	373.245	-0.228	-0.021	0.001	-4.132			
		3:BEBAN GEM	-265.615	-309.928	-11.521	-0.131	0.053	-3.093			
		4:KOMBINASI	754.968	2.79E 3	-0.644	-0.102	0.002	-25.316			
		5:KOMB B. MA	247.404	1.73E 3	-12.467	-0.207	0.056	-21.314			
	15598	1:BEBAN MATI	-442.158	-1.53E 3	0.233	0.057	0.002	32.063			
		2:BEBAN HIDL	-140.237	-373.245	0.228	0.021	0.001	7.792			
		3:BEBAN GEM	265.615	309.928	11.521	0.131	0.060	0.053			
		4:KOMBINASI	-754.968	-2.43E 3	0.644	0.102	0.004	50.943			
		5:KOMB B. MA	-247.404	-1.43E 3	12.467	0.207	0.066	36.794			
22944	16178	1:BEBAN MATI	-17.141	-676.555	-0.067	0.031	0.001	-6.776			
		2:BEBAN HIDL	-4.076	-225.502	0.022	-0.003	-0.000	-1.838			
		3:BEBAN GEM	27.447	0.018	3.780	0.022	-0.017	0.283			
		4:KOMBINASI	-27.091	-1.17E 3	-0.045	0.033	0.000	-11.073			
		5:KOMB B. MA	9.233	-811.837	3.916	0.053	-0.018	-7.583			
	15559	1:BEBAN MATI	17.141	907.206	0.067	-0.031	0.000	-2.543			
		2:BEBAN HIDL	4.076	225.502	-0.022	0.003	-0.000	-0.815			
		3:BEBAN GEM	-27.447	-0.018	-3.780	-0.022	-0.027	-0.282			
		4:KOMBINASI	27.091	1.45E 3	0.045	-0.033	0.000	-4.356			
		5:KOMB B. MA	-9.233	1.04E 3	-3.916	-0.053	-0.028	-3.328			
22945	16179	1:BEBAN MATI	-1.148	-123.415	-0.081	0.048	0.001	-10.511			
		2:BEBAN HIDL	2.393	-85.138	0.008	-0.004	-0.000	-3.152			
		3:BEBAN GEM	38.019	-9.461	3.430	0.025	-0.020	0.157			
		4:KOMBINASI	2.451	-284.319	-0.083	0.051	0.001	-17.656			
		5:KOMB B. MA	40.207	-184.432	3.526	0.071	-0.021	-12.237			
	16178	1:BEBAN MATI	1.148	354.067	0.081	-0.048	0.000	7.701			
		2:BEBAN HIDL	-2.393	85.138	-0.008	0.004	-0.000	2.150			
		3:BEBAN GEM	-38.019	9.461	-3.430	-0.025	-0.020	-0.269			
		4:KOMBINASI	-2.451	561.101	0.083	-0.051	0.000	12.682			
		5:KOMB B. MA	-40.207	415.084	-3.526	-0.071	-0.021	8.709			
22946	16180	1:BEBAN MATI	22.625	682.562	-0.053	0.051	0.000	-3.779			
		2:BEBAN HIDL	11.074	148.133	0.010	-0.004	-0.000	-1.404			
		3:BEBAN GEM	46.940	-9.571	4.394	-0.021	-0.027	0.035			
		4:KOMBINASI	44.868	1.06E 3	-0.047	0.055	0.000	-6.781			



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Job No

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Sheet No

622

Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	78.557	761.393	4.567	0.027	-0.028	-4.585			
	16179	1:BEBAN MATI	-22.625	-451.910	0.053	-0.051	0.000	10.455			
		2:BEBAN HIDL	-11.074	-148.133	-0.010	0.004	-0.000	3.147			
		3:BEBAN GEM	-46.940	9.571	-4.394	0.021	-0.025	-0.147			
		4:KOMBINASI	-44.868	-779.305	0.047	-0.055	0.000	17.581			
		5:KOMB B. MA	-78.557	-530.741	-4.567	-0.027	-0.026	12.188			
22947	16182	1:BEBAN MATI	442.971	-1.24E 3	-3.289	2.578	0.027	-8.873			
		2:BEBAN HIDL	133.148	-290.662	-1.161	0.884	0.010	-1.786			
		3:BEBAN GEM	-191.544	-334.613	-2.635	0.180	0.012	3.287			
		4:KOMBINASI	744.602	-1.95E 3	-5.805	4.507	0.048	-13.505			
		5:KOMB B. MA	321.738	-1.76E 3	-6.753	3.296	0.046	-6.494			
	16187	1:BEBAN MATI	-442.971	1.54E 3	3.289	-2.578	0.005	-4.749			
		2:BEBAN HIDL	-133.148	290.662	1.161	-0.884	0.002	-1.064			
		3:BEBAN GEM	191.544	334.613	2.635	-0.180	0.014	-6.568			
		4:KOMBINASI	-744.602	2.31E 3	5.805	-4.507	0.009	-7.402			
		5:KOMB B. MA	-321.738	2.06E 3	6.753	-3.296	0.021	-12.285			
22948	16185	1:BEBAN MATI	426.389	-2.43E 3	1.635	-0.018	-0.009	-16.448			
		2:BEBAN HIDL	135.607	-634.897	0.326	0.028	-0.002	-3.901			
		3:BEBAN GEM	-123.292	-323.883	-12.887	0.203	0.061	3.173			
		4:KOMBINASI	728.637	-3.93E 3	2.483	0.023	-0.014	-25.979			
		5:KOMB B. MA	378.296	-3.15E 3	-11.701	0.212	0.054	-15.457			
	16190	1:BEBAN MATI	-426.389	2.73E 3	-1.635	0.018	-0.007	-8.848			
		2:BEBAN HIDL	-135.607	634.897	-0.326	-0.028	-0.001	-2.325			
		3:BEBAN GEM	123.292	323.883	12.887	-0.203	0.065	-6.349			
		4:KOMBINASI	-728.637	4.29E 3	-2.483	-0.023	-0.010	-14.337			
		5:KOMB B. MA	-378.296	3.45E 3	11.701	-0.212	0.061	-16.909			
22949	16187	1:BEBAN MATI	567.463	-1.79E 3	-48.297	3.312	0.214	5.471			
		2:BEBAN HIDL	178.390	-377.380	-16.848	1.154	0.074	1.292			
		3:BEBAN GEM	-12.984	-350.247	-16.059	0.352	0.049	6.629			
		4:KOMBINASI	966.379	-2.75E 3	-84.914	5.820	0.375	8.632			
		5:KOMB B. MA	660.863	-2.38E 3	-75.268	4.373	0.310	13.207			
	15503	1:BEBAN MATI	-567.463	2.09E 3	48.297	-3.312	0.260	-24.450			
		2:BEBAN HIDL	-178.390	377.380	16.848	-1.154	0.091	-4.993			
		3:BEBAN GEM	12.984	350.247	16.059	-0.352	0.108	-10.064			
		4:KOMBINASI	-966.379	3.11E 3	84.914	-5.820	0.458	-37.329			
		5:KOMB B. MA	-660.863	2.68E 3	75.268	-4.373	0.428	-38.013			
22950	16190	1:BEBAN MATI	409.201	-3.34E 3	3.136	-0.056	-0.017	9.759			
		2:BEBAN HIDL	131.360	-839.719	0.243	0.025	-0.002	2.588			
		3:BEBAN GEM	-9.891	-359.322	-22.580	0.296	0.102	6.395			
		4:KOMBINASI	701.218	-5.35E 3	4.152	-0.027	-0.023	15.852			
		5:KOMB B. MA	477.631	-4.22E 3	-20.427	0.270	0.090	18.026			
	15528	1:BEBAN MATI	-409.201	3.64E 3	-3.136	0.056	-0.014	-44.001			
		2:BEBAN HIDL	-131.360	839.719	-0.243	-0.025	-0.001	-10.823			
		3:BEBAN GEM	9.891	359.322	22.580	-0.296	0.119	-9.919			
		4:KOMBINASI	-701.218	5.71E 3	-4.152	0.027	-0.018	-70.118			
		5:KOMB B. MA	-477.631	4.52E 3	20.427	-0.270	0.111	-60.909			
22951	16191	1:BEBAN MATI	630.879	-1.87E 3	-0.864	0.027	0.004	-7.706			
		2:BEBAN HIDL	221.317	-579.469	-0.143	-0.016	0.000	-1.293			



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Job No 1	Sheet No 623	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	106.991	-137.247	14.338	-0.655	-0.096	1.817			
		4:KOMBINASI	1.11E 3	-3.18E 3	-1.265	0.007	0.006	-11.316			
		5:KOMB B. MA	876.010	-2.37E 3	14.105	-0.670	-0.097	-6.574			
	15503	1:BEBAN MATI	-630.879	2.23E 3	0.864	-0.027	0.006	-16.461			
		2:BEBAN HIDL	-221.317	579.469	0.143	0.016	0.001	-5.526			
		3:BEBAN GEM	-106.991	137.247	-14.338	0.655	-0.072	-3.432			
		4:KOMBINASI	-1.11E 3	3.61E 3	1.265	-0.007	0.009	-28.595			
		5:KOMB B. MA	-876.010	2.73E 3	-14.105	0.670	-0.069	-23.380			
22952	16192	1:BEBAN MATI	370.559	-539.862	-0.709	0.017	0.004	-16.858			
		2:BEBAN HIDL	130.084	-254.549	-0.191	-0.013	0.001	-4.537			
		3:BEBAN GEM	78.232	-121.882	6.638	-0.206	-0.033	0.364			
		4:KOMBINASI	652.805	-1.06E 3	-1.156	-0.001	0.006	-27.489			
		5:KOMB B. MA	530.752	-820.567	6.147	-0.207	-0.030	-19.198			
	16191	1:BEBAN MATI	-370.559	900.255	0.709	-0.017	0.004	8.384			
		2:BEBAN HIDL	-130.084	254.549	0.191	0.013	0.001	1.541			
		3:BEBAN GEM	-78.232	121.882	-6.638	0.206	-0.045	-1.798			
		4:KOMBINASI	-652.805	1.49E 3	1.156	0.001	0.007	12.527			
		5:KOMB B. MA	-530.752	1.18E 3	-6.147	0.207	-0.042	7.421			
22953	16193	1:BEBAN MATI	265.953	985.165	-0.768	0.004	0.005	-7.329			
		2:BEBAN HIDL	91.987	145.553	-0.310	-0.010	0.002	-2.825			
		3:BEBAN GEM	56.814	-121.503	1.649	0.182	-0.005	-1.096			
		4:KOMBINASI	466.323	1.42E 3	-1.418	-0.012	0.009	-13.315			
		5:KOMB B. MA	380.800	944.919	0.777	0.189	0.000	-10.175			
	16192	1:BEBAN MATI	-265.953	-624.772	0.768	-0.004	0.004	16.801			
		2:BEBAN HIDL	-91.987	-145.553	0.310	0.010	0.002	4.538			
		3:BEBAN GEM	-56.814	121.503	-1.649	-0.182	-0.014	-0.333			
		4:KOMBINASI	-466.323	-982.610	1.418	0.012	0.008	27.423			
		5:KOMB B. MA	-380.800	-584.525	-0.777	-0.189	-0.010	19.174			
22954	16195	1:BEBAN MATI	424.000	1.56E 3	3.185	-2.628	-0.004	4.790			
		2:BEBAN HIDL	123.075	284.753	1.074	-0.866	-0.001	1.021			
		3:BEBAN GEM	-492.654	-323.934	-2.223	-0.221	0.017	-6.414			
		4:KOMBINASI	705.720	2.32E 3	5.541	-4.539	-0.006	7.381			
		5:KOMB B. MA	-19.442	1.39E 3	1.496	-3.380	0.013	-1.332			
	16200	1:BEBAN MATI	-424.000	-1.26E 3	-3.185	2.628	-0.028	8.991			
		2:BEBAN HIDL	-123.075	-284.753	-1.074	0.866	-0.009	1.772			
		3:BEBAN GEM	492.654	323.934	2.223	0.221	0.005	3.237			
		4:KOMBINASI	-705.720	-1.96E 3	-5.541	4.539	-0.048	13.624			
		5:KOMB B. MA	19.442	-1.09E 3	-1.496	3.380	-0.028	13.453			
22955	16198	1:BEBAN MATI	418.685	2.72E 3	0.499	0.063	-0.002	9.257			
		2:BEBAN HIDL	125.434	611.664	0.294	-0.006	-0.001	2.300			
		3:BEBAN GEM	-393.010	-308.644	-10.271	-0.200	0.054	-6.156			
		4:KOMBINASI	703.116	4.25E 3	1.069	0.065	-0.005	14.788			
		5:KOMB B. MA	81.284	2.77E 3	-10.109	-0.151	0.053	4.172			
	16203	1:BEBAN MATI	-418.685	-2.42E 3	-0.499	-0.063	-0.003	15.989			
		2:BEBAN HIDL	-125.434	-611.664	-0.294	0.006	-0.002	3.699			
		3:BEBAN GEM	393.010	308.644	10.271	0.200	0.047	3.130			
		4:KOMBINASI	-703.116	-3.89E 3	-1.069	-0.065	-0.006	25.104			
		5:KOMB B. MA	-81.284	-2.47E 3	10.109	0.151	0.046	21.494			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22956	16200	1:BEBAN MATI	377.068	888.901	0.286	-1.635	0.010	-9.338			
		2:BEBAN HIDL	107.099	160.393	0.173	-0.512	0.003	-1.857			
		3:BEBAN GEM	-372.525	-321.819	-1.320	-0.217	0.010	-3.232			
		4:KOMBINASI	623.840	1.32E 3	0.619	-2.782	0.016	-14.176			
		5:KOMB B. MA	50.176	647.227	-0.997	-2.170	0.021	-13.845			
15549	16200	1:BEBAN MATI	-377.068	-588.574	-0.286	1.635	-0.012	16.583			
		2:BEBAN HIDL	-107.099	-160.393	-0.173	0.512	-0.005	3.430			
		3:BEBAN GEM	372.525	321.819	1.320	0.217	0.003	0.076			
		4:KOMBINASI	-623.840	-962.918	-0.619	2.782	-0.022	25.386			
		5:KOMB B. MA	-50.176	-346.899	0.997	2.170	-0.012	18.720			
22957	16203	1:BEBAN MATI	423.445	1.7E 3	1.282	0.016	-0.004	-16.377			
		2:BEBAN HIDL	128.195	371.113	0.448	-0.018	-0.001	-3.746			
		3:BEBAN GEM	-318.274	-298.976	-12.889	-0.139	0.062	-3.054			
		4:KOMBINASI	713.245	2.64E 3	2.255	-0.009	-0.007	-25.646			
		5:KOMB B. MA	166.174	1.61E 3	-11.983	-0.140	0.060	-21.832			
15597	16203	1:BEBAN MATI	-423.445	-1.4E 3	-1.282	-0.016	-0.009	31.624			
		2:BEBAN HIDL	-128.195	-371.113	-0.448	0.018	-0.003	7.385			
		3:BEBAN GEM	318.274	298.976	12.889	0.139	0.065	0.122			
		4:KOMBINASI	-713.245	-2.28E 3	-2.255	0.009	-0.015	49.766			
		5:KOMB B. MA	-166.174	-1.31E 3	11.983	0.140	0.057	36.184			
22958	16204	1:BEBAN MATI	-10.346	-681.011	-0.230	-0.005	0.001	-6.724			
		2:BEBAN HIDL	-2.211	-224.844	-0.070	-0.002	0.000	-1.849			
		3:BEBAN GEM	27.598	-0.153	4.132	0.023	-0.018	0.281			
		4:KOMBINASI	-15.953	-1.18E 3	-0.388	-0.009	0.002	-11.026			
		5:KOMB B. MA	17.305	-816.077	4.067	0.017	-0.018	-7.538			
15549	16204	1:BEBAN MATI	10.346	911.663	0.230	0.005	0.002	-2.648			
		2:BEBAN HIDL	2.211	224.844	0.070	0.002	0.001	-0.797			
		3:BEBAN GEM	-27.598	0.153	-4.132	-0.023	-0.030	-0.282			
		4:KOMBINASI	15.953	1.45E 3	0.388	0.009	0.003	-4.453			
		5:KOMB B. MA	-17.305	1.05E 3	-4.067	-0.017	-0.030	-3.422			
22959	16205	1:BEBAN MATI	15.067	-131.519	-0.217	-0.004	0.001	-10.561			
		2:BEBAN HIDL	6.821	-84.143	-0.062	-0.001	0.000	-3.149			
		3:BEBAN GEM	48.587	-9.584	3.734	0.025	-0.021	0.154			
		4:KOMBINASI	28.994	-292.451	-0.360	-0.005	0.002	-17.712			
		5:KOMB B. MA	70.175	-192.068	3.666	0.022	-0.021	-12.290			
16204	16205	1:BEBAN MATI	-15.067	362.170	0.217	0.004	0.001	7.656			
		2:BEBAN HIDL	-6.821	84.143	0.062	0.001	0.000	2.159			
		3:BEBAN GEM	-48.587	9.584	-3.734	-0.025	-0.023	-0.266			
		4:KOMBINASI	-28.994	569.233	0.360	0.005	0.002	12.642			
		5:KOMB B. MA	-70.175	422.720	-3.666	-0.022	-0.023	8.672			
22960	16206	1:BEBAN MATI	49.905	673.075	-0.275	0.001	0.002	-3.946			
		2:BEBAN HIDL	19.145	148.854	-0.077	0.002	0.000	-1.391			
		3:BEBAN GEM	72.974	-9.661	5.003	-0.020	-0.030	0.030			
		4:KOMBINASI	90.518	1.05E 3	-0.453	0.005	0.003	-6.961			
		5:KOMB B. MA	138.015	752.243	4.932	-0.018	-0.030	-4.750			
16205	16206	1:BEBAN MATI	-49.905	-442.423	0.275	-0.001	0.002	10.510			
		2:BEBAN HIDL	-19.145	-148.854	0.077	-0.002	0.000	3.143			
		3:BEBAN GEM	-72.974	9.661	-5.003	0.020	-0.029	-0.144			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-90.518	-769.075	0.453	-0.005	0.003	17.640			
		5:KOMB B. MA	-138.015	-521.591	-4.932	0.018	-0.028	12.245			
22961	16208	1:BEBAN MATI	405.933	-1.27E 3	-3.239	2.645	0.028	-8.852			
		2:BEBAN HIDL	116.973	-285.688	-1.060	0.875	0.009	-1.760			
		3:BEBAN GEM	-88.012	-325.291	-2.368	0.180	0.011	3.135			
		4:KOMBINASI	674.276	-1.98E 3	-5.583	4.575	0.049	-13.438			
		5:KOMB B. MA	383.704	-1.78E 3	-6.361	3.359	0.046	-6.616			
	16213	1:BEBAN MATI	-405.933	1.57E 3	3.239	-2.645	0.004	-5.056			
		2:BEBAN HIDL	-116.973	285.688	1.060	-0.875	0.001	-1.042			
		3:BEBAN GEM	88.012	325.291	2.368	-0.180	0.012	-6.325			
		4:KOMBINASI	-674.276	2.34E 3	5.583	-4.575	0.006	-7.734			
		5:KOMB B. MA	-383.704	2.08E 3	6.361	-3.359	0.017	-12.323			
22962	16211	1:BEBAN MATI	417.809	-2.44E 3	1.272	-0.160	-0.006	-15.884			
		2:BEBAN HIDL	126.042	-610.068	0.242	-0.045	-0.001	-3.743			
		3:BEBAN GEM	-152.342	-314.582	-15.936	0.191	0.078	2.997			
		4:KOMBINASI	703.038	-3.9E 3	1.913	-0.263	-0.009	-25.050			
		5:KOMB B. MA	333.475	-3.14E 3	-15.316	0.014	0.075	-14.983			
	16216	1:BEBAN MATI	-417.809	2.74E 3	-1.272	0.160	-0.006	-9.506			
		2:BEBAN HIDL	-126.042	610.068	-0.242	0.045	-0.001	-2.240			
		3:BEBAN GEM	152.342	314.582	15.936	-0.191	0.078	-6.082			
		4:KOMBINASI	-703.038	4.26E 3	-1.913	0.263	-0.010	-14.991			
		5:KOMB B. MA	-333.475	3.44E 3	15.316	-0.014	0.075	-17.236			
22963	16213	1:BEBAN MATI	536.813	-1.81E 3	-48.279	3.375	0.213	5.787			
		2:BEBAN HIDL	161.068	-371.793	-16.534	1.141	0.073	1.269			
		3:BEBAN GEM	120.380	-341.158	-16.866	0.351	0.052	6.385			
		4:KOMBINASI	901.885	-2.77E 3	-84.390	5.876	0.373	8.974			
		5:KOMB B. MA	759.853	-2.39E 3	-75.910	4.428	0.312	13.252			
	15505	1:BEBAN MATI	-536.813	2.11E 3	48.279	-3.375	0.260	-25.040			
		2:BEBAN HIDL	-161.068	371.793	16.534	-1.141	0.089	-4.915			
		3:BEBAN GEM	-120.380	341.158	16.866	-0.351	0.114	-9.730			
		4:KOMBINASI	-901.885	3.13E 3	84.390	-5.876	0.454	-37.912			
		5:KOMB B. MA	-759.853	2.69E 3	75.910	-4.428	0.433	-38.206			
22964	16216	1:BEBAN MATI	413.854	-3.36E 3	1.329	-0.152	-0.009	10.421			
		2:BEBAN HIDL	122.751	-817.123	-0.482	-0.029	0.002	2.498			
		3:BEBAN GEM	-6.786	-350.694	-29.993	0.286	0.133	6.126			
		4:KOMBINASI	693.027	-5.34E 3	0.823	-0.229	-0.008	16.503			
		5:KOMB B. MA	480.380	-4.22E 3	-30.453	0.130	0.132	18.353			
	15527	1:BEBAN MATI	-413.854	3.66E 3	-1.329	0.152	-0.004	-44.851			
		2:BEBAN HIDL	-122.751	817.123	0.482	0.029	0.003	-10.511			
		3:BEBAN GEM	6.786	350.694	29.993	-0.286	0.161	-9.565			
		4:KOMBINASI	-693.027	5.7E 3	-0.823	0.229	-0.000	-70.640			
		5:KOMB B. MA	-480.380	4.52E 3	30.453	-0.130	0.167	-61.202			
22965	16217	1:BEBAN MATI	632.045	-1.86E 3	0.016	-0.033	-0.001	-7.712			
		2:BEBAN HIDL	221.014	-572.087	-0.164	0.008	0.001	-1.273			
		3:BEBAN GEM	100.018	-132.405	17.405	-0.666	-0.110	1.804			
		4:KOMBINASI	1.11E 3	-3.15E 3	-0.244	-0.028	0.000	-11.291			
		5:KOMB B. MA	869.672	-2.34E 3	18.192	-0.728	-0.116	-6.582			
	15505	1:BEBAN MATI	-632.045	2.22E 3	-0.016	0.033	0.001	-16.299			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 626	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-221.014	572.087	0.164	-0.008	0.001	-5.459			
		3:BEBAN GEM	-100.018	132.405	-17.405	0.666	-0.094	-3.362			
		4:KOMBINASI	-1.11E 3	3.58E 3	0.244	0.028	0.003	-28.293			
		5:KOMB B. MA	-869.672	2.7E 3	-18.192	0.728	-0.098	-23.104			
22966	16218	1:BEBAN MATI	374.754	-523.640	-0.149	-0.018	0.000	-16.667			
		2:BEBAN HIDL	130.384	-246.798	-0.090	0.008	0.000	-4.424			
		3:BEBAN GEM	86.316	-118.667	9.811	-0.212	-0.050	0.389			
		4:KOMBINASI	658.319	-1.02E 3	-0.322	-0.009	0.001	-27.078			
		5:KOMB B. MA	543.616	-796.319	10.098	-0.236	-0.052	-18.913			
	16217	1:BEBAN MATI	-374.754	884.033	0.149	0.018	0.001	8.384			
		2:BEBAN HIDL	-130.384	246.798	0.090	-0.008	0.001	1.519			
		3:BEBAN GEM	-86.316	118.667	-9.811	0.212	-0.066	-1.785			
		4:KOMBINASI	-658.319	1.46E 3	0.322	0.009	0.003	12.491			
		5:KOMB B. MA	-543.616	1.16E 3	-10.098	0.236	-0.067	7.421			
22967	16219	1:BEBAN MATI	270.272	1.01E 3	-0.449	0.001	0.003	-6.897			
		2:BEBAN HIDL	91.594	154.158	-0.056	0.008	0.000	-2.609			
		3:BEBAN GEM	84.987	-119.205	6.006	0.183	-0.030	-1.044			
		4:KOMBINASI	470.877	1.45E 3	-0.628	0.015	0.003	-12.450			
		5:KOMB B. MA	414.465	972.549	5.824	0.198	-0.029	-9.559			
	16218	1:BEBAN MATI	-270.272	-644.826	0.449	-0.001	0.003	16.606			
		2:BEBAN HIDL	-91.594	-154.158	0.056	-0.008	0.000	4.423			
		3:BEBAN GEM	-84.987	119.205	-6.006	-0.183	-0.041	-0.359			
		4:KOMBINASI	-470.877	-1.02E 3	0.628	-0.015	0.004	27.004			
		5:KOMB B. MA	-414.465	-612.156	-5.824	-0.198	-0.040	18.883			
22968	16221	1:BEBAN MATI	388.074	1.58E 3	2.850	-2.580	-0.002	4.522			
		2:BEBAN HIDL	115.883	298.580	1.046	-0.868	-0.001	1.002			
		3:BEBAN GEM	-279.145	-344.813	-1.607	-0.215	0.013	-6.770			
		4:KOMBINASI	651.101	2.37E 3	5.093	-4.484	-0.004	7.030			
		5:KOMB B. MA	164.501	1.4E 3	1.790	-3.326	0.011	-1.985			
	16226	1:BEBAN MATI	-388.074	-1.28E 3	-2.850	2.580	-0.026	9.494			
		2:BEBAN HIDL	-115.883	-298.580	-1.046	0.868	-0.009	1.926			
		3:BEBAN GEM	279.145	344.813	1.607	0.215	0.003	3.388			
		4:KOMBINASI	-651.101	-2.01E 3	-5.093	4.484	-0.046	14.474			
		5:KOMB B. MA	-164.501	-1.1E 3	-1.790	3.326	-0.028	14.208			
22969	16224	1:BEBAN MATI	400.446	2.76E 3	-0.171	0.122	0.001	8.629			
		2:BEBAN HIDL	131.903	638.678	0.169	0.002	-0.001	2.162			
		3:BEBAN GEM	-311.616	-330.185	-16.933	-0.196	0.086	-6.531			
		4:KOMBINASI	691.581	4.33E 3	0.066	0.149	-0.000	13.814			
		5:KOMB B. MA	152.391	2.8E 3	-17.850	-0.083	0.090	3.069			
	16229	1:BEBAN MATI	-400.446	-2.46E 3	0.171	-0.122	0.001	16.971			
		2:BEBAN HIDL	-131.903	-638.678	-0.169	-0.002	-0.001	4.102			
		3:BEBAN GEM	311.616	330.185	16.933	0.196	0.080	3.293			
		4:KOMBINASI	-691.581	-3.97E 3	-0.066	-0.149	-0.001	26.928			
		5:KOMB B. MA	-152.391	-2.5E 3	17.850	0.083	0.085	22.890			
22970	16226	1:BEBAN MATI	352.967	913.272	-0.117	-1.593	0.011	-9.840			
		2:BEBAN HIDL	101.050	173.992	0.112	-0.512	0.003	-2.012			
		3:BEBAN GEM	-108.696	-342.555	-2.260	-0.213	0.009	-3.380			
		4:KOMBINASI	585.240	1.37E 3	0.039	-2.732	0.019	-15.027			



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Job No 1	Sheet No 627	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	299.466	657.984	-2.423	-2.124	0.022	-14.596			
	15551	1:BEBAN MATI	-352.967	-612.945	0.117	1.593	-0.010	17.323			
		2:BEBAN HIDL	-101.050	-173.992	-0.112	0.512	-0.004	3.718			
		3:BEBAN GEM	108.696	342.555	2.260	0.213	0.013	0.020			
		4:KOMBINASI	-585.240	-1.01E 3	-0.039	2.732	-0.019	26.738			
		5:KOMB B. MA	-299.466	-357.657	2.423	2.124	0.001	19.576			
22971	16229	1:BEBAN MATI	410.972	1.74E 3	0.589	0.092	-0.000	-17.374			
		2:BEBAN HIDL	135.639	396.898	0.314	0.003	-0.001	-4.160			
		3:BEBAN GEM	-199.796	-320.657	-20.915	-0.133	0.094	-3.212			
		4:KOMBINASI	710.189	2.72E 3	1.210	0.115	-0.001	-27.504			
		5:KOMB B. MA	282.569	1.64E 3	-21.183	-0.046	0.098	-23.242			
	15596	1:BEBAN MATI	-410.972	-1.44E 3	-0.589	-0.092	-0.005	32.979			
		2:BEBAN HIDL	-135.639	-396.898	-0.314	-0.003	-0.003	8.052			
		3:BEBAN GEM	199.796	320.657	20.915	0.133	0.111	0.067			
		4:KOMBINASI	-710.189	-2.36E 3	-1.210	-0.115	-0.011	52.458			
		5:KOMB B. MA	-282.569	-1.34E 3	21.183	0.046	0.109	37.881			
22972	16230	1:BEBAN MATI	-7.117	-679.435	0.141	-0.019	-0.001	-6.726			
		2:BEBAN HIDL	-1.030	-224.792	-0.025	-0.001	0.000	-1.817			
		3:BEBAN GEM	6.656	0.378	6.111	0.021	-0.029	0.276			
		4:KOMBINASI	-10.188	-1.17E 3	0.130	-0.025	-0.001	-10.979			
		5:KOMB B. MA	-0.746	-813.913	6.543	0.002	-0.031	-7.527			
	15551	1:BEBAN MATI	7.117	910.087	-0.141	0.019	-0.001	-2.626			
		2:BEBAN HIDL	1.030	224.792	0.025	0.001	0.000	-0.828			
		3:BEBAN GEM	-6.656	-0.378	-6.111	-0.021	-0.043	-0.272			
		4:KOMBINASI	10.188	1.45E 3	-0.130	0.025	-0.001	-4.476			
		5:KOMB B. MA	0.746	1.04E 3	-6.543	-0.002	-0.046	-3.409			
22973	16231	1:BEBAN MATI	19.905	-126.668	-0.015	-0.034	-0.000	-10.509			
		2:BEBAN HIDL	8.599	-83.902	-0.052	-0.002	0.000	-3.118			
		3:BEBAN GEM	17.703	-8.698	5.912	0.023	-0.033	0.161			
		4:KOMBINASI	37.644	-286.245	-0.100	-0.044	-0.000	-17.600			
		5:KOMB B. MA	43.652	-186.143	6.161	-0.011	-0.035	-12.211			
	16230	1:BEBAN MATI	-19.905	357.319	0.015	0.034	0.001	7.661			
		2:BEBAN HIDL	-8.599	83.902	0.052	0.002	0.000	2.131			
		3:BEBAN GEM	-17.703	8.698	-5.912	-0.023	-0.036	-0.263			
		4:KOMBINASI	-37.644	563.027	0.100	0.044	0.002	12.603			
		5:KOMB B. MA	-43.652	416.794	-6.161	0.011	-0.037	8.663			
22974	16232	1:BEBAN MATI	52.338	682.578	-0.116	-0.051	0.000	-3.778			
		2:BEBAN HIDL	19.795	150.774	-0.074	-0.006	0.000	-1.337			
		3:BEBAN GEM	29.419	-8.690	7.775	-0.023	-0.047	0.049			
		4:KOMBINASI	94.476	1.06E 3	-0.258	-0.071	0.001	-6.674			
		5:KOMB B. MA	95.105	763.917	8.003	-0.078	-0.048	-4.529			
	16231	1:BEBAN MATI	-52.338	-451.926	0.116	0.051	0.001	10.454			
		2:BEBAN HIDL	-19.795	-150.774	0.074	0.006	0.001	3.112			
		3:BEBAN GEM	-29.419	8.690	-7.775	0.023	-0.045	-0.151			
		4:KOMBINASI	-94.476	-783.549	0.258	0.071	0.002	17.523			
		5:KOMB B. MA	-95.105	-533.265	-8.003	0.078	-0.046	12.162			
22975	16234	1:BEBAN MATI	417.381	-1.25E 3	-3.989	2.667	0.029	-9.849			
		2:BEBAN HIDL	118.958	-274.071	-1.366	0.920	0.010	-2.183			



