TUGAS AKHIR

DESAIN PORTAL TRIBUN STADION SLEMAN MEMAKAI BAJA DENGAN ANALISIS STRUKTUR PORTAL DUA DIMENSI (2D) DAN TIGA DIMENSI (3D)

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JURUSAN TEKNIK SIPIL
FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
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Motto

".....Sesungguhnya Allah tidak akan mengubah
keadaan suatu kaum sebelum mereka mengubah
keadaan yang ada pada diri mereka sendiri....."
(Q.S Ar rad : 11)

"..... Ya Tuhanku, masukanlah aku secara masuk yang
benar dan keluarkanlah pula aku secara keluar yang
benar dan berikanlah aku pertolonganmu"
(Q.S Al Israa : 80)

Mencari kemenangan bukanlah perkara mudah, kejayaan bukanlah
Perkara kecil , sebab itu belajarlah dan beranikanlah diri tertawa pada
Waktu dihembus angin. Beranikanlah dan kumpulkanlah kekuatan
Pada waktu gagal untuk tegak dan melompat sekali lagi, dengan lompat
yang lebih keras, sehingga orang yang tadinya tertawa melihat kita jatuh
Bertukar tempat menjadi takjub.
(Hamka)

Halaman Persembahan

Alhamdulillahi Rabbil Alamin

Puji dan syukur kehadirat ALLAH SWT yang telah memberikan berkah serta hidayah dan seluruh nikmatnya. Serta memberikan kemudahan dan kelancaran kepada kami sehingga dapat menyelesaikan tugas akhir ini.

Kami persembahkan karya ini untuk :

Orang tua tercinta, yang telah banyak memberikan doa, dorongan dan motivasi yang tiada hentinya.untuk keberhasilan kami ini.

Terima kasih buat

Vira... terimakasih atas perhatian dan kasih sayang mu kepada ku. Baik-baik kalau di tinggal, tesis nya di kerjain ya.. semoga kita akan selalu bersama.

Novi...terimakasih atas dorongan, memotivasiku dan menjadi salah satu inspirasiku dan penanmbah semangat bagiku.. semoga kita selalu bersama sampai kesurga.

Ku hanturkan terimakasih kepada...

Seluruh teman-teman kantin amanah: oxem lagi rindu ya cuyy... sabar yaa, dewa lama gak ke kafe stell (tempat mencari inspirasi), sarel he..he..lucu luar dalam kau lae (lahir batin gitu deh), roni gimana pun pasti milan ya lae (milan pasti juara champion), moce udah selesai belum main game nya, jimbonk lantai lima belum di lompat cuy (kapan ni renang lagi), Adi jawa (sesek manuk ku gatele), adi dompu (kau pantas lae jadi orang batak), wawan dompu (bang wan ,kapan2 main futsal lagi kita ya.. rebut juara 1 lagi kita), gandi (komandan ada koleksi bokep baru gak), iwan (pak iwan gimana ni.. biar jadi bos

kaya pak iwan), oni (sayur main batu yuk..), topik (pak de gimana udah kaya belum, yang bagus lempar dadu nya). Mas bemi (fitnes nya masih lanjutkan terus kan biar semangat kerja nya), mas supri (piya masih sering ngajak ngobrol2 ya mas, kalau mau bobo. senang banget ya mas), mbak galuh (mbak galuh ku mirip huges lho..), mbak dewi (ijal doa kan usaha nya lancar ya.. mbak), mami ubay (makasih bu atas nasehat dan doa nya, "mami bon ijal udah lunas kan mi!!")

Teman-teman kos jaya kusuma: anggi (Anggita..perut gendut, batak kali muka kau), bagus (susuah ya gus maen game dota nya), andre (basket mania) vijay (tetangga ku idolaku) boy (kemiri nya di pake terus boy, biar lekas tumbuh jemput nya ee..ee scri rambut nya), Furqan (bontang kalau main bola hati2 dengat kontak body nya, ngeri... gede bangat), rekta (horas lae..).

Teman-teman sadep: rizoman (takur makin maniz aja senyum nya), deri (ajo..wanggi nya itu lho harum banget), bery (bob,di manakah kau berada!!!) amsal (teman, perjalanan yang panjang), ifan (ipunk, kecil2 lantam.. semangat nya okeh).

Pak susantoro, pak heri terima kasih atas bantuan nya dalam urusan TA, sidang dan pendadaran (insyaALLAH undangan makan ikan bakar nya jadi pak, nanti di konfirmasikan lagi ke bapak, ok..)

Maaf, kalau ada kata-kata tulisan kami yang salah, karena dengan kata-kata ini kami dapat menggigat kalian semua, ini koleksi terbaru yang kami dapatkan. terimakasih banyak segala pengorbanan dan dukungan kalian semua, karena tanpa kalian kami tidak dapat menyelesaikan kewajiban (kuliah) kami ini.

Semua pihak yang tidak dapat kami sebutkan satu persatu terimakasih atas bantuan nya selama ini.

Semoga kita semua selalu bersama

AAM HERMAWAN

SYAFRIZAL PUTRA

5. Orang Tua dan Keluarga atas do'a dan cintanya yang telah memberikan dorongan untuk menyelesaikan tugas akhir ini.
6. Perumahan Persero (PP) kontraktor atas kerjasama dan bantuan data-data penting yang mendukung terselesaikannya tugas akhir ini.
7. Teman-teman Kos POHI dan komunitas kantin Amanah atas dukungan dan segala bentuk bantuannya.

Kami menyadari bahwa penyusunan laporan ini masih ada kekurangan, karena keterbatasan kemampuan kami. Untuk itu kami selalu terbuka terhadap segala saran dan kritik yang membangun demi kesempurnaan laporan ini.

Semoga apa yang tersaji dalam laporan ini dapat memberikan suatu wacana baru bagi semua pihak dalam dunia keteknik sipilan.

Yogyakarta, April 2007

Penyusun

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DAFTAR LAMPIRAN

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A	Adalah luas penampang, mm^2
Ab	Adalah Luas Penampang Bruto, mm^2
Ae	Adalah luas penampang efektif, mm^2
Af	Adalah luas efektif penampang sayap, mm^2
Aw	Adalah luas pelat badan, mm^2
bf	Adalah lebar pelat sayap, mm
Cb	Adalah Koefisien pengali momen tekuk torsi lateral
C	Koefisien gempa dasar
D	Adalah beban mati yang diakibatkan oleh berat konstruksi permanen, termasuk dinding, lantai, atap, plafon, partisi tetap, tangga, dan peralatan layan tetap.
d	Adalah tinggi penampang, mm
E	Adalah beban gempa
E	Adalah Modulus elastisitas baja, Mpa
Fi	adalah gaya geser dasar akibat gempa lantai ke-i
Fcr	Adalah tegangan kritis, KN
fy	Adalah tegangan leleh material, Mpa
fr	Adalah tegangan sisa, Mpa
fu	Adalah tegangan tarik putus, Mpa
G	Adalah modulus geser baja, Mpa
G	Adalah perbandingan total kekakuan kolom dalam suatu join terhadap kekakuan balok dalam suatu join yang sama.
Hi	Adalah tinggi latai ke-i
H	Adalah tinggi keseluruhan bangunan, m
hn	Adalah tinggi bersih kolom, m
h	Adalah tinggi kolom dari as ke as, m
I	Adalah faktor keutamaan struktur
I	Adalah Momen Inersia, N-mm

Iw	Adalah Konstanta puntir lengkung
J	Adalah konstanta puntir torsi
K	Adalah faktor panjang tekuk
kn	Adalah tebal pelat sayap ditambah jari-jari peralihan, mm
L	Adalah beban hidup yang ditimbulkan oleh penggunaan gedung, termasuk kejut, tetapi tidak termasuk beban lingkungan seperti angin, hujan, dan lain-lain.
L	Adalah lebar total bangunan, m
Lb	Adalah Panjang bentang antara dua pengekang lateral yang berdekatan, mm
Lp	Adalah panjang bentang maksimum untuk balok yang mampu menerima momen plastis, mm
Lr	Adalah panjang bentang minimum untuk balok yang kekuatannya mulai ditentukan oleh momen kritis tekuk torsi lateral, mm
Mu	Adalah momen lentur perlu, N-mm
Mcr	Adalah momen kritis terhadap tekuk torsi lateral, N-mm
Mp	Adalah momen lentur yang menyebabkan seluruh penampang mengalami tegangan leleh, N-mm
Mr	Adalah momen batas tekuk, N-mm
Mn	Adalah Kuat lentur nomonal balok, N-mm
M_{max}	Adalah momen maksimum pada bentang yang ditinjau, N-mm
MA	Adalah momen pada seperempat bentang, N-mm
MB	Adalah momen pada setengah bentang, N-mm
MC	Adalah momen pada tigaperempat bentang, N-mm
Nu	Adalah gaya tarik aksial terfaktor, KN
Nn	Adalah kuat tarik nominal balok, KN
Ru	Adalah beban terfaktor atau kuat perlu
Ry	Adalah faktor modifikasi tegangan leleh, N
ry	Adalah jari-jari girasi terhadap sumbu lemah, mm
ϕRn	Adalah Kuat Rencana
ϕRn	Adalah Kuat tumpu satu baut, KN

S	Adalah modulus penampang, mm^3
tf	Adalah tebal pelat syap, mm
tw	Adalah tebal pelat badan, mm
Tn	Adalah gaya tarik/tekan nominal, KN
Tu	Adalah gaya tarik/tekan terfaktor, KN
U	Adalah koefisien reduksi = 1 untuk elemen penghubung
Vb	Adalah gaya geser dasar total akibat gempa, N
Vu	Adalah gaya geser perlu, N
Vn	Adalah kuat geser nominal, N
Wi	Adalah berat lantai ke-i
X_1	Adalah koefisien untuk perhitungan momen tekuk torsi lateral, Mpa
X_2	Adalah koefien untuk perhitungan momen tekuk torsi lateral, $(1/Mpa)^2$
Z	Adalah modulus penampng plastis, mm^3
ϕ	Adalah faktor reduksi
ϕb	Adalah faktor reduksi kuat lentur
α	Adalah faktor distribusi momen kolom portal yang ditinjau sesuai kekakuan relatif kolom atas dan kolom bawah

TUGAS AKHIR

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Disusun oleh:
AAM HERMAWAN
00.511.228

SYAFRIZAL PUTRA
00.511.320

Disetujui:

Pembimbing I

(Ir.H. Suharyatmo, MT)
Tanggal: 1/5/07

Pembimbing II

(Ir. Fatkhurrohman N, MT)
Tanggal:

BAB I

PENDAHULUAN

1.1 Latar Belakang

Struktur stadion Sleman yang sekarang ada, dibuat dari beton bertulang dengan pertimbangan material beton (pasir dan kerikil) banyak terdapat didaerah istimewa Jogjakarta. Pelaksanaan pekerjaan beton bertulang membutuhkan waktu relatif lama karena harus menunggu proses pengerasan. Apabila waktu pelaksanaan mendesak maka sebagai alternatif struktur dapat dirancang dengan baja.

Baja digunakan sebagai alternatif dalam perencanaan stadion Sleman dengan pertimbangan bahwa baja mempunyai kekuatan yang relatif tinggi sehingga penampang struktur baja relatif kecil dan berat sendiri bangunannya dapat lebih ringan dibanding struktur beton, selain itu waktu pelaksanaan struktur baja relatif singkat.

Struktur stadion Sleman dapat diasumsikan sebagai struktur rangka bidang atau dua dimensi (2D) dan struktur rangka ruang atau tiga dimensi (3D). Perbedaan asumsi mengakibatkan perbedaan hasil analisis (momen, gaya aksial dan gaya geser) yang bekerja pada setiap komponen struktur, sehingga mengakibatkan perbedaan ukuran penampang. Guna mengetahui perbedaan hasil analisis dan desain diatas perlu dilakukan kajian secara numeris.

1.2 Rumusan Masalah

Permasalahan yang dapat dirumuskan dalam penulisan tugas akhir ini adalah seberapa besar perbedaan berat struktur bangunan antara struktur yang didesain dengan struktur rangka bidang atau dua dimensi (2D) dan struktur yang didesain dengan struktur rangka ruang atau tiga dimensi (3D).

1.3 Tujuan

Tujuan dari penulisan tugas akhir ini adalah sebagai berikut :

1. Mendapatkan hasil analisis (momen, gaya aksial, dan gaya geser) dan dimensi penampang setiap komponen struktur (balok dan kolom) dengan tinjauan struktur rangka bidang atau dua dimensi (2D) dan struktur rangka ruang atau tiga dimensi (3D).
2. Membandingkan berat struktur bangunan antara struktur yang didesain dengan struktur rangka bidang atau dua dimensi (2D) dan struktur struktur rangka ruang atau tiga dimensi (3D).

1.4 Manfaat

Manfaat dari penulisan tugas akhir ini adalah sebagai berikut :

1. Memberikan informasi kepada semua pihak yang berkepentingan tentang alternatif lain dalam mendesain struktur portal tribun stadion yang aman dan efisien.
2. Menambah pengetahuan yang lebih mendalam di bidang struktur terutama dalam perencanaan konstruksi baja stadion.

1.5 Batasan Perencanaan

Batasan perencanaan dalam penyusunan tugas akhir ini adalah sebagai berikut :

1. Obyek perencanaan struktur adalah tribun stadion Sleman Jogjakarta sayap utara (tanpa atap).
2. Perencanaan komponen struktur menggunakan metode Load Resistance Factor Design (LRFD), sesuai yang dikemukakan American institute of steel construction (AISC).
3. Komponen portal (Balok dan kolom) menggunakan baja A36, tegangan leleh (Fy) = 240Mpa dan tegangan ultimit (Fu) = 400 Mpa
4. Sambungan balok dengan kolom menggunakan las dan baut.
5. Pelat lantai tidak komposit dengan balok.
6. Hubungan struktur dengan tanah diasumsikan jepit.
7. Pembebanan struktur menggunakan Pedoman Perencanaan Pembebanan Untuk Rumah dan Gedung 1987.
8. Beban gempa menggunakan beban horizontal dengan metode statik akivalen yang mengacu pada Peraturan Perencanaan Tahan Gempa Indonesia untuk Gedung 1987.

BAB II

TINJAUAN PUSTAKA

2.1 Baja Struktur

Baja bangunan (*steel structural*) termasuk material daktail (*ductile*), artinya mampu mengalami deformasi inelastis besar sebelum runtuh. Sifat baja dapat dikenali dari diagram tegangan-regangan (*stress-strain diagram*) hasil uji uniaksial. (Fatkhurrohman N, 2003)

2.2 Struktur Rangka

Struktur rangka (*Framed structure*) adalah struktur yang elemen-elemennya terdiri dari batang-batang tarik, balok dan batang-batang yang mendapatkan beban lentur kombinasi dan beban aksial, yang terhubung secara kaku (*rigid*) atau hanya terhubung sederhana dengan penopang diagonal untuk menjaga stabilitas. (Salmon dan Johnson, 1992).

2.3 Struktur portal bidang dan portal ruang

Struktur portal bidang adalah struktur yang memiliki kelakuan yang jauh lebih besar dalam salah satu arah di bandingkan arah lainnya, dan struktur portal ruang adalah struktur yang kerangkanya memiliki kelakuan batang dalam salah satu bidang yang berpengaruh terhadap kelakuan dalam bidang yang lain. (Salmon dan Johnson, 1994)

2.4 Beban-Beban Pada Struktur

Beban-beban yang terdapat pada struktur adalah beban mati (*Dead Load*), beban hidup (*Live* Load) dan beban gempa (*Quake Load*).

Beban mati merupakan beban gaya berat pada suatu posisi tertentu atau bekerja terus menerus menuju arah bumi pada saat struktur telah berfungsi.

Beban hidup adalah beban gravitasi pada struktur yang ditimbulkan oleh penggunaan gedung, yang besar dan lokasinya bervariasi.

Beban gempa adalah beban yang diakibatkan pergerakan tanah dalam arah mendatar dan vertikal, dengan besar gerak vertikal yang umumnya jauh lebih lebih kecil. (Salmon dan Johnson, 1994)

2.5 Perencanaan Struktur Baja

2.5.1 Metode Load Resistance Factor Design (LRFD)

Load Resistance Factor Design (LRFD) adalah metode yang digunakan dalam merencanakan struktur berdasarkan pada keadaan batas, dimana suatu struktur akan berhenti memenuhi fungsi yang diharapkan darinya (Salmon dan Johnson, 1996).

2.5.2 Metode Statik Ekivalen

Beban statik ekivalen adalah representasi dari beban gempa yang telah disederhanakan, yaitu penyederhanaan gaya inersia yang bekerja pada suatu massa yang disederhanakan menjadi suatu beban statik. Analisis beban static ekivalen adalah suatu cara analisa statik struktur, pengaruh gempa pada struktur dianggap sebagai beban-beban statik

horizontal untuk menirukan pengaruh gempa yang sesungguhnya akibat gerakan tanah.

(Tata Cara Perencanaan Pembebanan Untuk Rumah dan Gedung 1989).

2.5.3 Rangka Kaku

Rangka Kaku adalah suatu rangka struktur yang gaya-gaya lateralnya dipikul oleh system struktur dengan sambungan-sambungannya direncanakan secara kaku dan komponen strukturnya direncanakan untuk memikul efek gaya aksial, gaya geser, gaya lentur dan torsi. (Tata Cara Perencanaan Struktur Baja Untuk Bangunan Gedung 2000)

2.5.4 Baut Kekuatan Tinggi (A325)

Baut A325 biasa disebut baut struktural berkekuatan tinggi. Material ini mengandung karbon maksimum sebesar 0,3 % dan mendapat perlakuan panas (pendinginan) dan kemudian dipanaskan kembali (penyepuhan) sampai temperature paling tidak sebesar 800^0 F. (Salmon dan Johnson, 1992).

2.5.5 Sambungan Las

Sering kali mudah membuat sambungan las dari pada membuat sambungan baut. Akan tetapi, didalam sambungan kerangka sambungan tersebut biasanya akan memerlukan baut-baut penegakan baik didalam plat penegakan sementara atau permanent maupun didalam profil siku untuk memegang bagian-bagian konstruksi selama penjajaran dan selama pemasangan perangkat acuan ulang untuk pengelasan tersebut. (Joseph E.Bowles, 1985).

2.5.6 Sambungan kaku

Sambungan kaku memiliki kontinuitas penuh sehingga sudut pertemuan antara batang-batang tidak berubah, yakni pengekangan (restrain) rotasi sekitar 90 % atau lebih dari yang diperlukan untuk mencegah perubahan sudut. (Salmon dan Johnson, 1992).

BAB III

LANDASAN TEORI

3.1 Pembebanan

Beban-beban yang bekerja pada struktur stadion Sleman adalah beban mati (*Dead Load*), beban hidup (*Live* Load) dan beban gempa (*Quake Load*).

3.1.1 Beban Mati (*Dead Load*)

Beban mati yang diakibatkan oleh berat konstruksi permanen, termasuk dinding, lantai, atap, plafon, partisi tetap, tangga, dan peralatan layan tetap.

3.1.2 Beban Hidup

Beban hidup yang ditimbulkan oleh penggunaan gedung, termasuk kejut, tetapi tidak termasuk beban lingkungan seperti angin, hujan dan lain-lain.

3.1.3 Beban Gempa

Faktor-faktor penentu beban gempa rencana dengan metode statik ekivalen

Beban statik ekivalen adalah representasi dari beban gempa yang telah disederhanakan, yaitu penyederhanaan gaya inersia yang bekerja pada suatu massa yang disederhanakan menjadi suatu beban statik. Gaya inersia adalah suatu gaya yang bekerja pada suatu massa dengan arah yang berlawanan dengan arah gerakan massa yang bersangkutan

oleh adanya beban dinamis gempa. Jadi beban statik ekivalen merupakan beban yang ekivalen dengan beban gempa yang bekerja pada bangunan dalam batas tidak terjadi *overstress*.

Walaupun sifatnya merupakan penyederhanaan, tetapi bukan berarti bahwa metode statik ekivalen tidak berdasar, karena beban tersebut sudah berdasar pada prinsip-prinsip dinamis, seperti dinamik karakteristik bangunan, jenis struktur (K) dan peruntukan bangunan (I). Dinamik karakteristik bangunan meliputi massa (M), kekakuan (K) dan redaman (Cc). Dalam konsep statik ekivalen hanya massa yang diperhitungkan dan inilah yang menjadi perbedaan utama antara konsep statis dan konsep dinamis.

Beban geser dasar akibat gempa

Peraturan-peraturan perencanaan bangunan tahan gempa yang berlaku menetapkan suatu taraf beban gempa rencana yang menjamin suatu struktur tidak akan rusak pada saat dilanda gempa kecil atau sedang dan pada saat dilanda gempa kuat yang jarang terjadi. Struktur tersebut harus mampu berperilaku daktail dengan memancarkan energi gempa dan sekaligus membatasi beban gempa yang masuk kedalam struktur.