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Job No 1	Sheet No 628	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	251.422	-345.360	-2.031	0.172	0.004	3.394			
		4:KOMBINASI	691.190	-1.93E 3	-6.972	4.673	0.052	-15.311			
		5:KOMB B. MA	752.749	-1.77E 3	-6.941	3.400	0.040	-7.595			
	16239	1:BEBAN MATI	-417.381	1.55E 3	3.989	-2.667	0.010	-3.836			
		2:BEBAN HIDL	-118.958	274.071	1.366	-0.920	0.003	-0.505			
		3:BEBAN GEM	-251.422	345.360	2.031	-0.172	0.016	-6.781			
		4:KOMBINASI	-691.190	2.29E 3	6.972	-4.673	0.017	-5.411			
		5:KOMB B. MA	-752.749	2.07E 3	6.941	-3.400	0.028	-11.259			
22976	16237	1:BEBAN MATI	438.762	-2.43E 3	0.578	-0.076	-0.002	-17.423			
		2:BEBAN HIDL	148.232	-592.625	0.147	0.006	-0.001	-4.602			
		3:BEBAN GEM	27.498	-338.371	-18.971	0.194	0.088	3.295			
		4:KOMBINASI	763.685	-3.86E 3	0.929	-0.082	-0.004	-28.271			
		5:KOMB B. MA	556.574	-3.14E 3	-19.254	0.131	0.090	-16.725			
	16242	1:BEBAN MATI	-438.762	2.73E 3	-0.578	0.076	-0.003	-7.877			
		2:BEBAN HIDL	-148.232	592.625	-0.147	-0.006	-0.001	-1.210			
		3:BEBAN GEM	-27.498	338.371	18.971	-0.194	0.098	-6.613			
		4:KOMBINASI	-763.685	4.22E 3	-0.929	0.082	-0.005	-11.388			
		5:KOMB B. MA	-556.574	3.44E 3	19.254	-0.131	0.099	-15.547			
22977	16239	1:BEBAN MATI	572.927	-1.81E 3	-44.733	3.428	0.189	4.547			
		2:BEBAN HIDL	171.531	-366.636	-16.538	1.210	0.071	0.729			
		3:BEBAN GEM	487.809	-361.121	-19.449	0.342	0.053	6.842			
		4:KOMBINASI	961.962	-2.75E 3	-80.141	6.051	0.340	6.623			
		5:KOMB B. MA	1.19E 3	-2.41E 3	-75.077	4.514	0.288	12.168			
	15499	1:BEBAN MATI	-572.927	2.11E 3	44.733	-3.428	0.249	-23.729			
		2:BEBAN HIDL	-171.531	366.636	16.538	-1.210	0.091	-4.325			
		3:BEBAN GEM	-487.809	361.121	19.449	-0.342	0.137	-10.383			
		4:KOMBINASI	-961.962	3.11E 3	80.141	-6.051	0.446	-35.394			
		5:KOMB B. MA	-1.19E 3	2.71E 3	75.077	-4.514	0.449	-37.226			
22978	16242	1:BEBAN MATI	486.701	-3.38E 3	0.622	-0.084	-0.005	8.765			
		2:BEBAN HIDL	168.737	-809.338	-0.542	0.021	0.002	1.453			
		3:BEBAN GEM	197.422	-375.092	-33.400	0.285	0.140	6.663			
		4:KOMBINASI	854.020	-5.35E 3	-0.121	-0.067	-0.002	12.843			
		5:KOMB B. MA	795.236	-4.26E 3	-34.773	0.227	0.144	16.633			
	15497	1:BEBAN MATI	-486.701	3.68E 3	-0.622	0.084	-0.001	-43.394			
		2:BEBAN HIDL	-168.737	809.338	0.542	-0.021	0.003	-9.390			
		3:BEBAN GEM	-197.422	375.092	33.400	-0.285	0.187	-10.341			
		4:KOMBINASI	-854.020	5.71E 3	0.121	0.067	0.004	-67.097			
		5:KOMB B. MA	-795.236	4.56E 3	34.773	-0.227	0.197	-59.886			
22979	16243	1:BEBAN MATI	225.470	-1.1E 3	-6.793	0.559	0.049	1.469			
		2:BEBAN HIDL	40.784	-243.568	-2.259	0.223	0.017	0.412			
		3:BEBAN GEM	1.22E 3	-47.612	1.407	-0.381	-0.033	0.721			
		4:KOMBINASI	335.818	-1.7E 3	-11.767	1.027	0.086	2.422			
		5:KOMB B. MA	1.53E 3	-1.29E 3	-6.671	0.292	0.025	2.473			
	15545	1:BEBAN MATI	-225.470	1.38E 3	6.793	-0.559	0.051	-19.703			
		2:BEBAN HIDL	-40.784	243.568	2.259	-0.223	0.016	-3.995			
		3:BEBAN GEM	-1.22E 3	47.612	-1.407	0.381	0.012	-1.421			
		4:KOMBINASI	-335.818	2.05E 3	11.767	-1.027	0.087	-30.035			
		5:KOMB B. MA	-1.53E 3	1.58E 3	6.671	-0.292	0.073	-23.592			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 629	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
22980	16245	1:BEBAN MATI	93.803	-590.307	-106.856	-0.353	0.319	-0.542			
		2:BEBAN HIDL	43.484	-128.791	-28.814	0.058	0.087	-0.099			
		3:BEBAN GEM	-50.039	-775.855	-515.620	-0.162	1.447	-0.529			
		4:KOMBINASI	182.138	-914.434	-174.330	-0.331	0.521	-0.809			
		5:KOMB B. MA	67.353	-1.48E 3	-665.546	-0.488	1.890	-1.157			
	16165	1:BEBAN MATI	-93.803	740.471	106.856	0.353	0.205	-2.720			
		2:BEBAN HIDL	-43.484	128.791	28.814	-0.058	0.055	-0.533			
		3:BEBAN GEM	50.039	775.855	515.620	0.162	1.081	-3.275			
		4:KOMBINASI	-182.138	1.09E 3	174.330	0.331	0.334	-4.117			
		5:KOMB B. MA	-67.353	1.63E 3	665.546	0.488	1.373	-6.479			
22981	16246	1:BEBAN MATI	49.687	-545.457	0.246	0.543	-0.003	-0.742			
		2:BEBAN HIDL	15.073	-168.250	-0.003	0.082	-0.000	-0.526			
		3:BEBAN GEM	-147.096	18.961	-4.715	0.035	0.033	0.025			
		4:KOMBINASI	83.741	-923.747	0.290	0.783	-0.004	-1.732			
		5:KOMB B. MA	-95.721	-626.497	-4.706	0.629	0.031	-1.031			
	15600	1:BEBAN MATI	-49.687	833.771	-0.246	-0.543	-0.001	-9.402			
		2:BEBAN HIDL	-15.073	168.250	0.003	-0.082	0.000	-1.949			
		3:BEBAN GEM	147.096	-18.961	4.715	-0.035	0.037	0.254			
		4:KOMBINASI	-83.741	1.27E 3	-0.290	-0.783	-0.000	-14.401			
		5:KOMB B. MA	95.721	914.811	4.706	-0.629	0.038	-10.305			
22982	16247	1:BEBAN MATI	87.951	475.363	2.025	-0.162	-0.014	-2.346			
		2:BEBAN HIDL	11.875	70.044	0.440	0.014	-0.003	-0.427			
		3:BEBAN GEM	1.59E 3	-38.532	1.014	-0.262	-0.025	-0.222			
		4:KOMBINASI	124.542	682.505	3.135	-0.173	-0.022	-3.498			
		5:KOMB B. MA	1.77E 3	476.931	3.354	-0.430	-0.043	-2.835			
	15557	1:BEBAN MATI	-87.951	-187.049	-2.025	0.162	-0.015	7.218			
		2:BEBAN HIDL	-11.875	-70.044	-0.440	-0.014	-0.004	1.457			
		3:BEBAN GEM	-1.59E 3	38.532	-1.014	0.262	0.011	-0.345			
		4:KOMBINASI	-124.542	-336.528	-3.135	0.173	-0.024	10.993			
		5:KOMB B. MA	-1.77E 3	-188.617	-3.354	0.430	-0.007	7.730			
22983	16249	1:BEBAN MATI	558.779	-2.91E 3	-10.086	1.215	0.081	-5.169			
		2:BEBAN HIDL	146.065	-745.788	-2.812	0.308	0.023	-0.415			
		3:BEBAN GEM	1.33E 3	-31.198	28.254	-0.811	-0.248	0.509			
		4:KOMBINASI	904.238	-4.68E 3	-16.603	1.951	0.134	-6.868			
		5:KOMB B. MA	2.04E 3	-3.39E 3	17.893	0.549	-0.166	-4.883			
	15523	1:BEBAN MATI	-558.779	3.36E 3	10.086	-1.215	0.067	-40.945			
		2:BEBAN HIDL	-146.065	745.788	2.812	-0.308	0.019	-10.555			
		3:BEBAN GEM	-1.33E 3	31.198	-28.254	0.811	-0.168	-0.968			
		4:KOMBINASI	-904.238	5.23E 3	16.603	-1.951	0.110	-66.022			
		5:KOMB B. MA	-2.04E 3	3.84E 3	-17.893	-0.549	-0.098	-48.295			
22984	16250	1:BEBAN MATI	301.352	1.88E 3	0.701	-1.489	-0.000	-7.151			
		2:BEBAN HIDL	73.630	329.206	0.293	-0.371	-0.001	-2.024			
		3:BEBAN GEM	1.05E 3	-64.770	9.696	0.502	-0.082	-0.758			
		4:KOMBINASI	479.431	2.79E 3	1.311	-2.379	-0.002	-11.820			
		5:KOMB B. MA	1.44E 3	2.01E 3	11.058	-1.184	-0.087	-9.162			
	15600	1:BEBAN MATI	-301.352	-1.43E 3	-0.701	1.489	-0.010	31.539			
		2:BEBAN HIDL	-73.630	-329.206	-0.293	0.371	-0.003	6.867			
		3:BEBAN GEM	-1.05E 3	64.770	-9.696	-0.502	-0.060	-0.194			



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Job No

1

Sheet No

630

Rev

Part 1a

Job Title Skripsi Value Engineering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-479.431	-2.25E 3	-1.311	2.379	-0.017	48.834			
		5:KOMB B. MA	-1.44E 3	-1.56E 3	-11.058	1.184	-0.075	35.455			
22985	16252	1:BEBAN MATI	329.945	1.05E 3	4.737	-2.838	-0.033	-7.274			
		2:BEBAN HIDL	97.704	148.845	1.266	-0.796	-0.009	-1.938			
		3:BEBAN GEM	-939.174	-341.099	3.686	-0.225	-0.010	-4.961			
		4:KOMBINASI	552.260	1.5E 3	7.711	-4.680	-0.055	-11.830			
		5:KOMB B. MA	-597.565	780.361	9.367	-3.552	-0.050	-13.647			
	15589	1:BEBAN MATI	-329.945	-598.716	-4.737	2.838	-0.036	19.395			
		2:BEBAN HIDL	-97.704	-148.845	-1.266	0.796	-0.010	4.127			
		3:BEBAN GEM	939.174	341.099	-3.686	0.225	-0.044	-0.056			
		4:KOMBINASI	-552.260	-956.611	-7.711	4.680	-0.059	29.878			
		5:KOMB B. MA	597.565	-329.869	-9.367	3.552	-0.088	21.812			
22986	16253	1:BEBAN MATI	199.063	465.668	0.259	0.110	0.000	-5.119			
		2:BEBAN HIDL	56.804	65.402	0.138	0.043	-0.001	-1.525			
		3:BEBAN GEM	-103.659	-47.028	-11.225	-0.027	0.087	-0.782			
		4:KOMBINASI	329.762	663.445	0.531	0.200	-0.001	-8.583			
		5:KOMB B. MA	124.304	455.529	-11.444	0.107	0.091	-6.855			
	15624	1:BEBAN MATI	-199.063	-177.353	-0.259	-0.110	-0.004	9.848			
		2:BEBAN HIDL	-56.804	-65.402	-0.138	-0.043	-0.002	2.487			
		3:BEBAN GEM	103.659	47.028	11.225	0.027	0.078	0.090			
		4:KOMBINASI	-329.762	-317.467	-0.531	-0.200	-0.007	15.798			
		5:KOMB B. MA	-124.304	-167.215	11.444	-0.107	0.078	11.435			
22987	16255	1:BEBAN MATI	13.446	-641.984	-1.401	0.052	0.009	-7.828			
		2:BEBAN HIDL	3.397	-193.163	-0.482	0.012	0.003	-1.903			
		3:BEBAN GEM	75.243	-5.880	11.812	0.143	-0.070	0.137			
		4:KOMBINASI	21.570	-1.08E 3	-2.451	0.082	0.016	-12.439			
		5:KOMB B. MA	94.490	-764.056	10.713	0.209	-0.062	-8.826			
	15589	1:BEBAN MATI	-13.446	930.298	1.401	-0.052	0.011	-3.736			
		2:BEBAN HIDL	-3.397	193.163	0.482	-0.012	0.004	-0.939			
		3:BEBAN GEM	-75.243	5.880	-11.812	-0.143	-0.104	-0.224			
		4:KOMBINASI	-21.570	1.43E 3	2.451	-0.082	0.020	-5.985			
		5:KOMB B. MA	-94.490	1.05E 3	-10.713	-0.209	-0.096	-4.534			
22988	16256	1:BEBAN MATI	123.359	594.774	-0.336	-0.115	0.003	-3.667			
		2:BEBAN HIDL	33.833	93.613	-0.132	-0.035	0.001	-1.064			
		3:BEBAN GEM	306.389	-1.843	10.856	-0.072	-0.082	-0.149			
		4:KOMBINASI	202.164	863.510	-0.614	-0.194	0.006	-6.103			
		5:KOMB B. MA	465.367	649.006	10.984	-0.212	-0.082	-4.462			
	15624	1:BEBAN MATI	-123.359	-306.460	0.336	0.115	0.002	10.296			
		2:BEBAN HIDL	-33.833	-93.613	0.132	0.035	0.001	2.441			
		3:BEBAN GEM	-306.389	1.843	-10.856	0.072	-0.078	0.122			
		4:KOMBINASI	-202.164	-517.533	0.614	0.194	0.003	16.261			
		5:KOMB B. MA	-465.367	-360.692	-10.984	0.212	-0.080	11.888			
22989	16258	1:BEBAN MATI	330.977	-1.78E 3	-33.027	3.873	0.241	-2.885			
		2:BEBAN HIDL	88.862	-382.256	-9.320	1.095	0.068	-0.598			
		3:BEBAN GEM	752.785	-374.778	-54.540	0.306	0.351	5.125			
		4:KOMBINASI	539.352	-2.74E 3	-54.544	6.400	0.398	-4.419			
		5:KOMB B. MA	1.17E 3	-2.4E 3	-95.886	4.851	0.650	2.138			
	15522	1:BEBAN MATI	-330.977	2.23E 3	33.027	-3.873	0.245	-26.545			



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Job No

1

Sheet No

631

Rev

Part 1a

Job Title Skripsi Value Enginering

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-88.862	382.256	9.320	-1.095	0.069	-5.025			
		3:BEBAN GEM	-752.785	374.778	54.540	-0.306	0.451	-10.638			
		4:KOMBINASI	-539.352	3.28E 3	54.544	-6.400	0.404	-39.893			
		5:KOMB B. MA	-1.17E 3	2.85E 3	95.886	-4.851	0.760	-40.730			
22990	16259	1:BEBAN MATI	217.711	-988.948	-1.315	0.060	0.009	-2.520			
		2:BEBAN HIDL	63.121	-285.168	-0.365	0.011	0.002	-0.720			
		3:BEBAN GEM	-186.048	0.678	-14.197	-0.059	0.099	0.688			
		4:KOMBINASI	362.248	-1.64E 3	-2.162	0.089	0.014	-4.177			
		5:KOMB B. MA	60.233	-1.16E 3	-16.441	0.004	0.114	-2.231			
	15603	1:BEBAN MATI	-217.711	1.28E 3	1.315	-0.060	0.011	-14.148			
		2:BEBAN HIDL	-63.121	285.168	0.365	-0.011	0.003	-3.475			
		3:BEBAN GEM	186.048	-0.678	14.197	0.059	0.110	-0.678			
		4:KOMBINASI	-362.248	1.99E 3	2.162	-0.089	0.018	-22.537			
		5:KOMB B. MA	-60.233	1.45E 3	16.441	-0.004	0.128	-16.944			
22991	16261	1:BEBAN MATI	725.674	-3.19E 3	-9.475	-0.358	0.068	-9.945			
		2:BEBAN HIDL	203.859	-810.548	-3.176	-0.063	0.023	-1.772			
		3:BEBAN GEM	935.505	-116.354	34.067	-0.955	-0.261	1.348			
		4:KOMBINASI	1.2E 3	-5.13E 3	-16.452	-0.531	0.118	-14.769			
		5:KOMB B. MA	1.83E 3	-3.8E 3	24.390	-1.399	-0.192	-9.592			
	15522	1:BEBAN MATI	-725.674	3.64E 3	9.475	0.358	0.072	-40.334			
		2:BEBAN HIDL	-203.859	810.548	3.176	0.063	0.024	-10.151			
		3:BEBAN GEM	-935.505	116.354	-34.067	0.955	-0.241	-3.060			
		4:KOMBINASI	-1.2E 3	5.67E 3	16.452	0.531	0.124	-64.643			
		5:KOMB B. MA	-1.83E 3	4.25E 3	-24.390	1.399	-0.167	-49.638			
22992	16262	1:BEBAN MATI	378.455	2.28E 3	0.392	-0.042	-0.001	-7.583			
		2:BEBAN HIDL	106.840	445.383	-0.059	-0.005	0.001	-2.047			
		3:BEBAN GEM	603.212	-87.592	31.882	0.589	-0.229	-1.340			
		4:KOMBINASI	625.090	3.45E 3	0.376	-0.059	-0.000	-12.376			
		5:KOMB B. MA	1.08E 3	2.46E 3	33.833	0.573	-0.241	-10.219			
	15603	1:BEBAN MATI	-378.455	-1.83E 3	-0.392	0.042	-0.004	37.820			
		2:BEBAN HIDL	-106.840	-445.383	0.059	0.005	-0.000	8.599			
		3:BEBAN GEM	-603.212	87.592	-31.882	-0.589	-0.240	0.052			
		4:KOMBINASI	-625.090	-2.91E 3	-0.376	0.059	-0.005	59.142			
		5:KOMB B. MA	-1.08E 3	-2.01E 3	-33.833	-0.573	-0.257	43.033			
22993	16264	1:BEBAN MATI	444.319	1.82E 3	0.542	-0.314	-0.007	-5.590			
		2:BEBAN HIDL	134.291	380.085	0.044	-0.095	-0.001	-1.026			
		3:BEBAN GEM	-119.696	-281.645	-13.080	-0.170	0.098	-4.184			
		4:KOMBINASI	748.048	2.79E 3	0.720	-0.529	-0.011	-8.349			
		5:KOMB B. MA	399.212	1.75E 3	-13.166	-0.549	0.095	-10.599			
	15588	1:BEBAN MATI	-444.319	-1.37E 3	-0.542	0.314	-0.001	29.032			
		2:BEBAN HIDL	-134.291	-380.085	-0.044	0.095	0.001	6.617			
		3:BEBAN GEM	119.696	281.645	13.080	0.170	0.095	0.041			
		4:KOMBINASI	-748.048	-2.25E 3	-0.720	0.529	-0.000	45.425			
		5:KOMB B. MA	-399.212	-1.3E 3	13.166	0.549	0.099	33.045			
22994	16265	1:BEBAN MATI	237.837	506.279	-0.044	0.029	0.001	-2.525			
		2:BEBAN HIDL	68.845	82.818	0.002	0.029	0.000	-0.662			
		3:BEBAN GEM	-158.971	-25.215	-6.362	0.036	0.047	-0.445			
		4:KOMBINASI	395.557	740.045	-0.049	0.081	0.002	-4.090			



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Job No 1	Sheet No 632	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	112.225	529.495	-6.723	0.084	0.051	-3.390			
	15614	1:BEBAN MATI	-237.837	-217.965	0.044	-0.029	-0.001	7.852			
		2:BEBAN HIDL	-68.845	-82.818	-0.002	-0.029	-0.000	1.881			
		3:BEBAN GEM	158.971	25.215	6.362	-0.036	0.047	0.074			
		4:KOMBINASI	-395.557	-394.067	0.049	-0.081	-0.002	12.431			
		5:KOMB B. MA	-112.225	-241.180	6.723	-0.084	0.048	9.058			
22995	16267	1:BEBAN MATI	163.961	-826.858	-0.713	-0.030	0.004	-5.022			
		2:BEBAN HIDL	49.355	-242.339	-0.263	-0.019	0.002	-1.158			
		3:BEBAN GEM	385.416	-4.904	14.702	0.110	-0.105	0.269			
		4:KOMBINASI	275.721	-1.38E 3	-1.276	-0.067	0.007	-7.880			
		5:KOMB B. MA	598.261	-977.411	14.567	0.074	-0.106	-5.434			
	15588	1:BEBAN MATI	-163.961	1.12E 3	0.713	0.030	0.007	-9.261			
		2:BEBAN HIDL	-49.355	242.339	0.263	0.019	0.002	-2.407			
		3:BEBAN GEM	-385.416	4.904	-14.702	-0.110	-0.111	-0.342			
		4:KOMBINASI	-275.721	1.73E 3	1.276	0.067	0.012	-14.964			
		5:KOMB B. MA	-598.261	1.27E 3	-14.567	-0.074	-0.109	-11.064			
22996	16268	1:BEBAN MATI	213.833	551.001	-0.476	-0.037	0.004	-3.386			
		2:BEBAN HIDL	63.406	82.255	-0.179	-0.025	0.001	-0.971			
		3:BEBAN GEM	492.554	-12.370	20.200	-0.127	-0.152	-0.191			
		4:KOMBINASI	358.049	792.809	-0.858	-0.085	0.007	-5.617			
		5:KOMB B. MA	769.058	587.366	20.626	-0.185	-0.155	-4.169			
	15614	1:BEBAN MATI	-213.833	-262.687	0.476	0.037	0.003	9.371			
		2:BEBAN HIDL	-63.406	-82.255	0.179	0.025	0.001	2.181			
		3:BEBAN GEM	-492.554	12.370	-20.200	0.127	-0.145	0.009			
		4:KOMBINASI	-358.049	-446.832	0.858	0.085	0.006	14.734			
		5:KOMB B. MA	-769.058	-299.052	-20.626	0.185	-0.148	10.689			
22997	16270	1:BEBAN MATI	414.936	-2.75E 3	-14.034	1.037	0.108	-4.834			
		2:BEBAN HIDL	120.655	-657.327	-3.619	0.283	0.028	-1.316			
		3:BEBAN GEM	1.439	-335.570	-22.045	0.287	0.161	4.386			
		4:KOMBINASI	690.972	-4.35E 3	-22.631	1.696	0.174	-7.907			
		5:KOMB B. MA	488.840	-3.5E 3	-39.353	1.508	0.293	-1.018			
	15521	1:BEBAN MATI	-414.936	3.2E 3	14.034	-1.037	0.099	-38.951			
		2:BEBAN HIDL	-120.655	657.327	3.619	-0.283	0.025	-8.353			
		3:BEBAN GEM	-1.439	335.570	22.045	-0.287	0.164	-9.322			
		4:KOMBINASI	-690.972	4.89E 3	22.631	-1.696	0.159	-60.105			
		5:KOMB B. MA	-488.840	3.95E 3	39.353	-1.508	0.286	-53.751			
22998	16271	1:BEBAN MATI	239.320	-904.133	-0.040	0.038	-0.000	-2.101			
		2:BEBAN HIDL	70.594	-257.334	0.018	0.020	-0.000	-0.633			
		3:BEBAN GEM	-114.728	10.122	-6.946	-0.024	0.049	0.524			
		4:KOMBINASI	400.135	-1.5E 3	-0.018	0.078	-0.001	-3.535			
		5:KOMB B. MA	161.212	-1.05E 3	-7.322	0.025	0.051	-1.932			
	15606	1:BEBAN MATI	-239.320	1.19E 3	0.040	-0.038	0.001	-13.319			
		2:BEBAN HIDL	-70.594	257.334	-0.018	-0.020	0.000	-3.152			
		3:BEBAN GEM	114.728	-10.122	6.946	0.024	0.053	-0.375			
		4:KOMBINASI	-400.135	1.84E 3	0.018	-0.078	0.001	-21.026			
		5:KOMB B. MA	-161.212	1.34E 3	7.322	-0.025	0.057	-15.604			
22999	16273	1:BEBAN MATI	581.151	-3.06E 3	-0.327	-0.055	0.002	-10.174			
		2:BEBAN HIDL	160.633	-755.847	-0.401	-0.009	0.003	-2.064			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 633	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	679.757	-101.423	48.508	-0.951	-0.354	1.396			
		4:KOMBINASI	954.394	-4.89E 3	-1.034	-0.080	0.007	-15.512			
		5:KOMB B. MA	1.39E 3	-3.62E 3	50.365	-1.059	-0.368	-9.947			
	15521	1:BEBAN MATI	-581.151	3.51E 3	0.327	0.055	0.003	-38.203			
		2:BEBAN HIDL	-160.633	755.847	0.401	0.009	0.003	-9.054			
		3:BEBAN GEM	-679.757	101.423	-48.508	0.951	-0.359	-2.888			
		4:KOMBINASI	-954.394	5.43E 3	1.034	0.080	0.008	-60.330			
		5:KOMB B. MA	-1.39E 3	4.07E 3	-50.365	1.059	-0.373	-46.668			
23000	16274	1:BEBAN MATI	395.754	2.26E 3	-0.680	-0.018	0.005	-6.898			
		2:BEBAN HIDL	115.501	448.902	-0.159	-0.034	0.001	-1.735			
		3:BEBAN GEM	888.965	-96.057	59.077	0.538	-0.445	-1.291			
		4:KOMBINASI	659.706	3.43E 3	-1.070	-0.076	0.008	-11.054			
		5:KOMB B. MA	1.4E 3	2.43E 3	61.256	0.527	-0.461	-9.294			
	15606	1:BEBAN MATI	-395.754	-1.81E 3	0.680	0.018	0.005	36.860			
		2:BEBAN HIDL	-115.501	-448.902	0.159	0.034	0.001	8.339			
		3:BEBAN GEM	-888.965	96.057	-59.077	-0.538	-0.424	-0.122			
		4:KOMBINASI	-659.706	-2.89E 3	1.070	0.076	0.007	57.574			
		5:KOMB B. MA	-1.4E 3	-1.98E 3	-61.256	-0.527	-0.440	41.735			
23001	16276	1:BEBAN MATI	406.740	1.82E 3	4.073	-0.288	-0.033	-6.321			
		2:BEBAN HIDL	126.733	370.663	1.008	-0.072	-0.008	-1.572			
		3:BEBAN GEM	-255.232	-308.508	-20.042	-0.183	0.148	-4.654			
		4:KOMBINASI	690.860	2.78E 3	6.500	-0.461	-0.053	-10.101			
		5:KOMB B. MA	214.785	1.72E 3	-16.366	-0.524	0.118	-12.151			
	15587	1:BEBAN MATI	-406.740	-1.37E 3	-4.073	0.288	-0.027	29.783			
		2:BEBAN HIDL	-126.733	-370.663	-1.008	0.072	-0.007	7.025			
		3:BEBAN GEM	255.232	308.508	20.042	0.183	0.146	0.116			
		4:KOMBINASI	-690.860	-2.24E 3	-6.500	0.461	-0.043	46.979			
		5:KOMB B. MA	-214.785	-1.27E 3	16.366	0.524	0.123	34.120			
23002	16277	1:BEBAN MATI	248.050	507.399	0.382	-0.011	-0.002	-3.199			
		2:BEBAN HIDL	72.970	81.446	0.099	0.003	-0.001	-0.905			
		3:BEBAN GEM	86.948	-33.189	-11.869	0.034	0.086	-0.607			
		4:KOMBINASI	414.413	739.193	0.617	-0.008	-0.003	-5.286			
		5:KOMB B. MA	383.128	521.418	-12.021	0.027	0.088	-4.379			
	15617	1:BEBAN MATI	-248.050	-219.085	-0.382	0.011	-0.004	8.542			
		2:BEBAN HIDL	-72.970	-81.446	-0.099	-0.003	-0.001	2.103			
		3:BEBAN GEM	-86.948	33.189	11.869	-0.034	0.088	0.119			
		4:KOMBINASI	-414.413	-393.216	-0.617	0.008	-0.006	13.615			
		5:KOMB B. MA	-383.128	-233.104	12.021	-0.027	0.089	9.929			
23003	16279	1:BEBAN MATI	165.620	-831.874	0.011	-0.026	0.000	-5.060			
		2:BEBAN HIDL	52.053	-242.829	0.016	-0.008	-0.000	-1.203			
		3:BEBAN GEM	167.808	-3.042	21.538	0.117	-0.156	0.246			
		4:KOMBINASI	282.029	-1.39E 3	0.039	-0.044	0.000	-7.997			
		5:KOMB B. MA	373.050	-980.765	22.636	0.092	-0.164	-5.524			
	15587	1:BEBAN MATI	-165.620	1.12E 3	-0.011	0.026	-0.000	-9.297			
		2:BEBAN HIDL	-52.053	242.829	-0.016	0.008	-0.000	-2.369			
		3:BEBAN GEM	-167.808	3.042	-21.538	-0.117	-0.160	-0.291			
		4:KOMBINASI	-282.029	1.73E 3	-0.039	0.044	-0.001	-14.947			
		5:KOMB B. MA	-373.050	1.27E 3	-22.636	-0.092	-0.169	-11.024			



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Job No 1	Sheet No 634	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
23004	16280	1:BEBAN MATI	216.709	561.540	-0.237	-0.025	0.002	-3.316			
		2:BEBAN HIDL	66.805	87.929	-0.051	-0.002	0.000	-0.926			
		3:BEBAN GEM	77.934	-12.269	23.587	-0.124	-0.173	-0.188			
		4:KOMBINASI	366.938	814.535	-0.367	-0.033	0.002	-5.460			
		5:KOMB B. MA	338.622	601.416	24.498	-0.156	-0.180	-4.068			
15617	16280	1:BEBAN MATI	-216.709	-273.226	0.237	0.025	0.002	9.455			
		2:BEBAN HIDL	-66.805	-87.929	0.051	0.002	0.000	2.219			
		3:BEBAN GEM	-77.934	12.269	-23.587	0.124	-0.174	0.008			
		4:KOMBINASI	-366.938	-468.558	0.367	0.033	0.003	14.897			
		5:KOMB B. MA	-338.622	-313.101	-24.498	0.156	-0.180	10.795			
23005	16282	1:BEBAN MATI	492.329	-2.78E 3	-10.060	1.086	0.079	-5.442			
		2:BEBAN HIDL	150.113	-677.038	-2.702	0.272	0.021	-1.547			
		3:BEBAN GEM	-7.259	-356.827	-28.774	0.282	0.201	4.654			
		4:KOMBINASI	830.975	-4.42E 3	-16.395	1.738	0.129	-9.006			
		5:KOMB B. MA	574.775	-3.56E 3	-41.893	1.545	0.303	-1.484			
15493	16282	1:BEBAN MATI	-492.329	3.23E 3	10.060	-1.086	0.069	-38.806			
		2:BEBAN HIDL	-150.113	677.038	2.702	-0.272	0.018	-8.412			
		3:BEBAN GEM	7.259	356.827	28.774	-0.282	0.223	-9.903			
		4:KOMBINASI	-830.975	4.96E 3	16.395	-1.738	0.112	-60.027			
		5:KOMB B. MA	-574.775	4.01E 3	41.893	-1.545	0.313	-54.252			
23006	16283	1:BEBAN MATI	220.743	-874.464	-0.151	0.038	0.000	-3.122			
		2:BEBAN HIDL	65.372	-249.050	-0.054	-0.001	0.000	-0.945			
		3:BEBAN GEM	231.040	0.311	-16.437	-0.029	0.117	0.630			
		4:KOMBINASI	369.487	-1.45E 3	-0.269	0.044	0.001	-5.257			
		5:KOMB B. MA	502.558	-1.02E 3	-17.443	0.007	0.123	-3.027			
15609	16283	1:BEBAN MATI	-220.743	1.16E 3	0.151	-0.038	0.002	-11.862			
		2:BEBAN HIDL	-65.372	249.050	0.054	0.001	0.001	-2.719			
		3:BEBAN GEM	-231.040	-0.311	16.437	0.029	0.125	-0.625			
		4:KOMBINASI	-369.487	1.79E 3	0.269	-0.044	0.003	-18.585			
		5:KOMB B. MA	-502.558	1.31E 3	17.443	-0.007	0.133	-14.150			
23007	16285	1:BEBAN MATI	543.132	-2.82E 3	6.888	-0.747	-0.050	-9.793			
		2:BEBAN HIDL	158.516	-686.777	2.223	-0.174	-0.016	-1.931			
		3:BEBAN GEM	-156.918	-105.625	44.472	-0.937	-0.327	1.362			
		4:KOMBINASI	905.384	-4.48E 3	11.822	-1.175	-0.085	-14.842			
		5:KOMB B. MA	473.478	-3.34E 3	54.918	-1.836	-0.403	-9.522			
15493	16285	1:BEBAN MATI	-543.132	3.27E 3	-6.888	0.747	-0.052	-34.946			
		2:BEBAN HIDL	-158.516	686.777	-2.223	0.174	-0.017	-8.171			
		3:BEBAN GEM	156.918	105.625	-44.472	0.937	-0.327	-2.916			
		4:KOMBINASI	-905.384	5.02E 3	-11.822	1.175	-0.088	-55.009			
		5:KOMB B. MA	-473.478	3.79E 3	-54.918	1.836	-0.405	-42.910			
23008	16286	1:BEBAN MATI	399.345	2.1E 3	-1.433	0.388	0.013	-6.364			
		2:BEBAN HIDL	121.641	397.448	-0.348	0.133	0.003	-1.611			
		3:BEBAN GEM	-563.960	-90.848	22.337	0.517	-0.160	-1.318			
		4:KOMBINASI	673.840	3.15E 3	-2.275	0.678	0.021	-10.214			
		5:KOMB B. MA	-119.828	2.24E 3	21.813	1.010	-0.154	-8.714			
15609	16286	1:BEBAN MATI	-399.345	-1.65E 3	1.433	-0.388	0.008	33.893			
		2:BEBAN HIDL	-121.641	-397.448	0.348	-0.133	0.002	7.457			
		3:BEBAN GEM	563.960	90.848	-22.337	-0.517	-0.168	-0.019			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 635	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-673.840	-2.61E 3	2.275	-0.678	0.013	52.603			
		5:KOMB B. MA	119.828	-1.79E 3	-21.813	-1.010	-0.167	38.348			
23009	16287	1:BEBAN MATI	-42.439	-388.679	-14.630	1.238	0.130	3.178			
		2:BEBAN HIDL	-18.088	-103.951	-4.675	0.375	0.042	0.865			
		3:BEBAN GEM	497.835	-152.790	23.537	-0.275	-0.212	0.013			
		4:KOMBINASI	-79.868	-632.735	-25.037	2.085	0.222	5.198			
		5:KOMB B. MA	469.435	-611.478	7.278	1.175	-0.067	3.711			
	15525	1:BEBAN MATI	42.439	929.268	14.630	-1.238	0.128	-14.810			
		2:BEBAN HIDL	18.088	103.951	4.675	-0.375	0.041	-2.700			
		3:BEBAN GEM	-497.835	152.790	-23.537	0.275	-0.204	-2.710			
		4:KOMBINASI	79.868	1.28E 3	25.037	-2.085	0.219	-22.092			
		5:KOMB B. MA	-469.435	1.15E 3	-7.278	-1.175	-0.061	-19.276			
23010	16289	1:BEBAN MATI	404.381	2.07E 3	-64.014	1.328	0.177	-4.771			
		2:BEBAN HIDL	130.054	483.700	-23.354	0.458	0.065	-0.711			
		3:BEBAN GEM	-132.300	-315.719	-220.224	-0.177	0.619	-4.561			
		4:KOMBINASI	693.344	3.25E 3	-114.183	2.327	0.316	-6.863			
		5:KOMB B. MA	343.499	2.02E 3	-309.262	1.417	0.866	-9.987			
	16379	1:BEBAN MATI	-404.381	-1.92E 3	64.014	-1.328	0.137	14.534			
		2:BEBAN HIDL	-130.054	-483.700	23.354	-0.458	0.050	3.082			
		3:BEBAN GEM	132.300	315.719	220.224	0.177	0.461	3.013			
		4:KOMBINASI	-693.344	-3.07E 3	114.183	-2.327	0.243	22.373			
		5:KOMB B. MA	-343.499	-1.87E 3	309.262	-1.417	0.650	19.547			
23011	16290	1:BEBAN MATI	156.201	-312.143	-0.448	-0.006	0.005	0.639			
		2:BEBAN HIDL	51.257	-133.466	-0.152	-0.000	0.002	0.018			
		3:BEBAN GEM	358.388	6.543	10.531	-0.015	-0.092	-0.005			
		4:KOMBINASI	269.451	-588.116	-0.781	-0.008	0.008	0.795			
		5:KOMB B. MA	563.262	-385.351	10.518	-0.022	-0.090	0.645			
	15592	1:BEBAN MATI	-156.201	658.120	0.448	0.006	0.003	-9.203			
		2:BEBAN HIDL	-51.257	133.466	0.152	0.000	0.001	-2.373			
		3:BEBAN GEM	-358.388	-6.543	-10.531	0.015	-0.094	0.120			
		4:KOMBINASI	-269.451	1E 3	0.781	0.008	0.006	-14.841			
		5:KOMB B. MA	-563.262	731.329	-10.518	0.022	-0.095	-10.501			
23012	16292	1:BEBAN MATI	391.990	-2.51E 3	-83.143	0.099	0.213	-4.389			
		2:BEBAN HIDL	116.965	-598.036	-29.107	-0.036	0.075	-1.164			
		3:BEBAN GEM	331.834	-306.580	-193.325	0.262	0.539	4.544			
		4:KOMBINASI	657.533	-3.97E 3	-146.343	0.061	0.376	-7.128			
		5:KOMB B. MA	810.595	-3.19E 3	-303.598	0.352	0.824	-0.316			
	16390	1:BEBAN MATI	-391.990	2.66E 3	83.143	-0.099	0.194	-8.274			
		2:BEBAN HIDL	-116.965	598.036	29.107	0.036	0.068	-1.769			
		3:BEBAN GEM	-331.834	306.580	193.325	-0.262	0.409	-6.047			
		4:KOMBINASI	-657.533	4.15E 3	146.343	-0.061	0.341	-12.759			
		5:KOMB B. MA	-810.595	3.34E 3	303.598	-0.352	0.664	-15.685			
23013	16293	1:BEBAN MATI	41.183	-691.019	-0.704	-0.017	0.006	-0.243			
		2:BEBAN HIDL	13.737	-202.737	-0.295	0.002	0.003	-0.193			
		3:BEBAN GEM	516.953	-144.623	27.955	-0.379	-0.248	-0.054			
		4:KOMBINASI	71.398	-1.15E 3	-1.317	-0.017	0.012	-0.600			
		5:KOMB B. MA	592.226	-964.516	28.471	-0.414	-0.252	-0.415			
	15524	1:BEBAN MATI	-41.183	1.23E 3	0.704	0.017	0.006	-16.727			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 636	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-13.737	202.737	0.295	-0.002	0.002	-3.385			
		3:BEBAN GEM	-516.953	144.623	-27.955	0.379	-0.246	-2.499			
		4:KOMBINASI	-71.398	1.8E 3	1.317	0.017	0.011	-25.488			
		5:KOMB B. MA	-592.226	1.51E 3	-28.471	0.414	-0.250	-21.382			
23014	16295	1:BEBAN MATI	363.140	2.07E 3	-97.824	1.333	0.278	-5.091			
		2:BEBAN HIDL	123.669	476.978	-34.089	0.448	0.096	-1.248			
		3:BEBAN GEM	198.412	-340.997	-141.305	-0.203	0.376	-4.927			
		4:KOMBINASI	633.639	3.25E 3	-171.930	2.317	0.488	-8.106			
		5:KOMB B. MA	645.675	2E 3	-266.647	1.388	0.730	-11.013			
	16401	1:BEBAN MATI	-363.140	-1.92E 3	97.824	-1.333	0.202	14.878			
		2:BEBAN HIDL	-123.669	-476.978	34.089	-0.448	0.071	3.587			
		3:BEBAN GEM	-198.412	340.997	141.305	0.203	0.317	3.255			
		4:KOMBINASI	-633.639	-3.07E 3	171.930	-2.317	0.355	23.592			
		5:KOMB B. MA	-645.675	-1.85E 3	266.647	-1.388	0.577	20.448			
23015	16296	1:BEBAN MATI	150.834	-304.739	-0.361	-0.028	0.003	0.529			
		2:BEBAN HIDL	50.254	-130.154	-0.073	-0.006	0.001	-0.045			
		3:BEBAN GEM	145.536	4.845	13.617	-0.008	-0.120	-0.014			
		4:KOMBINASI	261.407	-573.933	-0.550	-0.044	0.005	0.563			
		5:KOMB B. MA	333.799	-377.744	13.893	-0.040	-0.123	0.488			
	15591	1:BEBAN MATI	-150.834	650.716	0.361	0.028	0.003	-8.962			
		2:BEBAN HIDL	-50.254	130.154	0.073	0.006	0.001	-2.252			
		3:BEBAN GEM	-145.536	-4.845	-13.617	0.008	-0.120	0.099			
		4:KOMBINASI	-261.407	989.105	0.550	0.044	0.005	-14.358			
		5:KOMB B. MA	-333.799	723.721	-13.893	0.040	-0.122	-10.209			
23016	16298	1:BEBAN MATI	404.697	-2.49E 3	-81.110	0.125	0.213	-5.152			
		2:BEBAN HIDL	136.695	-598.538	-27.583	-0.037	0.072	-1.656			
		3:BEBAN GEM	598.631	-334.277	-19.231	0.275	0.032	4.946			
		4:KOMBINASI	704.349	-3.95E 3	-141.465	0.091	0.371	-8.831			
		5:KOMB B. MA	1.12E 3	-3.2E 3	-117.853	0.392	0.290	-0.952			
	16412	1:BEBAN MATI	-404.697	2.64E 3	81.110	-0.125	0.185	-7.437			
		2:BEBAN HIDL	-136.695	598.538	27.583	0.037	0.063	-1.279			
		3:BEBAN GEM	-598.631	334.277	19.231	-0.275	0.062	-6.585			
		4:KOMBINASI	-704.349	4.13E 3	141.465	-0.091	0.323	-10.972			
		5:KOMB B. MA	-1.12E 3	3.35E 3	117.853	-0.392	0.288	-15.119			
23017	16299	1:BEBAN MATI	72.010	-610.366	1.817	-0.236	-0.016	-0.265			
		2:BEBAN HIDL	19.518	-184.415	0.928	-0.027	-0.008	-0.221			
		3:BEBAN GEM	-111.561	-152.715	29.746	-0.405	-0.266	-0.029			
		4:KOMBINASI	117.641	-1.03E 3	3.665	-0.327	-0.033	-0.671			
		5:KOMB B. MA	-33.418	-881.366	33.607	-0.678	-0.300	-0.428			
	15495	1:BEBAN MATI	-72.010	1.15E 3	-1.817	0.236	-0.016	-15.281			
		2:BEBAN HIDL	-19.518	184.415	-0.928	0.027	-0.008	-3.034			
		3:BEBAN GEM	111.561	152.715	-29.746	0.405	-0.259	-2.666			
		4:KOMBINASI	-117.641	1.68E 3	-3.665	0.327	-0.032	-23.192			
		5:KOMB B. MA	33.418	1.42E 3	-33.607	0.678	-0.293	-19.901			
23018	16300	1:BEBAN MATI	351.816	-1.02E 3	-55.945	2.425	0.326	-2.765			
		2:BEBAN HIDL	127.930	-217.267	-19.500	0.837	0.113	-0.773			
		3:BEBAN GEM	132.333	-170.742	9.126	-0.453	-0.058	1.664			
		4:KOMBINASI	626.867	-1.57E 3	-98.334	4.249	0.572	-4.555			



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Job No 1	Sheet No 637	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	567.523	-1.33E 3	-58.062	2.452	0.333	-1.481			
	15496	1:BEBAN MATI	-351.816	1.38E 3	55.945	-2.425	0.332	-11.365			
		2:BEBAN HIDL	-127.930	217.267	19.500	-0.837	0.116	-1.784			
		3:BEBAN GEM	-132.333	170.742	-9.126	0.453	-0.049	-3.674			
		4:KOMBINASI	-626.867	2E 3	98.334	-4.249	0.585	-16.492			
		5:KOMB B. MA	-567.523	1.69E 3	58.062	-2.452	0.350	-16.293			
23019	16302	1:BEBAN MATI	203.265	-303.734	-7.637	0.701	0.046	-9.139			
		2:BEBAN HIDL	72.759	-96.398	-2.682	0.264	0.016	-2.133			
		3:BEBAN GEM	88.380	-163.229	0.850	-0.165	-0.003	-0.232			
		4:KOMBINASI	360.333	-518.718	-13.455	1.264	0.081	-14.380			
		5:KOMB B. MA	339.720	-532.964	-8.353	0.686	0.053	-10.663			
	16300	1:BEBAN MATI	-203.265	664.127	7.637	-0.701	0.044	3.444			
		2:BEBAN HIDL	-72.759	96.398	2.682	-0.264	0.016	0.999			
		3:BEBAN GEM	-88.380	163.229	-0.850	0.165	-0.007	-1.689			
		4:KOMBINASI	-360.333	951.189	13.455	-1.264	0.078	5.731			
		5:KOMB B. MA	-339.720	893.356	8.353	-0.686	0.045	2.270			
23020	16304	1:BEBAN MATI	239.937	608.656	6.096	-1.642	-0.034	-4.051			
		2:BEBAN HIDL	80.951	94.587	2.019	-0.540	-0.011	-1.006			
		3:BEBAN GEM	21.345	-168.410	-2.725	0.154	0.022	-2.239			
		4:KOMBINASI	417.446	881.727	10.545	-2.835	-0.058	-6.470			
		5:KOMB B. MA	310.919	488.578	4.446	-1.804	-0.017	-7.005			
	16302	1:BEBAN MATI	-239.937	-248.263	-6.096	1.642	-0.038	9.093			
		2:BEBAN HIDL	-80.951	-94.587	-2.019	0.540	-0.013	2.119			
		3:BEBAN GEM	-21.345	168.410	2.725	-0.154	0.010	0.257			
		4:KOMBINASI	-417.446	-449.255	-10.545	2.835	-0.066	14.302			
		5:KOMB B. MA	-310.919	-128.184	-4.446	1.804	-0.036	10.635			
23021	16306	1:BEBAN MATI	622.450	2.43E 3	37.946	1.603	-0.031	3.440			
		2:BEBAN HIDL	216.118	601.379	14.205	0.449	-0.012	1.685			
		3:BEBAN GEM	-174.266	-348.817	67.652	-0.299	-0.092	-8.480			
		4:KOMBINASI	1.09E 3	3.87E 3	68.264	2.642	-0.057	6.824			
		5:KOMB B. MA	569.142	2.42E 3	117.504	1.559	-0.135	-4.453			
	16129	1:BEBAN MATI	-622.450	-2.35E 3	-37.946	-1.603	-0.062	2.414			
		2:BEBAN HIDL	-216.118	-601.379	-14.205	-0.449	-0.023	-0.211			
		3:BEBAN GEM	174.266	348.817	-67.652	0.299	-0.073	7.625			
		4:KOMBINASI	-1.09E 3	-3.78E 3	-68.264	-2.642	-0.111	2.560			
		5:KOMB B. MA	-569.142	-2.34E 3	-117.504	-1.559	-0.153	10.294			
23022	16310	1:BEBAN MATI	477.421	1.57E 3	20.533	1.395	-0.045	-12.540			
		2:BEBAN HIDL	162.368	378.860	8.314	0.381	-0.019	-2.325			
		3:BEBAN GEM	-149.177	-324.205	49.244	-0.334	-0.137	-5.924			
		4:KOMBINASI	832.693	2.49E 3	37.943	2.283	-0.083	-18.767			
		5:KOMB B. MA	418.205	1.46E 3	77.228	1.273	-0.200	-20.155			
	16134	1:BEBAN MATI	-477.421	-1.42E 3	-20.533	-1.395	-0.056	19.876			
		2:BEBAN HIDL	-162.368	-378.860	-8.314	-0.381	-0.022	4.182			
		3:BEBAN GEM	149.177	324.205	-49.244	0.334	-0.104	4.334			
		4:KOMBINASI	-832.693	-2.31E 3	-37.943	-2.283	-0.103	30.542			
		5:KOMB B. MA	-418.205	-1.31E 3	-77.228	-1.273	-0.179	26.936			
23023	16314	1:BEBAN MATI	426.379	806.084	3.252	1.122	-0.024	-22.814			
		2:BEBAN HIDL	141.028	189.530	2.115	0.344	-0.012	-4.892			



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Job No 1	Sheet No 638	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-129.448	-308.528	20.717	-0.346	-0.090	-3.458			
		4:KOMBINASI	737.300	1.27E 3	7.286	1.896	-0.048	-35.203			
		5:KOMB B. MA	375.076	595.847	26.273	0.965	-0.126	-29.379			
	15594	1:BEBAN MATI	-426.379	-580.838	-3.252	-1.122	0.000	27.914			
		2:BEBAN HIDL	-141.028	-189.530	-2.115	-0.344	-0.004	6.285			
		3:BEBAN GEM	129.448	308.528	-20.717	0.346	-0.062	1.188			
		4:KOMBINASI	-737.300	-1E 3	-7.286	-1.896	-0.006	43.554			
		5:KOMB B. MA	-375.076	-370.602	-26.273	-0.965	-0.067	32.933			
23024	16315	1:BEBAN MATI	79.722	-895.691	-0.343	-0.128	0.000	-1.838			
		2:BEBAN HIDL	28.911	-270.556	-0.069	-0.049	-0.000	-0.720			
		3:BEBAN GEM	142.780	-6.354	-0.222	0.010	0.003	0.226			
		4:KOMBINASI	141.924	-1.51E 3	-0.523	-0.233	-0.000	-3.358			
		5:KOMB B. MA	246.988	-1.06E 3	-0.618	-0.148	0.003	-2.033			
	15599	1:BEBAN MATI	-79.722	1.13E 3	0.343	0.128	0.004	-10.059			
		2:BEBAN HIDL	-28.911	270.556	0.069	0.049	0.001	-2.464			
		3:BEBAN GEM	-142.780	6.354	0.222	-0.010	-0.001	-0.301			
		4:KOMBINASI	-141.924	1.78E 3	0.523	0.233	0.007	-16.013			
		5:KOMB B. MA	-246.988	1.3E 3	0.618	0.148	0.004	-11.853			
23025	16316	1:BEBAN MATI	100.374	-377.886	0.356	-0.110	-0.001	-8.882			
		2:BEBAN HIDL	37.463	-133.639	0.129	-0.062	-0.000	-2.677			
		3:BEBAN GEM	179.304	-15.231	-0.574	0.025	0.004	0.025			
		4:KOMBINASI	180.388	-667.285	0.633	-0.231	-0.001	-14.942			
		5:KOMB B. MA	311.120	-474.062	-0.169	-0.121	0.003	-10.463			
	16315	1:BEBAN MATI	-100.374	608.537	-0.356	0.110	-0.004	3.078			
		2:BEBAN HIDL	-37.463	133.639	-0.129	0.062	-0.001	1.104			
		3:BEBAN GEM	-179.304	15.231	0.574	-0.025	0.003	-0.204			
		4:KOMBINASI	-180.388	944.067	-0.633	0.231	-0.006	5.461			
		5:KOMB B. MA	-311.120	704.713	0.169	0.121	-0.001	3.527			
23026	16317	1:BEBAN MATI	99.336	443.479	0.692	-0.052	-0.003	-5.062			
		2:BEBAN HIDL	38.781	106.177	0.196	-0.046	-0.001	-1.433			
		3:BEBAN GEM	222.739	-13.512	-0.812	0.001	0.007	-0.146			
		4:KOMBINASI	181.252	702.058	1.145	-0.137	-0.004	-8.367			
		5:KOMB B. MA	356.480	492.998	-0.042	-0.079	0.004	-6.075			
	16316	1:BEBAN MATI	-99.336	-212.828	-0.692	0.052	-0.005	8.923			
		2:BEBAN HIDL	-38.781	-106.177	-0.196	0.046	-0.002	2.683			
		3:BEBAN GEM	-222.739	13.512	0.812	-0.001	0.003	-0.013			
		4:KOMBINASI	-181.252	-425.276	-1.145	0.137	-0.009	15.000			
		5:KOMB B. MA	-356.480	-262.346	0.042	0.079	-0.003	10.520			
23027	16321	1:BEBAN MATI	386.811	-1.73E 3	68.361	-1.996	-0.069	-17.611			
		2:BEBAN HIDL	127.426	-386.710	28.676	-0.550	-0.028	-4.019			
		3:BEBAN GEM	-128.040	-339.895	236.412	-0.008	-0.244	1.260			
		4:KOMBINASI	668.055	-2.7E 3	127.916	-3.276	-0.128	-27.563			
		5:KOMB B. MA	328.824	-2.32E 3	333.799	-2.335	-0.343	-18.700			
	16159	1:BEBAN MATI	-386.811	1.81E 3	-68.361	1.996	-0.098	13.270			
		2:BEBAN HIDL	-127.426	386.710	-28.676	0.550	-0.042	3.071			
		3:BEBAN GEM	128.040	339.895	-236.412	0.008	-0.335	-2.093			
		4:KOMBINASI	-668.055	2.79E 3	-127.916	3.276	-0.186	20.837			
		5:KOMB B. MA	-328.824	2.4E 3	-333.799	2.335	-0.476	12.915			



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Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
23028	16325	1:BEBAN MATI	405.607	-2.48E 3	35.392	-2.442	-0.084	-2.397			
		2:BEBAN HIDL	133.470	-574.096	14.738	-0.703	-0.035	-0.667			
		3:BEBAN GEM	-60.449	-370.525	129.142	0.113	-0.309	3.975			
		4:KOMBINASI	700.280	-3.89E 3	66.052	-4.055	-0.157	-3.943			
		5:KOMB B. MA	422.217	-3.21E 3	179.834	-2.745	-0.430	1.377			
	16163	1:BEBAN MATI	-405.607	2.63E 3	-35.392	2.442	-0.089	-10.113			
		2:BEBAN HIDL	-133.470	574.096	-14.738	0.703	-0.038	-2.148			
		3:BEBAN GEM	60.449	370.525	-129.142	-0.113	-0.324	-5.792			
		4:KOMBINASI	-700.280	4.07E 3	-66.052	4.055	-0.167	-15.573			
		5:KOMB B. MA	-422.217	3.36E 3	-179.834	2.745	-0.452	-17.484			
23029	16329	1:BEBAN MATI	459.216	-3.02E 3	25.541	-2.824	-0.095	17.951			
		2:BEBAN HIDL	154.375	-682.430	11.288	-0.857	-0.041	3.929			
		3:BEBAN GEM	192.507	-413.900	22.783	0.282	-0.137	6.827			
		4:KOMBINASI	798.058	-4.71E 3	48.710	-4.760	-0.179	27.828			
		5:KOMB B. MA	753.973	-3.86E 3	56.236	-3.042	-0.264	27.477			
	15526	1:BEBAN MATI	-459.216	3.24E 3	-25.541	2.824	-0.093	-40.956			
		2:BEBAN HIDL	-154.375	682.430	-11.288	0.857	-0.042	-8.949			
		3:BEBAN GEM	-192.507	413.900	-22.783	-0.282	-0.030	-9.872			
		4:KOMBINASI	-798.058	4.98E 3	-48.710	4.760	-0.179	-63.465			
		5:KOMB B. MA	-753.973	4.08E 3	-56.236	3.042	-0.150	-56.691			
23030	16330	1:BEBAN MATI	137.886	-1.73E 3	2.591	-0.016	-0.016	-5.393			
		2:BEBAN HIDL	70.072	-406.434	0.745	0.028	-0.005	-2.219			
		3:BEBAN GEM	398.745	-141.892	24.647	-0.638	-0.143	1.723			
		4:KOMBINASI	277.578	-2.73E 3	4.301	0.025	-0.027	-10.021			
		5:KOMB B. MA	598.612	-2.12E 3	28.917	-0.670	-0.168	-4.915			
	15529	1:BEBAN MATI	-137.886	2.09E 3	-2.591	0.016	-0.015	-17.082			
		2:BEBAN HIDL	-70.072	406.434	-0.745	-0.028	-0.004	-2.564			
		3:BEBAN GEM	-398.745	141.892	-24.647	0.638	-0.147	-3.392			
		4:KOMBINASI	-277.578	3.16E 3	-4.301	-0.025	-0.024	-24.601			
		5:KOMB B. MA	-598.612	2.48E 3	-28.917	0.670	-0.172	-22.183			
23031	16331	1:BEBAN MATI	159.429	-474.813	1.399	0.024	-0.008	-13.943			
		2:BEBAN HIDL	74.032	-118.355	0.499	0.030	-0.003	-3.884			
		3:BEBAN GEM	465.393	-125.513	10.058	-0.208	-0.055	0.229			
		4:KOMBINASI	309.766	-759.144	2.477	0.077	-0.014	-22.945			
		5:KOMB B. MA	692.511	-677.615	12.260	-0.177	-0.068	-16.033			
	16330	1:BEBAN MATI	-159.429	835.205	-1.399	-0.024	-0.009	6.235			
		2:BEBAN HIDL	-74.032	118.355	-0.499	-0.030	-0.003	2.491			
		3:BEBAN GEM	-465.393	125.513	-10.058	0.208	-0.063	-1.706			
		4:KOMBINASI	-309.766	1.19E 3	-2.477	-0.077	-0.015	11.467			
		5:KOMB B. MA	-692.511	1.04E 3	-12.260	0.177	-0.076	5.938			
23032	16332	1:BEBAN MATI	202.754	1.07E 3	0.360	0.111	-0.001	-3.497			
		2:BEBAN HIDL	90.693	281.171	0.111	0.045	-0.000	-0.559			
		3:BEBAN GEM	600.048	-121.812	4.535	0.182	-0.026	-1.240			
		4:KOMBINASI	388.413	1.73E 3	0.610	0.206	-0.002	-5.091			
		5:KOMB B. MA	887.220	1.11E 3	5.189	0.329	-0.028	-5.134			
	16331	1:BEBAN MATI	-202.754	-706.972	-0.360	-0.111	-0.003	13.937			
	2:BEBAN HIDL	-90.693	-281.171	-0.111	-0.045	-0.001	3.868				
	3:BEBAN GEM	-600.048	121.812	-4.535	-0.182	-0.028	-0.194				



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-388.413	-1.3E 3	-0.610	-0.206	-0.005	22.914			
		5:KOMB B. MA	-887.220	-747.772	-5.189	-0.329	-0.033	16.055			
23033	16333	1:BEBAN MATI	180.843	-1.73E 3	9.195	-0.528	-0.054	-3.924			
		2:BEBAN HIDL	79.115	-419.763	3.576	-0.216	-0.021	-1.559			
		3:BEBAN GEM	-22.537	-143.968	39.912	-0.640	-0.220	1.614			
		4:KOMBINASI	343.596	-2.75E 3	16.756	-0.980	-0.099	-7.203			
		5:KOMB B. MA	204.648	-2.13E 3	53.248	-1.331	-0.298	-3.165			
	15497	1:BEBAN MATI	-180.843	2.09E 3	-9.195	0.528	-0.054	-18.542			
		2:BEBAN HIDL	-79.115	419.763	-3.576	0.216	-0.021	-3.381			
		3:BEBAN GEM	22.537	143.968	-39.912	0.640	-0.249	-3.308			
		4:KOMBINASI	-343.596	3.18E 3	-16.756	0.980	-0.098	-27.659			
		5:KOMB B. MA	-204.648	2.49E 3	-53.248	1.331	-0.328	-24.044			
23034	16335	1:BEBAN MATI	192.305	-506.138	1.287	-0.203	-0.007	-12.711			
		2:BEBAN HIDL	78.441	-143.471	0.524	-0.077	-0.003	-3.484			
		3:BEBAN GEM	-101.169	-132.866	22.088	-0.198	-0.123	0.029			
		4:KOMBINASI	356.271	-836.919	2.383	-0.367	-0.014	-20.827			
		5:KOMB B. MA	133.142	-731.730	24.793	-0.457	-0.139	-14.771			
	16333	1:BEBAN MATI	-192.305	866.531	-1.287	0.203	-0.008	4.634			
		2:BEBAN HIDL	-78.441	143.471	-0.524	0.077	-0.003	1.795			
		3:BEBAN GEM	101.169	132.866	-22.088	0.198	-0.137	-1.593			
		4:KOMBINASI	-356.271	1.27E 3	-2.383	0.367	-0.015	8.434			
		5:KOMB B. MA	-133.142	1.09E 3	-24.793	0.457	-0.153	4.039			
23035	16337	1:BEBAN MATI	212.150	915.741	-1.961	0.306	0.011	-4.059			
		2:BEBAN HIDL	85.319	215.494	-0.702	0.127	0.004	-0.940			
		3:BEBAN GEM	-163.618	-132.376	19.412	0.184	-0.117	-1.564			
		4:KOMBINASI	391.091	1.44E 3	-3.475	0.572	0.019	-6.375			
		5:KOMB B. MA	91.543	906.042	18.001	0.576	-0.110	-6.265			
	16335	1:BEBAN MATI	-212.150	-555.348	1.961	-0.306	0.012	12.715			
		2:BEBAN HIDL	-85.319	-215.494	0.702	-0.127	0.004	3.476			
		3:BEBAN GEM	163.618	132.376	-19.412	-0.184	-0.112	0.006			
		4:KOMBINASI	-391.091	-1.01E 3	3.475	-0.572	0.022	20.820			
		5:KOMB B. MA	-91.543	-545.649	-18.001	-0.576	-0.102	14.807			
23036	16339	1:BEBAN MATI	243.802	1.8E 3	-1.876	0.250	0.012	-1.338			
		2:BEBAN HIDL	79.258	319.425	-0.962	0.031	0.006	-1.019			
		3:BEBAN GEM	-120.747	-455.457	-24.632	-0.106	0.137	-4.229			
		4:KOMBINASI	419.375	2.68E 3	-3.790	0.350	0.025	-3.236			
		5:KOMB B. MA	164.572	1.52E 3	-28.317	0.158	0.160	-6.390			
	15590	1:BEBAN MATI	-243.802	-1.44E 3	1.876	-0.250	0.010	20.443			
		2:BEBAN HIDL	-79.258	-319.425	0.962	-0.031	0.005	4.778			
		3:BEBAN GEM	120.747	455.457	24.632	0.106	0.153	-1.131			
		4:KOMBINASI	-419.375	-2.24E 3	3.790	-0.350	0.020	32.177			
		5:KOMB B. MA	-164.572	-1.16E 3	28.317	-0.158	0.174	22.123			
23037	16340	1:BEBAN MATI	102.873	-796.208	1.384	0.063	-0.006	-1.243			
		2:BEBAN HIDL	35.045	-236.163	0.414	0.014	-0.001	-0.510			
		3:BEBAN GEM	-149.865	-6.599	9.329	0.012	-0.048	0.219			
		4:KOMBINASI	179.519	-1.33E 3	2.324	0.098	-0.009	-2.307			
		5:KOMB B. MA	-33.459	-944.835	11.428	0.084	-0.057	-1.319			
	15595	1:BEBAN MATI	-102.873	1.03E 3	-1.384	-0.063	-0.011	-9.484			