Setiap struktur gedung harus direncanakan dan dilaksanakan untuk menahan suatu beban geser dasar akibat gempa (V). Besarnya beban geser rencana (V) menurut Pedoman Perencanaan Ketahanan

Gempa untuk Rumah dan Gedung 1987 dapat dinyatakan sebagai berikut :

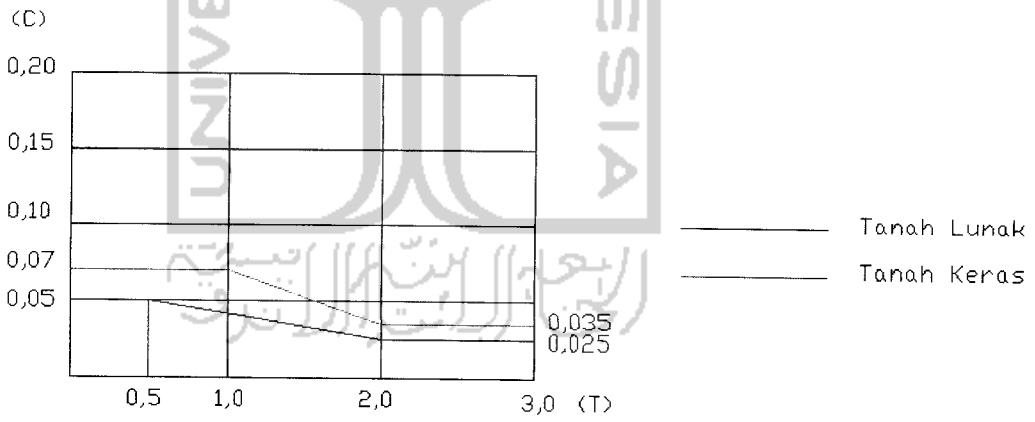
$$V = C \cdot I \cdot K \cdot Wt \quad \text{..... (3.1)}$$

dengan : V = Gaya geser dasar horizontal total akibat gempa

C = Koefisien gempa dasar, I = Faktor keutamaan struktur

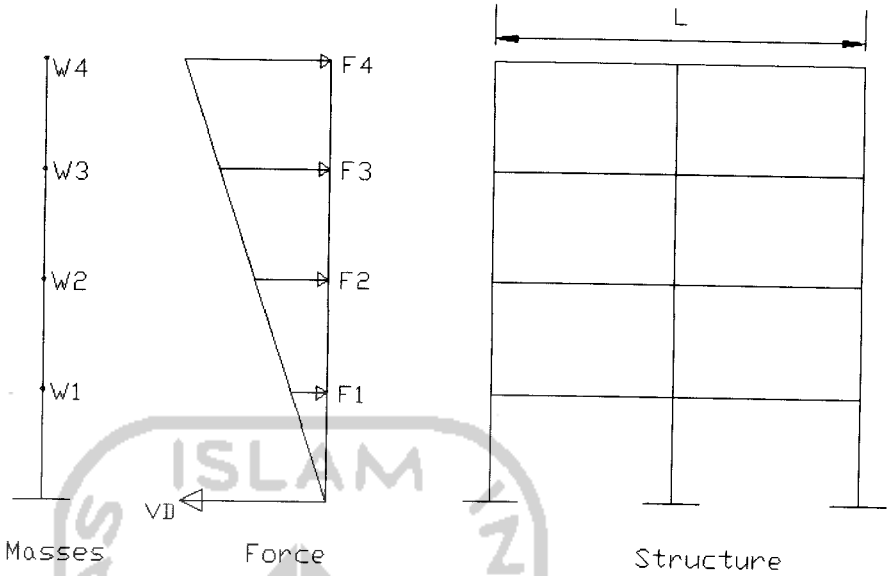
K = Faktor jenis struktur , Wt = Berat total bangunan

Nilai koefisien gempa dasar (C) dipengaruhi oleh periode getar struktur (T). Cara mencari koefisien gempa dasar adalah dengan menggunakan grafik respon spektrum seperti ditunjukan pada gambar 3.1 dibawah ini.



Gambar 3.1 koefisien gempa dasar (C)

Untuk struktur baja periode getar struktur dihitung dengan rumus $T = 0{,}08.H^{3/4}$ dengan H adalah tinggi total bangunan.



Gambar 3.2 Massa, gaya dan struktur

Distribusi gaya geser horizontal akibat gempa ke sepanjang tinggi gedung menurut Pedoman Perencanaan Ketahanan Gempa untuk Rumah dan Gedung 1987 dihitung dengan persamaan berikut ini :

$$\text{Untuk } \frac{H}{L} \geq 3 \qquad Fi = \frac{wi \cdot hi}{\sum wi \cdot hi} \cdot 0{,}9.Vb \quad \text{..... (3.2)}$$

Gaya geser sebesar 0,1.V ditambahkan pada Fi lantai paling atas

$$\text{Untuk } \frac{H}{L} < 3 \qquad Fi = \frac{wi \cdot hi}{\sum wi \cdot hi} \cdot Vb \quad \text{..... (3.3)}$$

dengan : Fi = Gaya geser dasar akibat gempa lantai ke – i,

Hi = Tinggi lantai ke-i terhadap lantai dasar,

Wi = berat lantai ke – i, Vb = Gaya geser dasar total akibat gempa, L = Lebar total bangunan , H = Tinggi keseluruhan bangunan

Pembebanan gempa horizontal terhadap portal 2D dan 3D

Gempa horizontal yang bekerja pada portal 2D bekerja hanya pada satu arah saja sedangkan pada portal 3D beban gempa horizontal bekerja pada 2 arah yang saling tegak lurus, artinya gempa arah x dikerjakan pada unsur dalam arah itu dikombinasikan dengan pengaruh gempa arah y dikerjakan tegak lurus dengan arah x (PPKGURDG, 1987). Menurut PPKGURDG, 1987 beban gempa yang bekerja dalam masing-masing arah utama dengan dikombinasi dengan 0,3 beban gempa yang bekerja pada arah tegak lurus pada arah utama yang ditinjau. Kombinasi yang menghasilkan pengerahan kekuatan unsur yang maksimum adalah yang ditinjau atau dapat ditulis sebagai berikut :

- Gravitasi ± 100 % gempa arah x ± 30 % gempa arah y
- Gravitasi ± 30 % gempa arah x ± 100 % gempa arah y

Pada penulisan tugas akhir ini pembebanan pada struktur 3D dicoba dengan pembebanan yang sama besar dan arahnya dengan pembebanan struktur 2D.

3.2 Sistem Koordinat

Setiap model struktur menggunakan koordinat yang berbeda untuk menentukan joint dan arah beban, *displacements*, gaya dalam dan tegangan. Pengetahuan tentang sistem koordinat ini sangat penting dalam pemodelan struktur, baik pemodelan struktur 2 (dua) dimensi maupun pemodelan struktur 3 (tiga) dimensi, karena dalam menentukan model dan menginterprestasikan

hasil-hasil keluaran dari program, perencana harus mengetahui tentang sistem koordinat ini.

Semua sistem koordinat pada model ditentukan dengan mematuhi satu sistem koordinat global **X-Y-Z.** Setiap bagian dari model misalnya joint, elemen atau konstrain. Masing-masing mempunyai sistem koordinat lokal **1-2-3**. semua sistem koordinat ditunjukan dengan sumbu tiga dimensi, menggunakan aturan tangan kanan dan menggunakan sistem *cartesian* (segi empat).

SAP selalu mengasumsikan sumbu Z ialah sumbu vertikal, dengan Z+ mengarah keatas. Arah keatas digunakan sebagai bantuan untuk menentukan sistem koordinat lokal itu sendiri tidak mempunyai sumbu arah vertikal.

3.2.1 Sistem koordinat Global

Sistem koordinat global merupakan koordinat dalam tiga dimensi, mengikuti aturan tangan kanan (*right handed*), dan merupakan koordinat *cartesian* (segi-empat). Tiga sumbu dengan notasi **X, Y** dan **Z** ialah sumbu yang saling tegak lurus sesuai dengan aturan tangan kanan. Letak dan orientasi sumbu global tersebut dapat berubah-ubah, misalkan sesuai dengan aturan tangan kanan.

Lokasi pada sistem koordinat global dapat ditentukan menggunakan variabel **X, Y** dan **Z.** Vektor dalam sistem koordinat global atau dengan memberikan arah koordinat. Arah koordinat ditunjukan dengan nilai **X±**, **Y±** dan **Z±**. Sebagai contoh **X+**

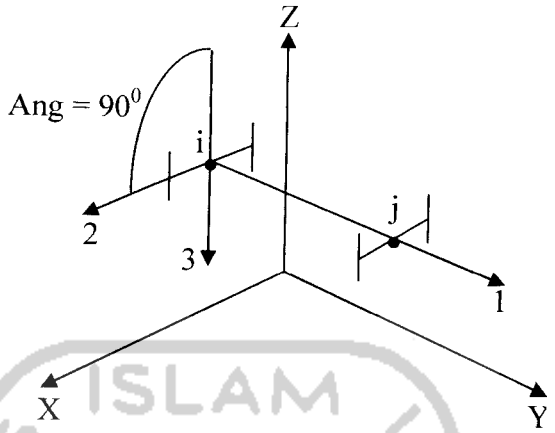
menunjukan vektor sejajar dan searah dengan dengan sumbu X positif. Semua sistem koordinat yang lain pada model ditentukan berdasarkan sistem koordinat global ini.

SAP selalu mengasumsikan sumbu Z arahnya vertikal, dengan Z+ arah keatas. Sistem koordinat lokal untuk joint, elemen, dan gaya percepatan tanah ditentukan berdasarkan arah keatas tersebut. Beban berat sendiri arahnya selalu kebawah, pada arah Z−.

Bidang X−Y merupakan bidang horizontal.dengan sumbu X+ merupakan sumbu utama. Sudut pada bidang horizontal diukur dari sumbu positif X, dengan sudut positif ialah berlawanan arah dengan arah putaran jarum jam.

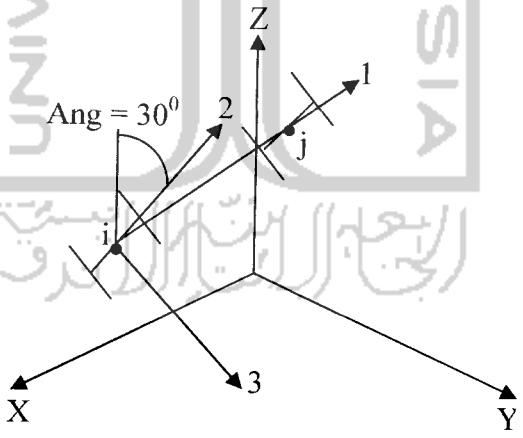
3.2.2 Sistem Koordinat Lokal

Pada setiap elemen frame mempunyai sistem koordinat lokal yang digunakan untuk menentukan potongan property, beban dan gaya keluaran. Sumbu – sumbu koordinat lokal ini dinyatakan dengan simbol 1, 2 dan 3. Sumbu 1 arahnya ialah searah sumbu elemen, dua sumbu yang lain tegak lurus dengan elemen tersebut dan arahnya dapat ditentukan sendiri oleh pengguna. Dalam menentukan sudut putar *ang* dapat dilihat pada gambar - gambar dibawah, sebagai berikut :



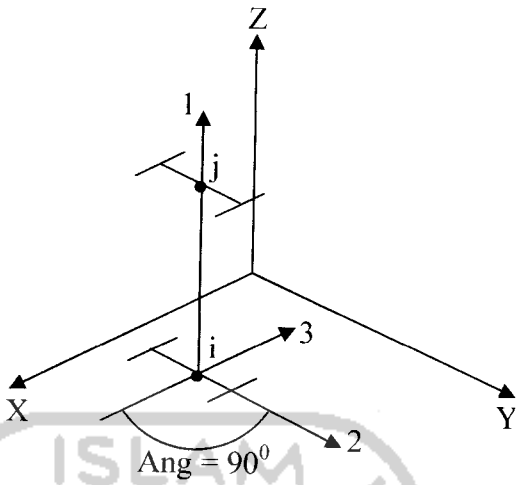
Sumbu lokal 1 sejajar sumbu Y-
Sumbulokal 2 diputar 90^0 dari bidang Z-1

Gambar 3.1. Menentukan sudut putar *ang*



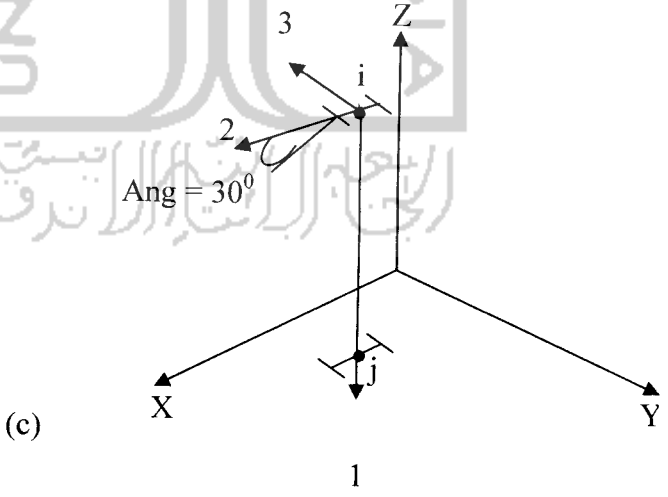
Sumbu lokal 1 sejajar dengan sumbu X, Y dan Z-
Sumbu lokal 2 diputar 30^0 dari bidang Z-1

Gambar 3.2. Menentukan sudut putar *ang*



Sumbu lokal 1 sejajar sumbu Z-
Sumbu lokal 2 diputar 90^0 dari bidang X-1

Gambar 3.3. Menentukan sudut putar *ang*



(c)

1

Sumbu lokal 1 sejajar sumbu Y-
Sumbulokal 2 diputar 90^0 dari bidang ∠-1

Gambar 3.4. Menentukan sudut putar *ang*

Koordinat lokal 1-2-3 dan koordinat global **X-Y-Z** ini menggunakan aturan tangan kanan. Namun untuk koordinat lokal, arah sumbu lokalnya bebas ditentukan arahnya selama hal tersebut memudahkan dalam memasukan data dan menginterpretasikan hasilnya.

Untuk menentukan sistem koordinat lokal elemen yang umum, dapat menggunakan **orieantasi default** dan **sudut koordinat elemen frame**, yang dapat dijelaskan sebagai berikut.

1. Sumbu lokal 1 arahnya selalu memanjang arah sumbu elemen, arah positif ialah dari ujung **i** keujung **j**.
2. Orientasi sumbu default sumbu lokal 2 dan 3 ditentukan oleh hubungan diantara sumbu lokal 1 dan sumbu global Z sebagai berikut :
   - Jika sumbu lokal 1 arahnya horisontal, maka bidang 1 – 2 dibuat sejajar dengan sumbu **Z.**
   - Jika sumbu lokal 1 arahnya keatas (Z+), maka arah sumbu lokal 2 sejajar dengan sembu lokal **X**+.
   - Sumbu lokal 3 arahnya selalu horisontal searah bidang X-Y.

   Oleh program, elemen dianggap vertikal jika sinus sudut antara sumbu 1 dan sumbu **Z** kurang dari 10^{-3}.
3. Sudut koordinat *ang* digunakan untuk menentukan orientasi elemen yang berbeda dengan orientasi default.sudut ini memutar sumbu lokal 2 dan 3 terhadap sumbu 1 dari posisi orientasi default.

Rotasi positif ialah arah berlawanan jarum jam apabila sumbu 1 menuju kearah pengamat.

Untuk elemen vertikal sudut *ang* ialah sudut antara sumbu lokal 2 dan sumbu X+ horisontal. Dengan kata lain *ang* ialah sudut antara sumbu lokal 2 dan bidang vertikal yang dilalui sumbu lokal 1.

3.3 Perencanaan Struktur Baja Dengan Metode LRFD

Perencanaan struktur baja dengan metode LRFD adalah perencanaan dengan mengkombinasikan tegangan ultimit dan *serviceability* dengan probabilitas berdasarkan pendekatan keamanan.

Perencanaan dengan metode LRFD ini sebenarnya sama dengan perencanaan metode plastis, yaitu dengan mempertimbangkan tegangan ultimit. Dalam metode ini, beban-beban yang terjadi dikalikan dengan suatu faktor (*overcapacity factor*) yang nilainya lebih dari 1 (*undercapacity factor*). Filosofi perencanaan dengan metode LRFD adalah sebagai berikut.

Gaya yang dapat digunakan ≥ ΣGaya akibat beban terfaktor

3.3.1 Kombinasi Pembebanan Dalam LRFD

Menurut Tata Cara Perencanaan Struktur Baja Untuk Bangunan Gedung 2000, Kombinasi pembebanan dalam perencanaan struktur baja dengan metode LRFD adalah sebagai berikut.

1,4 D ..... (3.4)

1,2 D + 1,6 L + 0,5 (La atau H) ..... (3.5)

1,2 D + 1,6 (La atau H)+ (γ_L L atau 0,8W) ..... (3.6)

- *1,2 D + 1,3 W + γ_L L + 0,5 (La atau H)* ..... (3.7)

1,2 D + 1,0 E + γ_L L ..... (3.8)

0,9 D – (1,3W atau 1,0E) ..... (3.9)

dengan : D = beban mati, L = beban hidup

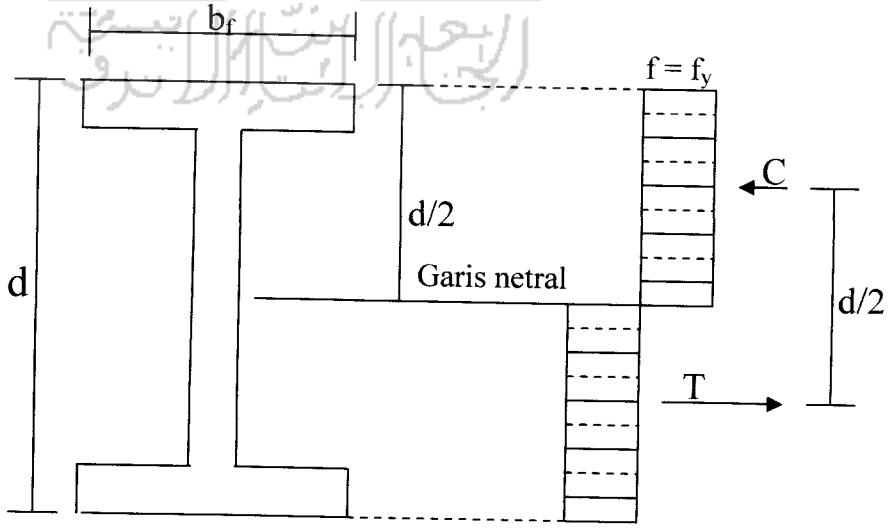
La = beban hidup di atap selama perawatan atau selama penggunaan, H = beban hujan, W = beban angin, E = beban gempa, γ_L = 0,5 bila L < 5kN m^2, dan γ_L = 1.0 bila L ≥ 5kN/m^2

3.3.2 Perencanaan Lentur Balok

Suatu balok yang menahan momen lentur harus memenuhi persamaan

$$M_u \leq \phi M_n \quad \text{..... (3.10)}$$

dengan : M_u = momen lentur terfaktor , ϕ = faktor reduksi yang nilainya 0,9, M_n = kuat lentur normal penampang



Gambar 3.5. Distribusi tegangan

Menurut AISCM-LRFD kuat lentur nominal penampang dihitung dengan rumus – rumus sebagai berikut:

a. Untuk penampang kompak

Kriteria penampang kompak adalah penampang yang memenuhi :

1. Rasio lebar sayap terhadap tebal sayap

$$\frac{b}{2.t_f} \leq \frac{171}{\sqrt{F_y(Mpa)}} \quad \text{..... (3.11)}$$

2. Rasio tinggi badan terhadap tebal memenuhi

$$\frac{d}{t_w} \leq \frac{1680}{\sqrt{f_y(Mpa)}} \quad \text{..... (3.12)}$$

dengan : b = lebar sayap, t_f = tebal sayap, d = tinggi penampang

t_w = tebal badan, f_y = tegangan leleh (Mpa)

Kuat lentur penampang kompak dipengaruhi oleh panjang bentang antara dua dukungan lateral (L)

Kasus 1 ($L \leq L_p$)

Kuat komponen struktur yang memenuhi $L \leq L_p$ kuat nominal komponen struktur terhadap lentur adalah

$$M_n = M_P = Z \,.\, f_y \quad \text{..... (3.13)}$$

dengan : $L_P = 1{,}76 \,.\, r_y \,.\, \sqrt{\frac{E}{f_y}}$, (Mpa), Z = modolus penampang plastis

Kasus 2 ($L_p < L < L_r$)

Untuk komponen struktur yang memenuhi $L_p < L < L_r$. Kuat nominal komponen struktur terhadap momen lentur adalah

$$M_n = C_b\left\{M_r + (M_p - M_r)\left[\frac{L_r - L}{L_r - L_p}\right]\right\} \le M_p \quad \text{..... (3.14)}$$

dengan : $M_r = (f_y - f_r). S_x$

$$L_r = \frac{r_y . X_1}{(f_y - f_r)}\sqrt{1 + \sqrt{1 + X_2 (f_y - f_r)^2}} \quad \text{..... (3.15)}$$

$$X_1 = \frac{\pi}{S}\sqrt{\frac{EGJA}{2}}$$, J = konstanta puntir torsi

$$X_2 = \frac{I_w}{I_y}\left(\frac{S}{GJ}\right)^2 .4$$, I_w = konstanta puntir lengkung

Nilai X_1 dan X_2 bisa dilihat ditabel AISC-LRFD.

C_b = faktor pengali momen, yang besarnya dapat dihitung dengan

$$C_b = 1{,}75 + 1{,}05.\frac{M_1}{M_2} + 0{,}3.\left(\frac{M_1}{M_2}\right)^2 \le 2{,}3 \quad \text{..... (3.16)}$$

dengan : $\left(\frac{M_1}{M_2}\right)$ adalah rasio momen-momen ujung, bertanda positif jika M_1 dan M_2 membentuk lengkung ganda *(double curvature)*, bertanda negatif bila membentuk lengkung tunggal *(single curvature)*

C_b sama dengan 1,0 untuk batang yang tidak ada tambatan lateralnya.

Kasus 3 ($L > L_r$)

Untuk komponen stuktur yang memenuhi L > L_r . kuat nominal komponen struktur terhadap lentur adalah

$$M_n = M_{cr} \leq M_p \quad \text{..... (3.17)}$$

dengan : $M_{cr} = \dfrac{c_b.S_x.X_1.\sqrt{2}}{(L/r_x)}\sqrt{1+\dfrac{X_1^{\,2}.X_2}{2.(L/r_y)^2}}$ ..... (3.18)

3.3.3 Perencanaan Kolom

Menurut AISCM LRFD komponen struktur yang mengalami momen lentur dan gaya aksial direncanakan menurut persamaan berikut ini.

- **Pada portal 3D**

Untuk $\dfrac{P_u}{\phi P_n} \geq 0{,}2$

$$\frac{P_u}{\phi P_n}+\frac{8}{9}\left(\frac{M_{ux}}{\phi_b.M_{nx}}+\frac{M_{uy}}{\phi_b.M_{ny}}\right)\leq 1{,}0 \quad \text{..... (3.19)}$$

Untuk $\dfrac{P_u}{\phi P_n} < 0{,}2$

$$\frac{P_u}{2.\phi P_n}+\left(\frac{M_{ux}}{\phi_b.M_{nx}}+\frac{M_{uy}}{\phi_b.M_{ny}}\right)\leq 1{,}0 \quad \text{..... (3.20)}$$

dengan : P_u = gaya aksial terfaktor, P_n = Kuat nominal penampang

ϕ = faktor reduksi kekuatan (untuk tekan nialainya 0,85)

M_u = momen lentur terfaktor terhadap sumbu-x dan sumbu-y

M_n = kuat nominal lentur penampang terhadap sb-x dan sb-y

- **Pada portal 2D**

Untuk $\frac{P_u}{\phi P_n} \geq 0{,}2$

$$\frac{P_u}{\phi P_n} + \frac{8}{9}\left(\frac{M_u}{\phi_b . M_n}\right) \leq 1{,}0 \quad \text{..... (3.21)}$$

Untuk $\frac{P_u}{\phi P_n} < 0{,}2$

$$\frac{P_u}{2.\phi P_n} + \left(\frac{M_u}{\phi_b . M_n}\right) \leq 1{,}0 \quad \text{..... (3.22)}$$

Perbandingan kekakuan pada rangka portal

$$G = \frac{\sum\left(I_C / L_C\right)}{\sum\left(I_g / L_g\right)} \quad \text{..... (3.23)}$$

dengan : G = Perbandingan total kekakuan kolom dalam suatu join terhadap kekakuan balok dalam suatu join yang sama,

I_c = Momen inersia kolom, L_c = Panjang kolom, I_g =Momen inersia balok, L_g = Panjang balok

Rasio kerampingan = $\frac{K_l}{r}$ ..... (3.24)

diambil yang terbesar antara : $\frac{K_l}{r_x}$ dan $\frac{K_l}{r_y}$

dengan K_l = Panjang efektif kolom

Kuat nominal penampang

$\phi P_n = \phi F_{cr} . A_g$ ..... (3.25)

dengan : F_{cr} = Tegangan kritis, A_g = Luas bruto

Dalam perencanaan baja tahan gempa maka harus direncanakan dengan konsep "*Strong column weak beam*". Untuk mendapatkan tujuan tersebut maka digunakan rumus berikut ini.