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Job No 1	Sheet No 641	Rev
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Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-35.045	236.163	-0.414	-0.014	-0.003	-2.270			
		3:BEBAN GEM	149.865	6.599	-9.329	-0.012	-0.061	-0.297			
		4:KOMBINASI	-179.519	1.61E 3	-2.324	-0.098	-0.018	-15.012			
		5:KOMB B. MA	33.459	1.18E 3	-11.428	-0.084	-0.077	-11.157			
23038	16341	1:BEBAN MATI	123.103	-245.567	0.257	0.027	-0.004	-6.334			
		2:BEBAN HIDL	42.406	-91.565	0.078	0.022	-0.001	-1.854			
		3:BEBAN GEM	-204.546	-20.719	8.127	0.029	-0.048	-0.033			
		4:KOMBINASI	215.574	-441.184	0.433	0.067	-0.007	-10.566			
		5:KOMB B. MA	-66.226	-322.261	8.837	0.071	-0.055	-7.480			
	16340	1:BEBAN MATI	-123.103	476.218	-0.257	-0.027	0.001	2.087			
		2:BEBAN HIDL	-42.406	91.565	-0.078	-0.022	0.000	0.776			
		3:BEBAN GEM	204.546	20.719	-8.127	-0.029	-0.048	-0.211			
		4:KOMBINASI	-215.574	717.966	-0.433	-0.067	0.002	3.746			
		5:KOMB B. MA	66.226	552.912	-8.837	-0.071	-0.049	2.331			
23039	16342	1:BEBAN MATI	126.413	441.886	-0.099	-0.002	-0.002	-2.490			
		2:BEBAN HIDL	43.721	96.249	-0.011	0.016	-0.001	-0.719			
		3:BEBAN GEM	-258.887	-22.755	10.624	-0.039	-0.066	-0.304			
		4:KOMBINASI	221.649	684.262	-0.136	0.023	-0.003	-4.139			
		5:KOMB B. MA	-119.186	475.743	11.049	-0.034	-0.072	-3.241			
	16341	1:BEBAN MATI	-126.413	-211.235	0.099	0.002	0.003	6.333			
		2:BEBAN HIDL	-43.721	-96.249	0.011	-0.016	0.001	1.852			
		3:BEBAN GEM	258.887	22.755	-10.624	0.039	-0.059	0.037			
		4:KOMBINASI	-221.649	-407.480	0.136	-0.023	0.005	10.563			
		5:KOMB B. MA	119.186	-245.091	-11.049	0.034	-0.058	7.483			
23040	16346	1:BEBAN MATI	498.393	-1.9E 3	-4.147	-1.026	0.021	-7.662			
		2:BEBAN HIDL	174.800	-532.769	-1.419	-0.349	0.007	-1.038			
		3:BEBAN GEM	270.300	-460.836	-12.144	0.370	0.028	6.480			
		4:KOMBINASI	877.752	-3.13E 3	-7.247	-1.789	0.036	-10.855			
		5:KOMB B. MA	887.088	-2.7E 3	-17.749	-0.847	0.054	-1.480			
	15537	1:BEBAN MATI	-498.393	2.26E 3	4.147	1.026	0.028	-16.781			
		2:BEBAN HIDL	-174.800	532.769	1.419	0.349	0.010	-5.232			
		3:BEBAN GEM	-270.300	460.836	12.144	-0.370	0.115	-11.903			
		4:KOMBINASI	-877.752	3.56E 3	7.247	1.789	0.049	-28.507			
		5:KOMB B. MA	-887.088	3.06E 3	17.749	0.847	0.155	-32.418			
23041	16347	1:BEBAN MATI	224.277	-874.088	32.217	-1.735	-0.184	-2.468			
		2:BEBAN HIDL	82.397	-168.806	11.705	-0.636	-0.066	-0.646			
		3:BEBAN GEM	-70.820	-167.792	16.418	-0.532	-0.074	1.565			
		4:KOMBINASI	400.967	-1.32E 3	57.389	-3.099	-0.327	-3.995			
		5:KOMB B. MA	199.354	-1.15E 3	56.479	-2.675	-0.302	-1.212			
	15538	1:BEBAN MATI	-224.277	1.23E 3	-32.217	1.735	-0.195	-9.939			
		2:BEBAN HIDL	-82.397	168.806	-11.705	0.636	-0.071	-1.341			
		3:BEBAN GEM	70.820	167.792	-16.418	0.532	-0.119	-3.540			
		4:KOMBINASI	-400.967	1.75E 3	-57.389	3.099	-0.348	-14.072			
		5:KOMB B. MA	-199.354	1.51E 3	-56.479	2.675	-0.363	-14.460			
23042	16348	1:BEBAN MATI	113.205	-155.292	2.863	-0.609	-0.023	-6.901			
		2:BEBAN HIDL	42.035	-46.114	1.057	-0.237	-0.008	-1.354			
		3:BEBAN GEM	-314.456	-153.794	0.103	-0.137	0.004	-0.300			
		4:KOMBINASI	203.102	-260.134	5.128	-1.110	-0.041	-10.449			



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Job No 1	Sheet No 642	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
Client Teknik Sipil	File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	-191.752	-344.444	3.606	-0.895	-0.024	-8.029			
	16347	1:BEBAN MATI	-113.205	515.685	-2.863	0.609	-0.011	2.953			
		2:BEBAN HIDL	-42.035	46.114	-1.057	0.237	-0.004	0.812			
		3:BEBAN GEM	314.456	153.794	-0.103	0.137	-0.005	-1.510			
		4:KOMBINASI	-203.102	692.605	-5.128	1.110	-0.020	4.843			
		5:KOMB B. MA	191.752	704.837	-3.606	0.895	-0.018	1.855			
23043	16349	1:BEBAN MATI	104.497	671.234	-3.145	0.920	0.012	-1.098			
		2:BEBAN HIDL	37.885	115.932	-1.050	0.316	0.004	0.018			
		3:BEBAN GEM	-535.277	-150.747	-0.703	0.163	0.003	-2.093			
		4:KOMBINASI	186.013	990.972	-5.454	1.610	0.021	-1.290			
		5:KOMB B. MA	-434.813	582.509	-4.513	1.282	0.018	-3.285			
	16348	1:BEBAN MATI	-104.497	-310.840	3.145	-0.920	0.025	6.877			
		2:BEBAN HIDL	-37.885	-115.932	1.050	-0.316	0.008	1.347			
		3:BEBAN GEM	535.277	150.747	0.703	-0.163	0.005	0.319			
		4:KOMBINASI	-186.013	-558.500	5.454	-1.610	0.043	10.407			
		5:KOMB B. MA	434.813	-222.115	4.513	-1.282	0.036	8.019			
23044	16353	1:BEBAN MATI	299.371	1.56E 3	-1.991	3.162	0.000	5.689			
		2:BEBAN HIDL	85.418	259.773	-0.828	0.968	0.000	0.369			
		3:BEBAN GEM	-181.469	-339.750	-6.487	-0.088	0.023	-6.565			
		4:KOMBINASI	495.914	2.29E 3	-3.714	5.344	0.001	7.417			
		5:KOMB B. MA	160.079	1.36E 3	-9.299	3.651	0.025	-0.984			
	16357	1:BEBAN MATI	-299.371	-1.26E 3	1.991	-3.162	0.019	8.120			
		2:BEBAN HIDL	-85.418	-259.773	0.828	-0.968	0.008	2.179			
		3:BEBAN GEM	181.469	339.750	6.487	0.088	0.041	3.234			
		4:KOMBINASI	-495.914	-1.93E 3	3.714	-5.344	0.035	13.230			
		5:KOMB B. MA	-160.079	-1.06E 3	9.299	-3.651	0.067	12.822			
23045	16357	1:BEBAN MATI	277.115	888.771	0.206	2.054	-0.009	-8.540			
		2:BEBAN HIDL	76.249	134.726	-0.065	0.595	-0.003	-2.274			
		3:BEBAN GEM	-352.764	-333.789	-5.805	-0.001	0.017	-3.178			
		4:KOMBINASI	454.537	1.28E 3	0.142	3.417	-0.016	-13.887			
		5:KOMB B. MA	-47.538	619.129	-5.928	2.410	0.007	-13.241			
	15593	1:BEBAN MATI	-277.115	-588.444	-0.206	-2.054	0.007	15.783			
		2:BEBAN HIDL	-76.249	-134.726	0.065	-0.595	0.004	3.596			
		3:BEBAN GEM	352.764	333.789	5.805	0.001	0.040	-0.096			
		4:KOMBINASI	-454.537	-921.695	-0.142	-3.417	0.015	24.693			
		5:KOMB B. MA	47.538	-318.801	5.928	-2.410	0.051	17.840			
23046	16358	1:BEBAN MATI	36.370	-963.625	-0.035	0.000	0.000	-2.236			
		2:BEBAN HIDL	15.511	-288.022	0.032	-0.001	-0.000	-0.947			
		3:BEBAN GEM	55.192	-4.722	7.762	0.007	-0.041	0.204			
		4:KOMBINASI	68.462	-1.62E 3	0.009	-0.002	-0.000	-4.199			
		5:KOMB B. MA	103.629	-1.14E 3	8.134	0.006	-0.043	-2.590			
	15598	1:BEBAN MATI	-36.370	1.19E 3	0.035	-0.000	0.000	-10.461			
		2:BEBAN HIDL	-15.511	288.022	-0.032	0.001	-0.000	-2.443			
		3:BEBAN GEM	-55.192	4.722	-7.762	-0.007	-0.051	-0.259			
		4:KOMBINASI	-68.462	1.89E 3	-0.009	0.002	0.000	-16.461			
		5:KOMB B. MA	-103.629	1.37E 3	-8.134	-0.006	-0.053	-12.199			
23047	16359	1:BEBAN MATI	17.717	-419.127	0.093	-0.015	-0.000	-9.581			
		2:BEBAN HIDL	8.661	-143.397	0.049	-0.001	-0.000	-2.963			



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Job No

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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	45.374	-13.659	4.716	0.012	-0.027	0.028			
		4:KOMBINASI	35.118	-732.389	0.190	-0.019	-0.001	-16.238			
		5:KOMB B. MA	70.556	-519.508	5.074	-0.002	-0.029	-11.329			
	16358	1:BEBAN MATI	-17.717	649.778	-0.093	0.015	-0.001	3.291			
		2:BEBAN HIDL	-8.661	143.397	-0.049	0.001	-0.000	1.276			
		3:BEBAN GEM	-45.374	13.659	-4.716	-0.012	-0.028	-0.189			
		4:KOMBINASI	-35.118	1.01E 3	-0.190	0.019	-0.001	5.990			
		5:KOMB B. MA	-70.556	750.159	-5.074	0.002	-0.030	3.858			
23048	16360	1:BEBAN MATI	-2.374	371.194	0.144	-0.017	-0.001	-6.603			
		2:BEBAN HIDL	1.202	86.174	0.055	-0.001	-0.000	-1.952			
		3:BEBAN GEM	34.595	-14.336	3.595	-0.038	-0.024	-0.153			
		4:KOMBINASI	-0.925	583.311	0.260	-0.022	-0.001	-11.047			
		5:KOMB B. MA	34.672	407.846	3.952	-0.058	-0.026	-7.935			
	16359	1:BEBAN MATI	2.374	-140.542	-0.144	0.017	-0.001	9.614			
		2:BEBAN HIDL	-1.202	-86.174	-0.055	0.001	-0.000	2.966			
		3:BEBAN GEM	-34.595	14.336	-3.595	0.038	-0.018	-0.016			
		4:KOMBINASI	0.925	-306.529	-0.260	0.022	-0.002	16.283			
		5:KOMB B. MA	-34.672	-177.194	-3.952	0.058	-0.020	11.377			
23049	16364	1:BEBAN MATI	290.852	-1.25E 3	2.244	-3.312	-0.021	-8.199			
		2:BEBAN HIDL	81.143	-308.936	0.874	-1.006	-0.008	-1.691			
		3:BEBAN GEM	-645.512	-331.822	-2.387	0.255	-0.000	3.327			
		4:KOMBINASI	478.851	-2E 3	4.091	-5.584	-0.039	-12.544			
		5:KOMB B. MA	-338.250	-1.79E 3	0.262	-3.648	-0.026	-5.720			
	16368	1:BEBAN MATI	-290.852	1.55E 3	-2.244	3.312	-0.001	-5.563			
		2:BEBAN HIDL	-81.143	308.936	-0.874	1.006	-0.000	-1.338			
		3:BEBAN GEM	645.512	331.822	2.387	-0.255	0.024	-6.581			
		4:KOMBINASI	-478.851	2.36E 3	-4.091	5.584	-0.001	-8.818			
		5:KOMB B. MA	338.250	2.09E 3	-0.262	3.648	0.024	-13.276			
23050	16368	1:BEBAN MATI	366.271	-1.8E 3	36.442	-4.210	-0.157	6.391			
		2:BEBAN HIDL	109.608	-394.422	13.774	-1.303	-0.060	1.587			
		3:BEBAN GEM	-817.448	-347.045	-15.506	0.213	0.013	6.574			
		4:KOMBINASI	614.898	-2.79E 3	65.769	-7.136	-0.283	10.209			
		5:KOMB B. MA	-426.284	-2.4E 3	28.425	-4.767	-0.179	14.246			
	15525	1:BEBAN MATI	-366.271	2.1E 3	-36.442	4.210	-0.201	-25.472			
		2:BEBAN HIDL	-109.608	394.422	-13.774	1.303	-0.076	-5.455			
		3:BEBAN GEM	817.448	347.045	15.506	-0.213	0.139	-9.977			
		4:KOMBINASI	-614.898	3.15E 3	-65.769	7.136	-0.362	-39.295			
		5:KOMB B. MA	426.284	2.7E 3	-28.425	4.767	-0.100	-39.222			
23051	16369	1:BEBAN MATI	171.757	-1.69E 3	-2.248	0.093	0.013	-5.501			
		2:BEBAN HIDL	74.462	-413.740	-0.364	0.001	0.002	-2.133			
		3:BEBAN GEM	199.517	-148.052	26.805	-0.628	-0.148	1.555			
		4:KOMBINASI	325.248	-2.69E 3	-3.281	0.114	0.018	-10.013			
		5:KOMB B. MA	425.928	-2.09E 3	25.679	-0.565	-0.142	-5.147			
	15528	1:BEBAN MATI	-171.757	2.05E 3	2.248	-0.093	0.014	-16.477			
		2:BEBAN HIDL	-74.462	413.740	0.364	-0.001	0.002	-2.736			
		3:BEBAN GEM	-199.517	148.052	-26.805	0.628	-0.167	-3.298			
		4:KOMBINASI	-325.248	3.12E 3	3.281	-0.114	0.020	-24.150			
		5:KOMB B. MA	-425.928	2.45E 3	-25.679	0.565	-0.160	-21.581			



Software licensed to Snow Panther [LZ0]

Job No 1	Sheet No 644	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
23052	16370	1:BEBAN MATI	190.179	-436.212	-1.027	0.159	0.006	-13.520			
		2:BEBAN HIDL	78.393	-119.861	-0.214	0.026	0.001	-3.793			
		3:BEBAN GEM	187.859	-131.390	10.560	-0.202	-0.054	-0.009			
		4:KOMBINASI	353.644	-715.233	-1.575	0.232	0.010	-22.292			
		5:KOMB B. MA	434.467	-646.088	9.932	-0.037	-0.050	-15.805			
	16369	1:BEBAN MATI	-190.179	796.605	1.027	-0.159	0.006	6.266			
		2:BEBAN HIDL	-78.393	119.861	0.214	-0.026	0.001	2.382			
		3:BEBAN GEM	-187.859	131.390	-10.560	0.202	-0.070	-1.537			
		4:KOMBINASI	-353.644	1.15E 3	1.575	-0.232	0.009	11.330			
		5:KOMB B. MA	-434.467	1.01E 3	-9.932	0.037	-0.067	6.081			
23053	16371	1:BEBAN MATI	239.453	1.08E 3	0.857	0.268	-0.007	-2.892			
		2:BEBAN HIDL	97.019	278.583	0.375	0.057	-0.003	-0.500			
		3:BEBAN GEM	225.745	-130.815	5.865	0.180	-0.031	-1.582			
		4:KOMBINASI	442.573	1.74E 3	1.627	0.413	-0.012	-4.271			
		5:KOMB B. MA	534.696	1.11E 3	7.240	0.490	-0.040	-4.853			
		16370	1:BEBAN MATI	-239.453	-722.001	-0.857	-0.268	-0.003	13.509		
			2:BEBAN HIDL	-97.019	-278.583	-0.375	-0.057	-0.002	3.779		
			3:BEBAN GEM	-225.745	130.815	-5.865	-0.180	-0.038	0.043		
			4:KOMBINASI	-442.573	-1.31E 3	-1.627	-0.413	-0.007	22.257		
			5:KOMB B. MA	-534.696	-751.795	-7.240	-0.490	-0.045	15.821		
23054	16375	1:BEBAN MATI	621.522	2.68E 3	63.276	-0.261	-0.145	8.237			
		2:BEBAN HIDL	191.173	640.280	21.632	-0.017	-0.050	2.476			
		3:BEBAN GEM	-1.03E 3	-321.003	166.968	-0.135	-0.354	-6.131			
		4:KOMBINASI	1.05E 3	4.24E 3	110.542	-0.339	-0.255	13.846			
		5:KOMB B. MA	-350.116	2.72E 3	251.571	-0.412	-0.547	3.284			
		16289	1:BEBAN MATI	-621.522	-2.53E 3	-63.276	0.261	-0.165	4.517		
			2:BEBAN HIDL	-191.173	-640.280	-21.632	0.017	-0.056	0.664		
			3:BEBAN GEM	1.03E 3	321.003	-166.968	0.135	-0.465	4.557		
			4:KOMBINASI	-1.05E 3	-4.06E 3	-110.542	0.339	-0.287	6.483		
			5:KOMB B. MA	350.116	-2.57E 3	-251.571	0.412	-0.686	9.701		
23055	16379	1:BEBAN MATI	447.948	1.57E 3	21.478	-0.039	-0.112	-14.757			
		2:BEBAN HIDL	139.655	364.929	6.986	0.009	-0.037	-3.129			
		3:BEBAN GEM	-605.374	-309.791	20.184	-0.083	-0.139	-2.951			
		4:KOMBINASI	760.985	2.47E 3	36.951	-0.032	-0.194	-22.715			
		5:KOMB B. MA	-103.902	1.46E 3	46.863	-0.121	-0.280	-19.733			
		15592	1:BEBAN MATI	-447.948	-1.27E 3	-21.478	0.039	-0.099	28.677		
			2:BEBAN HIDL	-139.655	-364.929	-6.986	-0.009	-0.031	6.708		
			3:BEBAN GEM	605.374	309.791	-20.184	0.083	-0.059	-0.087		
			4:KOMBINASI	-760.985	-2.11E 3	-36.951	0.032	-0.169	45.146		
			5:KOMB B. MA	103.902	-1.16E 3	-46.863	0.121	-0.179	32.611		
23056	16380	1:BEBAN MATI	94.513	-871.798	-0.451	0.048	0.002	-1.593			
		2:BEBAN HIDL	34.976	-264.968	-0.108	0.027	0.001	-0.718			
		3:BEBAN GEM	141.088	-6.277	10.511	0.017	-0.056	0.172			
		4:KOMBINASI	169.378	-1.47E 3	-0.714	0.101	0.004	-3.060			
		5:KOMB B. MA	263.641	-1.04E 3	10.521	0.082	-0.056	-1.843			
		15597	1:BEBAN MATI	-94.513	1.1E 3	0.451	-0.048	0.003	-10.024		
2:BEBAN HIDL	-34.976		264.968	0.108	-0.027	0.001	-2.400				
		3:BEBAN GEM	-141.088	6.277	-10.511	-0.017	-0.068	-0.246			



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Sheet No

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Rev

Part 1a

Job Title Skripsi Value Enggining

Ref

By Jeronio.G

Date 26-Mar-15

Chd

Client Teknik Sipil

File Jero Fix Staad.std

Date/Time 28-Aug-2017 02:34

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		4:KOMBINASI	-169.378	1.75E 3	0.714	-0.101	0.004	-15.868			
		5:KOMB B. MA	-263.641	1.27E 3	-10.521	-0.082	-0.068	-11.722			
23057	16381	1:BEBAN MATI	98.126	-305.025	-0.493	0.062	0.003	-7.543			
		2:BEBAN HIDL	35.763	-114.323	-0.121	0.035	0.001	-2.379			
		3:BEBAN GEM	188.590	-15.169	9.291	0.027	-0.054	-0.022			
		4:KOMBINASI	174.971	-548.947	-0.786	0.129	0.005	-12.857			
		5:KOMB B. MA	317.603	-389.547	9.189	0.111	-0.053	-8.993			
	16380	1:BEBAN MATI	-98.126	535.677	0.493	-0.062	0.003	2.596			
		2:BEBAN HIDL	-35.763	114.323	0.121	-0.035	0.001	1.033			
		3:BEBAN GEM	-188.590	15.169	-9.291	-0.027	-0.055	-0.156			
		4:KOMBINASI	-174.971	825.729	0.786	-0.129	0.004	4.768			
		5:KOMB B. MA	-317.603	620.198	-9.189	-0.111	-0.055	3.052			
23058	16382	1:BEBAN MATI	106.673	524.966	-0.830	0.059	0.005	-2.716			
		2:BEBAN HIDL	38.203	126.282	-0.229	0.033	0.001	-0.886			
		3:BEBAN GEM	257.697	-15.541	11.873	-0.017	-0.072	-0.218			
		4:KOMBINASI	189.132	832.010	-1.362	0.123	0.008	-4.677			
		5:KOMB B. MA	400.176	584.417	11.499	0.060	-0.070	-3.476			
	16381	1:BEBAN MATI	-106.673	-294.314	0.830	-0.059	0.005	7.536			
		2:BEBAN HIDL	-38.203	-126.282	0.229	-0.033	0.001	2.372			
		3:BEBAN GEM	-257.697	15.541	-11.873	0.017	-0.067	0.035			
		4:KOMBINASI	-189.132	-555.228	1.362	-0.123	0.008	12.839			
		5:KOMB B. MA	-400.176	-353.766	-11.499	-0.060	-0.065	8.997			
23059	16386	1:BEBAN MATI	431.154	-1.92E 3	101.993	-1.348	-0.208	-14.435			
		2:BEBAN HIDL	133.572	-448.309	35.246	-0.463	-0.073	-3.405			
		3:BEBAN GEM	-763.331	-295.028	125.184	0.117	-0.268	3.038			
		4:KOMBINASI	731.100	-3.02E 3	178.786	-2.358	-0.366	-22.771			
		5:KOMB B. MA	-290.200	-2.5E 3	254.585	-1.503	-0.533	-13.288			
	16292	1:BEBAN MATI	-431.154	2.07E 3	-101.993	1.348	-0.292	4.653			
		2:BEBAN HIDL	-133.572	448.309	-35.246	0.463	-0.100	1.207			
		3:BEBAN GEM	763.331	295.028	-125.184	-0.117	-0.346	-4.485			
		4:KOMBINASI	-731.100	3.2E 3	-178.786	2.358	-0.511	7.515			
		5:KOMB B. MA	290.200	2.65E 3	-254.585	1.503	-0.716	0.669			
23060	16390	1:BEBAN MATI	425.375	-2.94E 3	24.325	-1.128	-0.129	8.807			
		2:BEBAN HIDL	128.102	-695.037	9.419	-0.413	-0.049	1.928			
		3:BEBAN GEM	-264.594	-322.942	-8.427	0.215	-0.018	6.040			
		4:KOMBINASI	715.413	-4.64E 3	44.261	-2.016	-0.234	13.653			
		5:KOMB B. MA	224.412	-3.7E 3	21.128	-1.151	-0.177	16.305			
	15524	1:BEBAN MATI	-425.375	3.24E 3	-24.325	1.128	-0.110	-39.137			
		2:BEBAN HIDL	-128.102	695.037	-9.419	0.413	-0.043	-8.744			
		3:BEBAN GEM	264.594	322.942	8.427	-0.215	0.100	-9.207			
		4:KOMBINASI	-715.413	5E 3	-44.261	2.016	-0.200	-60.954			
		5:KOMB B. MA	-224.412	4E 3	-21.128	1.151	-0.030	-54.050			
23061	16391	1:BEBAN MATI	186.404	-1.75E 3	-0.239	0.003	0.001	-4.496			
		2:BEBAN HIDL	80.157	-447.603	-0.451	0.029	0.003	-1.678			
		3:BEBAN GEM	270.991	-149.154	38.743	-0.624	-0.213	1.596			
		4:KOMBINASI	351.936	-2.82E 3	-1.008	0.050	0.005	-8.081			
		5:KOMB B. MA	519.039	-2.18E 3	40.171	-0.636	-0.221	-3.828			
	15527	1:BEBAN MATI	-186.404	2.11E 3	0.239	-0.003	0.002	-18.220			



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Job No 1	Sheet No 646	Rev
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By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		2:BEBAN HIDL	-80.157	447.603	0.451	-0.029	0.003	-3.589			
		3:BEBAN GEM	-270.991	149.154	-38.743	0.624	-0.243	-3.351			
		4:KOMBINASI	-351.936	3.25E 3	1.008	-0.050	0.007	-27.606			
		5:KOMB B. MA	-519.039	2.54E 3	-40.171	0.636	-0.251	-23.892			
23062	16392	1:BEBAN MATI	186.013	-504.215	-0.616	0.017	0.003	-13.328			
		2:BEBAN HIDL	76.141	-155.793	-0.257	0.023	0.001	-3.771			
		3:BEBAN GEM	272.623	-134.037	20.868	-0.190	-0.114	-0.002			
		4:KOMBINASI	345.041	-854.326	-1.151	0.057	0.006	-22.027			
		5:KOMB B. MA	517.952	-738.430	21.141	-0.169	-0.116	-15.593			
	16391	1:BEBAN MATI	-186.013	864.607	0.616	-0.017	0.004	5.274			
		2:BEBAN HIDL	-76.141	155.793	0.257	-0.023	0.002	1.937			
		3:BEBAN GEM	-272.623	134.037	-20.868	0.190	-0.131	-1.575			
		4:KOMBINASI	-345.041	1.29E 3	1.151	-0.057	0.007	9.429			
		5:KOMB B. MA	-517.952	1.1E 3	-21.141	0.169	-0.133	4.783			
23063	16393	1:BEBAN MATI	205.620	991.959	-1.041	0.027	0.006	-3.769			
		2:BEBAN HIDL	83.238	235.017	-0.200	0.014	0.001	-0.997			
		3:BEBAN GEM	307.288	-134.525	18.373	0.198	-0.110	-1.620			
		4:KOMBINASI	379.926	1.57E 3	-1.568	0.055	0.009	-6.119			
		5:KOMB B. MA	578.216	991.719	18.132	0.243	-0.109	-6.069			
	16392	1:BEBAN MATI	-205.620	-631.566	1.041	-0.027	0.006	13.322			
		2:BEBAN HIDL	-83.238	-235.017	0.200	-0.014	0.001	3.763			
		3:BEBAN GEM	-307.288	134.525	-18.373	-0.198	-0.106	0.037			
		4:KOMBINASI	-379.926	-1.13E 3	1.568	-0.055	0.009	22.008			
		5:KOMB B. MA	-578.216	-631.325	-18.132	-0.243	-0.105	15.619			
23064	16397	1:BEBAN MATI	423.107	2.66E 3	89.907	-0.100	-0.206	7.854			
		2:BEBAN HIDL	135.430	626.995	30.660	0.026	-0.070	1.879			
		3:BEBAN GEM	-992.138	-349.739	87.688	-0.133	-0.167	-6.632			
		4:KOMBINASI	724.415	4.19E 3	156.944	-0.079	-0.360	12.430			
		5:KOMB B. MA	-537.381	2.67E 3	200.375	-0.225	-0.423	2.018			
	16295	1:BEBAN MATI	-423.107	-2.51E 3	-89.907	0.100	-0.235	4.816			
		2:BEBAN HIDL	-135.430	-626.995	-30.660	-0.026	-0.080	1.196			
		3:BEBAN GEM	992.138	349.739	-87.688	0.133	-0.263	4.917			
		4:KOMBINASI	-724.415	-4.01E 3	-156.944	0.079	-0.410	7.693			
		5:KOMB B. MA	537.381	-2.52E 3	-200.375	0.225	-0.560	10.697			
23065	16401	1:BEBAN MATI	389.129	1.58E 3	21.325	0.008	-0.117	-15.097			
		2:BEBAN HIDL	127.690	359.415	7.068	0.024	-0.039	-3.630			
		3:BEBAN GEM	-474.079	-334.372	-5.238	-0.103	-0.007	-3.187			
		4:KOMBINASI	671.259	2.47E 3	36.899	0.048	-0.204	-23.924			
		5:KOMB B. MA	-32.040	1.44E 3	20.066	-0.086	-0.148	-20.622			
	15591	1:BEBAN MATI	-389.129	-1.28E 3	-21.325	-0.008	-0.092	29.077			
		2:BEBAN HIDL	-127.690	-359.415	-7.068	-0.024	-0.030	7.154			
		3:BEBAN GEM	474.079	334.372	5.238	0.103	0.058	-0.092			
		4:KOMBINASI	-671.259	-2.11E 3	-36.899	-0.048	-0.158	46.339			
		5:KOMB B. MA	32.040	-1.14E 3	-20.066	0.086	-0.049	33.273			
23066	16402	1:BEBAN MATI	92.371	-885.470	-0.288	0.015	0.002	-1.455			
		2:BEBAN HIDL	33.351	-270.391	-0.086	0.004	0.001	-0.676			
		3:BEBAN GEM	53.925	-7.000	15.509	0.013	-0.084	0.193			
		4:KOMBINASI	164.207	-1.5E 3	-0.482	0.024	0.003	-2.828			



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Job No 1	Sheet No 647	Rev
Part 1a		
Ref		
By Jeronio.G	Date 26-Mar-15	Chd
File Jero Fix Staad.std	Date/Time 28-Aug-2017 02:34	

Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		5:KOMB B. MA	169.003	-1.06E 3	15.946	0.030	-0.085	-1.659			
	15596	1:BEAN MATI	-92.371	1.12E 3	0.288	-0.015	0.001	-10.322			
		2:BEAN HIDL	-33.351	270.391	0.086	-0.004	0.000	-2.506			
		3:BEAN GEM	-53.925	7.000	-15.509	-0.013	-0.099	-0.275			
		4:KOMBINASI	-164.207	1.77E 3	0.482	-0.024	0.002	-16.396			
		5:KOMB B. MA	-169.003	1.29E 3	-15.946	-0.030	-0.102	-12.114			
23067	16403	1:BEAN MATI	101.671	-320.250	-0.428	0.018	0.002	-7.597			
		2:BEAN HIDL	36.563	-120.578	-0.118	0.001	0.001	-2.416			
		3:BEAN GEM	69.965	-15.863	13.034	0.023	-0.076	-0.011			
		4:KOMBINASI	180.506	-577.224	-0.703	0.024	0.003	-12.982			
		5:KOMB B. MA	197.072	-409.253	13.187	0.044	-0.078	-9.058			
	16402	1:BEAN MATI	-101.671	550.901	0.428	-0.018	0.003	2.471			
		2:BEAN HIDL	-36.563	120.578	0.118	-0.001	0.001	0.997			
		3:BEAN GEM	-69.965	15.863	-13.034	-0.023	-0.077	-0.176			
		4:KOMBINASI	-180.506	854.006	0.703	-0.024	0.005	4.561			
		5:KOMB B. MA	-197.072	639.904	-13.187	-0.044	-0.078	2.885			
23068	16404	1:BEAN MATI	116.766	514.088	-0.512	0.001	0.003	-2.905			
		2:BEAN HIDL	41.422	121.764	-0.122	-0.004	0.001	-0.980			
		3:BEAN GEM	92.391	-16.119	15.943	-0.020	-0.099	-0.214			
		4:KOMBINASI	206.395	811.728	-0.810	-0.005	0.004	-5.053			
		5:KOMB B. MA	238.631	570.221	16.155	-0.023	-0.101	-3.717			
	16403	1:BEAN MATI	-116.766	-283.436	0.512	-0.001	0.003	7.597			
		2:BEAN HIDL	-41.422	-121.764	0.122	0.004	0.001	2.413			
		3:BEAN GEM	-92.391	16.119	-15.943	0.020	-0.088	0.024			
		4:KOMBINASI	-206.395	-534.946	0.810	0.005	0.005	12.977			
		5:KOMB B. MA	-238.631	-339.570	-16.155	0.023	-0.089	9.070			
23069	16408	1:BEAN MATI	417.237	-1.9E 3	98.097	-1.299	-0.203	-15.105			
		2:BEAN HIDL	138.786	-448.401	33.606	-0.453	-0.070	-3.896			
		3:BEAN GEM	-723.603	-321.426	-42.209	0.115	0.109	3.305			
		4:KOMBINASI	722.742	-3E 3	171.486	-2.283	-0.355	-24.361			
		5:KOMB B. MA	-259.275	-2.51E 3	73.941	-1.449	-0.131	-13.973			
	16298	1:BEAN MATI	-417.237	2.05E 3	-98.097	1.299	-0.278	5.409			
		2:BEAN HIDL	-138.786	448.401	-33.606	0.453	-0.095	1.698			
		3:BEAN GEM	723.603	321.426	42.209	-0.115	0.098	-4.881			
		4:KOMBINASI	-722.742	3.18E 3	-171.486	2.283	-0.486	9.207			
		5:KOMB B. MA	259.275	2.66E 3	-73.941	1.449	-0.232	1.303			
23070	16412	1:BEAN MATI	452.543	-2.94E 3	22.342	-1.134	-0.118	7.951			
		2:BEAN HIDL	154.614	-702.129	8.548	-0.434	-0.045	1.434			
		3:BEAN GEM	-93.032	-350.752	-53.388	0.224	0.216	6.580			
		4:KOMBINASI	790.434	-4.65E 3	40.488	-2.056	-0.213	11.836			
		5:KOMB B. MA	447.628	-3.73E 3	-28.586	-1.160	0.082	15.721			
	15495	1:BEAN MATI	-452.543	3.24E 3	-22.342	1.134	-0.101	-38.275			
		2:BEAN HIDL	-154.614	702.129	-8.548	0.434	-0.039	-8.319			
		3:BEAN GEM	93.032	350.752	53.388	-0.224	0.308	-10.020			
		4:KOMBINASI	-790.434	5.01E 3	-40.488	2.056	-0.184	-59.240			
		5:KOMB B. MA	-447.628	4.03E 3	28.586	1.160	0.199	-53.787			
23071	16414	1:BEAN MATI	298.153	1.68E 3	5.787	-0.363	-0.033	-0.727			
		2:BEAN HIDL	85.357	307.435	1.485	-0.192	-0.009	-0.465			



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Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
		3:BEBAN GEM	-433.351	-399.602	-28.363	-0.134	0.161	-4.600			
		4:KOMBINASI	494.356	2.51E 3	9.321	-0.744	-0.054	-1.616			
		5:KOMB B. MA	-105.651	1.45E 3	-23.104	-0.619	0.130	-5.837			
	15586	1:BEBAN MATI	-298.153	-1.32E 3	-5.787	0.363	-0.035	18.421			
		2:BEBAN HIDL	-85.357	-307.435	-1.485	0.192	-0.009	4.082			
		3:BEBAN GEM	433.351	399.602	28.363	0.134	0.173	-0.102			
		4:KOMBINASI	-494.356	-2.08E 3	-9.321	0.744	-0.056	28.637			
		5:KOMB B. MA	105.651	-1.09E 3	23.104	0.619	0.142	20.763			
23072	16415	1:BEBAN MATI	140.303	-245.835	-0.277	0.075	0.002	0.138			
		2:BEBAN HIDL	46.816	-119.084	0.031	0.066	-0.000	-0.135			
		3:BEBAN GEM	-369.297	3.930	12.174	-0.057	-0.107	-0.004			
		4:KOMBINASI	243.269	-485.536	-0.282	0.196	0.002	-0.050			
		5:KOMB B. MA	-219.369	-313.159	12.524	0.055	-0.111	0.053			
	15590	1:BEBAN MATI	-140.303	591.812	0.277	-0.075	0.003	-7.531			
		2:BEBAN HIDL	-46.816	119.084	-0.031	-0.066	-0.000	-1.967			
		3:BEBAN GEM	369.297	-3.930	-12.174	0.057	-0.108	0.073			
		4:KOMBINASI	-243.269	900.709	0.282	-0.196	0.003	-12.185			
		5:KOMB B. MA	219.369	659.136	-12.524	-0.055	-0.110	-8.635			
23073	16417	1:BEBAN MATI	504.593	-2.19E 3	-20.093	0.380	0.118	-2.630			
		2:BEBAN HIDL	136.233	-518.601	-6.575	0.015	0.038	-0.391			
		3:BEBAN GEM	-629.392	-432.592	-17.187	0.402	0.129	4.946			
		4:KOMBINASI	823.484	-3.45E 3	-34.631	0.481	0.202	-3.781			
		5:KOMB B. MA	-74.529	-2.95E 3	-42.085	0.811	0.276	2.329			
	15536	1:BEBAN MATI	-504.593	2.55E 3	20.093	-0.380	0.119	-25.221			
		2:BEBAN HIDL	-136.233	518.601	6.575	-0.015	0.039	-5.712			
		3:BEBAN GEM	629.392	432.592	17.187	-0.402	0.074	-10.037			
		4:KOMBINASI	-823.484	3.89E 3	34.631	-0.481	0.205	-39.405			
		5:KOMB B. MA	74.529	3.31E 3	42.085	-0.811	0.220	-39.187			
23074	16418	1:BEBAN MATI	70.995	-356.556	8.308	0.348	-0.076	2.258			
		2:BEBAN HIDL	33.117	-137.809	3.399	0.024	-0.031	0.798			
		3:BEBAN GEM	-1.07E 3	-52.229	20.385	-0.666	-0.200	-0.076			
		4:KOMBINASI	138.181	-648.361	15.408	0.456	-0.141	3.986			
		5:KOMB B. MA	-1.04E 3	-494.082	31.752	-0.338	-0.305	2.657			
	15537	1:BEBAN MATI	-70.995	897.145	-8.308	-0.348	-0.071	-13.323			
		2:BEBAN HIDL	-33.117	137.809	-3.399	-0.024	-0.029	-3.230			
		3:BEBAN GEM	1.07E 3	52.229	-20.385	0.666	-0.160	-0.845			
		4:KOMBINASI	-138.181	1.3E 3	-15.408	-0.456	-0.131	-21.157			
		5:KOMB B. MA	1.04E 3	1.03E 3	-31.752	0.338	-0.255	-16.149			
23075	16420	1:BEBAN MATI	207.090	477.416	0.058	-0.050	0.000	0.795			
		2:BEBAN HIDL	61.540	75.115	0.005	-0.024	0.000	0.146			
		3:BEBAN GEM	261.276	-26.910	-16.659	0.043	0.099	-0.341			
		4:KOMBINASI	346.972	693.084	0.079	-0.098	0.001	1.187			
		5:KOMB B. MA	518.354	494.230	-17.431	-0.019	0.105	0.524			
	15620	1:BEBAN MATI	-207.090	-246.765	-0.058	0.050	-0.001	3.466			
		2:BEBAN HIDL	-61.540	-75.115	-0.005	0.024	-0.000	0.738			
		3:BEBAN GEM	-261.276	26.910	16.659	-0.043	0.097	0.025			
		4:KOMBINASI	-346.972	-416.302	-0.079	0.098	-0.002	5.341			
		5:KOMB B. MA	-518.354	-263.578	17.431	0.019	0.100	3.935			



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Job Title Skripsi Value Enggining

Client Teknik Sipil

Beam End Forces Cont...

Beam	Node	L/C	Axial			Shear			Torsion	Bending	
			Fx (kg)	Fy (kg)	Fz (kg)	Mx (kNm)	My (kNm)	Mz (kNm)			
23076	16422	1:BEBAN MATI	185.521	-765.724	0.594	0.046	-0.002	-4.608			
		2:BEBAN HIDL	60.580	-214.973	0.243	0.052	-0.001	-1.128			
		3:BEBAN GEM	-422.086	0.008	12.951	0.087	-0.098	0.343			
		4:KOMBINASI	319.552	-1.26E 3	1.102	0.139	-0.005	-7.335			
		5:KOMB B. MA	-221.322	-894.699	14.339	0.168	-0.106	-4.925			
15586	16422	1:BEBAN MATI	-185.521	1.05E 3	-0.594	-0.046	-0.006	-8.777			
		2:BEBAN HIDL	-60.580	214.973	-0.243	-0.052	-0.002	-2.034			
		3:BEBAN GEM	422.086	-0.008	-12.951	-0.087	-0.093	-0.342			
		4:KOMBINASI	-319.552	1.61E 3	-1.102	-0.139	-0.011	-13.786			
		5:KOMB B. MA	221.322	1.18E 3	-14.339	-0.168	-0.105	-10.357			
23077	16423	1:BEBAN MATI	241.702	517.032	0.177	0.079	-0.002	-3.189			
		2:BEBAN HIDL	76.067	67.545	0.143	0.024	-0.001	-0.920			
		3:BEBAN GEM	-606.462	-19.057	8.356	-0.117	-0.064	-0.225			
		4:KOMBINASI	411.749	728.510	0.440	0.133	-0.004	-5.298			
		5:KOMB B. MA	-349.444	537.549	9.036	-0.029	-0.070	-3.977			
15620	16423	1:BEBAN MATI	-241.702	-228.718	-0.177	-0.079	-0.001	8.674			
		2:BEBAN HIDL	-76.067	-67.545	-0.143	-0.024	-0.001	1.913			
		3:BEBAN GEM	606.462	19.057	-8.356	0.117	-0.059	-0.055			
		4:KOMBINASI	-411.749	-382.533	-0.440	-0.133	-0.003	13.470			
		5:KOMB B. MA	349.444	-249.235	-9.036	0.029	-0.063	9.764			
23078	16425	1:BEBAN MATI	146.268	-554.431	0.888	-0.124	-0.008	-0.635			
		2:BEBAN HIDL	44.437	-172.834	0.358	-0.048	-0.003	0.104			
		3:BEBAN GEM	229.440	-6.293	-18.613	-0.025	0.111	0.558			
		4:KOMBINASI	246.622	-941.852	1.638	-0.226	-0.014	-0.595			
		5:KOMB B. MA	413.843	-664.739	-18.441	-0.179	0.107	0.014			
15556	16425	1:BEBAN MATI	-146.268	785.083	-0.888	0.124	-0.003	-7.246			
		2:BEBAN HIDL	-44.437	172.834	-0.358	0.048	-0.001	-2.138			
		3:BEBAN GEM	-229.440	6.293	18.613	0.025	0.108	-0.633			
		4:KOMBINASI	-246.622	1.22E 3	-1.638	0.226	-0.006	-12.117			
		5:KOMB B. MA	-413.843	895.391	18.441	0.179	0.110	-9.194			

PERHITUNGAN STRUKTUR

1. Data Perencanaan

a. Data Bangunan

Nama Proyek	:	Pembangunan Kantor DPRD Kab. Ngada
Lokasi Proyek	:	Kabupaten Ngada
Luas Bangunan	:	$\pm 1545 \text{ m}^2$
Jumlah Lantai	:	4 Lantai
Tinggi Bangunan	:	16 meter
Panjang Bangunan	:	44,8 meter
Lebar Bangunan	:	37,8 meter
Zona Gempa	:	Zona 4
Jenis Tanah	:	Sedang

2. Perhitungan Pembebanan

a. Beban Mati (Dead Load)

Beban Mati Bangunan

- Berat sendiri : untuk berat sendiri struktur menggunakan perintah selfweight pada program bantu STAAD Pro 2004.

- Beban tembok

Beban tembok lantai 2-4

Tinggi tembok 3,5 m dengan tebal setengah batu

Tinggi tembok x berat jenis per m^2

$$3.5 \times 250 \text{ kg/m}^2 = 875 \text{ kg/m}$$

Beban tembok sebagian + kaca lantai 2-4

Tinggi tembok 3,5 m dengan tebal setengah batu

Tinggi tembok x berat jenis per m^2 x 60%

$$3,5 \times 250 \text{ kg/m}^2 \times 0,6 = 525 \text{ kg/m}$$

- Beban pasir urug tebal 5 cm

Tebal urugan pasir x berat jenis

$$0,05 \text{ m} \times 1600 \text{ kg/m}^2 = 80 \text{ kg/m}^2$$

- Beban keramik + adukan tebal 3 cm
Tebal keramik + adukan x berat jenis
 $0,03 \text{ m} \times 2100 \text{ kg/m}^2 = 63 \text{ kg/m}^2$
- Beban plafond dan rangka plafond
Berat plafond + penggantung
 $11 \text{ kg/m}^2 + 7 \text{ kg/m}^2 = 18 \text{ kg/m}^2$

Beban Plat Lantai

Berat sendiri plat	=	$0,12 \times 2400$	=	288	kg/m^2
Berat tegel keramik	=	2×24	=	48	kg/m^2
Berat spesi	=	2×21	=	42	kg/m^2
Berat plafond+penggantung	=	$\frac{11 + 7}{\text{qd}}$	=	18	kg/m^2
			=	396	kg/m^2

b. Beban Hidup (Live Load)

Menurut Peraturan Pembebanan Indonesia Untuk Gedung 1987

(Tabel 3.1, halaman 17), beban hidup untuk lantai gedung yang berfungsi sebagai Perkantoran adalah 250 kg/m^2 , sedangkan untuk lantai atap adalah 100 kg/m^2 .

c. Beban Gempa (Earthquake Load)

Lantai Atap

Beban Mati

Elemen Horizontal

$$\begin{aligned} \text{Berat lantai} &= \text{luas lantai} \times \text{qd lantai} \\ &= 44.8 \times 37.8 \times 396 = 670602 \text{ kg} \end{aligned}$$

$$\text{Berat Balok} = A \times L \times B_j \times \text{balok}$$

Berat balok memanjang

$$\text{Balok (25/50)} = 0.13 \times 6 \times 2400 \times 20 = 36000 \text{ kg}$$

$$\text{Balok (25/50)} = 0.13 \times 4.8 \times 2400 \times 10 = 14400 \text{ kg}$$

$$\text{Balok (20/40)} = 0.08 \times 6 \times 2400 \times 8 = 9216 \text{ kg}$$

$$\text{Balok (20/40)} = 0.08 \times 4.8 \times 2400 \times 4 = 3686.4 \text{ kg}$$

Berat balok melintang

$$\text{Balok (25/50)} = 0.13 \times 6 \times 2400 \times 10 = 18000 \text{ kg}$$

$$\text{Balok (25/50)} = 0.13 \times 4.8 \times 2400 \times 5 = 7200 \text{ kg}$$

$$\text{Balok (20/40)} = 0.08 \times 6 \times 2400 \times 3 = 3456 \text{ kg}$$

$$\text{Balok (20/40)} = 0.08 \times 4.8 \times 2400 \times 2 = \underline{1843.2 \text{ kg}}$$

$$\text{Wd Lantai atap} = 764403.840 \text{ kg}$$

Elemen Vertical

$$\text{Berat Kolom} = A \times (h \text{ lantai atap} + 1/2 h \text{ lantai bawah}) \times B_j \times \text{kolom}$$

$$\text{Kolom (40/40)} = 0.16 \times 1.75 \times 2400 \times 64 = 43008 \text{ kg}$$

Beban Hidup

$$\text{Beban hidup} = 250 \text{ kg/m}^2$$

$$\text{Faktor reduksi gempa} = 0.5$$

$$\text{Wl Lantai Atap} = 250 \times 0.5 \times 44.8 \times 37.8 = 211680 \text{ kg}$$

$$\text{Beban Total Lantai Atap} = \text{Wd} + \text{Wl}$$

$$= 764403.840 + 211680 = 976083.840 \text{ kg}$$

Lantai 2-4

Beban Mati

Elemen Horizontal

$$\text{Berat lantai} = \text{luas lantai} \times q_d \text{ lantai}$$

$$= 44.80 \times 37.8 \times 396 = 670602 \text{ kg}$$

$$\text{Berat Balok} = A \times L \times B_j \times \text{balok}$$

Berat balok memanjang

$$\begin{aligned} \text{Balok (25/50)} &= 0.13 \times 6 \times 2400 \times 16 = 28800 \text{ kg} \\ \text{Balok (25/50)} &= 0.13 \times 4.8 \times 2400 \times 4 = 5760 \text{ kg} \\ \text{Balok (20/40)} &= 0.08 \times 6 \times 2400 \times 4 = 4608 \text{ kg} \\ \text{Balok (20/40)} &= 0.08 \times 4.8 \times 2400 \times 1 = 921.6 \text{ kg} \end{aligned}$$

Berat balok melintang

$$\begin{aligned} \text{Balok (25/50)} &= 0.13 \times 6 \times 2400 \times 18 = 32400 \text{ kg} \\ \text{Balok (25/50)} &= 0.13 \times 4.8 \times 2400 \times 7 = 10080 \text{ kg} \\ \text{Balok (20/40)} &= 0.08 \times 6 \times 2400 \times 2 = 2304 \text{ kg} \\ \text{Balok (20/40)} &= 0.08 \times 4.8 \times 2400 \times 2 = 1843.2 \text{ kg} \end{aligned}$$

Elemen Vertical

Berat Kolom = $A \times (1/2 \text{ lantai atas} + 1/2 \text{ lantai bawah}) \times B_j \times \text{kolom}$

$$\text{Kolom (40/40)} = 0.16 \times 3.5 \times 2400 \times 64 = 86016 \text{ kg}$$

Berat Dinding = $b \times h \times L \times B_j$

$$\text{Memanjang} = 0.15 \times 4.5 \times 44.80 \times 250 = 7560 \text{ kg}$$

$$\text{Melintang} = 0.15 \times 4.5 \times 37.8 \times 250 = \underline{6378.750 \text{ kg}}$$

$$W_d = 857273.790 \text{ kg}$$

Beban Hidup

$$\text{Beban hidup} = 250 \text{ kg/m}^2$$

$$\text{Reduksi gempa} = 0.5$$

$$W_l \text{ Lantai Atap} = 250 \times 0.5 \times 44.80 \times 37.8 = 211680 \text{ kg}$$

$$\text{Beban T Lantai 2-4} = W_d + W_l$$

$$= 857273.790 + 211680.000 = 1068953.790 \text{ kg}$$

Berat Total Bangunan

$$\text{Berat Total Lantai 2} = 1068953.790 \text{ kg}$$

$$\text{Berat Total Lantai 3} = 1068953.790 \text{ kg}$$

$$\text{Berat Total Lantai 4} = 1068953.790 \text{ kg}$$

$$\text{Berat Total Lantai Atap} = \underline{976083.840 \text{ kg}}$$

$$W_t = 4182945.210 \text{ kg}$$

Tabel 3.1 Beban Gempa Dinamik Arah X, Z dan Y

Lantai	FX	FZ	FY (kg)
	(kg)	(kg)	Wi x 10 %
2	1068953.790	1068953.790	106895.379
3	1068953.790	1068953.790	106895.379
4	1068953.790	1068953.790	106895.379
Atap	976083.840	976083.840	97608.384

Spktrum Respons

Untuk Kabupaten Ngada berdasarkan SNI 1726-2012 memiliki percepatan batuan dasar, yaitu :

$$- S_s = 1.0$$

$$- S_l = 0.4$$

Jenis tanah untuk wilayah kota Malang di mana gedung tersebut berada adalah tanah keras.

- Penentuan koefisien situs F_a dan F_s

Koefisien situs F_a

Ditentukan berdasarkan beberapa parameter, yaitu nilai S_s yang terdapat pada Tabel 2.10 dan kelas situs yang berdasarkan jenis tanah yang terdapat pada Tabel 2.9.

$$S_s = 1.0$$

Kelas situs = SC (tanah keras)

Dari data di atas, didapat nilai :

$$F_a = 1.0$$

Koefisien situs F_v

Ditentukan berdasarkan beberapa parameter, yaitu nilai S_l yang terdapat pada Tabel 2.11 dan kelas situs yang berdasarkan jenis tanah yang terdapat pada Tabel 2.9.

$$S_I = 0.4$$

Kelas situs = SC (tanah keras)

Dari data di atas, didapat nilai :

$$F_v = 1.4$$

- Penentuan nilai S_{MS} dan S_{MI}

$$S_{MS} = F_a S_s$$

$$S_{MS} = 1.0 \times 1.0 = 1.0$$

$$S_{MI} = F_v S_I$$

$$S_{MI} = 1.4 \times 0.4 = 0.56$$

- Penentuan nilai S_{DS} dan S_{DI}

$$S_{DS} = \frac{2}{3} S_{MS}$$

$$S_{DS} = \frac{2}{3} 1.0 = 0.667$$

$$S_{DI} = \frac{2}{3} S_{MI}$$

$$S_{DI} = \frac{2}{3} 0.6 = 0.373$$

- Penentuan nilai T_0 dan T_s

$$T_0 = 0.2 \frac{S_{DI}}{S_{DS}}$$

$$T_0 = 0.2 \frac{0.373}{0.667} = 0.112$$

$$T_s = \frac{S_{DI}}{S_{DS}}$$

$$T_s = \frac{0.373}{0.667} = 0.560$$

- Penentuan nilai S_a

1. Untuk periode yang lebih kecil dari T_0 , spektrum respons

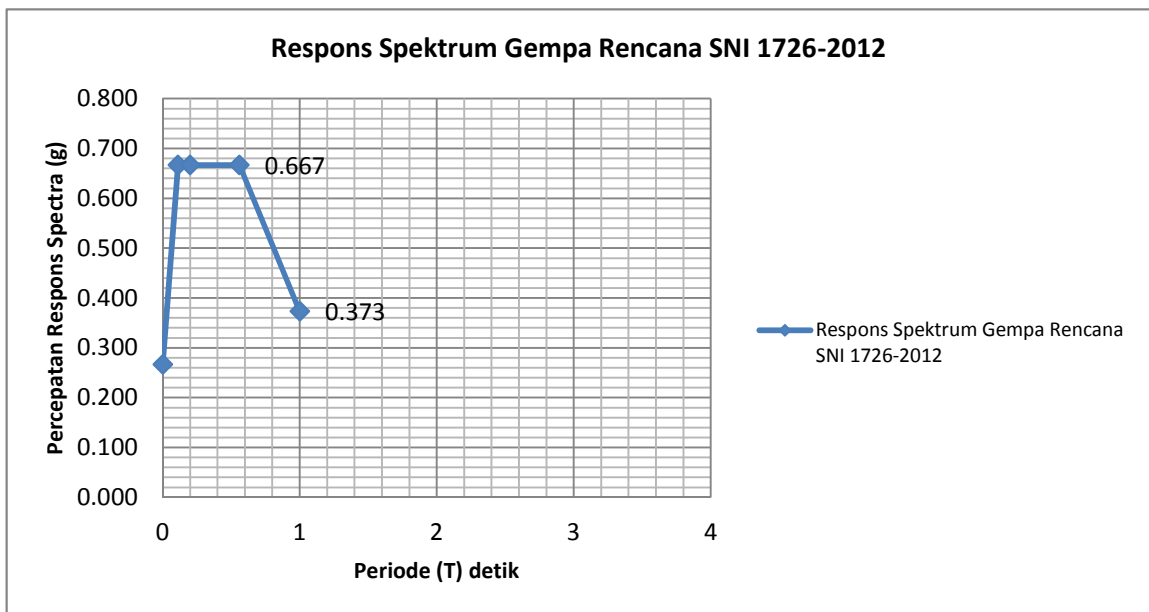
percepatan desain, S_a harus diambil dari persamaan :

$$S_a = S_{DS} \left(0,4 + 0,6 \frac{T}{T_0} \right)$$

2. Untuk periode yang lebih besar dari atau sama dengan T_0 dan lebih kecil atau sama dengan T_s , spektrum respons desain, S_a , sama dengan S_{DS} .
3. Untuk periode lebih besar dari T_s , spektrum respons percepatan desain, S_a , diambil berdasarkan persamaan :

$$S_a = \frac{S_{DI}}{T}$$

Spektrum gempa rencana SNI 1726-2012 yang diplot ke dalam *Microsoft Excel* sebagai berikut.



Gambar 3.2 Respons Spketrum Gempa Rencana

T	g
0	0.267
0.112	0.667
0.2	0.667
0.560	0.667
1	0.373

Untuk perhitungan Pusat Massa lantai dianalisa menggunakan perintah CG (*Center Gravity*) pada program bantu STAAD Pro 2004 dengan memasukkan semua dimensi struktur, beban mati dan beban hidup.

3. Perencanaan Dimensi Balok dan Kolom

a. Dimensi Balok

Menurut SNI 2847-2013 pasal 21.5.1.3 bahwa lebar balok (b) tidak boleh kurang dari 250 mm dan perbandingan lebar (b) terhadap tinggi (h) tidak boleh kurang dari 0,3.

Untuk panjang balok induk = 6 m = 600 cm

$$h = \frac{1}{12} L \quad \frac{1}{15} L = \frac{1}{12} 600 \quad \frac{1}{15} 600$$

$$= 50 \text{ cm} \quad \text{s/d} \quad 40 \text{ cm} \quad 50 \text{ cm}$$

$$b = \frac{1}{2} h \quad \frac{2}{3} h = \frac{1}{2} 50 \quad \frac{2}{3} 50$$

$$= 25 \text{ cm} \quad \text{s/d} \quad 33.33 \text{ cm} \quad 25 \text{ cm}$$

Dipakai balok induk berukuran 25 / 50

$$b/h = \frac{25}{50} = 0.5 \quad 0.3 \quad (\text{OK})$$

Untuk panjang balok induk = 4.8 m = 480 cm

$$h = \frac{1}{12} L \quad \frac{1}{15} L = \frac{1}{12} 480 \quad \frac{1}{15} 480$$

$$= 40 \text{ cm} \quad \text{s/d} \quad 32 \text{ cm} \quad 50 \text{ cm}$$

$$b = \frac{1}{2} h \quad \frac{2}{3} h = \frac{1}{2} 50 \quad \frac{2}{3} 50$$

$$= 25 \text{ cm} \quad \text{s/d} \quad 33.33 \text{ cm} \quad 25 \text{ cm}$$

Dipakai balok induk berukuran 25 / 50

$$b/h = \frac{25}{50} = 0.50 \quad 0.3 \quad (\text{OK})$$

Untuk panjang balok anak = 6 m = 600 cm

$$h = \frac{1}{12} L \quad \frac{1}{15} L = \frac{1}{12} 600 \quad \frac{1}{15} 600$$

$$= 50 \text{ cm} \quad \text{s/d} \quad 40 \text{ cm} \quad 40 \text{ cm}$$

$$b = \frac{1}{2} h \quad \frac{2}{3} h = \frac{1}{2} 40 \quad \frac{2}{3} 40$$

$$= 20 \text{ cm} \quad \text{s/d} \quad 26.67 \text{ cm} \quad 20 \text{ cm}$$

Dipakai balok induk berukuran 20 / 40

$$b/h = \frac{20}{40} = 0.50 \quad 0.3 \quad (\text{OK})$$

b. Dimensi Plat

Untuk lantai 2 – 4 digunakan tebal plat = 12 cm, sedangkan untuk lantai atap digunakan tebal plat = 10 cm.