Gaya aksial kolom rencana (P_u) untuk kolom eksterior.

$$P_u = 1{,}2\ P_D + P_L + P_E \quad \text{..... (3.24)}$$

Gaya aksial kolom rencana (P_u) untuk kolom interior

$$P_u = 1{,}2.P_D + P_L \quad \text{..... (3.25)}$$

Momen rencana kolom (M_u) untuk kolom eksterior

$$M_u = M_{pb}.\left(\frac{L}{L_b}\right).\left(\frac{h_c}{2h}\right) \quad \text{..... (3.26)}$$

Momen rencana kolom (M_u) untuk kolom interior

$$M_u = 2.M_{pb}.\left(\frac{L}{L_b}\right).\left(\frac{h_c}{2.h}\right) \quad \text{..... (3.27)}$$

dengan : P_D = gaya aksial akibat beban mati, P_L = gaya aksial akibat beban hidup, P_E = gaya aksial akibat beban gempa, M_{pb} = momen plastik balok = $Z.f_y$, L_b = panjang tanpa penopang lateral, L = bentang balok dari as ke as, h = tinggi kolom dari as ke as

3.3.4 Perencanaan Sambungan Balok dengan Kolom

a. Sambungan menahan tarik/desak

Momen plastis yang terjadi pada balok akan didistribusikan menjadi tegangan/gaya tarik dan tekan pada sayap balok sebesar :

$$Tu = \frac{M_f}{0{,}95.d} \quad \text{..... (3.40)}$$

dengan : Tu = kuat tarik/tekan terfaktor (KN), M_f = momen plastis yang terjadi pada muka kolom (KN.m), d = tinggi keseluruhan profil (mm).

Pada umumnya elemen tarik dapat mengalami retak akibat pelelehan pada penampang bruto, maupun retakan pada penampang bersihnya. Sehingga tebal plat sambung (*flange plate*) didesain berdasarkan nilai terkecil dari dua kondisi :

1) Kondisi pelelehan tarik pada penampang bruto (Ag) :

$$Tu \leq \phi.Tn \quad \text{..... (3.41)}$$

$$\phi.Tn = \phi.Fy.\ Ag \quad \text{..... (3.42)}$$

dengan : Tu = gaya tarik/tekan terfaktor (KN), ϕ.Tn = gaya tarik/tekan nominal (KN), dengan ϕ adalah faktor reduksi tarik/tekan (0,9), Ag = luas penampang bruto *flange plate* (mm^2).

2) Kondisi fraktur/retakan pada penampang bersih (Ae) :

$$\phi.Tn = \phi.Fu.\ Ae \quad \text{..... (3.43)}$$

dengan : ϕ = faktor reduksi untuk retakan (0,75), Ae = luas penampang bersih profil (mm^2) Ae = U.An, U adalah koefisien reduksi sama dengan 1 untuk elemen penghubung, An = luas tampang *netto* (mm^2).

Perhitungan selanjutnya yaitu menentukan jumlah baut yang diperlukan untuk mentransfer gaya tarik dan tekan pada bagian atas dan bawah balok :

Menentukan kuat geser satu baut

$$\phi.Rn = \phi.\ (0{,}6.Fu^b).\ m.\ Ab \quad \text{..... (3.44)}$$

Kebutuhan baut minimal untuk menahan geser

$$n_{min} = \frac{Tu}{\phi.Rn} \quad \text{..... (3.45)}$$

dengan : ϕ.Rn = kuat geser baut (KN), Tu = gaya tarik/tekan terfaktor (KN), Fu^b = tegangan tarik material baut (KN), m = banyaknya bidang geser, Ab = luas penampang lintang bruto dari satu baut (mm^2).

Untuk menghindari kegagalan tumpu pada masing-masing elemen yang disambung, maka kuat tumpu elemen yang paling kritis (sayap balok/*flange plate*) harus lebih besar dari tegangan yang terjadi, yaitu sebesar :

$$\phi.Rn = \phi.\ 2{,}4.\ Fu.\ d_b.\ t \geq \phi.Rn \quad \text{..... (3.46)}$$

dengan : ϕ = 0,75, db = diameter baut (mm), t = tebal bagian yang paling kritis menahan beban (mm)

Perhitungan selanjutnya yaitu mengontrol blok geser pada sayap balok.

Tegangan tarik dan tekan (Tn) merupakan nilai terbesar dari :

1. Pelelehan geser – peretakan tarik

$$Tn = 0{,}6.\ Fy.\ A_{vg} + Fu.\ A_{nt} \quad \text{..... (3.47)}$$

2. Peretakan geser – pelelehan tarik

$$Tn = 0{,}6.\ Fu.\ A_{ns} + Fy.\ A_{tg} \quad \text{..... (3.48)}$$

dengan : A_{vg} = luas bruto yang mengalami pelelehan geser (mm^2), A_{tg} = luas bruto yang mengalami pelelehan tarik (mm^2), A_{ns} = luas netto yang mengalami retakan geser (mm^2), A_{nt} = luas netto yang mengalami retakan geser (mm^2).

Cek blok geser pada bagian yang paling kritis dalam menahan beban : $\phi.Tn \geq Tu \quad (\phi = 0{,}75)$ ..... (3.49)

b. Sambungan yang menahan geser

Transfer gaya geser dari balok ke kolom, merupakan nilai terkecil dari :

$$V_f = \frac{2.Mf}{Ln} + Vg \quad \text{..... (3.50)}$$

$$V_f = 1{,}05\left(V_D + V_L + \frac{4}{K}.V_E\right) \quad \text{..... (3.51)}$$

Jumlah baut n = $\frac{V_f}{\phi.Rn}$ ..... (3.52)

Menentukan tebal plat geser yang dibutuhkan untuk meletakan baut pada plat dengan cara coba-coba, dimana plat geser harus kuat terhadap geser leleh pada plat :

$\phi.Rn = \phi.\ (0{,}6.\ Fy).\ Ag \geq V_f$ ..... (3.53)

dengan : ϕ = 0,9, Fy = tegangan leleh profil baja (Mpa), Ag = luas tampang bruto pada plat geser (mm^2)

Geser fraktur pada plat :

$\phi.Rn = \phi.\ (0{,}6.\ Fu).\ An \geq V_f$ ..... (3.54)

dengan : ϕ = 0,75, Fu = tegangan tarik baja struktur (KN), An = luas tampang netto pada plat geser (mm^2)

Kemudian perhitungan selanjutnya yaitu mengontrol blok geser yang terjadi pada sayap balok, dapat digunakan rumus sesuai dengan persamaan 3.47 sampai dengan 3.49.

Menentukan panjang las fillet pada plat geser, pertama harus menentukan kekuatan las sambung antara plat geser ke sayap kolom ditentukan dengan resistensi geser melalui leher las sebesar

$\phi R_{nw} = \phi.\ (0{,}6.\ F_{Exx}).\ tc$ ..... (3.55)

Tapi tidak perlu lebih besar dari kekuatan fraktur geser dari logam dasar sebesar

$\phi R_{nw} = \phi.\ (0{,}6.\ Fu).\ t_{pl}$ ..... (3.56)

dengan : F_{Exx} = kekuatan tarik elektroda las (KN), tc = dimensi leher efektif, t_{pl} = tebal material dasar sepanjang las (mm)

Panjang las yang dibutuhkan

$$P_{las} = \frac{Vf}{\phi.R_{nw}} \quad \text{..... (3.57)}$$

dengan : Vf = gaya geser dari balok ke kolom (KN), ϕR_{nw} = kekuatan las terhadap geser/fraktur (KN.m)

3.3.5 Perencanaan Sambungan Kolom dengan Kolom

Sambungan kolom dilakukan karena adanya keterbatasan panjang profil yang tersedia dan perbedaan profil yang dipakai. Dalam perencanaannya sambungan dibagi menjadi dua, yaitu sambungan badan dan sambungan sayap.

Sambungan sayap merupakan sambungan yang yang berada pada sayap kolom. Sambungan ini dibagi menjadi dua, yaitu sambungan pelat sayap dalam san sambungan pelat sayap luar. Perencanaan awal yaitu menentukan besarnya gaya yang terjadi pada kedua sayap kolom akibat momen rencana kolom sebagai berikut :

$$Pu_f = \frac{Mu,k}{0{,}95.d} \quad \text{..... (3.58)}$$

dengan : Pu_f = gaya pada tiap sayap kolom (KN), Mu,k adalah momen rencana kolom didapat dari analisis struktur (KN.m), d = lebar/tinggi profil kolom keseluruhan (mm).

a. Sambungan pada sayap

Menentukan kuat geser satu baut sesuai dengan persamaan 3.44, selanjutnya menghitung jumlah baut minimum yang diperlukan pada sambungan diperoleh melalui persamaan 3.58 sebagai berikut :

$$\text{n perlu} = \frac{P_{uf}}{2.\phi.Rn} \quad \text{..... (3.59)}$$

Kontrol kekuatan sayap kolom

Untuk $\phi.Rn > Pu_f$ ..... (3.60)

Fu. Ant > 0,60. fu. Ans, maka

$\phi.Rn = \phi(fu.Ant + 0{,}6.fy.Ags)$ ..... (3.61)

Desain plat sambung pada sayap

Setelah jumlah baut diketahui, maka langkah selanjutnya adalah mendesain pelat sambung. Lebar pelat sambung ditentukan dengan cara coba-coba, setelah itu menentukan luas penampang *bruto flange plate* (mm^2).

$$Ag = \frac{Pu_f}{0{,}9.Fy(Mpa)} \quad \text{..... (3.62)}$$

Kemudian mengontrol kekuatan pelat sambung, sesuai dengan persamaan 3.63 dibawah ini.

$$\phi.Rn = \phi.fu.Ant > \frac{Pu_f}{2} \quad \text{..... (3.63)}$$

dengan : ϕ = 0,75, Fu = tegangan tarik baja struktur (Mpa), Ant = luas tampang netto pada plat geser (mm^2)

Kemudian dikontrol blok geser plat sambung menggunakan persamaan 3.64 dibawah ini.

Fu.Ant < 0,60.fu.Ans, maka

$$\phi.Rn = \phi(0,6.fu.Ans + fy.Agt) > \frac{Pu_f}{2} \quad \text{..... (3.64)}$$

dengan : ϕ = 0,75, Fu = tegangan tarik baja struktur (KN), Ant = luas netto yang mengalami retakan geser (mm^2), Ans = luas netto yang mengalami retakan geser (mm^2), Agt = luas tampang bruto pada plat geser (mm^2), Pu_f = gaya pada tiap sayap kolom (KN), ϕ.Rn = kuat tumpu satu baut (KN).

Kemudian kontrol kuat tumpu plat sambung kolom dengan persaman (3.65) dibawah ini.

$$\phi.Rn = \phi.\ 2,4.\ Fu.\ D_b.\ t_p > \frac{Pu_f}{2} \quad \text{..... (3.65)}$$

dengan : Fu = tegangan ultimit baja (KN), d_b diameter baut (mm), t_p = tebal sayap kolom (mm), Ant = luas netto pelat sambung (mm^2), ϕ = 0,75.

b. Sambungan pada badan

Sambungan badan merupakan sambungan yang berada pada badan kolom, gaya pada badan kolom diperoleh melalui persamaan 3.66 dibawah ini

$$\text{Puw} = \frac{Pu,k.Ag}{A} \quad \text{..... (3.66)}$$

Desain plat sambung pada badan kolom

Desain pelat sambung kolom pada badan dapat menggunakan persamaan 3. 62 sampai dengan 3.65 dapat dipakai.

3.3.6 Perencanaan Pelat Dasar Kolom

Pelat dasar kolom merupakan penghubung antara kolom baja dengan kaki kolom beton (Pedestal). Dalam perencanaannya pelat dasar kolom akan didesain berdasarkan beban aksial dan momen yang terjadi didasar kolom. Desain plat dasar kolom dipengaruhi oleh momen arah x (Mu,kx) dan arah y (Mu,ky).

Kesetimbangan momen pada pusat gaya aksial T :

$$Pu,k\left(\frac{dc}{2}+\frac{bf_{ca}}{2}\right)+Mu,k_x+Mu,k_y=R\left(dc+bf_{ca}-\frac{tf}{2}\right) \quad ...(3.77)$$

Diasumsikan luas bidang tekan efektif penumpu akibat momen yang bekerja adalah (X.B), sehingga gaya tekan yang terjadi harus memenuhi :

$\phi P_p \geq Pu$ ..... (3.78)

$\phi(0,5.Fp.\ X.B) = Pu$

Fp = 0,85. Fy < Tegangan desak beton (fy dalam Mpa)

Jarak dari pusat flens ke ujung pelat = 1/3.X ..... (3.79)

Panjang pelat dasar yang dibutuhkan

$$L = (2.X) + (dc - tf) \quad \text{..... (3.80)}$$

dengan : X = panjang bidang tekan (mm), dc adalah tinggi keseluruhan profil baja (mm), tf = tebal sayap dari profil baja (mm).

Menentukan jarak tepi pelat dasar kolom dengan profil baja pada arah lebar dan panjang

$$m = \frac{L - 0{,}95.dc}{2} \quad \text{..... (3.81)}$$

$$n = \frac{B - 0{,}8.bf}{2} \quad \text{..... (3.82)}$$

Tegangan pada ujung pelat :

$$fp = \frac{Pu}{B.L} \pm \frac{Mu,kx}{\frac{1}{6}B.L} \pm \frac{Mu,ky}{\frac{1}{6}B.L} < Fp \text{ (fy dalam Mpa) .... (3.83)}$$

Cek kapasitas penumpu (pedestal)

$$\phi Pp \geq Pu \quad \text{..... (3.84)}$$

$$\phi Pp = \phi_c.Fp.A \quad \text{..... (3.85)}$$

Momen lentur pelat titik A, sepanjang B (tegak lurus gambar)

$$Mu = 0{,}5.(fp_{max} - y).\frac{x}{3}.\left(\frac{2}{3}.\frac{x}{3}\right)B + y.\frac{x}{3}\left(\frac{1}{2}.\frac{x}{3}\right)B \quad \text{..... (3.86)}$$

Batas pelelehan untuk lentur pada pelat menghendaki

$$\phi Mn \geq Mu \quad \text{..... (3.89)}$$

$$\phi Mn = \phi Mp = \phi_b.Zfy = 0{,}9\left(\frac{B.tp^2}{4}\right).fy \geq Mu \quad \text{..... (3.90)}$$

Tebal pelat yang diperlukan

$$tp = \sqrt{\frac{4.Mu}{0{,}9.B.fy}} \quad \text{..... (3.91)}$$

Perencanaan baut angkur arah y yang menahan Mu,kx

$$T = \frac{Mu,kx}{d} \quad \text{..... (3.92)}$$

Kapasitas tarik satu angkur (ϕTn)

$$\phi Tn = \phi.0{,}75.fu.Ab \quad \text{..... (3.93)}$$

Jumlah angkur minimum yang diperlukan

$$n = \frac{T}{\phi Tn} \quad \text{..... (3.94)}$$

Kedalaman angkur :

Gaya tarik yang ditahan satu angkur

$$Tn = \frac{T}{n} \quad \text{..... (3.95)}$$

Tegangan ijin tarik beton :

$$ft' = 0{,}57\sqrt{fc'(Mpa)} \quad \text{..... (3.96)}$$

gaya tarik = luas permukaan angkur × tegangan ijin tarik beton

$$Tn = \pi.D.L.ft' \quad \text{..... (3.97)}$$

Kedalaman angkur yang diperlukan

$$H = \frac{Tn}{\pi.D.ft'} \quad \text{..... (3.98)}$$

dengan : Tn = gaya tarik yang terjadi pada angkur (KN), D = diameter angkur (mm), ft' = tegangan ijin tarik beton (Mpa).

Perencanaan angkur arah y yang menahan Mu,ky sama dengan perencanaan angkur arah x, sehingga persamaan (3.94) sampai dengan (3.98) dapat dipakai.

3.3.7 Perencanaan Pedestal (kaki kolom)

Pedestal (kaki kolom) merupakan elemen struktur yang berfungsi sebagai tempat perletakan pelat dasar kolom, terbuat dari beton. Dalam desainnya pedestal dirancang mempunyai dimensi yang lebih besar dari pelat dasar kolom dan tinggi pedestal harus lebih dari kedalaman angkur.

Tulangan longitudinal/lentur pedestal

Rasio tulangan pakai, $\rho = 1\%$

$$Ast = 0{,}01.Ag \quad \text{..... (3.99)}$$

Menentukan jumlah tulangan longitudinal

$$n = \frac{Ast}{A_{\phi 22}} \quad \text{..... (3.100)}$$

Tulangan sengkang

$$Vs = \frac{Vu, k_{pakai}}{\varphi} \quad \text{..... (3.101)}$$

Jarak antar tulangan

$$S = \frac{Av.fy.d}{Vs} \quad \text{..... (3.102)}$$

BAB IV

METODE PENELITIAN

4.1 Data Struktur

Struktur stadion Sleman terletak diatas tanah lunak pada wilayah gempa tiga (3), Gambar denah strukur tribun stadion sleman dapat dilihat pada gambar 4.1 dibawah ini :

Gambar 4.1 Gambar Denah Struktur Tribun Bangunan

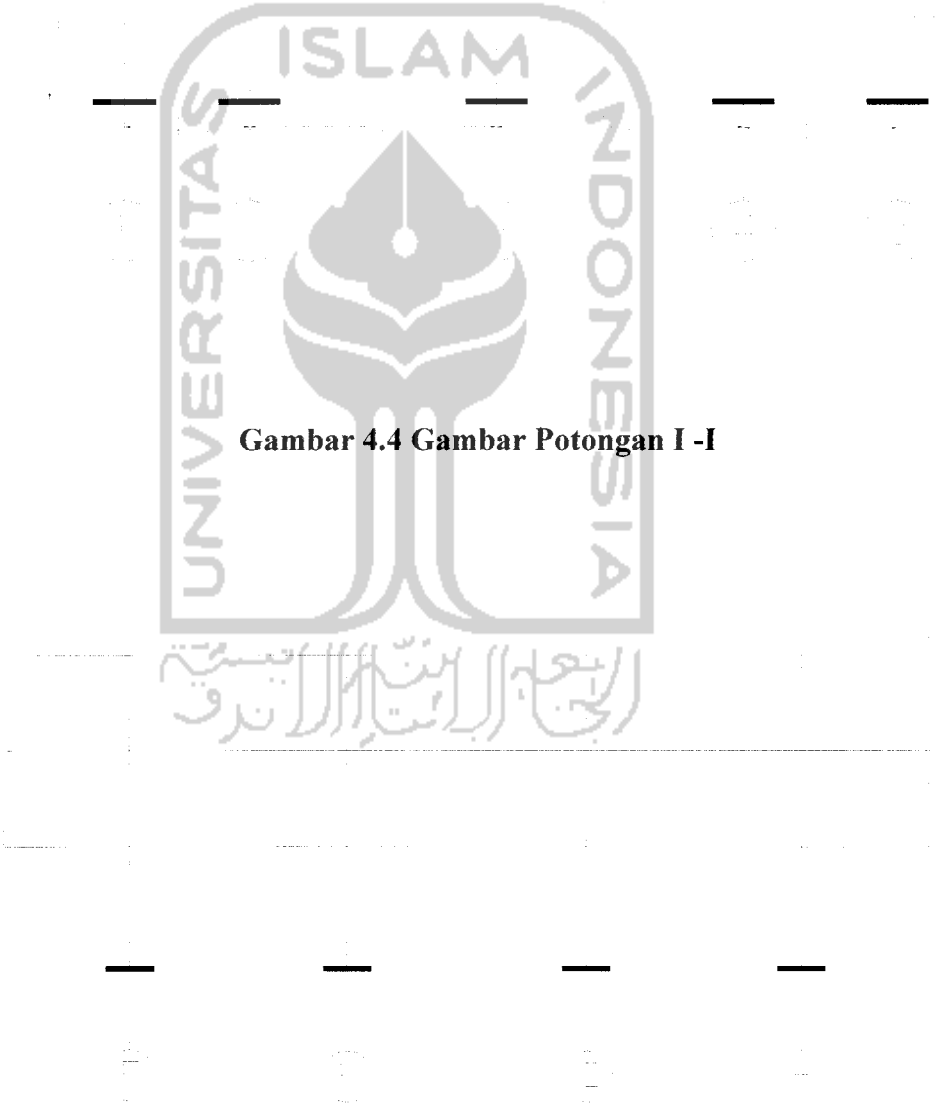
Daerah yang diarsir pada gambar 4.1 diatas menunjukan bagian struktur stadion Sleman yang ditinjau yaitu struktur stadion blok utara. Agar lebih

jelasnya, gambar struktur stadion Sleman blok utara ini dapat dilihat pada gambar 4.2 dibawah ini

Gambar 4.2 Gambar Denah Struktur Tribun Blok Utara

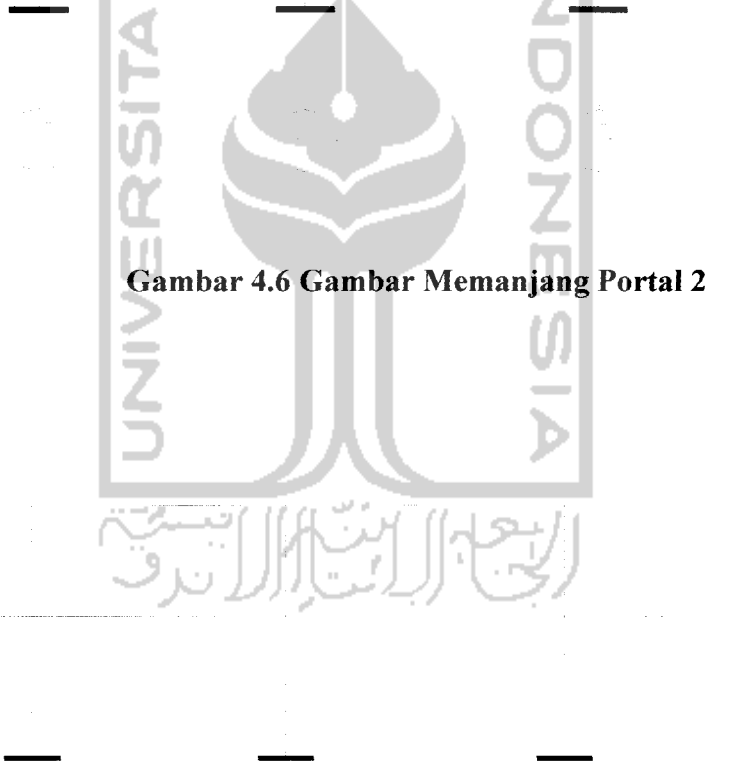
Struktur portal tribun ini merupakan bangunan yang simetris, sehingga dapat ditinjau setengah bagian saja. Lebih jelasnya dapat dilihat pada gambar dibawah.

Gambar 4.3 Denah Struktur Tribun Blok Utara Setengah Bentang Bangunan



Gambar 4.4 Gambar Potongan I -I

Gambar 4.5 Gambar Memanjang Portal 1



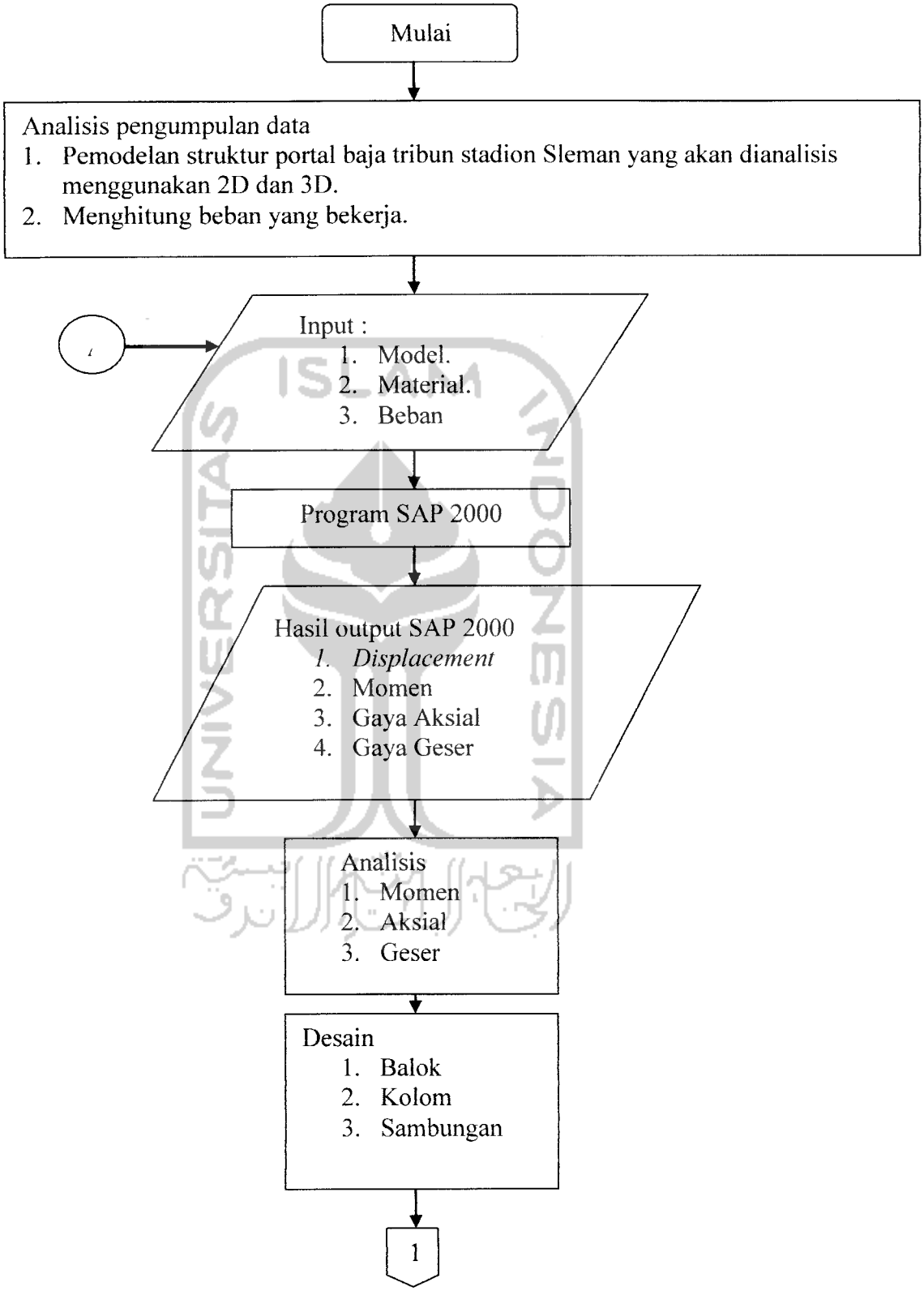
Gambar 4.6 Gambar Memanjang Portal 2

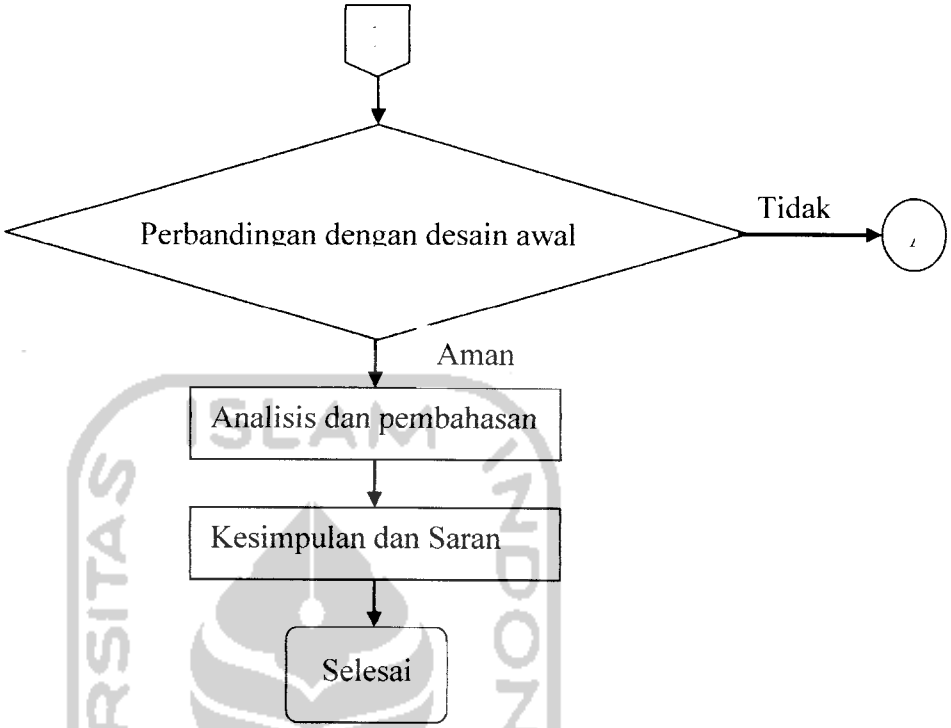
Gambar 4.7 Gambar Memanjang Portal 3

4.3 Tahapan analisis

Tahapan analisis dalam penulisan tugas akhir ini dapat dilihat pada gambar 4.7 yaitu gambar *flow chart* pengolahan.

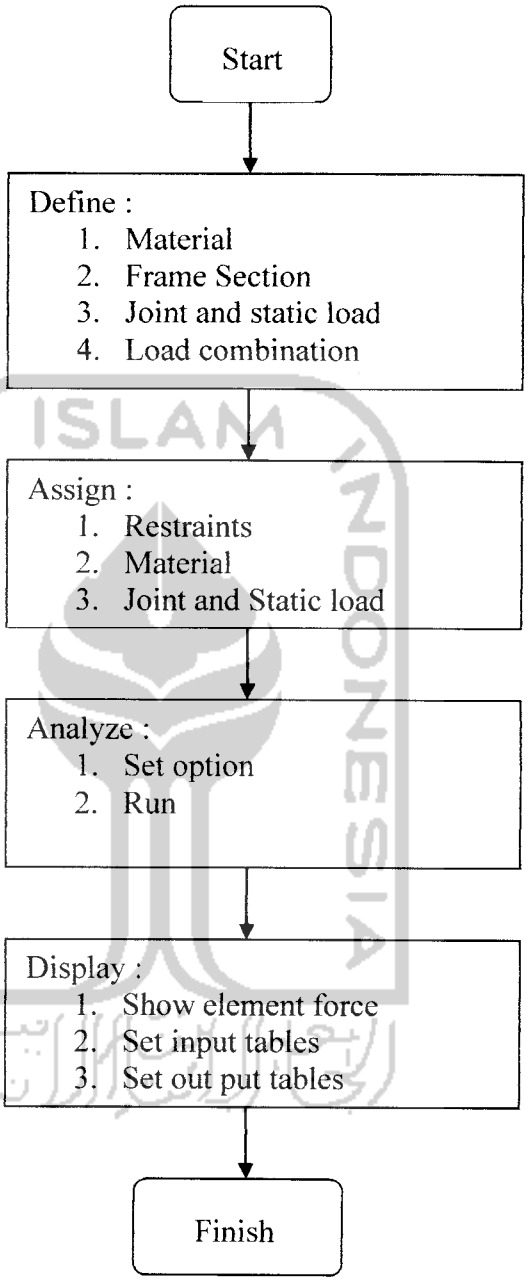
Nilai ratio tegangan ijin dan tegangan yang terjadi tidak boleh kurang dari 1 dan maksimal 1,25 atau dapat ditulis $1{,}0 < \frac{\sigma_{ijin}}{\sigma_{terjadi}} \leq 1{,}25$.


Mulai
Analisis pengumpulan data
1. Pemodelan struktur portal baja tribun stadion Sleman yang akan dianalisis menggunakan 2D dan 3D.
2. Menghitung beban yang bekerja.
Input :
1. Model.
2. Material.
3. Beban
Program SAP 2000
Hasil output SAP 2000
1. Displacement
2. Momen
3. Gaya Aksial
4. Gaya Geser
Analisis
1. Momen
2. Aksial
3. Geser
Desain
1. Balok
2. Kolom
3. Sambungan
1



Gambar 4.7 *Flow Chart* Tahapan Analisis

Flow Chart Pengolahan analisis data memakai SAP 2000 dapat dilihat pada gambar 4.8.



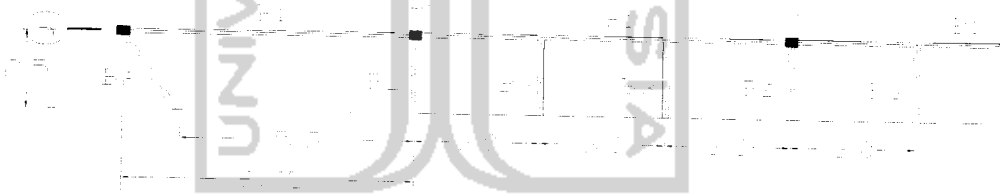
Gambar 4.8 *Flow Chart* Analisis SAP 2000

BAB V

ANALISIS DAN DESAIN STRUKTUR

5.1 Perencanaan Awal (Preliminari Design)

Perencanaan awal (preliminary design) merupakan perkiraan penampang balok dan kolom yang ditentukan oleh panjang bentang antara dua dukungan. Gambar denah pola balok lantai (elevasi lantai +2.500) ditunjukkan gambar 5.1 dibawah ini.



Gambar 5.1 Denah Pola Balok (Elevasi Lantai +2.500)

- Perkiraan penampang balok B_1 (Cantilever)

$$d = \frac{1}{12} \times L = \frac{1}{12} \times 9 = 0{,}75 \text{ m} = 750 \text{ mm}$$

Pakai W30 × 99 (d = 753,11 mm ; bf = 265,43 mm)

Berat = 1,444 KN/m

- Perkiraan penampang balok B_2 (Cantilever)

Pakai W21 × 57 (d = 534,924 mm ; bf = 166,497 mm)

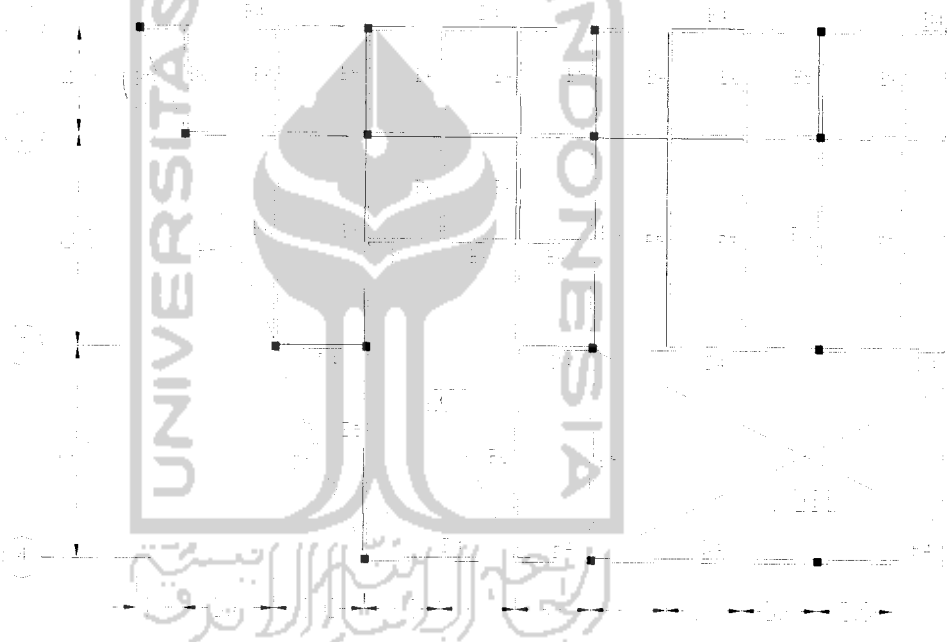
Berat = 0,832 KN/m

- Perkiraan penampang balok B_3 (Cantilever)

  W 18 × 55 (d = 459,99 mm ; bf = 191,262 mm)

  Berat = 0,803 KN/m

Gambar denah pola balok lantai (elevasi lantai +5.000) ditunjukkan gambar 5.2 dibawah ini.



Gambar 5.2 Denah Pola Balok (Elevasi Lantai +5.000)

- Perkiraan penampang balok B_4

$$d = \frac{1}{12} \times L = \frac{1}{12} \times 9 = 0{,}75 \text{ m} = 750 \text{ mm}$$

Pakai W30 × 99 (d = 753,11 mm ; bf = 265,43 mm)

Berat = 1,444 KN/m

- Perkiraan penampang balok B_5

$$d = \frac{1}{12} \times L = \frac{1}{12} \times 8 = 0{,}667 \text{ m} = 667 \text{ mm}$$

Pakai W27 × 84 (d = 678,434 mm ; bf = 252,984 mm)

Berat = 1,226 KN/m

- Perkiraan penampang balok B_6

$$d = \frac{1}{15} \times L = \frac{1}{15} \times 8 = 0{,}533 \text{ m} = 533 \text{ mm}$$

Pakai W21 × 57 (d = 534,924 mm ; bf = 166,497 mm)

Berat = 0,832 KN/m

Perkiraan dimensi balok miring

Gambar pola balok miring ditunjukkan gambar 5.3 dibawah ini.

Gambar 5.3 Denah Pola Balok miring

- Perkiraan penampang balok B_7

$$d = \frac{1}{12} \times L = \frac{1}{12} \times 9 = 0{,}75 \text{ m} = 750 \text{ mm}$$

Pakai W30 × 99 (d = 753,11 mm ; bf = 265,43 mm)

Berat = 1,444 KN/m

- Perkiraan penampang balok B_8

Panjang balok miring (L) = $\frac{8}{Cos.27^0}$ = 8,98 m

$$d = \frac{1}{12} \times L = \frac{1}{12} \times 8{,}98 = 0{,}748 \text{ m} = 748 \text{ mm}$$

Pakai W30 × 99 (d = 753,11 mm ; bf = 265,43 mm)

Berat = 1,444 KN/m

- Perkiraan penampang balok B_9

$$d = \frac{1}{15} \times L = \frac{1}{15} \times 8{,}98 = 0{,}599 \text{ m} = 599 \text{ mm}$$

Pakai W24 × 55 (d = 598,678 mm ; bf = 177,927 mm)

Berat = 0,803 KN/m

Perkiraan dimensi kolom W 18 × 76 (d = 462 mm ; bf = 280,289 mm)

Berat = 1,131 KN/m

5.2 Pembebanan

Pembebanan merupakan langkah paling awal dalam mengerjakan hitungan struktur. Beban-beban yang dihitung, kemudian ditransfer ke balok portal sehingga mendapatkan gaya-gaya dalam yang dipergunakan untuk

menghitung dimensi profil struktur. Beban-beban yang bekerja dibagi menjadi tiga kelompok, yaitu beban mati, beban hidup dan beban gempa. Untuk selanjutnya beban mati dan beban hidup disebut dengan beban gravitasi.

5.2.1 Beban Gravitasi

Beban gravitasi merupakan beban yang terdiri dari beban mati dan beban hidup. Perhitungan berat pelat lantai dan pelat tribun pada struktur stadion sleman ini adalah sebagai berikut :

Berat pelat lantai

Pelat = 0,12 × 24 = 2,88 KN/m^2

Pasir = 0,05 × 16 = 0,8 KN/m^2

Spesi = 0,03 × 24 = 0,72 KN/m^2

Keramik = 0,01 × 24 = 0,24 KN/m^2

W_D= 4,64 KN/m^2

Beban hidup pelat lantai **(W_L) = 5 KN/m^2**

Berat pelat tribun

Pelat $= \left[\left(\frac{0,12}{\cos 27°}\right)+\left(\frac{0,4}{2}\right)\right]\times 24$ = 8,36 KN/m^2

Kedap air = 0,03 × 24 = 0,72 KN/m^2

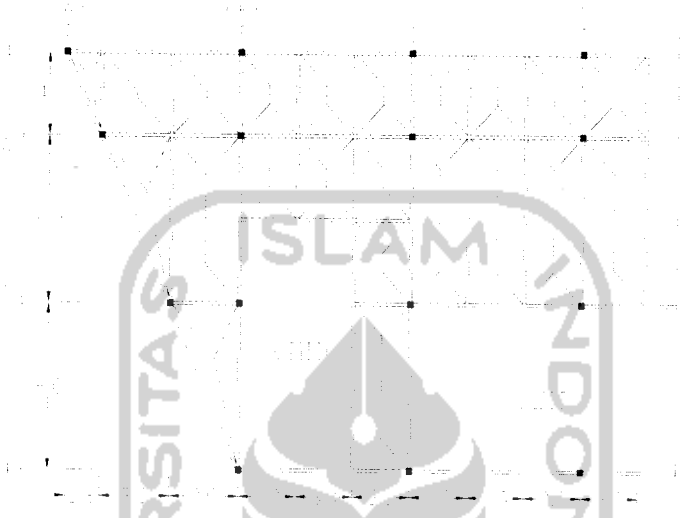
Spesi = 0,03 × 24 = 0,72 KN/m^2

W_D = 9,8 KN/m^2

Beban hidup pelat tribun **(W_L) = 5 KN/m^2**

Pembebanan Balok Portal

Distribusi beban gravitasi dari pelat ke balok portal pada elevasi lantai +5.000 ditunjukkan gambar 5.4 dibawah ini.

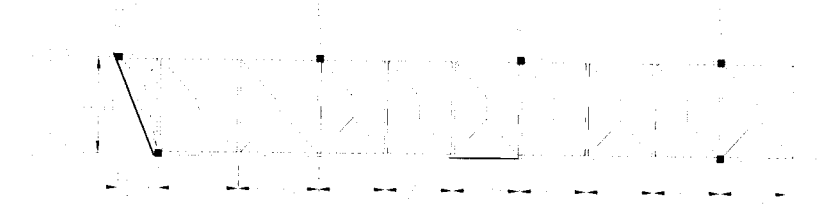


Gambar 5.4 Distribusi Beban (elevasi lantai +5.000)

Distribusi beban gravitasi dari pelat ke balok portal pada elevasi lantai +9.000 ditunjukkan gambar 5.5 dibawah ini.

Gambar 5.5 Distribusi Beban (elevasi lantai +9.000)

Distribusi beban gravitasi dari pelat ke balok portal pada elevasi lantai +13.000 ditunjukkan gambar 5.6 dibawah ini.



Gambar 5.6 Distribusi Beban (elevasi lantai +13.000)

Pembebanan Balok Portal

Pembebanan gravitasi dari pelat ke balok portal 1 ditunjukkan gambar 5.6 dibawah ini.