4. Kombinasi Beban

Sesuai dengan ketentuan yang tertera dalam SNI 2847-2013 pasal 9 disebutkan agar struktur dan komponen struktur harus direncanakan hingga semua penampang mempunyai kuat rencana minimum sama dengan kuat perlu, yang dihitung berdasarkan kombinasi dan gaya terfaktor.

$$U = 1,4 D$$

$$U = 1,2D + 1,6L + 0,5 (Lr \text{ atau } R)$$

$$U = 1,2D + 1,6 (Lr \text{ atau } R) + (1,0L \text{ atau } W)$$

$$U = 1,2D + 1,0W + 1,0L + 0,5 (Lr \text{ atau } R)$$

$$U = 1,2D + 1,0E + 1,0L$$

$$U = 0,9D + 1,0W$$

$$U = 0,9D + 1,0E$$

Dimana :

$$U = \text{Kombinasi Pembebanan}$$

D = Beban Mati

L = Beban Hidup

Lr = Beban Atap

R = Beban Hujan

W = Beban Angin

E = Beban Gempa

1g

3.5.3 Beban Gempa (Earthquake Load)

3.5.3.1 Pusat Massa dan Berat Struktur Tiap Lantai

Arah Memanjang Lantai 2

Garis Patokan Arah Memanjang Adalah Line 3

a. Kolom

$$\text{Berat sendiri} = \text{jumlah} \times \text{luas} \times (1/2 \text{ tinggi lantai bawah} + 1/2 \text{ tinggi lantai atas}) \times 2400$$

$$\text{Jarak} = \text{jarak kolom ke garis patokan line 3}$$

• Line 1

$$\text{Berat sendiri} = 2 \times (0,60 \times 0,80 \times 5,50) \times 2400 = 12672 \text{ kg}$$

$$\text{Jarak} = 14,075 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 12672 \times 14,075 = 178358,4 \text{ kgm}$$

• Line 2

$$\text{Berat sendiri} = 4 \times (0,60 \times 0,80 \times 5,50) \times 2400 = 25344 \text{ kg}$$

$$\text{Jarak} = 10,80 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 25344 \times 10,80 = 273715,2 \text{ kgm}$$

• Line 2'

$$\text{Berat sendiri} = 2 \times (0,60 \times 0,60 \times 5,50) \times 2400 = 9504 \text{ kg}$$

$$\text{Jarak} = 10,70 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 9504 \times 10,70 = 101692,8 \text{ kgm}$$

• Line 3

$$\text{Berat sendiri} = 6 \times (0,60 \times 0,80 \times 5,50) \times 2400 = 38016 \text{ kg}$$

$$\text{Jarak} = 0,00 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 38016 \times 0,00 = 0,00 \text{ kgm}$$

• Line 4

$$\text{Berat sendiri} = 6 \times (0,60 \times 0,80 \times 5,50) \times 2400 = 38016 \text{ kg}$$

$$\text{Jarak} = 5,40 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 38016 \times 5,40 = 205286,4 \text{ kgm}$$

• Line 5

$$\text{Berat sendiri} = 4 \times (0,60 \times 0,80 \times 5,50) \times 2400 = 25344 \text{ kg}$$

$$\text{Jarak} = 10,80 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 25344 \times 10,80 = 273715,2 \text{ kgm}$$

• Line 5'

$$\text{Berat sendiri} = 2 \times (0,60 \times 0,60 \times 5,50) \times 2400 = 9504 \text{ kg}$$

$$\text{Jarak} = 10,90 \text{ m}$$

$$\text{Berat} \times \text{Jarak} = 9504 \times 10,90 = 103593,6 \text{ kgm}$$

b. Balok

$$\begin{aligned} \text{Berat sendiri} &= \text{luas} \times \text{panjang} \times 2400 \\ \text{Jarak} &= \text{jarak balok ke garis patokan line 3} \end{aligned}$$

• Line 1

$$\begin{aligned} \text{Berat sendiri} &= 0,3 \times 0,4 \times 4,2 \times 2400 &= 1209.6 &\text{ kg} \\ \text{Jarak} & &= 14.075 &\text{ m} \\ \text{Berat x Jarak} &= 1209.6 \times 14.075 &= 17025.1 &\text{ kgm} \end{aligned}$$

• Line 2

$$\begin{aligned} \text{Berat sendiri} &= 0,4 \times 0,5 \times 25,8 \times 2400 &= 12384 &\text{ kg} \\ \text{Jarak} & &= 10.80 &\text{ m} \\ \text{Berat x Jarak} &= 12384 \times 10.80 &= 133747.2 &\text{ kgm} \end{aligned}$$

• Line 3

$$\begin{aligned} \text{Berat sendiri} &= 0,4 \times 0,5 \times 25,8 \times 2400 &= 12384 &\text{ kg} \\ \text{Jarak} & &= 0.00 &\text{ m} \\ \text{Berat x Jarak} &= 12384 \times 0.00 &= 0.00 &\text{ kgm} \end{aligned}$$

• Line 4

$$\begin{aligned} \text{Berat sendiri} &= 0,4 \times 0,5 \times 25,8 \times 2400 &= 12384 &\text{ kg} \\ \text{Jarak} & &= 5.40 &\text{ m} \\ \text{Berat x Jarak} &= 12384 \times 5.40 &= 66873.6 &\text{ kgm} \end{aligned}$$

c. Plat Lantai

$$\begin{aligned} \text{Berat sendiri} &= \text{luas} \times \text{tebal} \times 2400 \\ \text{Jarak} &= \text{jarak titik berat plat lantai ke garis patokan line 3} \end{aligned}$$

• Line A-B

$$\begin{aligned} \text{Berat sendiri} &= 5,4 \times 16,2 \times 0,12 \times 2400 &= 25194.24 &\text{ kg} \\ \text{Jarak} & &= 8.10 &\text{ m} \\ \text{Berat x Jarak} &= 25194.24 \times 8.10 &= 204073.3 &\text{ kgm} \end{aligned}$$

• Line B-C

$$\begin{aligned} \text{Berat sendiri} &= 5,4 \times 18,2 \times 0,12 \times 2400 &= 28304.64 &\text{ kg} \\ \text{Jarak} & &= 9.10 &\text{ m} \\ \text{Berat x Jarak} &= 28304.64 \times 9.10 &= 257572.2 &\text{ kgm} \end{aligned}$$

• Line C-D

$$\begin{aligned} \text{Berat sendiri} &= 4,2 \times 19,475 \times 0,12 \times 2400 &= 30287.52 &\text{ kg} \\ \text{Jarak} & &= 9.74 &\text{ m} \\ \text{Berat x Jarak} &= 30287.52 \times 9.74 &= 294939.9 &\text{ kgm} \end{aligned}$$

• Line D-F

$$\begin{aligned} \text{Berat sendiri} &= 10,8 \times 16,2 \times 0,12 \times 2400 &= 50388.48 &\text{ kg} \\ \text{Jarak} & &= 8.10 &\text{ m} \\ \text{Berat x Jarak} &= 50388.48 \times 8.10 &= 408146.7 &\text{ kgm} \end{aligned}$$

d. Dinding

$$\begin{aligned} \text{Berat sendiri} &= \text{panjang} \times \text{tinggi} \times 250 \\ \text{Jarak} &= \text{jarak dinding ke garis patokan line 3} \end{aligned}$$

• Line 1'

$$\begin{aligned} \text{Berat sendiri} &= 27,56 \times 6,0 \times 250 &= 41340 &\text{ kg} \\ \text{Jarak} & &= 6.40 &\text{ m} \\ \text{Berat x Jarak} &= 41340.0 \times 6.400 &= 264576 &\text{ kgm} \end{aligned}$$

• Line 3

$$\begin{aligned} \text{Berat sendiri} &= 25,8 \times 6,0 \times 250 &= 38700 &\text{ kg} \\ \text{Jarak} & &= 0.00 &\text{ m} \\ \text{Berat x Jarak} &= 38700.0 \times 0.00 &= 0.00 &\text{ kgm} \end{aligned}$$

• Line 3

$$\begin{aligned} \text{Berat sendiri} &= 25,8 \times 6,0 \times 250 &= 38700 &\text{ kg} \\ \text{Jarak} & &= 5.40 &\text{ m} \\ \text{Berat x Jarak} &= 38700.0 \times 5.40 &= 208980 &\text{ kgm} \end{aligned}$$

• Line 4

$$\begin{aligned} \text{Berat sendiri} &= 25,8 \times 6,0 \times 250 &= 38700 &\text{ kg} \\ \text{Jarak} & &= 10.80 &\text{ m} \\ \text{Berat x Jarak} &= 38700.0 \times 10.80 &= 417960 &\text{ kgm} \end{aligned}$$

$$\begin{aligned} \text{Berat sendiri} &= 488376.48 &\text{ kg} \\ \text{Berat sendiri x jarak} &= 3828215.6 &\text{ kgm} \end{aligned}$$

$$\begin{aligned} \text{Pusat massa arah melintang Y} &= \frac{\text{Berat sendiri} \times \text{jarak}}{\text{Berat sendiri}} \\ &= \frac{3828215.6}{488376.48} = 7.84 &\text{ m} \end{aligned}$$

Garis Patokan Arah Melintang Adalah Line 3

e. Kolom

$$\begin{aligned} \text{Berat sendiri} &= \text{jumlah} \times \text{luas} \times (1/2 \text{ tinggi lantai bawah} + \\ &\quad 1/2 \text{ tinggi lantai atas}) \times 2400 \\ \text{Jarak} &= \text{jarak kolom ke garis patokan line 3} \end{aligned}$$

• Line 1

$$\begin{aligned} \text{Berat sendiri} &= 2 \times (0,60 \times 0,80 \times 5,50) \times 2400 &= 12672 &\text{ kg} \\ \text{Jarak} & &= 14.075 &\text{ m} \\ \text{Berat x Jarak} &= 12672 \times 14.075 &= 178358.4 &\text{ kgm} \end{aligned}$$

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L PEKERJAAN MEKANIKAL , ELECTRICAL & PLUMBING

NO	JENIS PEKERJAAN	SAT.	VOL	HARGA SATUAN	JUMLAH HARGA
I.	PEKERJAAN PLUMBING				
A	PEKERJAAN AIR BERSIH				
A.1	PERALATAN UTAMA				
	a Pompa Transfer Utama	Unit	2	8,950,975	17,901,950
	- Merk/Type : ex EBARA 50X40 FSH				
	- Kapasitas : 100 liter/Menit				
	- Total Head : 40 meter				
	- Daya : 5 HP / 380V / 50Hz / 3 Phase / 2900 Rpm				
	b Tank Air Stenlesteel 1100 Liter	Unit	4	4,734,400	18,937,600
A.2	PEKERJAAN RUANG POMPA UTAMA				
	a Strainer : Dia. 2" 10K	Bh	2	566,649	1,133,297
	b Check Valve : Dia. 1 1/2" 10K	Bh	2	581,444	1,162,887
	: Dia. 2" 10K	Bh	2	621,390	1,242,780
	c Gate Valve : Dia. 1 1/2" 10 K	Bh	3	303,298	909,893
	: Dia. 2 " 10 K	Bh	2	446,809	893,618
	d Foot Valve : Dia. 2"	Bh	2	446,809	893,618
	e Flexible Joint : Dia. 1 1/2"	Bh	2	432,014	864,028
	: Dia. 2"	Bh	2	483,797	967,593
	f Header GIP Medium A Dia. 3"	Unit	1	909,893	909,893
	g Pipa GIP Medium Dia. 1 1/2 " (Dari Pompa Transfer Utama ke Roof Tank)	M'	63	92,469	5,825,531
	h Support, Fitting & material bantu	Ls	1	1,250,000	1,250,000
	i Ground Water Tank + Rumah Pompa	Ls	1	By Civil	
A.3	PEKERJAAN INSTALASI				
	1 BASEMENT				
	a Pipa GIP Medium ex Bakrie Pipe/PPI				
	- Dia. 1/2 "	M'	72	48,084	3,462,030
	- Dia. 3/4 "	M'	22	51,043	1,122,941
	- Dia. 1 "	M'	10	67,317	673,173
	b Gate valve 10 K				
	- Dia. 1 "	Bh	1	221,925	221,925
	2 LANTAI 1				
	a Pipa GIP Medium ex Bakrie Pipe/PPI				
	- Dia. 1/2 "	M'	101	48,084	4,856,459
	- Dia. 3/4 "	M'	22	51,043	1,122,941
	- Dia. 1 "	M'	10	67,317	673,173
	b Gate valve 10 K				
	- Dia. 1 "	Bh	1	221,925	221,925
	3 LANTAI 2				
	a Pipa GIP Medium ex Bakrie Pipe/PPI				
	- Dia. 1/2 "	M'	104	48,084	5,000,710
	- Dia. 3/4 "	M'	72	51,043	3,675,078
	- Dia. 1 "	M'	10	67,317	673,173
	b Gate valve 10 K				
	- Dia. 1 "	Bh	1	221,925	221,925
	4 LANTAI 3				
	a Pipa GIP Medium ex Bakrie Pipe/PPI				
	- Dia. 1/2 "	M'	72	51,043	3,675,078
	- Dia. 3/4 "	M'	22	51,043	1,122,941
	- Dia. 1 "	M'	10	67,317	673,173
	b Gate valve 10 K				
	- Dia. 1 "	Bh	1	221,925	221,925



6	AIR HUJAN					
	a Pipa Air Hujan PVC Class AW setara WAVIN					
	- Dia. 4 "		M'	640	156,087	99,895,840
	b Roof Drain					
	- Dia. 4 "		Bh	32	130,000	4,160,000
	c Saluran Pembuangan Air Hujan (Gutter)		Ls	1	By Civil	By Civil
7	LAIN-LAIN					
	a Bio Septic Tank Kap. 3 - 5 orang		Unit	1	12,205,875	12,205,875
	b Konvensional Septic Tank		Unit	2	16,570,400	33,140,800
	c Testing dan Commissioning		Ls	1	1,500,000	1,500,000
	SUB TOTAL PEKERJAAN AIR KOTOR, BEKAS & VENT					219,689,648
D.	PEKERJAAN SANITARY					
1	BASEMENT					
	a Keran/Faucet	Sekualitas TOTO Type T-23BQ13V7NB	Bh	8	295,160	2,361,282
	b Closed Jongkok	sekualitas TOTO Type CE-7	Bh	8	569,608	4,556,860
	c Wastafel Meja	sekualitas TOTO Type L-521V1A lengkap accessories	Bh	4	1,398,128	5,592,510
	d Heavy Duty Mirror	sekualitas TOTO Type TS-119AS5	Bh	2	613,993	1,227,985
	e Urinoir	sekualitas TOTO Type U-57M lengkap accesories	Bh	4	3,136,540	12,546,160
	f Floor Drain Dia. 2 "	sekualitas TOTO Type TX-1A	Bh	8	405,383	3,243,064
	g Clean Out (CO)					
	- Dia. 3 "	Stainless Steel berkualitas San Ei	Bh	4	185,677	742,709
	- Dia. 4 "	Stainless Steel berkualitas San Ei	Bh	4	204,911	819,643
2	LANTAI 1					
	a Keran/Faucet	Sekualitas TOTO Type T-23BQ13V7NB	Bh	9	295,160	2,656,442
	b Closed Jongkok	sekualitas TOTO Type CE-7	Bh	8	569,608	4,556,860
	c Closed Duduk	sekualitas TOTO Type CW-660J/SW-660J	Bh	1	3,299,285	3,299,285
	d Wastafel Meja	sekualitas TOTO Type L-521V1A lengkap accessories	Bh	5	1,398,128	6,990,638
	e Heavy Duty Mirror	sekualitas TOTO Type TS-119AS5	Bh	3	613,993	1,841,978
	f Urinoir	sekualitas TOTO Type U-57M lengkap accesories	Bh	4	3,136,540	12,546,160
	g Floor Drain Dia. 2 "	sekualitas TOTO Type TX-1A	Bh	9	405,383	3,648,447
	h Clean Out (CO)					
	- Dia. 3 "	Stainless Steel berkualitas San Ei	Bh	2	185,677	371,355
	- Dia. 4 "	Stainless Steel ex San Ei	Bh	3	204,911	614,732
3	LANTAI 2					
	a Keran/Faucet	Sekualitas TOTO Type T-23BQ13V7NB	Bh	12	295,160	3,541,923
	b Closed Jongkok	sekualitas TOTO Type CE-7	Bh	8	569,608	4,556,860
	c Closed Duduk	sekualitas TOTO Type CW-660J/SW-660J	Bh	4	3,299,285	13,197,140
	d Wastafel Meja	sekualitas TOTO Type L-521V1A lengkap accessories	Bh	8	1,398,128	11,185,020
	e Heavy Duty Mirror	sekualitas TOTO Type TS-119AS5	Bh	8	613,993	4,911,940
	f Urinoir	sekualitas TOTO Type U-57M lengkap accesories	Bh	4	3,136,540	12,546,160
	g Floor Drain Dia. 2 "	sekualitas TOTO Type TX-1A	Bh	12	405,383	4,864,596
	h Clean Out (CO)					
	- Dia. 3 "	Stainless Steel berkualitas San Ei	Bh	2	185,677	371,355
	- Dia. 4 "	Stainless Steel ex San Ei	Bh	3	204,911	614,732
4	LANTAI 3					
	a Keran/Faucet	Sekualitas TOTO Type T-23BQ13V7NB	Bh	8	295,160	2,361,282
	b Closed Jongkok	sekualitas TOTO Type CE-7	Bh	8	569,608	4,556,860
	c Wastafel Meja	sekualitas TOTO Type L-521V1A lengkap accessories	Bh	4	1,398,128	5,592,510
	d Heavy Duty Mirror	sekualitas TOTO Type TS-119AS5	Bh	4	613,993	2,455,970
	e Urinoir	sekualitas TOTO Type U-57M lengkap accesories	Bh	4	3,136,540	12,546,160
	f Floor Drain Dia. 2 "	sekualitas TOTO Type TX-1A	Bh	8	405,383	3,243,064
	g Clean Out (CO)					
	- Dia. 3 "	Stainless Steel berkualitas San Ei	Bh	2	185,677	371,355
	- Dia. 4 "	Stainless Steel ex San Ei	Bh	2	204,911	409,822
4	LAIN-LAIN					
	a Testing Commissioning		Ls	1	1,000,000	1,000,000
	SUB TOTAL PEKERJAAN SANITARY					155,942,857



II	PEKERJAAN FIRE HYDRANT				
A	PERALATAN UTAMA				
	1. Electric Fire Pump (EFP) c/w panel kontrol	Unit	1	176,060,500	176,060,500
	- Kapasitas 500 USGPM				
	- Head 80 meter				
	- Type Centrifugal end suction				
	2. Diesel Fire Pump (DFP) c/w panel kontrol	Unit	1	323,270,750	323,270,750
	- Kapasitas 500 USGPM				
	- Head 80 meter				
	- Type Centrifugal end suction				
	3. Jockey Fire Pump (JFP) c/w panel kontrol	Unit	1	59,253,975	59,253,975
	- Kapasitas 25 USGPM				
	- Head 90 meter				
	- Type Vertical Multi Stage				
	4. Peralatan bantu	Ls	1	5,500,000	5,500,000
	SUB TOTAL PERALATAN UTAMA				564,085,225
B	PEKERJAAN RUANG POMPA				
	1. Pipa BS SCH 40				
	a Dia. 1"	M'	6	224,884	1,349,304
	b Dia. 2"	M'	6	344,724	2,068,341
	c Dia. 4"	M'	12	579,700	6,956,400
	2. Header Dia. 8"	Unit	1	18,493,750	18,493,750
	3. Gate Valve 16K				
	a Dia. 1"	Bh	1	880,303	880,303
	b Dia. 2"	Bh	2	1,301,960	2,603,920
	c Dia. 4"	Bh	5	6,583,775	32,918,875
	4. Flexible Joint 16K				
	a Dia. 2"	Bh	2	769,340	1,538,680
	b Dia. 4"	Bh	4	1,383,333	5,533,330
	5. Check Valve 16K				
	a Dia. 2"	Bh	1	643,583	643,583
	b Dia. 4"	Bh	2	6,139,925	12,279,850
	6. Foot Valve 16K				
	a Dia. 2"	Bh	1	821,123	821,123
	b Dia. 4"	Bh	2	3,254,900	6,509,800
	7. Strainer 16K				
	a Dia. 2"	Bh	1	761,943	761,943
	b Dia. 4"	Bh	2	4,172,190	8,344,380
	8. Safety Valve 16K				
	a Dia. 2"	Bh	1	5,355,790	5,355,790
	b Dia. 4"	Bh	1	11,688,050	11,688,050
	9. Safety Valve 16K	Bh	1	11,688,050	11,688,050
	10. Pressure Gauge	Bh	3	1,043,048	3,129,143
	11. Pressure Switch	Bh	3	1,464,705	4,394,115
	12. Pressure Tank 500 Liter	Bh	1	60,289,625	60,289,625
	13. Material bantu	Ls	1	5,000,000	5,000,000
	SUB TOTAL PEKERJAAN RUANG POMPA				203,248,353
C	PEKERJAAN INSTALASI				
	1 BASEMENT				
	1 Portable Fire Extinguisher 4,5 Kg Dry Chemical	Bh	2	1,886,363	3,772,725
	2 Pipa BS SCH 40 (ASTM A53)				
	- Dia. 2,5"	M'	12	473,440	5,681,280
	- Dia. 4"	M'	36	579,700	20,869,200
	3 Indoor Hydrant Box type B c/w accessories :	Set	2	7,708,195	15,416,390
	- 1 Rol Fire Hose 2,5" x 30m				
	- 1 Hose Nozzle 2,5"				
	- Accesories Lainnya lengkap				
	4 Gate Valve Dia 4" 16 K	Bh	1	6,583,775	6,583,775



2	LANTAI 1				
	1 Portable Fire Extinguisher 4,5 Kg Dry Chemical	Bh	6	1,886,363	11,318,175
	2 Pipa BS SCH 40 (ASTM A53)				
	- Dia. 2,5"	M'	18	473,440	8,521,920
	- Dia. 3"	M'	20	591,800	11,836,000
	- Dia. 4"	M'	87	579,700	50,433,900
	3 Siamesse 4"x2.5"x2.5"	Set	1	6,065,950	6,065,950
	4 Pillar Hydrant 4"x2.5"x2.5"	Set	2	7,249,550	14,499,100
	5 Outdoor Hydrant Box type C c/w accessories :	Set	5	7,397,500	36,987,500
	- 1 Rol Fire Hose 2,5" x 30m				
	- 1 Hose Nozzle 2,5"				
	6 Indoor Hydrant Box type B c/w accessories :	Set	3	7,708,195	23,124,585
	- 1 Rol Fire Hose 2,5" x 30m				
	- 1 Hose Nozzle 2,5"				
	- Accesories Lainnya lengkap				
	7 Check Valve Dia 4" 16 K	Bh	1	6,139,925	6,139,925
	8 Gate Valve Dia 4" 16 K	Bh	2	6,583,775	13,167,550
3	LANTAI 2				
	1 Portable Fire Extinguisher 4,5 Kg Dry Chemical	Bh	6	1,886,363	11,318,175
	2 Pipa BS SCH 40 (ASTM A53)				
	- Dia. 2,5"	M'	18	473,440	8,521,920
	- Dia. 3"	M'	20	591,800	11,836,000
	- Dia. 4"	M'	26	579,700	15,072,200
	3 Indoor Hydrant Box type B c/w accessories :	Set	3	7,708,195	23,124,585
	- 1 Rol Fire Hose 2,5" x 30m				
	- 1 Hose Nozzle 2,5"				
	- Accesories Lainnya lengkap				
	4 Gate Valve Dia 4" 16 K	Bh	1	6,583,775	6,583,775
4	LANTAI 3				
	1 Portable Fire Extinguisher 4,5 Kg Dry Chemical	Bh	7	1,886,363	13,204,538
	2 Pipa BS SCH 40 (ASTM A53)				
	- Dia. 2,5"	M'	12	473,440	5,681,280
	- Dia. 3"	M'	32	591,800	18,937,600
	3 Indoor Hydrant Box type C c/w accessories :	Set	2	7,708,195	15,416,390
	- 1 Rol Fire Hose 2,5" x 30m				
	- 1 Hose Nozzle 2,5"				
	- Accesories Lainnya lengkap				
	4 Gate Valve Dia 4" 16 K	Bh	1	6,583,775	6,583,775
5	RISER				
	1 Pipa BS SCH 40 (ASTM A53)				
	- Dia. 4"	M'	31	579,700	17,970,700
6	LAIN-LAIN				
	a Perijinan dari Disnaker dan PMK	Ls	1	7,500,000	7,500,000
	b Testing & Commisioning	Ls	1	4,500,000	4,500,000
	SUB TOTAL PEKERJAAN INSTALASI FIRE HYDRANT				400,668,913
III.	PEKERJAAN LISTRIK				
A	PEKERJAAN PANEL TEGANGAN RENDAH				
	a LVMDP + Automatic Transfer System (ATS/AMF)	Unit	1	96,322,275	96,322,275
	b Panel Penerangan Basement (P-BS)	Unit	1	4,540,275	4,540,275
	c Panel Penerangan Lantai 1 (P-P1)	Unit	1	7,204,533	7,204,533
	d Panel Penerangan Lantai 2 (P-P2)	Unit	1	7,626,190	7,626,190
	e Panel Penerangan Lantai 3 (P-P3)	Unit	1	5,785,505	5,785,505
	f Panel PP-AB + Kontrol + WLC	Unit	1	6,331,699	6,331,699
	g Panel Hydrant (P-HYD)	Unit	1	7,559,613	7,559,613
	h Grounding	Ls	1	2,735,000	2,735,000
	i Support & material bantu	Ls	1	1,221,000	1,221,000
	j Testing & Commisioning	Ls	1	1,500,000	1,500,000
	SUB TOTAL PEKERJAAN PANEL TEGANGAN RENDAH				140,826,089



B	PEKERJAAN KABEL FEEDER				
	a Panel Genset ke LVMDP (NYY 4x70 mm2 + BC 25 mm2)	M'	36	52,522	1,890,801
	b LVMDP ke P-HYDRANT (NYY 4x50 mm2 + BC 16 mm2)	M'	78	48,084	3,750,533
	c LVMDP ke P-AB (NYY 4x6 mm2 + BC 4 mm2)	M'	76	100,606	7,646,056
	d SDP ke P-BS (NYY 4x10 mm2 + BC 6 mm2)	M'	8	162,745	1,301,960
	e SDP ke P-P1 (NYY 4x16 mm2 + BC 10 mm2)	M'	12	264,831	3,177,966
	f SDP ke P-P2 (NYY 4x16 mm2 + BC 10 mm2)	M'	24	264,831	6,355,932
	g SDP ke P-P3 (NYY 4x16 mm2 + BC 10 mm2)	M'	36	264,831	9,533,898
	SUB TOTAL PEKERJAAN KABEL FEEDER				33,657,146
C	PEKERJAAN CABLE LADDER				
	a Cable Ladder Elektrik 400 x 50 mm	M'	20	356,560	7,131,190
	b Cable Ladder Elektronik 300 x 50 mm	M'	20	297,380	5,947,590
	SUB TOTAL PEKERJAAN CABLE LEDDER				13,078,780
D	ARMATURE, SAKLAR, KONTAK, DAN EXHAUST FAN				
	1 BASEMENT				
	a TL Balk 1x36 W c/w lampu sekuualitas Philips	Bh	38	196,774	7,477,393
	b TL 1x36 W Tipe GMS Acrylic Putih Susu c/w Lampu sekuualitas Philips	Bh	2	307,736	615,472
	c RMI 2x18 W c/w Lampu sekuualitas Philips	Bh	2	307,736	615,472
	d Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-14W sekuualitas Philips	Bh	8	211,569	1,692,548
	e Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-18W sekuualitas Philips	Bh	4	226,364	905,454
	f Down Light Outbow Diameter 15 cm c/w Lampu Essensial-18W sekuualitas Philips	Bh	12	241,159	2,893,902
	g Wall Lamp 14 Watt	Bh	22	211,569	4,654,507
	h Exhaust Fan 8" ex KDK	Bh	8	514,866	4,118,928
	i Saklar tunggal sekuualitas Clipsal	Bh	14	60,660	849,233
	j Saklar Seri sekuualitas Clipsal	Bh	6	66,578	399,465
	k Saklar Triple sekuualitas Clipsal	Bh	1	79,893	79,893
	l Saklar Tukar/Hotel sekuualitas Clipsal	Bh	4	90,250	360,998
	m Stop Kontak Dinding 1 Phasa (Single Outlet) sekuualitas Clipsal	Bh	8	66,578	532,620
	n Stop Kontak Dinding 1 Phasa (Double Outlet) sekuualitas Panasonic	Bh	1	134,635	134,635
	2 LANTAI 1				
	a RMI 2x36 W c/w lampu sekuualitas Philips	Bh	61	559,251	34,114,311
	b TL 1x36 W Tipe GMS Acrylic Putih Susu c/w Lampu sekuualitas Philips	Bh	4	307,736	1,230,944
	c RMI 2x18 W c/w Lampu sekuualitas Philips	Bh	2	307,736	615,472
	d Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-14W sekuualitas Philips	Bh	10	211,569	2,115,685
	e Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-18W sekuualitas Philips	Bh	55	226,364	12,449,993
	f Down Light Outbow Diameter 15 cm c/w Lampu Essensial-18W sekuualitas Philips	Bh	9	241,159	2,170,427
	g Lampu Baret 32 Watt sekuualitas Artolite Mentos 32 ACR + Ring	Bh	2	455,686	911,372
	h Exit lamp 1 MK + Battery sekuualitas Artolite	Bh	7	847,754	5,934,275
	i Exhaust Fan 8" ex KDK	Bh	9	514,866	4,633,794
	j Saklar tunggal sekuualitas Clipsal	Bh	20	60,660	1,213,190
	k Saklar Seri sekuualitas Clipsal	Bh	26	66,578	1,731,015
	l Saklar Triple sekuualitas Clipsal	Bh	4	79,893	319,572
	m Saklar Tukar/Hotel sekuualitas Clipsal	Bh	4	90,250	360,998
	n Stop Kontak Dinding 1 Phasa (Single Outlet) sekuualitas Clipsal	Bh	22	66,578	1,464,705
	o Stop Kontak Dinding 1 Phasa (Double Outlet) sekuualitas Panasonic	Bh	26	134,635	3,500,497
	3 LANTAI 2				
	a RMI 2x36 W c/w lampu sekuualitas Philips	Bh	23	559,251	12,862,773
	b TL 1x36 W Tipe GMS Acrylic Putih Susu c/w Lampu sekuualitas Philips	Bh	4	307,736	1,230,944
	c RMI 2x18 W c/w Lampu sekuualitas Philips	Bh	6	307,736	1,846,416
	d Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-14W sekuualitas Philips	Bh	54	211,569	11,424,699
	e Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-18W sekuualitas Philips	Bh	99	226,364	22,409,987
	f Lampu Baret 32 Watt sekuualitas Artolite Mentos 32 ACR + Ring	Bh	6	455,686	2,734,116
	g Exit lamp 1 MK + Battery sekuualitas Artolite	Bh	6	108,945	653,670
	h Exhaust Fan 8" ex KDK	Bh	12	514,866	6,178,392
	i Saklar tunggal sekuualitas Clipsal	Bh	62	60,660	3,760,889
	j Saklar Seri sekuualitas Clipsal	Bh	18	66,578	1,198,395
	k Saklar Triple sekuualitas Clipsal	Bh	3	79,893	239,679
	l Saklar Tukar/Hotel sekuualitas Clipsal	Bh	4	90,250	360,998
	m Stop Kontak Dinding 1 Phasa (Single Outlet) sekuualitas Clipsal	Bh	12	66,578	798,930
	n Stop Kontak Dinding 1 Phasa (Double Outlet) sekuualitas Panasonic	Bh	51	134,635	6,866,360



4	LANTAI 3				
	a RMI 2x36 W c/w lampu sekualitas Philips	Bh	16	559,251	8,948,016
	b RMI 2x18 W c/w Lampu sekualitas Philips	Bh	12	307,736	3,692,832
	c Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-14W sekualitas Philips	Bh	16	211,569	3,385,096
	d Down Light Diameter 15 cm dgn Penutup Kaca c/w Lampu Essensial-18W sekualitas Philips	Bh	105	226,364	23,768,168
	e Lampu Baret 32 Watt sekualitas Artolite Mentos 32 ACR + Ring	Bh	3	455,686	1,367,058
	f Lampu Sorot LED 100W	Bh	2	5,962,385	11,924,770
	g Exit lamp 1 MK + Battery sekualitas Artolite	Bh	8	847,754	6,782,028
	h Exhaust Fan 8" ex KDK	Bh	8	514,866	4,118,928
	i Saklar tunggal sekualitas Clipsal	Bh	37	60,660	2,244,402
	j Saklar Seri sekualitas Clipsal	Bh	13	66,578	865,508
	k Saklar Triple sekualitas Clipsal	Bh	3	79,893	239,679
	l Saklar Tukar/Hotel sekualitas Clipsal	Bh	4	90,250	360,998
	m Stop Kontak Dinding 1 Fasa (Single Outlet) sekualitas Clipsal	Bh	16	66,578	1,065,240
	n Stop Kontak Dinding 1 Fasa (Double Outlet) sekualitas Panasonic	Bh	22	134,635	2,961,959
	o Stop Kontak Lantai 1 Fasa sekualitas Albion (Untuk R. Sidang Utama)	Bh	35	613,993	21,489,738
	5 RUANG GENSET DAN RUANG POMPA				
	a Lampu TL 36W Tipe GMS 1x36 ACR c/w Lampu ex Philips	Bh	4	307,736	1,230,944
	b Saklar tunggal sekualitas Clipsal	Bh	2	60,660	121,319
	c Stop Kontak Dinding 1 Fasa (Single Outlet) ex Clipsal	Bh	2	66,578	133,155
	SUB TOTAL PEKERJAAN ARMATURE, SAKLAR & STOP KONTAK				265,362,851
E	PEKERJAAN INSTALASI				
	1 BASEMENT				
	a Instalasi Cable Tray Elektrikal 400 x 50 mm (Material Mild Steel 1,5 mm Finishing Galvanized Electro Plating)	M'	30	294,228	8,826,840
	b Instalasi Penerangan (Dengan Kabel NYM 2x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	88	328,064	28,869,632
	c Instalasi Exhaust Fan (Dengan Kabel NYM 2x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	8	100,678	805,420
	d Instalasi Stop Kontak 1 Fasa (Dengan Kabel NYM 3x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	9	381,326	3,431,934
	2 LANTAI 1				
	a Instalasi Cable Tray Elektronik 300 x 50 mm (Material Mild Steel 1,5 mm Finishing Galvanized Electro Plating)	M'	70	347,490	24,324,300
	b Instalasi Cable Tray Elektrikal 400 x 50 mm (Material Mild Steel 1,5 mm Finishing Galvanized Electro Plating)	M'	108	294,228	31,776,624
	c Instalasi Penerangan (Dengan Kabel NYM 2x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	150	328,064	49,209,600
	d Instalasi Exhaust Fan (Dengan Kabel NYM 2x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	9	100,678	906,098
	e Instalasi Stop Kontak 1 Fasa (Dengan Kabel NYM 3x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	48	381,326	18,303,648
	3 LANTAI 2				
	a Instalasi Cable Tray Elektronik 300 x 50 mm (Material Mild Steel 1,5 mm Finishing Galvanized Electro Plating)	M'	70	347,490	24,324,300
	b Instalasi Cable Tray Elektrikal 400 x 50 mm (Material Mild Steel 1,5 mm Finishing Galvanized Electro Plating)	M'	108	294,228	31,776,624
	c Instalasi Penerangan (Dengan Kabel NYM 2x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	198	328,064	64,956,672
	d Instalasi Exhaust Fan (Dengan Kabel NYM 2x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	12	100,678	1,208,130
	e Instalasi Stop Kontak 1 Fasa (Dengan Kabel NYM 3x2,5 mm2 sekualitas Supreme/Kabel Metal + Pipa Conduit ex Clipsal)	Ttk	63	381,326	24,023,538