- **Portal 1**

Gambar 5.6 Pembebanan Balok Portal 1

Beban merata

- Tipe 4

Q_{D4} = 4,64 × 1,33 = 6,17 KN/m

Q_{L4} = 5 × 1,33 = 6,65 KN/m

- Tipe 5

Q_{D5} = 4,64 × 1,8 = 8,352 KN/m

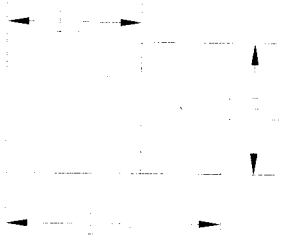
Q_{L5} = 5 × 1,8 = 9 KN/m

- Tipe 6

Q_{D6}= 4,64 × 1,5 = 6,96 KN/m

Q_{L6}= 5 × 1,5 = 7,5 KN/m

- Tipe 7



Q_{D7}= 4,64 × 1,33 = 5,746 KN/m

Q_{L7}= 5 × 1,33 = 6,65 KN/m

- Tipe 8

Q_{D8}= 4,64 × 1,8 = 7,776 KN/m

Q_{L8}= 5 × 1,8 = 9 KN/m

- Tipe 9

Q_{D9}= 4,64 × 1,5 = 6,48 KN/m

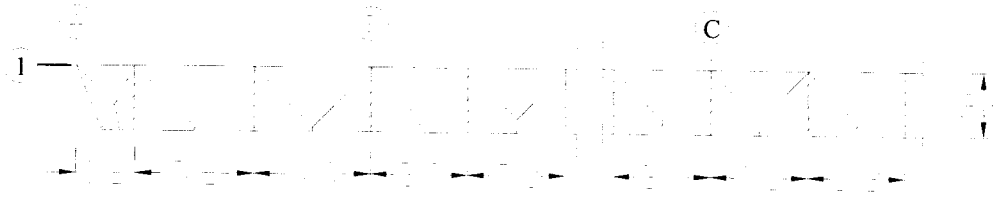
Q_{L9}= 5 × 1,5 = 7,5 KN/m

- Tipe 10

Q_{D9}= 4,64 × 1,56 = 6,48 KN/m

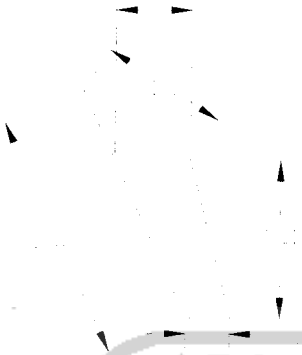
Q_{L9}= 5 × 1,56 = 7,5 KN/m

Beban titik



Gambar 5.7 Distribusi Beban Titik Portal 1

- Tipe 4



$A_1 = 0{,}5 \times 1{,}1 \times 0{,}7 = 0{,}385\ m^2$

$A_2 = \left[\frac{0{,}4 + 0{,}7}{2}\right].1{,}4 = 1{,}015\ m^2$

A total = 0,385 + 1,015 = 1,4 m^2

$P_{D4} = (4{,}64 \times 1{,}4) + (1{,}226 \times 2{,}2) = 9{,}19$ KN

$P_{L4} = (5 \times 1{,}4) = 7$ KN

- Tipe 5

$A_1 = 0{,}5 \times 0{,}6 \times 0{,}8 = 0{,}399\ m^2$

$A_2 = \left(\frac{0{,}2 + 2}{2}\right).1{,}8 = 1{,}98\ m^2$

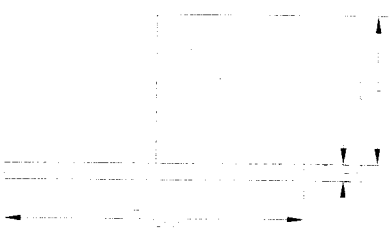
$A_3 = \left(\frac{0{,}5 + 0{,}6}{2}\right).1{,}4 = 0{,}77\ m^2$

A total = 0,399 + 1,98 + 0,77 = 3,15 m^2

$P_{D5} = (4{,}64 \times 3{,}15) + (0{,}832 \times 2) = 16{,}336$ KN

$P_{L5} = 5 \times 3{,}15 = 15{,}75$ KN

- Tipe 6



$A_1 = 0{,}5 \times 3{,}6 \times 1{,}8 = 3{,}24\ m^2$

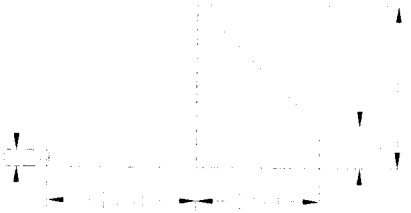
$A_2 = 3{,}6 \times 0{,}2 = 0{,}72\ m^2$

A total = 3,24 + 0,72 = 3,96 m^2

$P_{D6} = (4{,}64 \times 3{,}96) + (0{,}832 \times 2) = 20{,}04$ KN

$P_{L6} = 5 \times 3{,}96 = 19{,}8$ KN

- Tipe 7



$$A_1 = \left(\frac{0{,}5+2}{2}\right).1{,}5 = 1{,}875 \text{ m}^2$$

$$A_2 = \left(\frac{0{,}2+2}{2}\right).1{,}8 = 1{,}98 \text{ m}^2$$

A total = 1,875 + 1,98 = 3,855 m^2

$P_{D7} = (4{,}64 \times 3{,}855) + (1{,}226 \times 2) = 20{,}34$ KN

$P_{L7} = 5 \times 3{,}855 = 19{,}275$ KN

- Tipe 8

$$A = \left(\frac{0{,}5+2}{2}\right).1{,}5 \times 2 = 3{,}75 \text{ m}^2$$

$P_{D8} = (4{,}64 \times 3{,}75) + (0{,}832 \times 2)$

$= 20{,}34$ KN

$P_{L8} = (5 \times 3{,}75) = 18{,}75$ KN

- Tipe 9

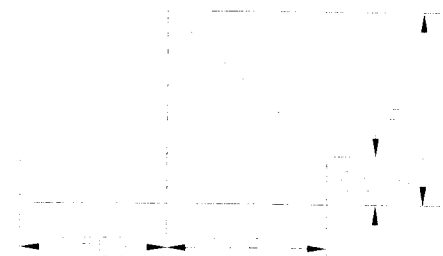
$$A = \left(\frac{0{,}5+2}{2}\right).1{,}5 \times 2 = 3{,}75 \text{ m}^2$$

$P_{D9} = (4{,}64 \times 3{,}75) + (1{,}226 \times 2)$

$= 19{,}852$ KN

$P_{L9} = (5 \times 3{,}75) = 18{,}75$ KN

- Tipe 10



$$A1 = \left(\frac{0{,}5+2}{2}\right).1{,}5 = 1{,}875 \text{ m}^2$$

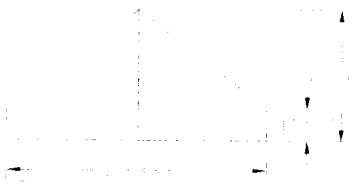
$$A2 = \left(\frac{0{,}5+2}{2}\right).1{,}667 = 2{,}08 \text{ m}^2$$

A total = 1,875 + 2,08 = 3,96 m^2

$P_{D10} = (4{,}64 \times 3{,}96) + (1{,}226 \times 2) = 20{,}83$ KN

$P_{L10} = (5 \times 3{,}96) = 19{,}8$ KN

- Tipe 11



$$A = \left(\frac{0{,}5+2}{2}\right).1{,}667 \times 2$$

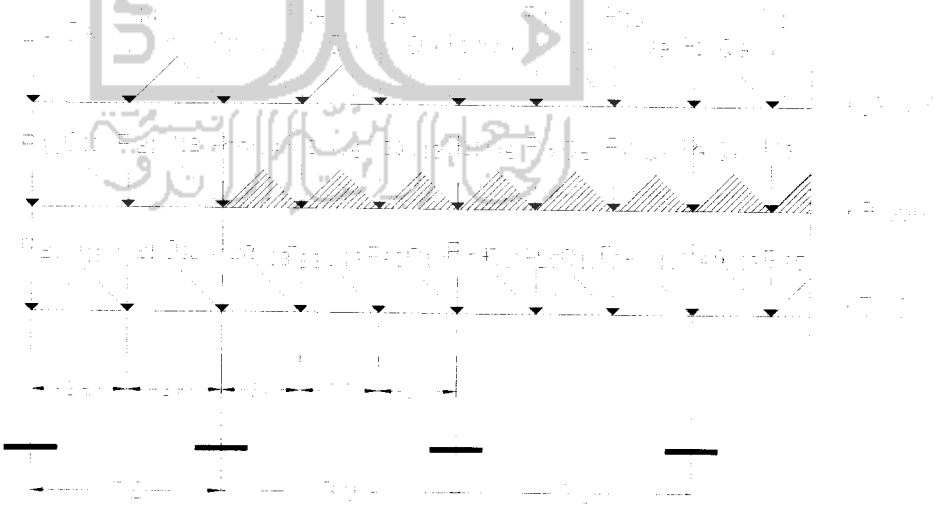
$$= 4{,}16 \text{ m}^2$$

$P_{D11} = (4{,}64 \times 4{,}16) + (0{,}832 \times 2) = 20{,}966$ KN

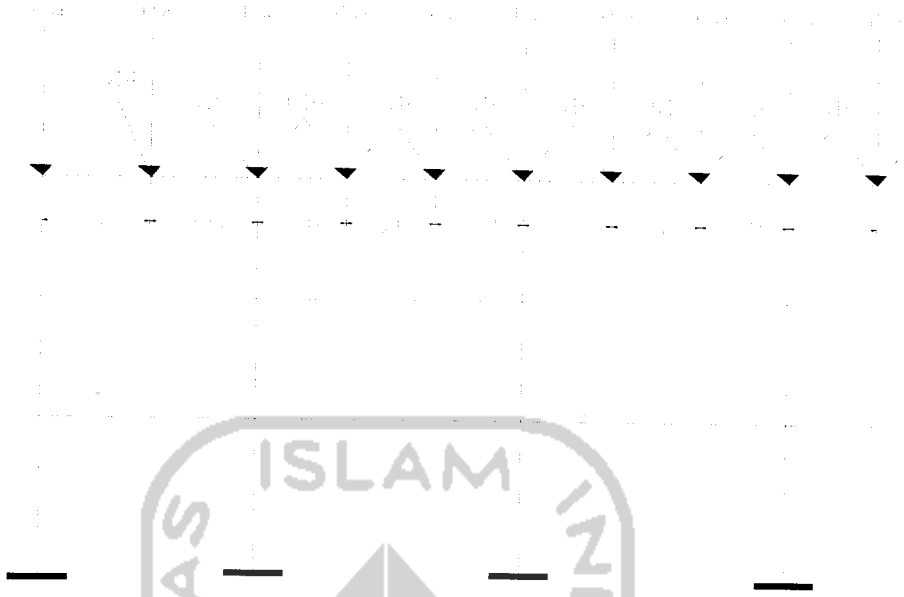
$P_{L11} = (5 \times 4{,}16) = 20{,}8$ KN

o **Portal 2**

Pembebanan gravitasi dari pelat ke balok portal 2 ditunjukkan gambar 5.9a dan 5.9b dibawah ini.



Gambar 5.9a Pembebanan Balok Portal 2 Akibat Pelat Lantai



Gambar 5.9b Pembebanan Balok Portal 2 Akibat Pelat Tribun

Beban merata

- Tipe 11

Q_{D11a} = 4,64 × 1,8 = 8,352 KN/m

Q_{D11b} = 4,64 × 2,67 = 12,39 KN/m

Q_{L11a} = 5 × 1,8 = 9 KN/m

Q_{L11b} = 5 × 2,67 = 13,35 KN/m

- Tipe 12

$Q_{D12} = 2 \times 4{,}64 \times 1{,}8 = 16{,}704$ KN/m

$Q_{L12} = 2 \times 5 \times 1{,}8 = 18$ KN/m

- Tipe 13

$Q_{D13} = 2 \times 1{,}5 \times 4{,}64 = 13{,}92$ KN/m

$Q_{L13} = 2 \times 1{,}5 \times 5 = 15$ KN/m

- Tipe 14

$Q_{D14} = 2{,}7 \times 9{,}8 = 26{,}46$ KN/m

$Q_{L14} = 2{,}7 \times 5 = 13{,}5$ KN/m

- Tipe 15

$Q_{D15} = 2 \times 9{,}8 = 19{,}6$ KN/m

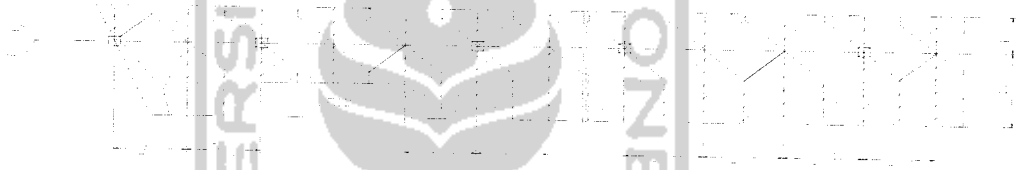
$Q_{L15} = 2 \times 5 = 10$ KN/m

- Tipe 16

$Q_{D16} = 2 \times 9{,}8 \quad = 19{,}6$ KN/m

$Q_{L16} = 2 \times 5 \quad = 10$ KN/m

Beban titik



Gambar 5.10a Distribusi Beban Titik Portal 2 Elevasi +5.000

- Tipe 20

$A_1 = \left(\frac{0{,}2+2}{2}\right).1{,}8 \quad = 1{,}98\ m^2$

$A_2 = 0{,}5 \times 0{,}9 \times 2 \quad = 0{,}9\ m^2$

$A_3 = 0{,}5 \times 1{,}3 \times 2{,}2 \quad = 1{,}43\ m^2$

$A_4 = \left(\frac{1{,}3+0{,}8}{2}\right).2{,}8 \quad = 2{,}94\ m^2$

A total = 1,98 + 1,43 + 0,9 + 2,94 = 7,25 m^2

$P_{D20} = (4{,}64 \times 7{,}25) + (0{,}832 \times 2) + (1{,}226 \times 6{,}6) = 43{,}4$ KN

$P_{L20} = (5 \times 7{,}25) = 36{,}25$ KN

- Tipe 21

$$A_1 = \left(\frac{0{,}2+2}{2}\right).1{,}8 \times 2 \quad = 3{,}96 \text{ m}^2$$

$$A_2 = \left(\frac{2{,}2+4}{2}\right).1{,}8 \quad = 5{,}58 \text{ m}^2$$

$$A_3 = 0{,}5 \times 1 \times 1{,}8 \quad = 1{,}602 \text{ m}^2$$

$$A_4 = \left(\frac{1{,}1+1{,}8}{2}\right).3 \quad = 4{,}35 \text{ m}^2$$

A total = 3,96 + 5,58 + 1,602 + 4,35 = 15,539 m^2

$P_{D21} = (4{,}64 \times 15{,}539) + (0{,}832 \times 6) = 63{,}173$ KN

$P_{L21} = (5 \times 12{,}539) = 62{,}695$ KN

- Tipe 22

$$A_1 = \left(\frac{0{,}2+2}{2}\right).1{,}8 \quad = 1{,}98 \text{ m}^2$$

$$A_2 = \left(\frac{2{,}2+4}{2}\right).1{,}8 \quad = 5{,}58 \text{ m}^2$$

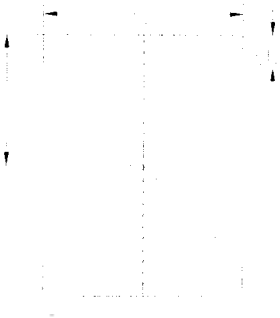
$$A_3 = \left(\frac{0{,}5+2}{2}\right).1{,}5 \times 2 \quad = 3{,}75 \text{ m}^2$$

A total = 1,98 + 5,58 + 3,75 = 11,31 m^2

$P_{D22} = (4{,}64 \times 11{,}31) + (1{,}226 \times 6) = 59{,}834$ KN

$P_{L22} = (5 \times 11{,}31) = 56{,}55$ KN

- Tipe 23



$$A = \left(\frac{0,5+2}{2}\right).1,5 \times 4 \quad = 7,5\ m^2$$

$$P_{D23} = (4,64 \times 7,5) + (0,832 \times 4) \ = 38,128\ KN$$

$$P_{L23} = (5 \times 7,5) = 37,5\ KN$$

- Tipe 24

$$A_1 = \left(\frac{2,5+4}{2}\right).1,5 \quad = 4,875\ m^2$$

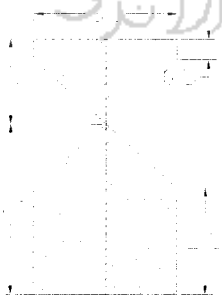
$$A_2 = \left(\frac{0,5+2}{2}\right).1,5 \times 3 \quad = 5,625\ m^2$$

$$A\ total = 4,875 + 5,625 = 10,5\ m^2$$

$$P_{D24} = (4,64 \times 10,5) + (1,226 \times 6) \ = 56,076\ KN$$

$$P_{L24} = (5 \times 10,5) = 52,5\ KN$$

- Tipe 25



$$A_1 = \left(\frac{2,5+4}{2}\right).1,5 \times 2 \quad = 9,75\ m^2$$

$$A_2 = \left(\frac{0,5+2}{2}\right).1,5 \times 2 \quad = 3,75\ m^2$$

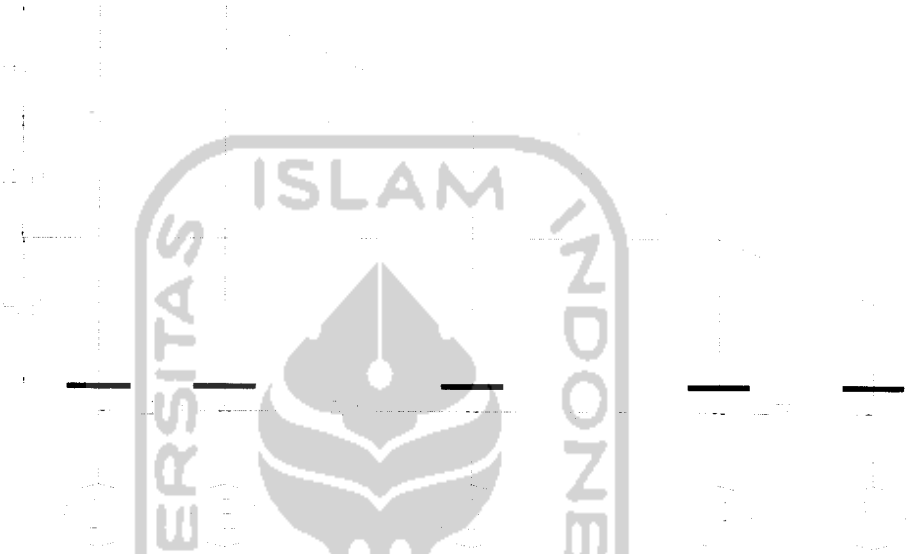
$$A\ total = 9,75 + 3,75 = 13,5\ m^2$$

$$P_{D25} = (4,64 \times 13,5) + (0,832 \times 6) \ = 67,632\ KN$$

$$P_{L25} = (5 \times 13,5) = 67,5\ KN$$

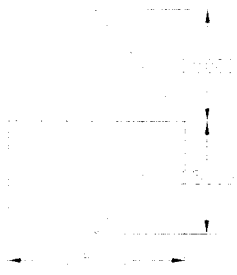
o **Portal C**

Pembebanan gravitasi dari pelat ke balok portal C ditunjukkan gambar 5.9a dibawah ini.



Gambar 5.9 Portal C

Bebab merata lantai 2.5



$Q_{D10} = 4.64 \times 1{,}5 \times 2 = 12{,}96$ KN/m

$Q_{L10} = 5 \times 1{,}5 \times 2 = 15$ KN/m

beban merata lantai 5.15 & 9.15

$Q_{D7} = 4{,}64 \times 1{,}5 \times 2 = 13{,}92$ KN/m

$Q_{L7} = 5 \times 1{,}5 \times 2 = 15$ KN/m

$Q_{D1} = 4{,}64 \times 1{,}5 = 6{,}96$ KN/m

$Q_{L1} = 5 \times 1{,}5 = 7{,}5$ KN/m

$Q_{D7a} = 4{,}64 \times 1{,}5 = 6{,}96$ KN/m

$Q_{L7a} = 5 \times 1{,}5 = 7{,}5$ KN/m

$Q_{D7b} = 4{,}64 \times 1{,}5 = 6{,}96$ KN/m

$Q_{L7b} = 5 \times 1{,}5 = 7{,}5$ KN/m

$Q_{D1} = 4{,}64 \times 1{,}5 = 6{,}96$ KN/m

$Q_{L1} = 5 \times 1{,}5 = 7{,}5$ KN/m

Beban merata lantai 13.15

$Q_{D2} = 4{,}64 \times 1{,}5 \times 2 = 12{,}96$ KN/m

$Q_{L2} = 5 \times 1{,}5 \times 2 = 15$ KN/m

$Q_{D2} = 9{,}8 \times 1{,}5 \times 2 \quad = 12{,}96$ KN/m

$Q_{L2} = 5 \times 1{,}5 \times 2 \quad = 15$ KN/m

$Q_{D2} = 9{,}8 \times 1{,}5 \times 2 = 12{,}96$ KN/m

$Q_{L2} = 5 \times 1{,}5 \times 2 \quad = 15$ KN/m

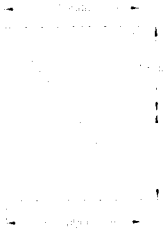
$Q_{D2} = 9{,}8 \times 1{,}5 \times 2 = 12{,}96$ KN/m

$Q_{L2} = 5 \times 1{,}5 \times 2 \quad = 15$ KN/m

- Beban titik lantai 5.150

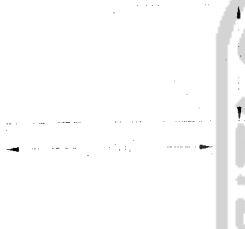
$$P_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 4{,}64\right) + (1{,}444 \times 3) = 14{,}768 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 5\right) = 11{,}25 \text{ KN}$$



$$P_D = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 2 \times 4{,}64\right) + (1{,}444 \times 3) = 25{,}212 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 2 \times 5\right) = 22{,}5 \text{ KN}$$



$$P_D = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 4{,}64\right) + (0{,}832 \times 1.5) = 11{,}688 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 5\right) = 11{,}25 \text{ KN}$$

$$P_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 4{,}64\right) + (1{,}444 \times 1.5) = 6{,}664 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 5\right) = 5{,}625 \text{ KN}$$

- Beban titik lantai 9,150

$$P_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 4{,}64\right) + (1{,}444 \times 3) = 14{,}76 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 5\right) \quad = 11{,}25 \text{ KN}$$

$$P_D = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 4{,}64\right) + (0{,}832 \times 1{,}5) = 11{,}272 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 5\right) = 11{,}25 \text{ KN}$$

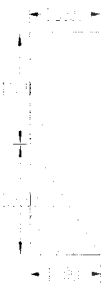
$$P_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 4{,}64\right) + (1{,}444 \times 1{,}5) = 6{,}664 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 5\right) = 5{,}625 \text{ KN}$$

$$P_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 4{,}64\right) + (1{,}444 \times 1{,}5) = 6{,}664 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 5\right) = 5{,}625 \text{ KN}$$

- Beban titik lantai 13.150



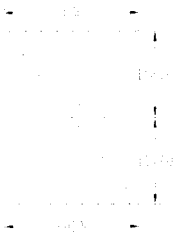
$$P_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 4{,}64\right) + (1{,}444 \times 3) = 14{,}768 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 5\right) = 11{,}25 \text{ KN}$$

Beban titik pada balok miring

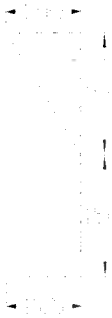
$$P_D = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 2 \times 9{,}8\right) + (1{,}444 \times 3) = 25{,}212 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 2 \times 5\right) = 22{,}5 \text{ KN}$$



$$P_D = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 2 \times 9{,}8\right) + (1{,}444 \times 3) = 25{,}212 \text{ KN}$$

$$P_L = \left(\frac{1}{2} \times 3 \times 1{,}5 \times 2 \times 5\right) = 22{,}5 \text{ KN}$$



$$_D = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 9{,}8\right) + (1{,}444 \times 3) = 14{,}768 \text{ KN}$$

$$_L = \left(\frac{1}{2} \times 1{,}5 \times 1{,}5 \times 2 \times 5\right) = 11{,}25 \text{ KN}$$

5.2.2 Beban Gempa

Perhitungan gaya geser dasar horizontal akibat gempa diawali dengan menentukan waktu getar bangunan (T), koefisien gempa dasar (C), factor keutamaan (I), dan factor jenis struktur (K). Selain itu juga dilakukan perhitungan terhadap berat total bangunan (Wt).

1. Berat bangunan

Portal C

a. Lantai 3

Beban mati

Pelat lantai	= 4,64 × 4 × 9	= 155,52	KN
Pelat tribun	= 9,8 × 4,49 × 9	= 193,968	KN
Balok induk	= 1,444 × [4 + (2 .9)]	= 31,768	KN

Balok anak	= 0,832 × 4 × 2		= 6,656	KN
B.miring induk	= 1,444 × 4,49		= 6,484	KN
B.miring anak	= 0,803 × 2 × 4,49		= 7,211	KN
Kolom	= 1,131 × 2 × 2		= 4,524	KN
Dinding	= 2,5 × 2 × 9		= 45	KN
		W_{D3}	= 451,131	KN

Beban hidup

$Q_L = 4$ KN/m^2

Koefisien reduksi = 0,5

$W_L = 0,5 \times 5 \times [(4 \times 9) + (4,49 \times 9)] = 191,025$ KN

Beban total $W_3 = W_D + W_L = 431,734 + 191,025 = 642,156$ KN

b. Lantai 2

Beban mati

Pelat lantai	= 4,64 × [(4 × 9) + (8 × 9)]		= 278,4	KN
Pelat tribun	= 9,8 × 8,98 × 9		= 387,936	KN
Balok induk	= 1,444 × [12 + (3 .9)]		= 56,316	KN
Balok anak	= 0,832 × 4 × 4		= 13,312	KN
B.miring induk	= 1,444 × 8,98		= 12,967	KN
B.miring anak	= 0,803 × 2 × 8,98		= 14,422	KN
Kolom	= 1,131 × 3 × 4		= 13,572	KN
Dinding	= 2,5 × 4 × 9		= 90	KN
		W_{D2}	= 866,925	KN

Beban hidup

$Q_L = 4$ KN/m^2

Koefisien reduksi = 0,5

$W_L = 0{,}5 \times 5 \times [(4 \times 9) + (8 \times 9) + (8{,}98 \times 9)] = 352{,}05$ KN

Beban total $W_2 = W_D + W_L = 828{,}131 + 352{,}05 = 1218{,}975$ KN

a. Lantai 1

Beban mati

Pelat lantai	$= 4{,}64 \times [(4 \times 9) + (2 \times 8 \times 9)]$	= 584,64	KN
Pelat tribun	$= 9{,}8 \times 10{,}1 \times 9$	= 436,32	KN
Pelat kantilever	$= 4{,}64 \times 9 \times 2.5$	= 97.2	KN
Balok induk	$= 1{,}444 \times [20 + 15 + (2 .9)]$	= 65,702	KN
Balok anak	$= 0{,}832 \times [20 + 12 + 4{,}5]$	= 30,368	KN
B.miring induk	$= 1{,}444 \times 10{,}1$	= 14,584	KN
B.miring anak	$= 0{,}803 \times 2 \times 10{,}1$	= 16,221	KN
Kolom	$= 1{,}131 \times 4{,}575 \times 4$	= 20,697	KN
Dinding	$= 2{,}5 \times 4{,}575 \times 9$	= 102,938	KN
		W_{D1} = 1368,67	KN

Beban hidup

$Q_L = 4$ KN/m^2

Koefisien reduksi = 0,5

$W_L = 0{,}5 \times 5 \times [(4 \times 9) + (10{,}1 \times 9) + (2 \times 8 \times 9) + (9 \times 2{,}5)]$

$= 598{,}5$ KN

Beban total $W_1 = W_D + W_L = 1325{,}038 + 598{,}5 = 1967{,}17$ KN

Maka berat total bangunan :

$Wt = W_1 + W_2 + W_3$

$= 1967{,}17 + 1218{,}975 + 642{,}156$

$= 3828{,}301$ KN

2. Beban Gempa

a) Waktu getar bangunan (T)

Dengan rumus empiris :

$Tx = Ty = 0{,}085 . H^{3/4} \rightarrow H = 13{,}15$ m

$Tx = Ty = 0{,}085 . 13{,}15^{3/4} = 0{,}587$ detik

b) Koefisien Gempa Dasar (C)

Koefisien gempa dasar (C) diperoleh dari gambar 3.1 sesuai dengan pedoman perencanaan ketahanan gempa untuk rumah dan gedung 1987.

Dengan : T = 0,587 detik, Daerah gempa 3

Jenis tanah adalah tanah lunak

Maka dari Respon Spektra diperoleh nilai C = 0,07

c) Faktor Keutamaan (I) dan Faktor Jenis Struktur (K)

Berdasarkan PPKGURDG, 1987 diperoleh I = 1,5 dan K = 1

d) Gaya Geser Dasar (V)

V = C.I.K.Wt ..... (3.1)

= 0,07. 1,5. 1. 3828,301 = 401,972 KN

e) Distribusi Gaya Horizontal Tingkat

H = 13,15 m, B = 20 m

$$\frac{H}{B} = \frac{13,15}{20} = 0,6575 < 3$$

Maka seluruh beban didistribusikan sebagai gaya horizontal dengan menggunakan persamaan (3.3) :

$$Fi = \frac{Wi.hi}{\sum Wi.hi} \times V \quad \text{..... (3.3)}$$

Tabel 5.1 Hitungan Gaya Horizontal Portal C

No	*Bagian*	*Wi*	*Hi*	*Wi Hi*	*Fx,y*
1	tingkat 3	642.156	13.15	8444.351	114.178
2	tingkat 2	1218.975	9.15	11153.621	150.811
3	tingkat 1	1967.17	5.15	10130.926	136.983
			Wi Hi	29728.898	

Tabel hitungan gaya horizontal akibat gempa dapat dilihat pada lampiran 1.

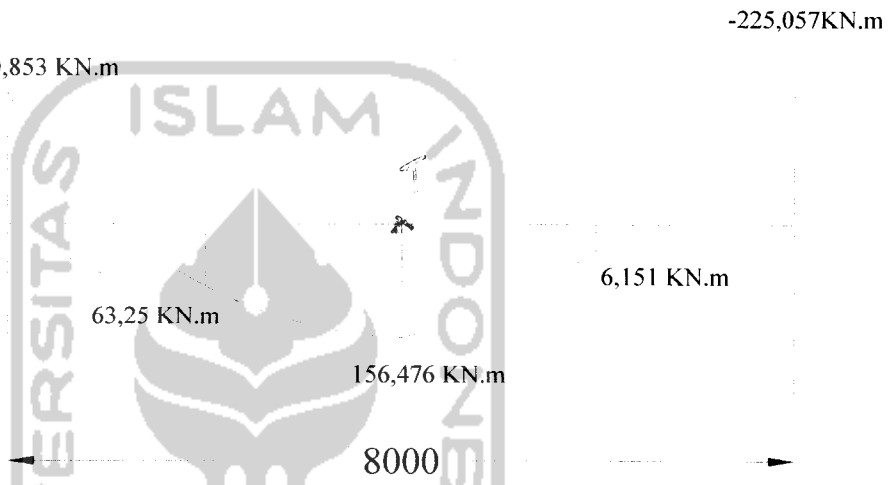
5.3 Perencanaan Balok

5.3.1 Perencanaan Balok Portal As B

a. Analisis dua dimensi (2D)

Kombinasi beban gempa dan gravitasi

Balok B2 (Batang 2)



Gambar 5.12 Bending Momen

Bentang yang terjadi lengkung ganda (*double curvature*)

Mu = 225,057 KN.m (Lampiran A4)

$$Cb = \frac{12{,}5.M_{maks}}{2{,}5.M_{maks} + 3M_A + 4M_B + 3M_C} \leq 2{,}3 \quad \text{..... (3.16)}$$

$$= \frac{12{,}5.225{,}057}{2{,}5.225{,}057 + 3.63{,}253 + 4.156{,}476 + 3.6{,}151}$$

$$= 2{,}01 < 2{,}3$$

Dipakai profil W16X36 (ry = 38,61 mm; Zx = 1048772,1 mm^3;

X_1 = 11721,5 MPa; $X_2 = 438.10^{-6}$ $(1/MPa)^2$; Sx = 925869,12 mm^3)

Cek penampang kompak :

Rasio lebar sayap terhadap tebal sayap

$$\frac{b}{2.tf} \leq \frac{171}{\sqrt{Fy}} \quad \text{..... (3.11)}$$

$$\frac{177,419}{2.10,922} = 8,122 \leq \frac{171}{\sqrt{250}} = 10,815$$

Rasio tinggi badan terhadap tebal badan

$$\frac{d}{tw} \leq \frac{1680}{\sqrt{Fy}} \quad \text{..... (3.12)}$$

$$\frac{402,844}{7,493} = 53,763 \leq \frac{1680}{\sqrt{250}} = 106$$

$$\text{Lp} = 1,76.ry.\sqrt{\frac{E}{fy}} = 1,76.38,61\sqrt{\frac{2.10^5}{250}} = 1921,92 \text{ mm}$$

$$\text{Lr} = \frac{ry.X_1}{(fy-fr)}.\sqrt{1+\sqrt{1+X_2.(fy-fr)^2}} \quad \text{..... (3.15)}$$

$$= \frac{38,61.11721,5}{(250-70)}.\sqrt{1+\sqrt{1+438.10^{-6}.(250-70)^2}}$$

$$= 5562,76 \text{ mm}$$

L = 4 m = 4000 mm

Lp = 19121,92 mm < Lb = 4000 mm < Lr = 5562,76 mm

Maka kuat nominal komponen struktur terhadap momen lentur adalah

$$\text{Mn} = \text{Cb}.\left[Mr + (Mp - Mr).\frac{(Lr-L)}{(Lr-Lp)}\right] \leq Mp \text{ ..... (3.14)}$$

dengan:

Mp= Zx.Fy = 1048772,1 $\times$250

= 262,19.10^6 N.mm = 262,19 KN.m

Mr = (fy – fr).Sx = (250 – 70). 925869,12

= 166,66.10^6 N.mm = 166,66 KN.m

Maka :

$$Mn = 2{,}01 \cdot \left[166{,}66 + (262{,}19 - 166{,}66) \cdot \frac{(5{,}563 - 4)}{(5{,}563 - 1{,}922)} \right]$$

= 418,26 KN.m > Mp = 262,19 KN.m

Mn pakai = 262,19 KN.m

0,9 . Mn = 0,9 . 262,19 = 235,971 KN.m > Mu = 215,057 KN.m

AMAN

$\frac{235{,}971}{225{,}057} = 1{,}1 < 1{,}25$ (sesuai dengan batasan yang kami tentukan)

Kontrol Defleksi

Dari Program SAP 2000 didapatkan defleksi profil balok W16x36 ditengah bentang adalah 1,16 cm

Maksimum defleksi diizinkan adalah = $\frac{8}{360}$ = 0,022 m = 2,2 cm

Profil balok W16x36 dapat digunakan

Kuat Tarik yang tersedia

P aksial balok = 77,774 KN (Lampiran A12)

Profil balok W16x36 (Ag = 6838,696 mm^2)

Kuat tarik yang tersedia = 0,9 . fy . Ag ..... (3.19b)

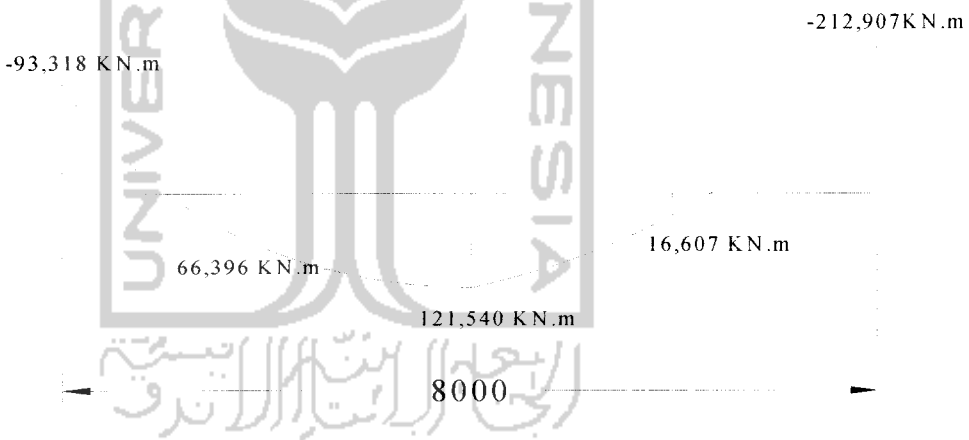
= 0,9 . 250 . 6838,696 = 1538706,6 N

= 1538,707 KN > P = 77,774 KN

b. Analisis tiga dimensi (3D)

Kombinasi beban gempa dan gravitasi

Balok B2



Gambar 5.12 Bending Momen

Bentang yang terjadi lengkung ganda (*double curvature*)

Mu = 212,907 KN.m (Lampiran A8)

$$Cb = \frac{12{,}5.M_{maks}}{2{,}5.M_{maks} + 3M_A + 4M_B + 3M_C} \leq 2{,}3 \quad \text{..... (3.16)}$$

$$= \frac{12,5.212,907}{2,5.212,907 + 3.66,396 + 4.121,54 + 3.16,607}$$

$= 2,1 < 2,3$

Dipakai profil W16X36 (ry = 38,61 mm; Zx = 1048772,1 mm^3;

X_1 = 11721,5 MPa; $X_2 = 438.10^{-6}$ $(1/MPa)^2$; Sx = 925869,12 mm^3)

Cek penampang kompak

Rasio lebar sayap terhadap tebal sayap

$$\frac{b}{2.tf} \leq \frac{171}{\sqrt{Fy}} \quad \text{..... (3.11)}$$

Rasio tinggi badan terhadap tebal badan

$$\frac{177,419}{2.10,922} = 8,122 \leq \frac{171}{\sqrt{250}} = 10,815$$

$$\frac{d}{tw} \leq \frac{640}{\sqrt{Fy}} \quad \text{..... (3.12)}$$

$$\frac{402,844}{7,493} = 53,763 \leq \frac{1680}{\sqrt{250}} = 106$$

$$Lp = 1,76.ry.\sqrt{\frac{E}{fy}} = 1,76.38,61\sqrt{\frac{2.10^5}{250}} = 1921,92 \text{ mm}$$

$$Lr = \frac{ry.X_1}{(fy - fr)}.\sqrt{1 + \sqrt{1 + X_2.(fy - fr)^2}} \quad \text{..... (3.15)}$$

$$= \frac{38,61.11721,5}{(250 - 70)}.\sqrt{1 + \sqrt{1 + 438.10^{-6}.(250 - 70)^2}}$$

$= 5562,76$ mm

L = 4 m = 4000 mm

Lp = 19121,92 mm < Lb = 4000 mm < Lr = 5562,76 mm

Maka kuat nominal komponen struktur terhadap momen lentur adalah

$$Mn = Cb.\left[Mr + (Mp - Mr).\frac{(Lr - L)}{(Lr - Lp)} \right] \leq Mp \quad \text{..... (3.14)}$$

dengan:

Mp = Zx.Fy = 1048772,1 ×250

= 262,19.10^6 N.mm = 262,19 KN.m

Mr = (fy – fr).Sx = (250 – 70). 925869,12

= 166,66.10^6 N.mm = 166,66 KN.m

Maka :

$$Mn = 2{,}1 \cdot \left[166{,}66 + (262{,}19 - 166{,}66).\frac{(5{,}563 - 4)}{(5{,}563 - 1{,}922)} \right]$$

= 436,05 KN.m > Mp = 262,19 KN.m

Mn pakai = 262,19 KN.m

0,9 . Mn = 0,9 . 262,19 = 235,971 KN.m > Mu = 212,907 KN.m

AMAN

$\frac{235{,}971}{212{,}907} = 1{,}12 < 1{,}25$ (sesuai dengan batasan yang kami tentukan)

Kontrol Defleksi

Dari Program SAP 2000 didapatkan defleksi profil balok W16x36 ditengah bentang adalah 0,61 cm

Maksimum defleksi diizinkan adalah = $\frac{8}{360}$ = 0,022 m = 2,2 cm

Profil balok W16x36 dapat digunakan

Kuat Tarik yang tersedia

P aksial balok = 79,437 KN (Lampiran A16)

Profil balok W16x36 (Ag = 6838,696 mm^2)

Kuat tarik yang tersedia = 0,9 . fy . Ag ..... (3.19b)

= 0,9 . 250 . 6838,696 = 1538706,6 N

= 1538,707 KN > P = 79,437 KN

Perhitungan perencanaan balok selanjutnya dapat dilihat pada lampiran D.

5.3.2 Gaya Geser Rencana Balok

a. Analisis dua dimensi (2D)

Gaya geser pada balok B_2 portal B adalah (Lihat lampiran A17)

V_D = 53,186 KN

V_L = 61,277 KN

V_E = 12,758 KN

Gaya geser balok diambil dari nilai minimum dua persamaan berikut :

$$Vu = 1{,}2.V_D + 0{,}5.V_L + \frac{2.Mpb}{L'} \quad \text{..... (3.20a)}$$

$$= 1{,}2.\ 53{,}186 + 0{,}5.\ 61{,}277 + \frac{2.262{,}19}{7{,}54} = 170{,}964 \text{ KN}$$

$$Vu = 1{,}2.V_D + 0{,}5.V_L + \mu.V_E \quad \text{..... (3.20b)}$$

$$= 1{,}2.\ 53{,}186 + 0{,}5.\ 61{,}277 + 4.\ 12{,}758 = 145{,}494 \text{ KN}$$

Gaya gsesr rencana balok adalah 145,494 KN

b. Analisis tiga dimensi (3D)

Gaya geser pada balok B_2 portal B adalah (Lihat lampiran A18)

V_D = 57,151 KN

V_L = 43,656 KN

V_E = 11,552 KN

Gaya geser balok diambil dari nilai minimum dua persamaan berikut :

$$Vu = 1{,}2.V_D + 0{,}5.V_L + \frac{2.Mpb}{L'} \quad \text{..... (3.20a)}$$

$$= 1{,}2.\ 57{,}151 + 0{,}5.\ 43{,}656 + \frac{2.262{,}19}{7{,}54} = 166{,}912 \text{ KN}$$

$$Vu = 1{,}2.V_D + 0{,}5.V_L + \mu.V_E \quad \text{..... (3.20b)}$$

$$= 1{,}2.\ 57{,}151 + 0{,}5.\ 43{,}656 + 4.\ 11{,}552 = 136{,}617 \text{ KN}$$

Gaya gsesr rencana balok adalah 136,617 KN

Perhitungan gaya geser rencana selanjutnya dapat dilihat pada lampiran A17 dan A18.

5.3.3 Kuat Geser Nominal Balok Portal

a. Analisis dua dimensi (2D)

Diketahui gaya geser yang bekerja pada balok B2 Portal B adalah

Vu = 145,494 KN (Lampiran A17)

Kontrol perbandingan tinggi terhadap tebal panel (h/tw) pendukung geser

h = 0,95. d = 0,95. 402,844 = 362,560 mm

$$\frac{h}{tw} < 1{,}1.\sqrt{\frac{k_n E}{fy}} \quad \text{..... (3.22a)}$$

$$\frac{h}{tw} = \frac{362{,}560}{7{,}493} = 48{,}387 < 1{,}1.\sqrt{\frac{k_n E}{fy}} = 1{,}1.\sqrt{\frac{5{,}01.200000}{250}} = 69{,}67$$

$Aw = d.tw = 402{,}844.\ 7{,}493 = 3018{,}51\ mm^2$

$\phi Vn = 0{,}9.\ 0{,}6.fy.Aw$ ..... (3.22b)

$= 0{,}9.\ 0{,}6.\ 250.\ 3018{,}51$

$= 407498{,}85\ N = 407{,}499\ KN$

Rasio tegangan yang terjadi

$$\frac{Vu,k}{\phi Vn} = \frac{145{,}494}{407{,}499} = 0{,}357 < 1{,}0 \rightarrow \text{AMAN}$$

b. Analisis tiga dimensi (3D)

Diketahui gaya geser yang bekerja pada balok B2 adalah

Vu = 136,617 KN (Lampiran A18)

Kontrol perbandingan tinggi terhadap tebal panel (h/tw) pendukung geser

h = 0,95. d = 0,95. 402,844 = 362,560 mm

$$\frac{h}{tw} < 1{,}1.\sqrt{\frac{k_n E}{fy}} \quad \text{..... (3.22a)}$$

$$\frac{h}{tw} = \frac{362{,}560}{7{,}493} = 48{,}387 < 1{,}1.\sqrt{\frac{k_n E}{fy}} = 1{,}1.\sqrt{\frac{5{,}01.200000}{250}} = 69{,}67$$

Aw = d.tw = 402,844. 7,493 = 3018,51 mm^2

ϕ Vn = 0,9. 0,6.fy.Aw ..... (3.22b)

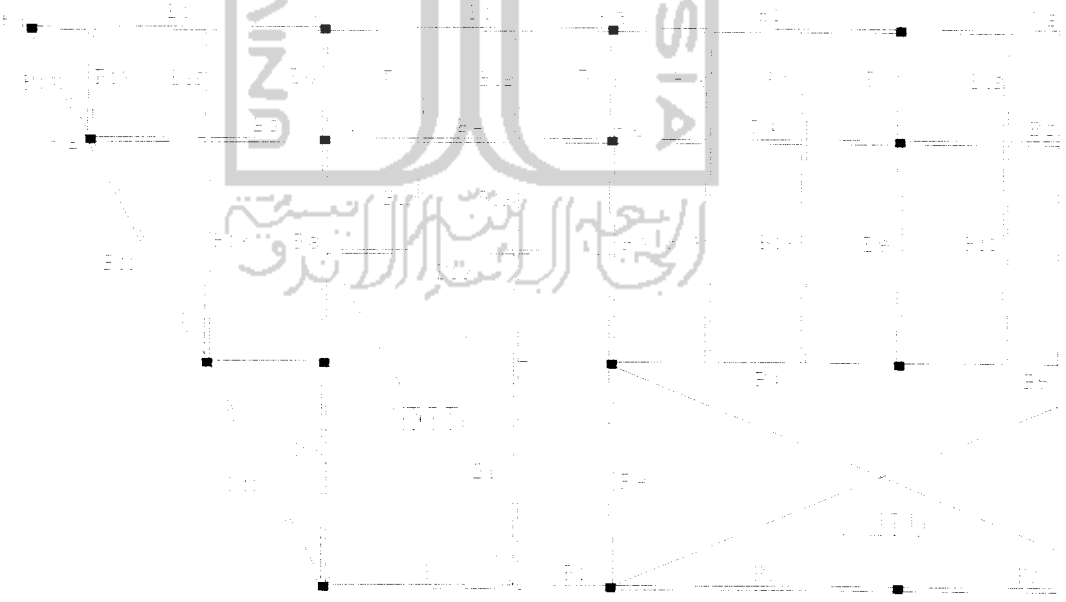
= 0,9. 0,6. 250. 3018,51

= 407498,85 N = 407,499 KN

Rasio tegangan yang terjadi

$$\frac{Vu,k}{\phi Vn} = \frac{136{,}617}{407{,}499} = 0{,}340 < 1{,}0$$

Perhitungan kuat geser balok dapat dilihat pada lampiran D9 dan D10



Gambar 5.13 Pola Balok Lantai 1

Tabel 5.2 Rekapitulasi Profil Balok Lantai 1

Analisis 2D		Analisis 3D	
Balok	**Profil**	**Balok**	**Profil**
B1	W18X60	B1	W18X55
B2	W18X60	B2	W18X55
B3	W18X55	B3	W18X55
B4	W18X76	B4	W18X71
B5	W18X86	B5	W18X76
B6	W16X40	B6	W16X31
B7	W16X26	B7	W16X26
B8	W16X40	B8	W16X31
B9	W16X36	B9	W16X36
B10	W14X22	B10	W14X22
B11	W14X26	B11	W14X26
B12	W14X22	B12	W14X22
B13	W14X226	B13	W14X226

Tabel 5.3 Rekapitulasi Profil Balok Lantai 2

Analisis 2D		Analisis 3D	
Balok	**Profil**	**Balok**	**Profil**
B1	W18X55	B1	W18X46
B2	W18X55	B2	W18X46
B3	W18X46	B3	W18X46
B4	W18X55	B4	W18X55
B5	W18X60	B5	W18X55
B6	W16X26	B6	W16X26
B7	W16X26	B7	W16X26
B8	W16X36	B8	W16X26
B9	W16X31	B9	W16X31
B10	W14X22	B10	W14X22
B11	W14X26	B11	W14X26
B12	W14X22	B12	W14X22
B13	W14X26	B13	W14X26

Tabel 5.4 Rekapitulasi Profil Balok Lantai 3

Analisis 2D		Analisis 3D	
Balok	**Profil**	**Balok**	**Profil**
B1	W16X36	B1	W18X46
B2	W16X36	B2	W18X46
B3	W16X26	B3	W18X46
B4	W16X31	B4	W18X55
B5	W16X36	B5	W18X55
B6	W14X22	B6	W16X26
B7	W14X26	B7	W16X26
B10	W14X22	B10	W14X22
B11	W14X26	B11	W14X26
B12	W14X22	B12	W14X22
B13	W14X26	B13	W14X26

5.4 Perencanaan kolom

Perencanaan kolom didasarkan pada prinsip desain *strong column and weak beam*, dimana respon struktur pada kolom (Muk, Nuk, dan Vu,k) terlebih dulu dicari berdasarkan kapasitas maksimum profil balok yang digunakan.