3	LAIN - LAIN				
	1 Grounding (Max 1 Ohm)	Ls	1	650,000	650,000
	2 Testing & Commisioning	Ls	1	2,000,000	2,000,000
	TOTAL PEKERJAAN SOUND SYSTEM				287,609,889
B	PEKERJAAN FIRE ALARM				
	1 PERALATAN UTAMA				
	a MCFA Support 20 zone lengkap dengan batterey (sekualitas Aprpron/HC)	Unit	1	25,373,425	25,373,425
	2 PEKERJAAN INSTALASI				
	a KABEL FEEDER				
	- MCFA ke MTBFA (NYA 30x2x1.5 mm2 sekualitas Supreme + Flexible Conduit)	M'	5	196,774	983,868
	- TBFA Lantai 2 ke MTBFA (NYA 20x2x1.5 mm2 sekualitas Supreme + Pipa Conduit ex Clipsal)	M'	18	152,389	2,742,993
	- TBFA Lantai 3 ke MTBFA (NYA 20x2x1.5 mm2 sekualitas Supreme + Pipa Conduit ex Clipsal)	M'	28	152,389	4,266,878
	b BASEMENT				
	- ROR Heat Detector (sekualitas Aprpron/HC)	Bh	4	192,335	769,340
	- Fixed Heat Detector (sekualitas Aprpron/HC)	Bh	2	199,733	399,465
	- Indikator lamp (sekualitas Aprpron/HC)	Bh	2	140,553	281,105
	- Push button/Break glass (sekualitas Aprpron/HC)	Bh	2	510,428	1,020,855
	- Alarm bell (sekualitas Aprpron/HC)	Bh	2	517,825	1,035,650
	- Instalasi Detektor (Dengan Kabel NYA 2x1,5 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	6	280,913	1,685,475
	c LANTAI 1				
	- ROR Heat Detector (sekualitas Aprpron/HC)	Bh	52	192,335	10,001,420
	- Smoke Detector (sekualitas Aprpron/HC)	Bh	1	739,750	739,750
	- Indikator lamp (sekualitas Aprpron/HC)	Bh	6	140,553	843,315
	- Push button/Break glass (sekualitas Aprpron/HC)	Bh	6	510,428	3,062,565
	- Alarm bell (sekualitas Aprpron/HC)	Bh	6	517,825	3,106,950
	- Instalasi Detektor (Dengan Kabel NYA 2x1,5 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	52	280,913	14,607,450
	d LANTAI 2				
	- Terminal box FA	Bh	1	177,540	177,540
	- ROR Heat Detector (sekualitas Aprpron/HC)	Bh	69	192,335	13,271,115
	- Indikator lamp (sekualitas Aprpron/HC)	Bh	5	140,553	702,763
	- Push button/Break glass (sekualitas Aprpron/HC)	Bh	5	510,428	2,552,138
	- Alarm bell (sekualitas Aprpron/HC)	Bh	5	517,825	2,589,125
	- Instalasi detektor (Dengan Kabel NYA 2x1,5 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	69	280,913	19,382,963
	e LANTAI 3				
	- Terminal box FA	Bh	1	177,540	177,540
	- ROR Heat Detector (sekualitas Aprpron/HC)	Bh	54	192,335	10,386,090
	- Indikator lamp (sekualitas Aprpron/HC)	Bh	5	140,553	702,763
	- Push button/Break glass (sekualitas Aprpron/HC)	Bh	5	510,428	2,552,138
	- Alarm bell (sekualitas Aprpron/HC)	Bh	5	517,825	2,589,125
	- Instalasi detektor (Dengan Kabel NYA 2x1,5 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	54	280,913	15,169,275
3	LAIN - LAIN				
	1 Grounding (Max 1 Ohm)	Ls	1	750,000	750,000
	2 Testing, commissioning & Ijin Depnaker	Ls	1	3,500,000	3,500,000
	TOTAL PEKERJAAN FIRE ALARM				145,423,076
C	PEKERJAAN TELEPON				
	1 PERALATAN UTAMA				
	1 PABX sekualitas Panasonic Tipe KX-TDA100DBX lengkap - 16 CO Line - 72 Extention Analog - 4 Extention Digital - Back Up Battery	Unit	1	49,045,425	49,045,425



	2 Pesawat Operator Digital Key Telephone sekualitas Panasonic KX-DT333	Bh	1	1,908,555	1,908,555
	3 MDF Telepon	Unit	1	384,670	384,670
	4 Surge Arrester	Unit	4	917,290	3,669,160
	2 PEKERJAAN INSTALASI				
	KABEL FEEDER				
	a. TB Telkom ke MDF (Kabel ITC 8 pairs sekualitas Supreme + Pipa conduit ex Clipsal)	M'	53	19,234	1,019,376
	b. MDF ke IDF lantai 2 (Kabel ITC 20 pairs sekualitas Supreme + Pipa Conduit ex Clipsal)	M'	48	19,234	923,208
	c. MDF ke IDF lantai 3 (Kabel ITC 40 pairs sekualitas Supreme + Pipa Conduit ex Clipsal)	M'	53	19,234	1,019,376
	BASEMENT				
	a. Outlet telephone (Outlet Dinding) sekualitas Clipsal	Bh	2	103,565	207,130
	b. Pesawat Telepon sekualitas Panasonic	Bh	2	263,351	526,702
	c. Instalasi telepon (Dengan Kabel ITC 2x2x0.6 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	2	334,078	668,157
	LANTAI 1				
	a. Outlet telephone (Outlet Dinding) sekualitas Clipsal	Bh	16	103,565	1,657,040
	b. Pesawat Telepon sekualitas Panasonic	Bh	15	263,351	3,950,265
	c. Instalasi telepon (Dengan Kabel ITC 2x2x0.6 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	16	334,078	5,345,252
	LANTAI 2				
	a. Terminal box Telepon (10 pairs)	Bh	1	251,515	251,515
	b. Outlet telephone (Outlet Dinding) ex Clipsal	Bh	39	103,565	4,039,035
	c. Pesawat Telepon ex Panasonic	Bh	39	263,351	10,270,689
	d. Instalasi telepon (Dengan Kabel ITC 2x2x0.6 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	39	334,078	13,029,052
	LANTAI 3				
	a. Terminal box Telepon (10 pairs)	Bh	1	9,415	9,415
	b. Outlet telephone (Outlet Dinding) ex Clipsal	Bh	12	23,941	287,292
	c. Pesawat Telepon ex Panasonic	Bh	12	30,000	360,000
	d. Instalasi telepon (Dengan Kabel ITC 2x2x0.6 mm2 sekualitas Supreme/Kabel Metal + Pipa conduit ex Clipsal)	Ttk	12	67,250	807,000
	3 LAIN - LAIN				
	1 Grounding	Ls	1	750,000	750,000
	2 Testing & Commissioning	Ls	1	1,500,000	1,500,000
	TOTAL PEKERJAAN TELEPHONE				101,628,312
	D PEKERJAAN JARINGAN KOMPUTER (LAN) & WIFI				
	1 PERALATAN UTAMA DI RUANG COMPUTER & REPRODUKSI LANTAI 1				
	a Unmanaged, Auto Sensing, Gigabit Switch 24 Port sekualitas TP-LINK TL-SG1024D	Unit	1	2,034,313	2,034,313
	b Dual Band Wireless N Router sekualitas LINKSYS E-3000	Unit	1	2,774,063	2,774,063
	c Rak Server	Unit	1	5,178,250	5,178,250
	2 PEKERJAAN INSTALASI LAN				
	a KABEL PENGHUBUNG ANTAR LANTAI				
	- Kabel antara Switch Pusat (di Ruang Computer & Reproduksi Lt. 1) ke Switch di Lantai 1, Lantai 2 dan (Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal)	M'	112	11,836	1,325,632
	b LANTAI 1				
	- Unmanaged, Auto Sensing, Gigabit Switch 24 Port sekualitas TP-LINK TL-SG1024D	Unit	1	2,034,313	2,034,313
	- Outlet Data tipe Dinding sekualitas Clipsal/Panasonic	Bh	21	100,606	2,112,726
	- Instalasi LAN (Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal)	Ttk	21	589,710	12,383,910
	c LANTAI 2				
	- Unmanaged, Auto Sensing, Gigabit Switch 24 Port sekualitas TP-LINK TL-SG1024D	Unit	1	2,034,313	2,034,313
	- Outlet Data tipe Dinding sekualitas Clipsal/Panasonic	Bh	8	100,606	804,848
	- Instalasi LAN (Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal)	Ttk	8	589,710	4,717,680



d	LANTAI 3				
	- Unmanaged, Auto Sensing, Gigabit Switch 24 Port sekualitas TP-LINK TL-SG1024D	Unit	1	2,034,313	2,034,313
	- Outlet Data tipe Dinding sekualitas Clipsal/Panasonic	Bh	10	100,606	1,006,060
	- Instalasi LAN	Ttk	10	589,710	5,897,100
	(Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal)				
3	PEKERJAAN INSTALASI WIFI				
a	LANTAI 1				
	- Wireless-N Range Extender / Acces Point sekualitas LINKSYS RE1000-AP	Unit	4	2,182,263	8,729,050
	- Instalasi Access Point ke Router	Ttk	4	1,009,470	4,037,880
	(Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal + Power)				
b	LANTAI 2				
	- Wireless-N Range Extender / Acces Point sekualitas LINKSYS RE1000-AP	Unit	4	2,182,263	8,729,050
	- Instalasi Access Point ke Router	Ttk	4	1,009,470	4,037,880
	(Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal + Power)				
c	LANTAI 3				
	- Wireless-N Range Extender / Acces Point sekualitas LINKSYS RE1000-AP	Unit	4	2,182,263	8,729,050
	- Instalasi Access Point ke Router	Ttk	4	1,009,470	4,037,880
	(Dengan Kabel LAN sekualitas Belden CAT5E UTP + Pipa conduit ex Clipsal + Power)				
4	LAIN - LAIN				
	1 Grounding (Max 1 Ohm)	Ls	1	750,000	750,000
	2 Testing & Commissioning	Ls	1	2,500,000	2,500,000
	TOTAL PEKERJAAN JARINGAN KOMPUTER (LAN) & WIFI				85,888,309
E	PEKERJAAN CCTV				
1	PERALATAN UTAMA				
a	Digital Video Recorder (DVR), terdiri dari :	Set	2	1,997,325	3,994,650
	- DVR 16 Channel Hard Disk 2 TB sekualitas Protech PDR-1630s				
	- LED Monitor 29" sekualitas Sharp/LG/Samsung				
	- UPS 1500VA sekualitas APC/ICA				
	- Arrester				
b	Rack	Set	1	5,252,225	5,252,225
2	PEKERJAAN INSTALASI				
a	BASEMENT				
	- Dome Infra Red (IR) Camera sekualitas Protech PD-1300C9BIR	Bh	2	1,815,750	3,631,500
	- Outdoor Infra Red (IR) Camera sekualitas Protech PR-2048C7T + Penyangga	Bh	2	3,833,250	7,666,500
	- Instalasi CCTV	Ttk	4	1,325,797	5,303,188
b	LANTAI 1				
	- Dome Infra Red (IR) Camera sekualitas Protech PD-1300C9BIR	Bh	6	2,086,095	12,516,570
	- Outdoor Infra Red (IR) Camera sekualitas Protech PR-2048C7T + Penyangga	Bh	2	4,423,705	8,847,410
	- Instalasi CCTV	Ttk	8	1,325,797	10,606,376
c	LANTAI 2				
	- Dome Infra Red (IR) Camera sekualitas Protech PD-1300C9BIR	Bh	6	2,086,095	12,516,570
	- Instalasi CCTV	Ttk	6	1,325,797	7,954,782
d	LANTAI 3				
	- Dome Infra Red (IR) Camera sekualitas Protech PD-1300C9BIR	Bh	6	2,086,095	12,516,570
	- Instalasi CCTV	Ttk	6	1,325,797	7,954,782
3	LAIN-LAIN				
	- Testing & Commissioning	Ls	1	2,000,000	2,000,000
	TOTAL PEKERJAAN CCTV				100,761,123



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RENCANA ANGGARAN BIAYA (R A B)

PROGRAM : PENINGKATAN SARANA & PRASARANA APARATUR
 KEGIATAN : PEMBANGUNAN GEDUNG KANTOR
 PAKET PEKERJAAN : PEMBANGUNAN GEDUNG KANTOR
 DPRD NGADA
 LOKASI : KABUPATEN NGADA
 TAHUN ANGGARAN : 2013,2014,2015

NO	JENIS PEKERJAAN	VOLUME	SAT	HARGA SATUAN (Rp)	JUMLAH HARGA (Rp)
1	2	3	4	5	6
A	PEKERJAAN PERSIAPAN				
1	Pas. Bouwplank dan Pengukuran	166.40	M'	77,434.50	12,885,100.80
2	Penyediaan Air Kerja	1.00	Ls	15,000,000.00	15,000,000.00
3	Pembuatan Direksi Keet & Gudang	150.00	M ²	550,000.00	82,500,000.00
4	Pagar Sementara dari Seng Gelombang t = 2 m	174.40	M'	404,182.63	70,489,449.80
5	Pembongkaran & Pembuangan Kantor BKD (Existing)	1.00	Ls	50,000,000.00	50,000,000.00
6	Job Mix Desain	1.00	Ls	4,500,000.00	4,500,000.00
7	Pengujian Kubus Beton	1.00	Ls	5,000,000.00	5,000,000.00
8	Pengurusan IMB Bangunan dll	1.00	Ls	75,000,000.00	75,000,000.00
9	Papan Nama Proyek	1.00	Ls	3,500,000.00	3,500,000.00
10	Mobilisasi & Demobilisasi	1.00	Ls	25,000,000.00	25,000,000.00
11	Pengadaan Listrik Kerja	1.00	Ls	27,500,000.00	27,500,000.00
12	Administrasi (Dokumentasi & Pelaporan)	1.00	Ls	15,000,000.00	15,000,000.00
				Jumlah A	386,374,550.60
B	PEKERJAAN STRUKTUR BAWAH				
				Jumlah B	3,700,778,664.30
I	PEKERJAAN TANAH DAN URUGAN				
1	Pek. Cuting Tanah Menggunakan Alat Berat	2,122.80	M ³	126,902.48	269,388,584.13
2	Pek. Urugan Tanah Depan & Pematatan	2,064.38	M ³	124,987.50	258,022,195.20
3	Galian Tanah Pondasi Siklop Manual	241.38	M ³	51,837.50	12,512,535.75
4	Galian Tanah Pondasi Footplate Dgn Alat Berat	693.25	M ³	126,902.48	87,975,397.93
5	Galian Tanah Pondasi Menerus Dgn Alat Berat	666.36	M ³	126,902.48	84,562,736.44
6	Urugan Tanah Kembali	400.25	M ³	19,387.50	7,759,808.10
7	Urugan Pasir Bawah Pondasi Menerus + Rolag	27.77	M ³	191,015.00	5,303,531.48
8	Urugan Pasir Dibawah Lantai Basement t = 12 cm	151.29	M ³	191,015.00	28,897,971.70
9	Urugan Sirtu Peninggi Muka Lantai Basement	567.32	M ³	124,987.50	70,908,408.45
				Jumlah I	825,331,169.18
II	PEKERJAAN PASANGAN & PONDASI				
1	Pas. Aanstamping Batu Kali	83.30	M ³	452,466.30	37,688,180.46
2	Pas. Pondasi Batu Kali 1 : 4	495.90	M ³	844,043.75	418,561,295.63
				Jumlah II	456,249,476.08
III	PEKERJAAN TALUD				
1	Pek. Galian Tanah Talud	316.88	M ³	126,902.48	40,212,730.90
2	Pek. Urugan Tanah Kembali	79.22	M ³	19,387.50	1,535,872.90
3	Pek. Urugan Pasir Bawah Pondasi Talud	13.20	M ³	191,015.00	2,521,780.03
4	Pas. Aanstamping Batu Kosong	39.28	M ³	452,466.30	17,771,518.87
5	Pas. Pondasi Batu Kali 1 : 4	549.13	M ³	844,043.75	463,491,516.93
				Jumlah III	525,533,419.63

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1	2	3	4	5	6
IV	PEKERJAAN BETON				
1	Selimut Beton Bertulang K - 275	116.11	M ³	5,409,333.88	628,099,393.56
2	Beton Ciclop K - 250	33.18	M ³	1,261,859.50	41,864,712.63
3	Beton Ciclop K - 175	59.76	M ³	1,170,092.00	69,921,187.64
4	Besi Angker D 16	984.20	Kg	14,000.00	13,778,780.40
5	Lantai Kerja Rabbat Beton K - 125	8.00	M ³	1,089,701.25	8,721,968.81
6	Cor Beton Foot Plate 1 K - 275	92.80	M ³	4,471,301.89	414,936,815.75
7	Cor Beton Foot Plate 2 K - 275	6.40	M ³	4,471,301.89	28,616,332.12
8	Cor Beton Foot Plate 3 K - 275	3.60	M ³	3,668,703.52	13,207,332.68
9	Cor Beton Foot Plate 4 K - 275	7.74	M ³	4,471,301.89	34,625,761.87
10	Cor Beton Kolom Pedestal 60/60 K - 275	1.58	M ³	6,613,265.90	10,475,413.19
11	Cor Beton Kolom Pedestal 45/45 K - 275	14.70	M ³	8,346,071.95	122,699,776.70
12	Cor Beton Sloof Struktur 30/50 K - 275	92.16	M ³	5,051,586.24	465,554,187.70
13	Cor Beton Sloof 15/50, K - 175	5.54	M ³	5,681,564.72	31,447,460.70
14	Cor Beton Sloof 15/50, K - 175 Utk Shaft	1.71	M ³	5,681,564.72	9,715,475.66
				Jumlah IV	1,893,664,599.41
C	PEKERJAAN BASEMENT			Jumlah C	1,106,452,117.16
I	PEK. PASANGAN & PLESTERAN				
1	Pas. Tembok Bata Merah 1 : 4, Tebal 1/2 Batu	246.34	M ²	158,228.13	38,977,758.08
2	Pas. Tembok Bata Merah 1 : 4, Tebal 1/2 Batu Shaft	429.12	M ²	158,228.13	67,898,853.00
3	Pas. Tembok Bata Merah 1 : 4, 1/2 Batu Tegak Pada Shaft & Kolom	50.22	M ²	158,228.13	7,946,216.44
4	Pas. Tembok Bata Merah 1 : 4, Tebal 1 Batu	31.47	M ²	323,712.81	10,187,889.64
5	Pas. Batu Sisir Pada Taman & Bangku, Kolom, Dinding & Shaft	320.06	M ²	412,977.81	132,176,439.74
6	Pas. Batu Alam di Shaft + Kaki Kolom	50.22	M ²	412,977.81	20,739,745.74
7	Plester Tembok Biasa 1 : 4	894.43	M ²	50,902.50	45,528,570.37
8	Plester Beton Kolom & Balok Bawah 1 : 4	984.99	M ²	50,902.50	50,138,453.48
9	Plester Keliling Sloof 1 : 4	72.72	M ²	50,902.50	3,701,629.80
10	Saus Lantai Basement	1,039.80	M ²	29,730.94	30,914,228.81
11	Acian	1,550.39	M ²	29,730.94	46,094,488.73
				Jumlah I	454,304,273.82
II	PEKERJAAN BETON				
1	Cor Kolom 60/60 C1, K - 275	3.02	M ³	6,613,265.90	19,998,516.08
2	Cor Kolom 45/45 C2, K - 275	17.01	M ³	8,346,071.95	141,966,683.79
3	Cor Kolom 45/45 C3, K - 275	9.36	M ³	8,346,071.95	78,081,676.08
4	Cor Kolom Praktis 15/15 Cp-1, K - 175	2.76	M ³	4,884,864.42	13,463,907.56
5	Cor Kolom Praktis 15/25 Cp-2, K - 175	1.35	M ³	3,750,257.34	5,062,847.41
6	Cor List Beton Pada Bangku & Taman, Shaft & Kolom Ukuran 10/40 cm K - 175	4.03	M ³	1,170,092.00	4,717,342.91
7	Cor List Beton Untuk Bingkai Kusen K - 125	4.05	M ³	1,089,701.25	4,413,290.06
8	Cor Lantai Rabbat Basement t = 8 Cm Tanpa Tul K - 175	15.60	M ³	1,170,092.00	18,247,818.76
9	Cor Pelat Lantai Rabbat Tulangan Basement t = 8 Cm Untuk Parkiran K - 175	85.26	M ³	1,445,456.11	123,243,056.93
				Jumlah II	409,195,139.58

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1	2	3	4	5	6
III	PEK. KUSEN ALMUNIU, DAUN PINTU , JENDELA ALAT - ALAT PENGGANTUNG				
1	Pek. Kusen Alumium	230.58	M'	230,131.69	53,063,764.50
2	Pek. Daun Pintu Multiplex Rangka Kayu Lapis Nyatoh	12.10	M ²	781,965.80	9,461,786.18
3	Pek. Daun Pintu Alumium Km/Wc + Pintu Shaf	21.40	M ²	1,272,869.13	27,239,399.28
4	Pek. Daun Jendela Bingkai Alumium Kaca 5 mm	16.15	M ²	1,102,754.13	17,806,170.86
5	Pek. Daun Boven Bingkai Alumium Kaca 5 mm	2.52	M ²	1,102,754.13	2,778,940.40
6	Pas. Engsel Pintu	62.00	Bh	37,500.00	2,325,000.00
7	Pas. Engsel Jendela	44.00	Bh	37,500.00	1,650,000.00
8	Pas. Engsel Boven	24.00	Bh	37,500.00	900,000.00
9	Pas. Hak Angin Jendela	44.00	Bh	17,500.00	770,000.00
10	Pas. Hak Angin Boven	24.00	Bh	17,500.00	420,000.00
11	Pas. Grendel Jendela	22.00	Bh	32,000.00	704,000.00
12	Pas. Grendel Boven	12.00	Bh	32,000.00	384,000.00
13	Pas. Kunci Pintu Doubel	2.00	Bh	375,000.00	750,000.00
14	Pas. Kunci Pintu Biasa	18.00	Bh	235,000.00	4,230,000.00
15	Pas. Ekspagnolet	4.00	Bh	12,000.00	48,000.00
				Jumlah III	122,531,061.21
IV	PEKERJAAN LANTAI				
1	Pas. Keramik Warna 40 x 40 cm	75.80	M ²	203,912.50	15,455,547.94
2	Pek. Plint Keramik 10 x 40 cm	75.28	M'	26,757.50	2,014,304.60
3	Pas. Lantai Keramik Km/Wc 20 x 20 cm	27.93	M ²	181,383.40	5,066,038.36
4	Pas. Dinding Keramik Km/Wc 20 x 20 cm	112.92	M ²	181,383.40	20,481,813.53
5	Pas. Keramik Border Wc/Km 10 x 20 cm	45.28	M'	38,315.75	1,734,937.16
				Jumlah IV	44,752,641.59
V	PEKERJAAN TANGGA				
1	Cor Foot Plate t = 20 cm, K - 275	0.72	M ³	4,471,301.89	3,219,337.36
2	Cor Kolom Foot Plate t = 20 cm, K - 275	0.36	M ³	8,346,071.95	3,004,585.90
3	Cor Pelat Tangga t = 0,15 cm, K - 275	3.74	M ³	6,705,553.96	25,078,771.81
4	Cor Pelat Bordes t = 0,15 cm, K - 275	1.71	M ³	6,705,553.96	11,466,497.27
5	Cor Balok Bordes 25/30 cm, K - 275	0.45	M ³	7,566,179.11	3,404,780.60
6	Pas. Granit 60 x 60 cm	16.95	M ²	489,378.31	8,294,962.40
7	Pas. Granit Anti Slip Pada Tangga	27.00	M'	44,446.88	1,200,065.63
8	Reling Tangga	1.00	Ls	20,000,000.00	20,000,000.00
				Jumlah V	75,669,000.96

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1	2	3	4	5	6
D	PEKERJAAN LANTAI I			Jumlah D	4,489,529,093.07
I	PEKERJAAN BETON				
1	Cor Balok 30/60 B1-1, K - 275	6.77	M ³	7,363,945.98	49,839,186.37
2	Cor Balok 30/60 B1-2, K - 275	29.95	M ³	6,912,846.54	207,028,693.37
3	Cor Balok 30/60 B1-3, K - 275	7.61	M ³	7,589,495.69	57,786,420.21
4	Cor Balok 30/60 B1-4, K - 275	23.69	M ³	7,138,396.26	169,094,330.58
5	Cor Balok 30/60 B1-5, K - 275	13.54	M ³	7,815,045.41	105,784,454.68
6	Cor Balok 30/60 B1-6, K - 275	3.38	M ³	6,687,296.82	22,629,812.45
7	Cor Balok Anak 25/50 BA1-1, K - 275	22.98	M ³	7,546,464.72	173,395,119.82
8	Cor Balok Anak 25/35 BA1-2, K - 275	3.17	M ³	7,566,179.11	23,969,655.42
9	Cor Pelat Lantai t = 13 cm, K - 275	165.67	M ³	6,705,553.96	1,110,922,535.49
10	Cor Kolom 60/60 C1, K - 275	4.18	M ³	6,613,265.90	27,616,998.40
11	Cor Kolom 45/45 C2, K - 275	23.49	M ³	8,346,071.95	196,049,229.99
12	Cor Kolom 45/45 C3, K - 275	12.92	M ³	8,346,071.95	107,827,076.50
13	Cor Kolom Praktis 15/15 Cp-1, K - 175	6.33	M ³	4,884,864.42	30,917,528.13
14	Cor Kolom Praktis 15/25 Cp-2, K - 175	1.58	M ³	3,750,257.34	5,906,655.31
15	Cor List Beton 10/40 cm Pada Patio K - 175	0.96	M ³	1,170,092.00	1,123,288.32
16	Cor List Beton Untuk Bingkai Kusen K - 125	15.52	M ³	1,089,701.25	16,910,991.97
17	Cor Umpak Pada Kolom K - 125	0.40	M ³	1,089,701.25	435,880.50
				Jumlah I	2,307,237,857.50
II	PEK. PASANGAN & PLESTERAN				
1	Pas. Tembok Bata Merah 1 : 4, Tebal 1/2 Batu	915.30	M ²	158,228.13	144,825,886.36
2	Pas. Tembok Bata Merah 1 : 4, Tebal 1 Batu di Patio	9.60	M ²	323,712.81	3,107,643.00
3	Pas. Batu Sisir Pada Dinding, Patio & Kolom	156.75	M ²	412,977.81	64,735,098.07
4	Plester Tembok Biasa 1 : 4	1,996.95	M ²	50,902.50	101,649,645.57
5	Plester Beton Kolom & Balok Bawah 1 : 4	1,087.41	M ²	50,902.50	55,351,887.53
6	Acian	2,918.01	M ²	29,730.94	86,755,054.01
				Jumlah II	456,425,214.53
III	PEK. KUSEN ALMUNIMUM, DAUN PINTU , JENDELA ALAT - ALAT PENGGANTUNG				
1	Pek. Kusen Aluminium	895.69	M	230,131.69	206,126,651.18
2	Pek. Daun Pintu Panil Aluminium Kaca 9 mm	11.34	M ²	1,203,954.13	13,652,839.78
3	Pek. Daun Pintu Multiplex Rangka Kayu Lapis Nyatoh	69.09	M ²	781,965.80	54,026,017.12
4	Pek. Daun Pintu Aluminium Km/Wc + Pintu Shaf	19.11	M ²	1,272,869.13	24,324,528.98
5	Pek. Daun Jendela Bingkai Aluminium Kaca 5 mm	118.14	M ²	1,102,754.13	130,279,372.33
6	Pek. Daun Boven Bingkai Aluminium Kaca 5 mm	54.81	M ²	1,102,754.13	60,436,439.82
7	Pas. Engsel Pintu	159.00	Bh	37,500.00	5,962,500.00
8	Pas. Engsel Jendela	196.00	Bh	37,500.00	7,350,000.00
9	Pas. Engsel Boven	262.00	Bh	37,500.00	9,825,000.00
10	Pas. Hak Angin Jendela	196.00	Bh	17,500.00	3,430,000.00
11	Pas. Hak Angin Boven	262.00	Bh	17,500.00	4,585,000.00
12	Pas. Grendel Jendela	98.00	Bh	32,000.00	3,136,000.00
13	Pas. Grendel Boven	131.00	Bh	32,000.00	4,192,000.00
14	Pas. Kunci Pintu Doubel	9.00	Bh	375,000.00	3,375,000.00
15	Pas. Kunci Pintu Biasa	42.00	Bh	235,000.00	9,870,000.00
16	Pas. Ekspagnolet	18.00	Bh	12,000.00	216,000.00
				Jumlah III	540,787,349.20

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1	2	3	4	5	6
IV	PEK. PLAFOND & LIST PLAFOND				
1	Pek. Plafond Gypsum Rangka Hollo	1,187.01	M ²	193,152.44	229,274,261.14
2	Pek. Listplafond Gypsum	784.96	M'	93,703.50	73,553,499.36
				Jumlah IV	302,827,760.50
V	PEKERJAAN LANTAI				
1	Pas. Lantai Granit 60 x 60 cm	1,045.24	M ²	489,378.31	511,517,787.36
2	Pek. Plint Geranit 10 x 60 cm	706.78	M'	53,305.73	37,675,425.91
3	Pas. Keramik Warna 40 x 40 cm	55.13	M ²	203,912.50	11,241,696.13
4	Pek. Plint Keramik 10 x 40 cm	51.27	M ²	26,757.50	1,371,857.03
5	Pas. Lantai Keramik Km/Wc 20 x 20 cm	30.10	M ²	181,383.40	5,459,640.34
6	Pas. Dinding Keramik Km/Wc 20 x 20 cm	122.52	M ²	201,805.18	24,725,170.04
7	Pas. Keramik Border Wc/Km 10 x 20 cm	81.68	M'	38,315.75	3,129,630.46
				Jumlah V	595,121,207.26
VI	PEKERJAAN TANGGA				
1	Cor Pelat Tangga t = 0,15 cm, K - 275	11.19	M ³	6,705,553.96	75,035,148.80
2	Cor Pelat Bordes t = 0,15 cm, K - 275	3.42	M ³	6,705,553.96	22,932,994.54
3	Cor Balok Bordes 25/30 cm, K - 275	0.90	M ³	7,566,179.11	6,809,561.20
4	Pas. Granit 60 x 60 cm	20.33	M ²	489,378.31	9,949,061.09
5	Pas. Granit Anti Slip Pada Tangga	34.50	M'	44,446.88	1,533,417.19
6	Reiling Tangga	1.00	Ls	20,000,000.00	20,000,000.00
				Jumlah VI	136,260,182.82
VII	PEKERJAAN TANGGA DEPAN				
1	Cor Foot Plate t = 20 cm, K - 275	1.44	M ³	4,471,301.89	6,438,674.73
2	Cor Kolom 20/20 cm, K - 275	3.49	M ³	8,346,071.95	29,127,791.09
3	Cor Pelat Tangga t = 0,15 cm, K - 275	6.79	M ³	6,705,553.96	45,530,711.38
4	Cor Pelat Bordes t = 0,15 cm, K - 275	1.26	M ³	6,705,553.96	8,448,997.99
5	Cor Balok Bordes 25/30 cm, K - 275	1.35	M ³	7,566,179.11	10,214,341.80
6	Pas. Granit 60 x 60 cm	37.14	M ²	489,378.31	18,175,510.53
7	Pas. Granit Anti Slip Pada Tangga	66.00	M'	44,446.88	2,933,493.75
8	Reiling Tangga	1.00	Ls	30,000,000.00	30,000,000.00
				Jumlah VII	150,869,521.26