5.4.1 Momen Rencana Kolom (Mu,k)

Analisis tiga dimensi (3D)

Momen Rencana kolom

Profil balok lantai 1 (B1) adalah W16x26 (d = 398,526 mm, Zx = 724308,229 mm^3).

Mp = Zx. Fy = 724308,229. 250 =181,077.10^6 N.mm = 181,077 KN.m

Angka kekakuan (α)

$$\alpha a = \frac{I_a / L_a}{[(I_b / L_b) + (I_a / L_a)]} \quad \text{..... (3.24a)}$$

$$= \frac{107912}{107912 + 138397} = 0{,}438$$

$$\alpha b = \frac{I_b / L_b}{[(I_b / L_b) + (I_a / L_a)]} \quad \text{..... (3.24b)}$$

$$= \frac{138397}{107912 + 138397} = 0{,}562$$

Perhitungan selanjutnya dapat dilihat pada tabel 5.11 dibawah ini.

Tabel 5.11 Angka Kekakuan

Ting kat	Elemen	Arah X				Arah Y			
		Ib/Lb (mm3)	Ia/La (mm3)	αbx	αax	Ib/Lb (mm3)	Ia/La (mm3)	αby	αay
1	Eksterior, ki	107912	138397	0,438	0,562	12332,75	15816,75	0,438	0,562
	Interior, ki	107912	138397	0,438	0,562	12332,75	15816,75	0,438	0,562
	Eksterior,ka	221435	0,000	1,000	0,000	25306,8	0,000	1,000	0,000
	Interior,ka	107912	0,000	1,000	0,000	12332,75	0,000	1,000	0,000
2	Eksterior,ki	138397	138397	0,500	0,500	15816,75	15816,75	0,500	0,500
	Interior	138397	138397	0,500	0,500	15816,75	15816,75	0,500	0,500
	Eksterior,ka	138397	0,000	1,000	0,000	138397	0,000	1,000	0,000
3	Eksterior	138397	0,000	1,000	0,000	138397	0,000	1,000	0,000
	Interior	138397	0,000	1,000	0,000	138397	0,000	1,000	0,000

L balok = 4m = 4000 mm

L^1 $= 4000 - \frac{462{,}534}{2} - \frac{462{,}534}{2} = 3537{,}466$ mm

H kolom = 5,13 m = 5130 mm

$hn = 5130 - \frac{398{,}526}{2} = 4930{,}737$ mm

$$Mu,k = \frac{hn}{h}.\alpha.1{,}1.Ry.\left(\frac{L_{bi}}{L^1_{bi}}.M_{bi} + \frac{L_{ba}}{L^1_{ba}}.M_{ba}\right) \quad \text{..... (3.23a)}$$

Maka :

$$Mu_{,kb} = \frac{4,93}{5,13}.0,438.1,1.1,5.\left(\frac{4}{3,54}.199,185\right) = 156,315 \text{ KN.m}$$

$$Mu_{,kb} = 1,2.\ 9,102 + 0,5.\ 7,841 + 4.\ 129,245 = 531,821 \text{ KN.m}$$

Dengan demikian, momen rencana kolom ($Mu_{,k}$ x) bawah pada join lantai 1 (K3) adalah sebesar 156,315 KN.m

Perhitungan momen rencana kolom dapat dilihat pada lampiran B1.

5.4.2 Gaya aksial rencana kolom

Hasil analisis struktur pada kolom K5 lantai 3 adalah (lihat lampiran B2)

P_D,k = 76,861 KN

P_L,k = 54,56 KN

P_E,k = 3,235 KN

Kolom diapit 3 balok yang saling tegak lurus, yaitu satu balok arah x dengan profil W14x26 dan dua balok arah y dengan profil W16x26.

Kapasitas lentur sendi plastis pada kedua ujung balok.

$$Pu,k = \left(\frac{Mpb,ki}{L'_{ki}} + \frac{Mpb,ka}{L'_{ka}}\right) + 1,05.Pg,k \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.26)$$

$$= \left(\frac{2.181,159}{3,54} + \left[2.\left(\frac{2.199,185}{8,54}\right)\right]\right) + 1,05.(76,861 + 54,56)$$

= 235,814 KN

Tetapi tidak lebih besar dari :

$Pu,k = 1,2.P_D + 0,5.P_L + \mu .P_E = 1,2.76,861 + 0,5.54,56 + 4.3,235$

= 106,573 KN

Jadi gaya aksial rencana kolom (P_U,k) terpakai adalah sebesar 106,573 KN

Perhitungan gaya aksial rencana kolom dapat dilihat pada lampiran B2.

5.4.3 Gaya Geser Kolom

Hasil analisis struktur pada kolom lantai 2 (lihat lampiran B3)

V_D,k x = 3,269 KN

V_L,k x = 3,799 KN

V_E,k x = 29,536 KN

Mu,k desain = 86,142 KN.m (dari hitungan momen rencana kolom)

$$Vu,k = \frac{Mu,k_{bawah} + Mu,k_{atas}}{h'_k} \quad \text{..... (3.29)}$$

$$= \frac{2.86,142}{3,62}$$

$$= 47,592 \text{ KN}$$

Tetapi tidak lebih besar dari :

$$Vu,k = 1,2.V_D,k + 0,5.V_L,k + \mu .V_E,k \quad \text{..... (3.30)}$$

$$= 1,2.\ 3,269 + 0,5.\ 3,799 + 4.\ 29,536$$

$$= 123,966 \text{ KN}$$

Jadi gaya geser rencana kolom (V_u,k) terpakai adalah sebesar 47,592 KN

Perhitungan gaya geser rencana kolom dapat dilihat pada lampiran B3.

5.4.4 Perencanaan Kolom Terhadap Momen Lentur dan Gaya Aksial Rencana

Analisis tiga dimensi (3D)

Kolom Eksterior lantai 2 (K3)

Mu,k x = 92.103 KN.m

Mu,k y = 248.014 KN.m

Pu,k = 484.327 KN

Kekakuan kolom arah x

$$G_A = \frac{\left(\frac{553587796}{5150}\right)+\left(\frac{553587796}{4000}\right)}{\left(\frac{125285659{,}1}{4000}\right)} = 6{,}86 \quad \text{..... (3.20)}$$

$$G_B = \frac{\left(\frac{553587796}{5150}\right)+\left(\frac{553587796}{4000}\right)}{\left(\frac{125285659{,}1}{4000}\right)} = 6{,}86$$

Dari grafik Johnson dan moreland didapatkan nilai kx = 2,25

Kekakuan kolom arah y

$$Ga = \frac{\left(\frac{553587796}{5150}\right)+\left(\frac{553587796}{4000}\right)}{\left(\frac{2.254733632{,}5}{9000}\right)} = 1{,}688 \quad \text{..... (3.20)}$$

$$G_B = \frac{\left(\frac{553587796}{5150}\right)+\left(\frac{553587796}{4000}\right)}{\left(\frac{2.254733632,5}{9000}\right)} = 1,6688$$

Dari grafik Johnson dan moreland didapatkan nilai ky = 1,5

Perhitungan kekakuan kolom dapat dilihat pada tabel 5.14 dibawah ini.

Tabel 5.14 Kekakuan Kolom

Tingkat	Bagian	G	Gx	Kx	Gy	Ky
1	Tepi	Ga	6.86	1.75	1.688	1.4
		Gb	1		1	
	Tengah	Ga	3.935	1.68	3.797	1.65
		Gb	1		1	
2	Tepi	Ga	6.86	2.25	1.688	1.5
		Gb	6.86		1.688	
	Tengah	Ga	3.935	2	3.797	1.9
		Gb	3.935		3.797	
3	Tepi	Ga	8.84	2.95	3.45	1.7
		Gb	6.86		1.688	
	Tengah	Ga	6.68	2.12	4.89	2.1
		Gb	3.935		3.797	

Dicoba Profil W14x99 (ry = 94,234 mm; rx = 156,718 mm ; Sx = 2572769,05 mm^3 ; Zx = 2834962,07 mm^3 ; A = 18774,156 mm^2 ; X_1 = 219950,5 Mpa ; $X_2 = 1,89.10^{-6}$; $\frac{bf}{2.tf} = 9,34$; $\frac{d}{tw} = 29,2$)

$$\frac{(K.L)x}{rx} = \frac{2,25 \times 4000}{156,718} = 57,428$$

$$\frac{(K.L)y}{ry} = \frac{1,5 \times 4000}{94,742} = 63,330 \rightarrow \text{yang dipakai}$$

Dari tabel AISC-LRFD hal 6-124 didapatkan nilai ϕc.Fcr

$\phi c.Fcr = 170,58$ Mpa

$\phi.Pn = \phi c.Fcr \times A = 170,58 \times 18774,156 = 3202,539$ KN

$$Lp = 1,76.ry.\sqrt{\frac{E}{fy}} = 1,76.94,234\sqrt{\frac{2.10^5}{250}} = 4690,998 \text{ mm} > Lb = 4000 \text{ mm}$$

Maka kuat nominal komponen struktur terhadap momen lentur adalah

ϕ Mnx $= \phi.Zx.Fy = 0,9.\ 2834962,07.\ 250.\ 10^{-6} = 637,866$ KN.m

ϕ Mny $= \phi.Zy.Fy = 0,9.\ 1369958,55.\ 250.\ 10^{-6} = 308,241$ KN.m

Selanjutnya dikontrol terhadap persamaan interaksi kolom aksial dan lentur

$$\frac{Pu}{\phi.Pn} = \frac{484,327}{3202,539} = 0,14 < 0,2$$

Rumus AISC-LRFD

$$\frac{Pu}{2.\phi.Pn} + \left(\frac{Mux}{\phi.Mnx} + \frac{Muy}{\phi.Mny}\right) \quad \text{..... (3.19)}$$

$$0,07 + \left(\frac{92.103}{637.866} + \frac{248.014}{308,241}\right) = 0,92 < 1,0 \rightarrow \textbf{AMAN}$$

Perhitungan perencanaan kolom terhadap lentur dan aksial dapat dilihat pada lampiran E

5.4.5 Perencanaan Kolom Terhadap Geser

Gaya geser (Vu,k) pada kolom K3 lantai 2 sebesar 119,628 KN

Kontrol rasio tinggi terhadap tebal panel (h/tw)

$$\frac{db}{tw} = \frac{359,664}{12,319} = 29,196 < 1,1.\sqrt{\frac{k_n E}{fy}} = 1,1.\sqrt{\frac{5,01.200000}{250}} = 69,67$$

Aw $= d.tw = 359,664.\ 12,319 = 4430,701$ mm^2

$$\phi \text{Vn} = 0{,}9.\ 0{,}6.\text{fy.Aw}$$

$$= 0{,}9.\ 0{,}6.\ 250.\ 4430{,}701$$

$$= 996908 \text{ N} = 996{,}908 \text{ KN}$$

Rasio tegangan yang terjadi

$$\frac{Vu,k}{\phi Vn} = \frac{119{,}628}{996{,}908} = 0{,}12 < 1{,}0 \rightarrow \textbf{AMAN}$$

Perhitungan perencanaan kolom terhadap geser dapat dilihat pada lampiran E3

Gambar 5.13 Hasil Desain Kolom dan Balok Portal 1

Gambar 5.14 Hasil Desain Kolom dan Balok Portal 2

5.5 Perencanaan Sambungan

5.5.1 Sambungan Balok ke Kolom

Diambil contoh hitungan portal 1 lantai 2 tepi kiri, antara balok B1 dan K3.

Data profil desain yang dipakai

Balok W18X60

Ag	= 11290,3 mm^2	Zx	= 2015608,872 mm^3
d	= 463,296 mm	Zy	= 337573,518 mm^3
tw	= 105,41 mm	Fy	= 250 Mpa
bf	= 191,897 mm	Fu	= 410 Mpa
tf	= 17,653 mm		

Kolom W14X109

Ag	= 20851,571 mm^2	Zx	= 3146316,288 mm^3
d	= 363,728 mm	Zy	= 1519080,833 mm^3
tw	= 13,335 mm	Fy	= 250 Mpa
bf	= 370,967 mm	Fu	= 410 Mpa
tf	= 21,844 mm	k	= 39,688 mm

Prosedur desain

a. Menentukan beban yang bekerja berdasarkan kapasitas plastis balok

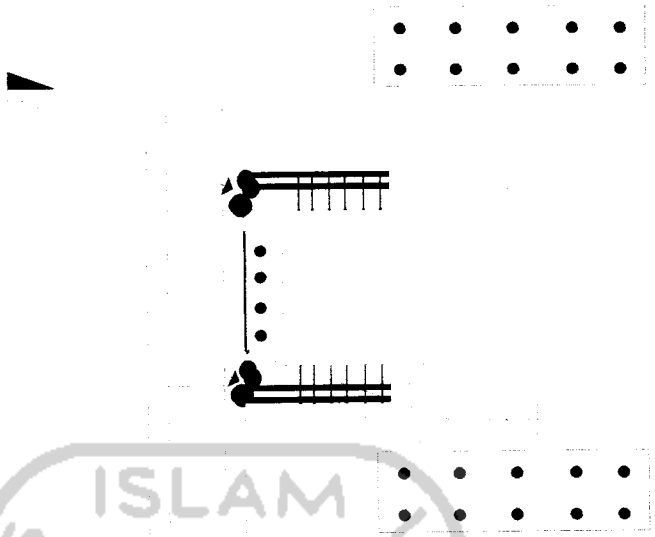
Momen kapasitas balok supaya terjadi strain hardening

Mp = 1,1. Zx. Fy

= 1,1 . 2015608,872. 250

= 554292439,8 N.mm

= 554,292 KN.m



Gambar 5.15 Rencana Sambungan Yang Digunakan

Gaya geser pada lokasi sendi plastis balok B1 hasil dari analisis struktur dapat dilihat pada lampiran A adalah sebagai berikut :

V_D = 86,248 KN

V_L = 36,467 KN

V_E = 51,143 KN

Gaya geser pada sendi plastis balok, merupakan nilai terkecil dari :

$$Vp = 1{,}2.V_D + 0{,}5.V_L + \frac{2.Mp}{L'}$$

$$= 1{,}2.86{,}248 + 0{,}5.36{,}467 + \frac{2.554{,}292}{8{,}54} = 122{,}669 \text{ KN}$$

$$Vp = 1{,}2.V_D + 0{,}5.V_L + \mu.V_E$$

$$= 1{,}2.\ 86{,}248 + 0{,}5.\ 36{,}467 + 4.\ 51{,}143 = 326{,}303\ KN$$

Momen pada muka kolom, Mf

$$Mf = Mpb + Vp.X = 554{,}292 + 122{,}669.0{,}831 = 656{,}288\ KN.m$$

b. Sambungan flange plate ke sayap kolom

Gaya tarik terfaktor, Tu

$$Tu = \frac{Mf}{0{,}95.d} \quad \text{..... (3.40)}$$

$$= \frac{656{,}288.10^3}{0{,}95.463{,}296} = 1491{,}119\ KN$$

Menenntukan ukuran flange plate yang menahan tarik dan desak :

Kondisi leleh tarik :

$$Tu \leq \phi.Fy.Ag \quad \text{..... (3.42)}$$

$$Ag_{min} = \frac{1491{,}119.10^3}{0{,}9.250} = 6627{,}196\ mm^2 \text{ (menentukan)}$$

Kondisi fraktur :

$$Tu \leq \phi.\ Fu.\ Ae \rightarrow Ae = U.\ An \quad \text{..... (3.43)}$$

Untuk $An \leq 0{,}85.\ Ag$

$U = 1 \rightarrow$ untuk pelat sambung/batang tarik pendek

$$Tu \leq \phi.\ Fu.\ U.\ 0{,}85.\ Ag$$

$$Ag_{min} = \frac{1491{,}119.10^3}{0{,}75.410.1.0{,}85} = 5704{,}903\ mm^2$$

Jika digunakan lebar flange plate, bpl = 165 mm

Maka tebal flange plate, tpl = $\frac{6627,196}{165}$ = 40,165 mm ≈ 45 mm

Menentukan jumlah baut yang diperlukan untuk menstranfer gaya tarik dan tekan pada bagian atas dan bawah balok :

Kuat geser satu baut A_{325}-X diameter ⅞ in

$\phi Rn = \phi.(0,6.\ Fu^b).\ m.\ A_b$ ..... (3.44)

= 0,75. (0,6. 838). 1. 387,96 = 146295,158 N = 146,295 KN

Kebutuhan baut minimal untuk menahan geser

$n_{min} = \frac{Tu}{\phi Rn} = \frac{1491,119}{146,295} = 10,193 \rightarrow 12$ buah ..... (3.45)

Kuat tumpu sayap balok

$\phi Rn = \phi.\ 2,4.\ Fu.\ d_b.\ t_p$ ..... (3.46)

= 0,75. 2,4. 410. 25. 17,653 = 325697,85 N

= 325,698 KN > 146,295 KN

Menentukan ukuran plat geser, jumlah baut dan panjang las :

$Vf = \frac{2.M_f}{Ln} + Vg$ ..... (3.50)

$= \frac{2.656,288}{8.54} + 1,2.86,248 + 0,5.36,467 = 298,58$ KN

Apabila digunakan baut dengan diameter ¾ in

$\phi Rn = \phi.(0,6.\ Fu^b).\ m.\ A_b$ ..... (3.44)

= 0,75. (0,6. 838). 1. 285,023 = 107482,157 N = 107,482 KN

Jumlah baut n = $\frac{V_f}{\phi Rn} = \frac{298,58}{107,482}$ = 2,78 → 4 buah ..... (3.52)

Dicoba plat ⅜ X 11,5

Kontrol geser leleh pada plat

$\phi Rn = \phi.(0,6.\ Fy).\ A_g$ ..... (3.53)

= 0,9. (0,6. 250). 2782,253 = 375604,088 N

= 375,604 KN > Vf = 298,58 KN → *Ok*

Kontrol geser fraktur pada plat :

$\phi Rn = \phi.(0,6.\ Fu).\ A_n$ ..... (3.54)

= 0,75. (0,6. 410). 1995,964 = 368255,312 N

= 368,255 KN >Vf = 298,58 KN → *Ok*

Menentukan panjang las fillet pada plat geser

a_{max} = tpl - 1/16 = ⅜ - 1/16 = 5/16 in

a_{min} = 3/16 in

a_{pakai} = ¼ in

te = 0,707. a = 0,707. 0,25 = 0,177 in = 5 mm

Kekuatan las terhadap geser

ϕR_{nw} = ϕ.(0,6.fuw). te ..... (3.55)

= 0,75. (0,6.485). 5 = 1091,25 N/mm (menentukan)

Kekuatan las terhadap geser fraktur dari logam dasar

ϕR_{nw} = ϕ.(0,6.fu). tpl ..... (3.56)

= 0,75. (0,6. 410). 10 = 1845 N/mm

Panjang las yang dibutuhkan

$$\text{P las} = \frac{Vf}{\phi Rnw} \quad \text{..... (3.57)}$$

$$= \frac{298{,}58.10^3}{1091{,}25} = 273{,}613 \text{ mm} \rightarrow \text{pakai } 275 \text{ mm}$$

5.5.3 Perencanaan Sambungan Kolom dengan Kolom

Diketahui profil kolom K3 lantai 1 adalah W14X159 dan lantai 2 adalah W14X99. Mu,k = 698,745 KN.m dan Pu,k = 657,569 KN

Kolom W14X159

Ag	= 30128,97 mm^2	Zx	= 4703087,368 mm^3
d	= 381 mm	Zy	= 2392511,344 mm^3
tw	= 18,923 mm	Fy	= 250 Mpa
bf	= 396,24 mm	Fu	= 410 Mpa
tf	= 30,226 mm	k	= 46,736 mm