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1	2	3	4	5	6
E	PEKERJAAN LANTAI II			Jumlah E	4,798,058,541.38
I	PEKERJAAN BETON				
1	Cor Balok 30/60 B2-1, K - 275	11.51	M ³	7,363,945.98	84,726,616.82
2	Cor Balok 30/60 B2-2, K - 275	26.56	M ³	6,912,846.54	183,635,620.67
3	Cor Balok 30/60 B2-3, K - 275	19.97	M ³	6,912,846.54	138,019,128.91
4	Cor Balok 30/60 B2-4, K - 275	24.36	M ³	7,138,396.26	173,925,597.17
5	Cor Balok 30/60 B2-5, K - 275	1.69	M ³	8,040,595.13	13,604,686.96
6	Cor Balok Anak 25/50 BA1-1, K - 275	26.64	M ³	7,546,464.72	201,037,820.08
7	Cor Balok Anak 25/35 BA1-2, K - 275	3.83	M ³	7,566,179.11	28,963,333.63
8	Cor Pelat Lantai t = 13 cm, K - 275	174.56	M ³	6,705,553.96	1,170,548,321.29
9	Cor Kolom 45/45 C2, K - 275	24.66	M ³	8,346,071.95	205,851,691.49
10	Cor Kolom 45/45 C3, K - 275	14.09	M ³	8,346,071.95	117,629,538.00
11	Cor Kolom Praktis 15/15 Cp-1, K - 175	7.96	M ³	4,884,864.42	38,885,963.22
12	Cor Kolom Praktis 15/25 Cp-2, K - 175	1.58	M ³	3,750,257.34	5,906,655.31
13	Cor List Beton Untuk Bingkai Kusen K - 125	19.74	M ³	1,089,701.25	21,507,433.57
14	Cor Umpak Pada Kolom K - 125	0.56	M ³	1,089,701.25	610,232.70
				Jumlah I	2,384,852,639.82
II	PEK. PASANGAN & PLESTERAN				
1	Pas. Tembok Bata Merah 1 : 4, Tebal 1/2 Batu	924.47	M ²	158,228.13	146,277,312.95
2	Pas. Batu Sisir Pada Kolom	23.20	M ²	412,977.81	9,581,085.25
3	Pas. Partisi Lt. 2 Dari Aluminium + Kaca Mati 5 mm	212.97	M ²	1,123,298.00	239,228,775.06
4	Pas. Pintu Partisi Lt. 2	58.21	M ²	1,123,298.00	65,387,176.58
5	Plester Tembok Biasa 1 : 4	1,872.14	M ²	50,902.50	95,296,708.16
6	Plester Beton Kolom & Balok Bawah 1 : 4	1,075.20	M ²	50,902.50	54,730,368.00
7	Acian	2,924.14	M ²	29,730.94	86,937,483.04
				Jumlah II	697,438,909.04
III	PEK. KUSEN ALMUNIMUM, DAUN PINTU , JENDELA ALAT - ALAT PENGGANTUNG				
1	Pek. Kusen Aluminium	1,059.74	M'	230,131.69	243,879,754.51
2	Pek. Daun Pintu Panil Aluminium Kaca 9 mm	3.78	M ²	1,203,954.13	4,550,946.59
3	Pek. Daun Pintu Multiplex Rangka Kayu Lapis Nyatoh	84.00	M ²	781,965.80	65,685,127.20
4	Pek. Daun Pintu Aluminium Km/Wc	23.52	M ²	1,272,869.13	29,937,881.82
5	Pek. Daun Jendela Bingkai Aluminium Kaca 5 mm	136.68	M ²	1,102,754.13	150,724,433.81
6	Pek. Daun Boven Bingkai Aluminium Kaca 5 mm	66.53	M ²	1,102,754.13	73,366,231.94
7	Pas. Engsel Pintu	114.00	Bh	37,500.00	4,275,000.00
8	Pas. Engsel Jendela	210.00	Bh	37,500.00	7,875,000.00
9	Pas. Engsel Boven	354.00	Bh	37,500.00	13,275,000.00
10	Pas. Hak Angin Jendela	210.00	Bh	17,500.00	3,675,000.00
11	Pas. Hak Angin Boven	354.00	Bh	17,500.00	6,195,000.00
12	Pas. Grendel Jendela	105.00	Bh	32,000.00	3,360,000.00
13	Pas. Grendel Boven	177.00	Bh	32,000.00	5,664,000.00
14	Pas. Kunci Pintu Doubel	8.00	Bh	375,000.00	3,000,000.00
15	Pas. Kunci Pintu Biasa	40.00	Bh	235,000.00	9,400,000.00
16	Pas. Ekspagnolet	16.00	Bh	12,000.00	192,000.00
				Jumlah III	625,055,375.87

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1	2	3	4	5	6
IV	PEK. PLAFOND & LIST PLAFOND				
1	Pek. Plafond Gypsum Rangka Hollo	1,176.71	M ²	193,152.44	227,284,404.73
2	Pek. Listplafond Gypsum	698.58	M'	93,703.50	65,459,391.03
				Jumlah IV	292,743,795.76
V	PEKERJAAN LANTAI				
1	Pas. Lantai Granit 60 x 60 cm	1,174.59	M ²	489,378.31	574,818,872.08
2	Pek. Plint Granit 10 x 60 cm	720.76	M'	53,305.73	38,420,640.05
3	Pas. Keramik Warna 40 x 40 cm	27.15	M ²	203,912.50	5,536,224.38
4	Pek. Plint Keramik 10 x 40 cm	30.10	M'	26,757.50	805,400.75
5	Pas. Lantai Keramik Km/Wc 20 x 20 cm	41.08	M ²	181,383.40	7,451,230.07
6	Pas. Dinding Keramik Km/Wc 20 x 20 cm	152.52	M ²	201,805.18	30,779,325.29
7	Pas. Keramik Border Wc/Km 10 x 20 cm	101.68	M'	38,315.75	3,895,945.46
				Jumlah V	661,707,638.08
VI	PEKERJAAN TANGGA				
1	Cor Pelat Tangga t = 0,15 cm, K - 275	11.19	M ³	6,705,553.96	75,035,148.80
2	Cor Pelat Bordes t = 0,15 cm, K - 275	3.42	M ³	6,705,553.96	22,932,994.54
3	Cor Balok Bordes 25/30 cm, K - 275	0.90	M ³	7,566,179.11	6,809,561.20
4	Pas. Granit 60 x 60 cm	20.33	M ²	489,378.31	9,949,061.09
5	Pas. Granit Anti Slip Pada Tangga	34.50	M'	44,446.88	1,533,417.19
6	Reiling Tangga	1.00	Ls	20,000,000.00	20,000,000.00
				Jumlah VI	136,260,182.82
F	PEKERJAAN LANTAI III			Jumlah F	3,995,560,368.66
I	PEKERJAAN BETON				
1	Cor Balok 30/60 B3-1, Ev 7 m K - 275	36.04	M ³	7,138,396.26	257,264,945.81
2	Cor Balok 30/60 B3-2, Ev 7 m K - 275	11.51	M ³	6,687,296.82	76,941,362.34
3	Cor Balok 30/60 B3-3, Ev 7 m K - 275	5.08	M ³	6,912,846.54	35,089,609.05
4	Cor Balok 30/60 B3-4, Ev 7 m K - 275	18.27	M ³	7,589,495.69	138,687,408.50
5	Cor Balok 30/60 B3-5, Ev 7 m K - 275	1.69	M ³	8,266,144.85	13,986,317.08
6	Cor Balok Anak 25/50 BA1-1, Ev 7 m K - 275	26.64	M ³	7,546,464.72	201,037,820.08
7	Cor Balok Anak 25/35 BA1-2, Ev 7 m K - 275	3.83	M ³	7,566,179.11	28,963,333.63
8	Cor Pelat Lantai t = 13 cm, Ev 7 m K - 275	174.56	M ³	6,705,553.96	1,170,548,321.29
9	Cor Kolom 45/45 C2, K - 275	19.60	M ³	8,346,071.95	163,608,048.34
10	Cor Kolom 45/45 C3, K - 275	9.32	M ³	8,346,071.95	77,752,006.24
11	Cor Kolom 15/45 C4, K - 275	1.86	M ³	4,003,260.42	7,458,074.16
12	Cor Kolom Praktis 15/15 Cp-1, K - 175	9.62	M ³	4,884,864.42	46,987,510.86
13	Cor Kolom Praktis 15/25 Cp-2, K - 175	1.35	M ³	3,750,257.34	5,062,847.41
14	Cor List Beton Untuk Bingkai Kusen K - 125	10.34	M ³	1,089,701.25	11,271,542.82
15	Cor Umpak Pada Kolom K - 125	0.40	M ³	1,089,701.25	435,880.50
				Jumlah I	2,235,095,028.12
II	PEK. PASANGAN & PLESTERAN				
1	Pas. Tembok Bata Merah 1 : 4, Tebal 1/2 Batu	1,129.84	M ²	158,228.13	178,772,464.75
2	Plester Tembok Biasa 1 : 4	2,259.68	M ²	50,902.50	115,023,361.20
3	Plester Beton Kolom & Balok Bawah 1 : 4	1,039.70	M ²	50,902.50	52,923,329.25
4	Acian	3,299.38	M ²	29,730.94	98,093,660.57
				Jumlah II	444,812,815.77

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III	PEK. KUSEN ALMUNIU, DAUN PINTU , JENDELA ALAT - ALAT PENGGANTUNG				
1	Pek. Kusen Almunium	680.24	M'	230,131.69	156,544,779.11
2	Pek. Daun Pintu Panil Almunium Kaca 9 mm	29.40	M ²	1,203,954.13	35,396,251.28
3	Pek. Daun Pintu Multiplex Rangka Kayu Lapis Nyatoh	41.32	M ²	781,965.80	32,310,826.86
4	Pek. Daun Pintu Almunium Km/Wc	17.64	M ²	1,272,869.13	22,453,411.37
5	Pek. Daun Jendela Bingkai Almunium Kaca 5 mm	30.42	M ²	1,102,754.13	33,545,780.48
6	Pek. Daun Boven Bingkai Almunium Kaca 5 mm	24.71	M ²	1,102,754.13	27,249,054.43
7	Pas. Engsel Pintu	141.00	Bh	37,500.00	5,287,500.00
8	Pas. Engsel Jendela	152.00	Bh	37,500.00	5,700,000.00
9	Pas. Engsel Boven	194.00	Bh	37,500.00	7,275,000.00
10	Pas. Hak Angin Jendela	152.00	Bh	17,500.00	2,660,000.00
11	Pas. Hak Angin Boven	194.00	Bh	17,500.00	3,395,000.00
12	Pas. Grendel Jendela	76.00	Bh	32,000.00	2,432,000.00
13	Pas. Grendel Boven	97.00	Bh	32,000.00	3,104,000.00
14	Pas. Kunci Pintu Doubel	10.00	Bh	375,000.00	3,750,000.00
15	Pas. Kunci Pintu Biasa	37.00	Bh	235,000.00	8,695,000.00
16	Pas. Ekspagnolet	20.00	Bh	12,000.00	240,000.00
				Jumlah III	350,038,603.51
IV	PEK. PLAFOND & LIST PLAFOND				
1	Pek. Plafond Gypsum Rangka Hollo	1,466.99	M ²	193,152.44	283,352,694.29
2	Pek. Listplafond Gypsum	683.50	M'	93,703.50	64,046,342.25
				Jumlah IV	347,399,036.54
V	PEKERJAAN LANTAI				
1	Pas. Lantai Granit 60 x 60 cm	1,124.08	M ²	489,378.31	550,100,373.52
2	Pek. Plint Granit 10 x 60 cm	582.20	M'	53,305.73	31,034,597.70
3	Pas. Keramik Warna 40 x 40 cm	27.15	M ²	203,912.50	5,536,224.38
4	Pek. Plint Keramik 10 x 40 cm	30.10	M'	26,757.50	805,400.75
5	Pas. Lantai Keramik Km/Wc 20 x 20 cm	27.93	M ²	181,383.40	5,066,038.36
6	Pas. Dinding Keramik Km/Wc 20 x 20 cm	112.92	M ²	201,805.18	22,787,840.36
7	Pas. Keramik Border Wc/Km 10 x 20 cm	75.28	M'	38,315.75	2,884,409.66
				Jumlah V	618,214,884.73

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1	2	3	4	5	6
G	PEKERJAAN LANTAI IV / TOP FLOOR			Jumlah G	986,156,306.54
I	PEKERJAAN BETON				
1	Cor Balok 30/50 B4-1, Ev 10,1 m K - 275	15.05	M ³	7,402,554.65	111,393,642.35
2	Cor Balok 25/50 B4-2, Ev 10,1 m K - 275	2.51	M ³	7,546,464.72	18,926,533.51
3	Cor Balok 30/50 B4-3, Ev 10,1 m K - 275	8.70	M ³	7,570,319.40	65,891,303.04
4	Cor Balok 25/50 B4-4, Ev 10,1 m K - 275	1.78	M ³	8,007,575.67	14,263,494.16
5	Cor Balok 25/50 BA1-1, Ev 10,1 m K - 275	4.56	M ³	7,546,464.72	34,411,879.11
6	Cor Balok 25/50 B5-1, Ev 11,36 m K - 275	7.50	M ³	8,007,575.67	60,056,817.53
7	Cor Balok 30/50 B6-1, Ev 11,80 m K - 275	4.79	M ³	7,546,464.72	36,132,473.07
8	Cor Balok 25/50 B6-2, Ev 11,80 m K - 275	1.71	M ³	8,007,575.67	13,692,954.40
9	Cor Balok 25/50 BA1-1, Ev 11,8 m K - 275	1.71	M ³	7,546,464.72	12,904,454.67
10	Cor Balok Atap 25/50 B7-1, Ev 13 m K - 275	6.75	M ³	7,546,464.72	50,938,636.84
11	Cor Balok Atap 35/70 B7-2, Ev 13 m K - 275	4.41	M ³	6,528,133.96	28,789,070.76
12	Cor Pelat Lantai t = 12 cm, Ev 10,1 m K - 275	46.66	M ³	6,705,553.96	312,854,325.51
13	Cor Pelat Lantai t = 12 cm, Ev 11,8 m K - 275	12.96	M ³	6,705,553.96	86,903,979.31
14	Cor Kolom 45/45 C2, K - 275	4.58	M ³	8,346,071.95	38,199,971.29
15	Cor Kolom Praktis Atap 15/15 Cp-1, K - 175	0.34	M ³	4,884,864.42	1,651,084.17
16	Cor Rinbalk 15/25, Ev 11,8 m, K - 175	3.44	M ³	4,133,529.75	14,211,075.29
17	Cor List Beton Untuk Bingkai Kusen K - 125	1.77	M ³	1,089,701.25	1,930,078.85
				Jumlah I	903,151,773.86
II	PEK. PASANGAN & PLESTERAN				
1	Pas. Tembok Bata Merah 1 : 4, Tebal 1/2 Batu	61.16	M ²	158,228.13	9,677,232.13
2	Plester Tembok Biasa 1 : 4	122.32	M ²	50,902.50	6,226,393.80
3	Plester Beton Kolom & Balok Ring Balk 1 : 4	260.30	M ²	50,902.50	13,249,920.75
4	Acian	382.62	M ²	29,730.94	11,375,651.31
				Jumlah II	40,529,197.98
III	PEK. KUSEN ALMUNIMUM, DAUN PINTU , JENDELA ALAT - ALAT PENGGANTUNG				
1	Pek. Kusen Almunium	103.20	M'	230,131.69	23,749,590.15
2	Pek. Daun Jendela Bingkai Almunium Kaca 5 mm	10.80	M ²	1,102,754.13	11,909,744.55
3	Pas. Engsel Jendela	96.00	Bh	37,500.00	3,600,000.00
4	Pas. Hak Angin Jendela	96.00	Bh	17,500.00	1,680,000.00
5	Pas. Grendel Jendela	48.00	Bh	32,000.00	1,536,000.00
				Jumlah III	42,475,334.70
H	PEKERJAAN ATAP				
1	Pek. Kap Baja Ringan	1,975.13	M ²	265,196.25	523,796,273.67
2	Pek. Atap Multifoo 0,3	1,975.13	M ²	213,675.00	422,035,261.73
3	Pek. Bubungan Atap Metal & Jurai	113.52	M'	86,363.75	9,804,012.90
4	Pek. Rangka Baja WF & Gording	16,202.88	Kg	39,430.88	638,893,783.24
5	Pek. Track Stang Ø 16 + Ikatan angin + Turnbuckle	276.15	Kg	13,000.00	3,589,950.00
6	Pek. Lisplank Woodplank	285.50	M'	143,385.00	40,936,417.50
7	Pek. Bout	1.00	Ls	15,000,000.00	15,000,000.00
				Jumlah H	1,654,055,699.04

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I	PEKERJAAN SALURAN AIR				
1	Pek. Galian Tanah Menerus	34.57	M ³	51,837.50	1,792,074.21
2	Pas. Anstamping	9.23	M ³	452,466.30	4,176,263.95
3	Pas. Lantai Rabbat Saluran Keliling 1 : 3 : 5	3.33	M ³	1,089,701.25	3,628,705.16
4	Pas. Dinding Saluran 1 : 4	120.25	M ²	158,228.13	19,026,932.03
5	Pas. Plesteran 1 : 4	210.75	M ²	50,902.50	10,727,701.88
6	Pas. Acian	210.75	M ²	29,730.94	6,265,795.08
7	Cor Pelat Diatas Saluran t = 10 cm	0.30	M ³	3,750,257.34	1,125,077.20
				Jumlah I	46,742,549.51
J	PEKERJAAN GROUND WATER TANK, RUMAH POMPA & RUMAH GENSET				
A.	Untuk GWT Fire Hidrant & Rumah Pompa				
1	Pek. Galian Tanah Ground Water Tank (GWT)	220.97	M ³	51,837.50	11,454,428.70
2	Pek. Urugan Pasir Bawah Lantai (GWT)	3.56	M ³	191,015.00	680,777.46
3	Pek. Anstamping Bawah Lantai (GWT)	10.69	M ³	452,466.30	4,837,769.68
4	Pek. Rabbat Lantai 1:3:5 (GWT) t = 10 cm	7.13	M ³	1,089,701.25	7,767,390.51
5	Pek. Beton Lantai Dasar K - 275 (GWT) t = 15 cm	7.50	M ³	1,445,456.11	10,840,920.82
6	Pek. Sloof Beton 25/30 cm, K - 275 (GWT)	3.29	M ³	7,566,179.11	24,854,898.37
7	Pek. Dinding Beton K - 275 tbl = 25 cm (GWT)	29.02	M ³	5,409,333.88	156,968,050.38
8	Pek. Balok Beton 25/30 cm, K - 275 (GWT)	2.02	M ³	7,566,179.11	15,268,549.44
9	Pek. Pelat Beton Lantai t = 15 cm, K - 275 (GWT)	7.45	M ³	6,705,553.96	49,929,554.78
10	Pek. Dinding Beton tbl = 25 cm, K - 275 Rmh Pompa	10.08	M ³	5,409,333.88	54,499,038.79
11	Pek. Balok Beton 25/30 cm, K- 275 Rmh Pompa	0.83	M ³	7,566,179.11	6,242,097.77
12	Pek. Pelat Beton t = 15 cm, K -275 Rmh Pompa	3.00	M ³	6,705,553.96	20,116,661.88
13	Pek. Plesteran Dlm Dinding 1 : 4 (GWT & Rmh Pompa)	158.37	M ²	50,902.50	8,061,428.93
14	Pek. Acian (GWT & Rmh Pompa)	158.37	M ²	29,730.94	4,708,488.57
15	Pek. Talaud 1 : 4 (GWT & Rmh Pompa)	58.30	M ³	844,043.75	49,207,750.63
16	Pek. Daun Pintu Almunium Rumah Pompa	1.60	M ²	1,272,869.13	2,036,590.60
17	Pas. Pelat Man Hole (GWT)	1.00	Unit	750,000.00	750,000.00
B.	Untuk GWT Air Bersih & Rumah Genset				
1	Pek. Urugan Pasir Bawah Lantai	3.56	M ³	191,015.00	680,777.46
2	Pek. Anstamping Bawah Lantai	10.69	M ³	452,466.30	4,837,769.68
3	Pek. Rabbat Lantai 1:3:5 t = 10 cm	4.50	M ³	1,089,701.25	4,903,655.63
4	Pek. Beton Lantai Dasar K - 275 t = 15 cm	6.75	M ³	1,445,456.11	9,756,828.73
5	Pek. Dinding Beton K - 275 tbl = 25 cm	17.55	M ³	5,409,333.88	94,933,809.51
6	Pek. Sloof Beton 25/30 cm, K - 275	2.85	M ³	7,566,179.11	21,563,610.46
7	Pek. Balok Beton 25/30 cm, K - 275	1.95	M ³	7,566,179.11	14,754,049.26
8	Pek. Pelat Beton Lantai t = 15 cm, K - 275	6.70	M ³	6,705,553.96	44,900,389.31
9	Pek. Plesteran Dlm Dinding 1 : 4	70.20	M ²	50,902.50	3,573,355.50
10	Pek. Acian	70.20	M ²	29,730.94	2,087,111.81
11	Pek. Talaud 1 : 4	26.40	M ³	844,043.75	22,282,755.00
12	Pek. Daun Pintu Almunium Rumah Genset	1.60	M ²	1,272,869.13	2,036,590.60
13	Pas. Pelat Man Hole	1.00	Unit	650,000.00	650,000.00
				Jumlah J	655,185,100.25

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1	2	3	4	5	6
K	PEKERJAAN FINISHING				
1	Pengecatan Tembok & Beton Eksterior Dulux	11,074.54	M ²	72,735.30	805,509,698.32
2	Pengecatan Plafond	3,830.71	M ²	32,351.55	123,929,470.80
3	Pengecatan Lisplank	85.65	M ²	27,776.38	2,379,046.52
4	Pengecatan Batu Sisir	500.01	M ²	41,736.75	20,868,750.63
5	Pengecatan Batu Alam	50.22	M ²	41,736.75	2,096,019.59
6	Pekerjaan Water Profing Membrane	642.46	M ²	154,396.00	99,193,254.16
7	Pekerjaan Ornamen Kepala Kolom Finshing, Plester dan Cat	14.00	Bh	285,000.00	3,990,000.00
				Jumlah K	1,057,966,240.02

ANALISA ALTERNATIF BIAYA BALOK BETON						
No	Lantai	Line	Design		Biaya (Rp)	
			Dimensi Awal	Dimensi VE	Biaya Awal	Biaya VE
1	1		30/60	25/50	Rp 612,162,898	Rp 429,040,733
			25/50	20/40	Rp 197,364,775	Rp 126,438,423
	2		30/60	25/50	Rp 593,911,651	Rp 424,767,419
			25/50	20/40	Rp 230,001,154	Rp 147,344,650
	3		30/60	25/50	Rp 521,969,643	Rp 366,650,348
			25/50	20/40	Rp 230,001,154	Rp 147,344,650
	4		30/60	25/50	Rp 242,206,489	Rp 166,436,491
			25/50	20/40	Rp 205,194,770	Rp 128,248,314
JUMLAH					#####	Rp 1,936,271,029
PENGHEMATAN						Rp 896,541,504
PRESENTASE PENGHEMATAN (%)						32

ANALISA ALTERNATIF BIAYA KOLOM BETON						
No	Lantai	Bentang	Design		Biaya (Rp)	
			Dimensi Awal	Dimensi VE	Biaya Awal	Biaya VE
1	1	5	45/45	40/40	Rp 626,891,119	Rp 540,647,413
	2	4	45/45	40/40	Rp 368,273,848	Rp 318,471,268
	3	4	45/45	40/40	Rp 300,868,487	Rp 275,323,931
	4	4	45/45	40/40	Rp 39,851,055	Rp 32,411,610
JUMLAH					#####	Rp 1,166,854,221
PENGHEMATAN						Rp 169,030,289
PRESENTASE PENGHEMATAN (%)						13

total dana balok lantai 1	total balok lantai2	total dana balok lantai 3
809,527,672.90	823,912,804.24	751,970,796.49

809,527,672.90 823,912,804.24 751,970,796.49

total dana balok lantai 1	total balok lantai2	total dana balok lantai 3
612,162,897.66	593,911,650.54	521,969,642.79

Vol Ori	84.94	84.09	72.59
Panjang	471.88	467.18	403.26
Vol VE	58.99	58.40	50.41
Harga VE	429,040,733.38	424,767,419.30	366,650,347.85

total balok anak lantai 1	total balok lantai2	total balok lantai 3
197,364,775.23	230,001,153.71	230,001,153.71

Vol Ori	26.15	30.47	30.47
Panjang	209.16	243.74	243.74
Vol VE	16.73	19.50	19.50
Harga VE	126,438,423.31	147,344,650.28	147,344,650.28

555,479,156.69 572,112,069.58 513,994,998.13

total dana kolom basement	total dana kolom lantai 1	total kolom lantai 2
258,573,630.92	368,317,488.33	368,273,848.02

Vol Ori	33.50	48.49	48.29
Panjang	165.41	239.46	238.49
Vol VE	26.47	38.31	38.16
Harga VE	220,885,285.42	319,762,127.10	318,471,267.97
	540,647,412.51		

total dana plat lantai 1	total dana plat lantai 2	total dana plat lantai3
1,110,922,535.49	1,170,548,321.29	1,170,548,321.29

	lantai 1	lantai2
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pekerjaan tangga	75,669,000.96	150,869,521.26

total dana balok lantai 4	total balok lantai 1-4
447,401,259.44	2,832,812,533.07

447,401,259.44 2,832,812,533.07

total dana balok lantai 4	total balok lantai 1-4
242,206,489.22	1,970,250,680.20

Harga Satuan Balok Induk

7,273,726.09

0.18
0.13

32.95 274.57

183.06

22.88 190.67

166,436,491.16 1,386,894,991.68

total balok lantai 4	total balok anak lantai 1-4
205,194,770.22	862,561,852.87

Harga Satuan Balok Anak

7,556,321.91

0.13
0.08

26.52 113.60

212.15

16.97 72.70

128,248,313.54 549,376,037.41

294,684,804.70 1,936,271,029.10

total dana kolm lantai3	total dana kolom lantai 4	total dana kolom lantai 1-4	
300,868,487.01	39,851,055.47	1,335,884,509.75	

41.75 4.92 176.95

206.18

32.99 3.88 873.80

275,323,930.69 32,411,609.77 1,166,854,220.94

total dana plat lanta4	total dana plat lanta1 -4
399,758,304.82	3,851,777,482.88

lantai 3 total ppekerjaan tangga

136,260,182.82

362,798,705.04

0.20
0.16

8346072

No.	Item Pekerjaan	Biaya (Rp)	Bobot (&)
1	Beton balok	2,832,812,533	34
2	Beton kolom	1,335,884,510	16
3	Beton Plat Lantai	3,851,777,483	46
4	Tangga	362,798,705	4
	Jumlah	8,383,273,231	100

BALOK	2,832,812,533	1,013,694,547
		1,520,541,765
		298,576,257

0.1137

KOLOM	1,335,844,509	494,262,468
		748,072,925.04
		93,509,115.63

PLAT LT	3,851,777,483	1,425,157,668.67
		2,156,995,390
		269,624,424

100
66
50
4

No	Uraian	Kata Kerja	Kungsi Benda	Jjenis	Cost(Rp)	Worth(Rp)
1	beton	Menyalurkan	Beban	B	1,013,694,547	1,013,694,547
2	besi	Menyalurkan	Beban	B	1,520,541,765	1,520,541,765
3	bekesting	Mencetak	Balok	S	298,576,257	267,576,244
Jenis		B = Basuc S = Sekunder			2,832,812,569	2,801,812,556

No	Uraian	Kata Kerja	Kungsi Kata Kenda	Jjenis	Cost(Rp)	Worth(Rp)
1	beton	Menyalurkan	Beban	Beban	1,425,157,669	1,425,157,669
2	besi	Menyalurkan	Beban	Beban	2,156,995,390	2,156,995,390
3	bekesting	Mencetak	Balok	Sekunder	269,624,424	269,624,424
Jenis		B = Basic S = Sekunder			3,851,777,483	3,851,777,483

267,576,244

269624424

alternatif a

BERAT PROFIL LANTAI 1

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	66	300x300x10x15	94	37224
5	34	300x300x10x15	94	15341
4	14	300x300x10x15	94	4738
6	26	300x300x10x15	72	11232
5	24	300x300x10x15	72	8294
4	8	300x300x10x15	72	2074
=				78902

BERAT PROFIL LANTAI 2

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	65	300x300x10x15	94	36660
5	34	300x300x10x15	94	15341
4	12	300x300x10x15	94	4061
6	34	300x300x10x15	72	14688
5	24	300x300x10x15	72	8294
4	4	300x300x10x15	72	1037
=				80081

BERAT PROFIL LANTAI 3

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	65	300x300x10x15	94	36660
5	34	300x300x10x15	94	15341
4	12	300x300x10x15	94	4061
6	34	300x300x10x15	72	14688
5	24	300x300x10x15	72	8294
4	4	300x300x10x15	72	1037
=				80081

BERAT PROFIL LANTAI 4

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	20	200x200x8x12	50	5988
5	16	200x200x8x12	50	3832
4	12	200x200x8x12	50	2156
5	4	175x175x5x11	40	772
5	8	175x175x5x11	40	1544
				14292

253356

no	nama pekerjaan	volume	satuan	harga satuan
1	baja profil dan bagiannya	276.157,17	kg	1.100,00
2	pasang baja profil	276.157,17	kg	3.050,40
3	pasangan bata merah	246,36	M ²	158.228,13
4	plesteran bata merah	894,43	M ²	50.902,5
5	acian bat merah	1.550,39	M ²	29.730,94
total				

total harga (RP)
303.772.887
843.652.696.97
38.977.758,08
45.528.723.,075
46.094.552,067
1.147.425.584,00

2 Alternatif b

tabel : dimensi baja profil catella alternatif B untuk Balok

section index weight dept Widht thickness Luas Dimensi Profi
 (d) (b)

BERAT PROFIL LANTAI 1

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	66	300x300x10x15	88.76	35149
5	34	300x300x10x15	88.76	14486
4	14	300x300x10x15	88.76	4474
6	26	300x300x10x15	88.76	13847
5	24	300x300x10x15	88.76	10225
4	8	300x300x10x15	88.76	2556
=				80736.10

BERAT PROFIL LANTAI 2

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	65	300x300x10x15	88.76	34616
5	34	300x300x10x15	88.76	14486
4	12	300x300x10x15	88.76	3834
6	34	300x300x10x15	88.76	18107
5	24	300x300x10x15	88.76	10225
4	4	300x300x10x15	88.76	1278
=				82546.80

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
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6	65	300x300x10x15	88.76	34616
5	34	300x300x10x15	88.76	14486
4	12	300x300x10x15	88.76	3834
6	34	300x300x10x15	88.76	18107
5	24	300x300x10x15	88.76	10225
4	4	300x300x10x15	88.76	1278
=				82546.80

Panjang (m)	jumlah	profil	berat (kg/m)	berat total (kg)
6	20	200x200x8x12	47.10	5652
5	16	200x200x8x12	47.10	3617
4	12	200x200x8x12	47.10	2035
5	4	200x200x8x13	47.10	904
5	8	200x200x8x14	47.10	1809
				14016.96

Luas
in castella Depht
 Weight

10134.21

2598467

2598467

10393.87

259846.66

1039386.62

1299233.28

12992.33

283232.86

No.	Nama Pekerjaan	Volume	Satuan	Harga Satuan (Rp)	Total harga (Rp)
1	Baja profil dan bagiannya	50412.086	kg	12,600.00	635,192,281.08
2	Pekerjaan las dan Pemotongan	50412.086	kg	650.00	32,767,855.77
3	Pasang baja profil	50412.086	kg	3,050.40	153,777,026.52
4	Pasang Baut Ø 5/8"	1849.985	kg	6,650.00	12,302,398.92
5	Pasangan bata ringan	181.501	m ²	120,826.00	21,930,057.03
6	Plesteran bata ringan	1620.480	m ²	38,118.00	61,769,456.64
7	Acian bata ringan	1620.480	m ²	12,540.00	20,320,819.20
					938,059,895.17