Gaya pada sayap kolom

$$\text{Pu}_f = \frac{Mu,k}{0{,}95.d} \quad \text{..... (3.58)}$$

$$= \frac{698{,}745.10^3}{0{,}95.363{,}728} = 2022 \text{ KN}$$

a. Sambungan pada sayap

Kuat geser satu baut

Apabila digunakan baut tipe A325 dengan diameter ¾ in

$$\phi Rn = \phi.(0{,}6.\ Fu^b).\ m.\ A_b \quad \text{..... (3.44)}$$

$$= 0{,}75.\ (0{,}6.\ 838).\ 1.\ 285{,}023 = 107482{,}157\ N = 107{,}482\ KN$$

Jumlah baut yang diperlukan

$$n_{perlu} = \frac{Pu_f}{2.\varphi.Rn} \quad \text{..... (3.59)}$$

$$= \frac{2022}{2.107{,}482} = 9{,}4 \approx 10 \text{ buah}$$

Dicoba pelat lebar 10,5 in

Luas penampang bruto *flange plate*

$$Ag = \frac{Pu_f}{0{,}9.Fy} \quad \text{..... (3.62)}$$

$$= \frac{2022.10^3}{0{,}9.250} = 8986{,}66\ mm^2$$

$$t_{min} = \frac{Ag}{l} = \frac{8986{,}66}{10{,}5.25{,}4} = 33{,}696\ mm$$

Kontrol kekuatan pelat sambung

$$\phi Rn = \phi.fu.Ant > \frac{Pu_f}{2} \quad \text{..... (3.63)}$$

$$Agt = ¾ .10{,}5 = 7{,}875\ in^2 = 5080{,}635\ mm^2$$

$$Ant = (10{,}5 - 2(¾ + \tfrac{1}{6})).\ ¾ = 6{,}5\ in^2 = 4193{,}54\ mm^2$$

$$0{,}85.Agt = 0{,}85.\ 5080{,}635 = 4318{,}54\ mm^2 > Ant = 4193{,}54\ mm^2$$

$$\phi Rn = \phi.fu.Ant > \frac{Pu_f}{2} \quad \text{..... (3.63)}$$

$$\phi Rn = 0{,}75.\ 410.\ 4193{,}54 = 1289{,}514\ KN > \frac{2022}{2} = 1011\ KN$$

AMAN

b. Sambungan pada badan

Gaya pada badan kolom

$$Puw = \frac{Pu,k.Aw}{A} \quad \text{..... (3.66)}$$

$$= \frac{657{,}569.30128{,}97}{6065{,}73} = 2266{,}2\ KN$$

Kuat geser satu baut

Apabila digunakan baut tipe A325 dengan diameter ¾ in

$$\phi Rn = \phi.(0{,}6.\ Fu^b).\ m.\ A_b \quad \text{..... (3.44)}$$

$$= 0{,}75.\ (0{,}6.\ 838).\ 1.\ 285{,}023 = 107482{,}157\ N = 107{,}482\ KN$$

Jumlah baut yang diperlukan

$$n_{perlu} = \frac{Pu_f}{2.\varphi.Rn} \quad \text{..... (3.59)}$$

$$= \frac{2266{,}2}{2.107{,}482} = 10{,}2 \approx 12\ buah$$

Dicoba pelat lebar 10,5 in

Luas penampang bruto *flange plate*

$$Ag = \frac{Pu_f}{0{,}9.Fy} \quad \text{..... (3.62)}$$

$$= \frac{2266{,}2.10^3}{0{,}9.250} = 10072 \text{ mm}^2$$

$$t_{min} = \frac{Ag}{l} = \frac{10072}{10{,}5.25{,}4} = 37{,}766 \text{ mm}$$

Kontrol kekuatan pelat sambung

$$\phi Rn = \phi.fu.Ant > \frac{Pu_f}{2} \quad \text{..... (3.63)}$$

Agt = ¾ .10,5 = 7,875 in^2 = 5080,635 mm^2

Ant = (10,5 – 2(¾ + ⅛)). ¾ = 6,5 in^2 = 4193,54 mm^2

0,85.Agt = 0,85. 5080,635 = 4318,54 mm^2 > Ant = 4193,54 mm^2

$$\phi Rn = \phi.fu.Ant > \frac{Pu_f}{2} \quad \text{..... (3.63)}$$

$$\phi Rn = 0{,}75.\ 410.\ 4193{,}54 = 1289{,}514 \text{ KN} > \frac{2266{,}2}{2} = 1133{,}1 \text{ KN}$$

AMAN

5.5.4 Perencanaan Pelat Dasar Kolom

Momen dan gaya aksial yang bekerja

Mu,k x = 615,878 KN.m (Lampiran B1)

Mu,k y= 173,612 KN.m (Lampiran B1)

Pu, k = 704,969 KN (Lampiran B2)

Digunakan Profil kolom W14X159 dengan data sebagai berikut :

Ag	= 30128,97 mm^2	Zx	= 4703087,368 mm^3
d	= 381 mm	Zy	= 2392511,344 mm^3
tw	= 18,923 mm	Fy	= 250 Mpa
bf	= 396,24 mm	Fu	= 410 Mpa
tf	= 30,226 mm	k	= 46,736 mm

Eksentrisitas akibat momen

$$ey = \frac{Mu,kx}{Pu,k} = \frac{615,878}{704,969} = 0,874 \text{ m}$$

$$ey = \frac{Mu,ky}{Pu,k} = \frac{173,612}{704,969} = 0,246 \text{ m}$$

diasumsikan e > L/6, akibat e terjadi pembesaran gaya aksial, maka diberi sayap tambahan = 101,9 mm (menggunakan profil C12X45).

Kesetimbangan momen pada pusat gaya aksial T :

$$Pu,k\left(\frac{dc}{2}+\frac{bf_{ca}}{2}\right)+Mu,k_x+Mu,k_y = R\left(dc+bf_{ca}-\frac{tf}{2}\right) \quad ...(3.77)$$

$$T = \frac{704,969\left(\frac{0,381}{2}+\frac{0,396}{2}\right)+615,878+173,612}{0,381+0,396-\frac{0,0302}{2}}$$

= 1395,68 KN

Diasumsikan luas bidang tekan efektif penumpu akibat momen yang bekerja adalah (X.B), sehingga gaya tekan yang terjadi harus memenuhi :

$\phi P_p \geq Pu$ ..... (3.78)

$\phi(0,5.Fp.\ X.B) = Pu$

$$(X.B) = \frac{2.Pu}{\phi.Fp} = \frac{2.1395,68.1000}{\phi.0,5.25} = 372181,33\ mm^2$$

Coba B = 0,7 m, maka panjang bidang tekan

$$X = \frac{X.B}{0,7m} = \frac{372181,33}{700} = 531,69\ mm$$

Jarak dari pusat flens ke ujung pelat = 1/3.X ..... (3.79)

= 1/3. 531,69 = 177,23 mm

Panjang pelat dasar yang dibutuhkan

L = (2.X) + (dc – tf) ..... (3.80)

= (2.177,23) + (381-30,226) = 705,23 mm = 0,705 m

Diambil L = 710 mm = 0,71 m

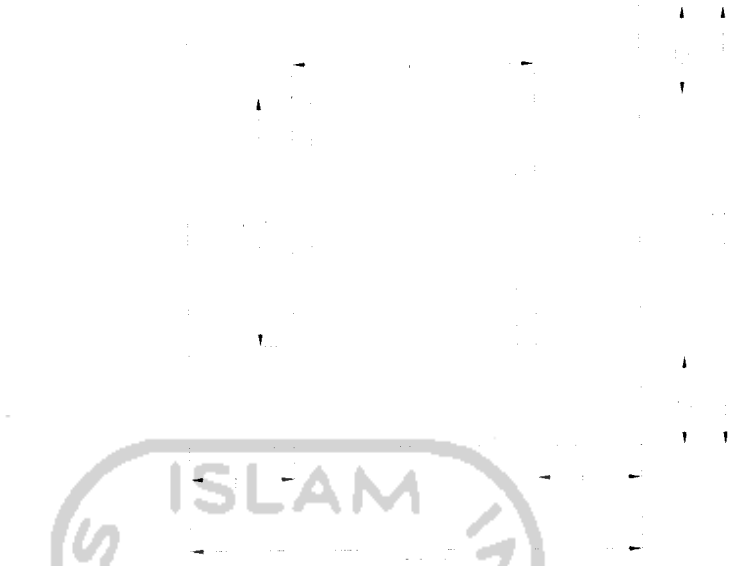
Dipakai B = 0,7 m dan L = 0,71 m

$$m = \frac{L - 0,95.dc}{2} \quad \text{..... (3.81)}$$

$$= \frac{0,71 - 0,95.0,381}{2} = 0,17\ m$$

$$n = \frac{B - 0,8.bf}{2} \quad \text{..... (3.82)}$$

$$= \frac{0,7 - 0,8.0,396}{2} = 0,19\ m$$



Gambar 5.17 Desain Pelat Dasar Kolom

Tegangan pada ujung pelat :

$$fp = \frac{Pu}{B.L} \pm \frac{Mu,kx}{\frac{1}{6}B.L^2} \pm \frac{Mu,ky}{\frac{1}{6}B^2.L} < Fp \text{ (fy dalam Mpa) .... (3.83)}$$

$$fp\ max = \frac{1395,68}{0,7.0,71} + \frac{615,878}{\frac{1}{6}0,7.0,71^2} + \frac{173,612}{\frac{1}{6}0,7^2.0,71} = 14884,66\ KN/m^2$$

$$fp\ min = \frac{1395,68}{0,7.0,71} - \frac{615,878}{\frac{1}{6}0,7.0,71^2} - \frac{173,612}{\frac{1}{6}0,7^2.0,71} = 154,23\ KN/m^2$$

Cek kapasitas penumpu (pedestal)

$$\phi Pp \geq Pu \text{ ..... (3.84)}$$

$$\phi Pp = \phi_c.Fp.A \text{ ..... (3.85)}$$

$$= 0,6.\ 0,5.\ 25.\ 497000 = 3727500\ N = 3727,5\ KN > 1395,68$$

Perencanaan baut angkur arah y yang menahan Mu,kx

$$T = \frac{Mu,kx}{d} \quad \text{..... (3.92)}$$

$$= \frac{615,878}{0,381+0,102} = 1275,11 \text{ KN}$$

Kapasitas tarik satu angkur (ϕTn), digunakan baut angkur A325 D = 1 in

$$\phi Tn = \phi.0,75.fu.Ab \quad \text{..... (3.93)}$$

$$= \phi.\ 0,75.\ 838.\ 506,707 = 191079,39 \text{ N} = 191,08 \text{ KN}$$

Jumlah angkur minimum yang diperlukan

$$n = \frac{T}{\phi Tn} \quad \text{..... (3.94)}$$

$$= \frac{1275,11}{191,08} = 6,67 \approx 8$$

Perencanaan baut angkur arah x yang menahan Mu,ky

$$T = \frac{Mu,ky}{d} \quad \text{..... (3.92)}$$

$$= \frac{173,612}{0,381+0,102} = 559,45 \text{ KN}$$

Kapasitas tarik satu angkur (ϕTn), digunakan baut angkur A325 D = 1 in

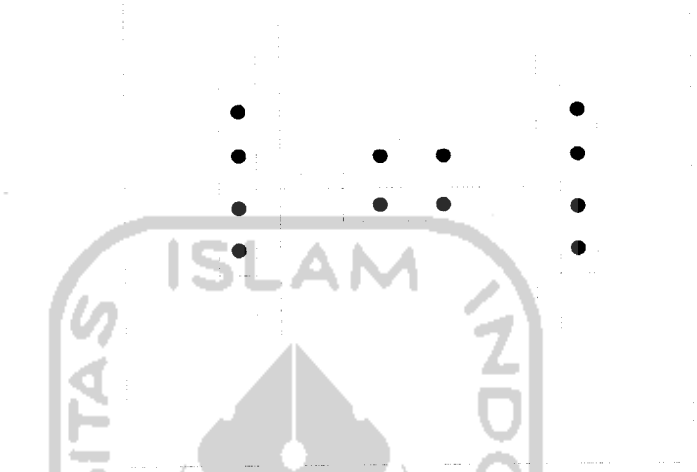
$$\phi Tn = \phi.0,75.fu.Ab \quad \text{..... (3.93)}$$

$$= \phi.\ 0,75.\ 838.\ 506,707 = 191079,39 \text{ N} = 191,08 \text{ KN}$$

Jumlah angkur minimum yang diperlukan

$$n = \frac{T}{\phi Tn} \quad \text{..... (3.94)}$$

$$= \frac{559,45}{191,08} = 2,9 \approx 4$$



Gambar 5.18 Desain Pelat Dasar Kolom

5.5.5 Perencanaan Pedestal (Kaki Kolom)

Dimensi pelat dasar kolom, L = 710 mm dan B = 700 mm

Dimensi pedestal, b = 800 mm dan h = 950 mm

Tulangan longitudinal

Rasio tulangan pakai, ρ = 1 %

$$Ast = 0,01.\ Ag \quad \text{..... (3.99)}$$

$$= 0,01.\ 800.\ 950 = 7600\ mm^2$$

Digunakan $D_{25} \rightarrow A_{\phi 25} = 490,874\ mm^2$

Jumlah tulangan longitudinal

$$n = \frac{Ast}{A_{\phi 22}} \quad \text{..... (3.100)}$$

$$= \frac{7600}{490{,}874} = 15{,}5 \approx 16 \text{ buah}$$

Dipakai tulangan $16D_{25}$ dipasang merata pada pedestal

Tulangan sengkang

Vu,k pakai = 184,367 KN (lihat lampiran B3)

$$Vs = \frac{Vu,k_{pakai}}{\varphi} \quad \text{..... (3.101)}$$

$$= \frac{184{,}367}{0{,}6} = 307{,}28 \text{ KN}$$

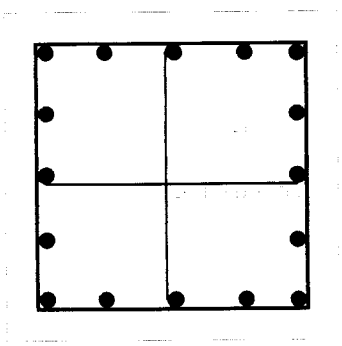
Dipakai tulangan sengkang $P_{10} \rightarrow A_{\phi 10} = 78{,}54 \text{ mm}^2$

Jarak antar tulangan

$$S = \frac{Av.fy.d}{Vs} \quad \text{..... (3.102)}$$

$$= \frac{1{,}5.78{,}54.400.1000}{307{,}28.1000} = 206{,}72 \text{ mm}$$

Dipakai sengkang 3 kaki, $1{,}5P_{10} - 200$



Gambar 5.19 Desain Pedestal (kaki kolom)

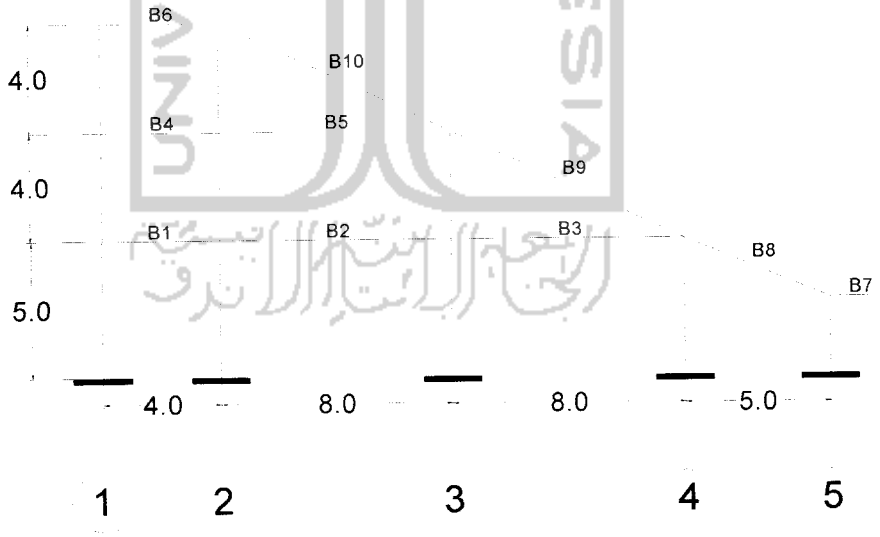
BAB VI KESIMPULAN

BAB VI

HASIL DAN PEMBAHASAN

Hasil dari desain yang telah dilakukan didapatkan bahwa antara Analisis dua dimeni (2D) dan tiga dimensi (3D) terdapat perbedaan, gaya-gaya dalam yang terjadi pada struktur berbeda sehingga profil balok maupun kolom yang didapatkan juga berbeda. Pembahasan yang akan dilakukan meliputi hasil dan perbandingan momen balok, momen kolom, gaya aksial kolom, gaya geser balok, gaya geser kolom dan berat struktur portal.

6.1 Hasil Analisis Momen dan Gaya Geser Balok



Gambar 6.1 Struktur Portal Arah Melintang

○ **Tabel Momen (Mu) dan Gaya Gaya Geser (Vu) Balok Portal As B**

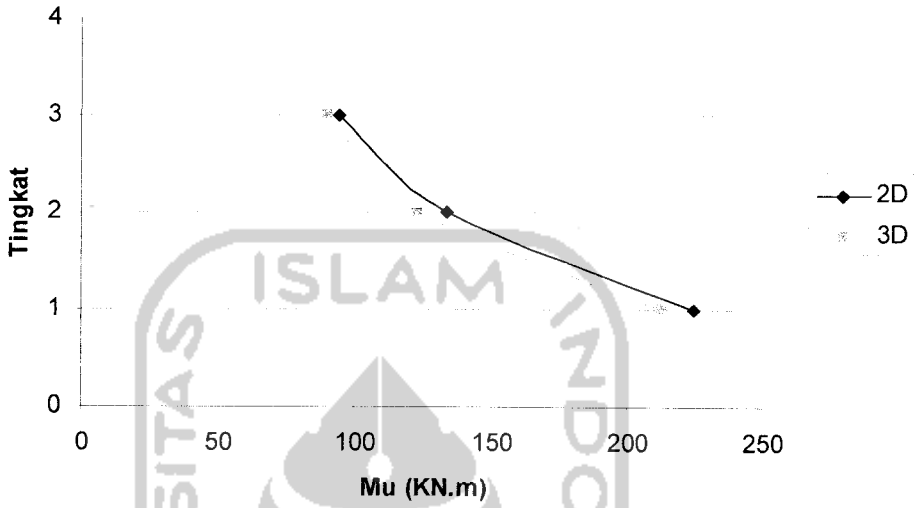
Balok	2D		3D		Rasio 2D/3D	
	Mu (KN.m)	Vu (KN)	Mu (KN.m)	Vu (KN)	Mu (KN.m)	Vu (KN)
B1	140.956	150.792	135.514	138.123	1.04	1.09
B2	225.057	145.494	212.907	136.617	1.06	1.06
B3	161.419	89.716	138.914	68.09	1.16	1.32
B4	133.365	63.488	123.134	46.707	1.08	1.36
B5	101.819	55.738	93.526	47.396	1.09	1.18
B6	94.153	42.023	89.741	34.396	1.05	1.22
B7	145.576	53.502	135.244	51.308	1.08	1.04
B8	269.596	204.289	250.365	199.536	1.08	1.02
B9	288.84	93.194	249.776	73.393	1.16	1.27
B10	240.157	97.291	226.904	87.678	1.06	1.11

○ **Tabel Momen (Mu) dan Gaya Gaya Geser (Vu) Balok Portal As 1**

Balok	2D		3D		Rasio 2D/3D	
	Mu (KN.m)	Vu (KN)	Mu (KN.m)	Vu (KN)	Mu (KN.m)	Vu (KN)
B1	433.001	215.542	352.106	179.711	1.23	1.20
B2	293.521	249.926	263.557	189.379	1.11	1.32
B3	437.478	206.329	365.576	168.125	1.20	1.23
B4	382.454	204.841	321.557	167.778	1.19	1.22
B5	393.382	201.195	299.821	171.649	1.31	1.17
B6	369.861	206.912	296.821	151.895	1.25	1.36
B7	208.737	107.213	158.91	87.725	1.31	1.22
B8	193.859	90.507	155.258	74.938	1.25	1.21
B9	193.393	90.423	187.843	70.57	1.03	1.28

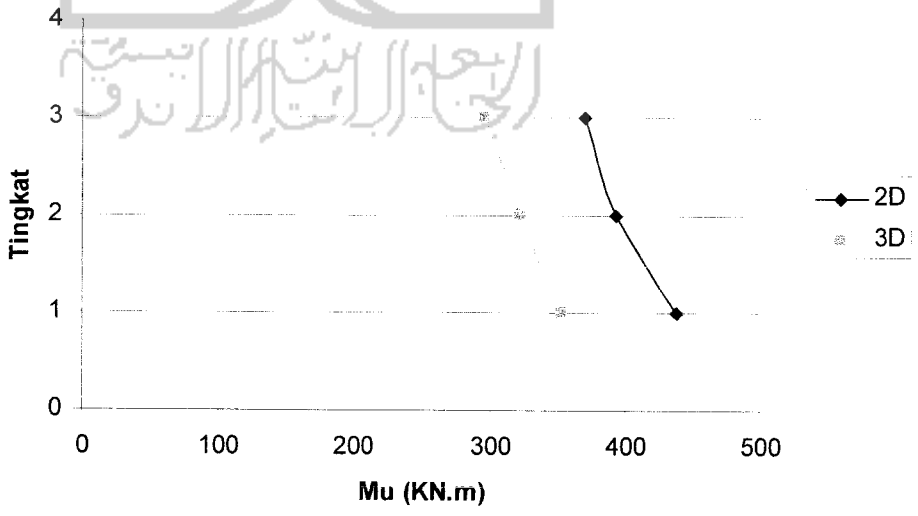
1. **Grafik Hasil Analisis Momen Perlu (Mu) Balok**

   - **Balok Portal As B (Arah X)**



Gambar 6.2 Momen Balok (Mu) Portal As B

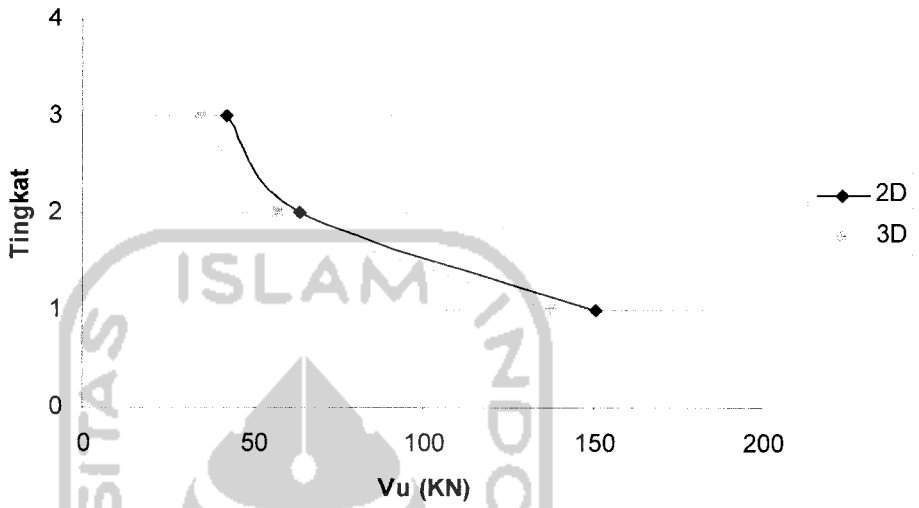
   - **Balok Portal As 1 (Arah Y)**



Gambar 6.3 Momen Balok (Mu) Portal As 1 Analisis 2D dan 3D

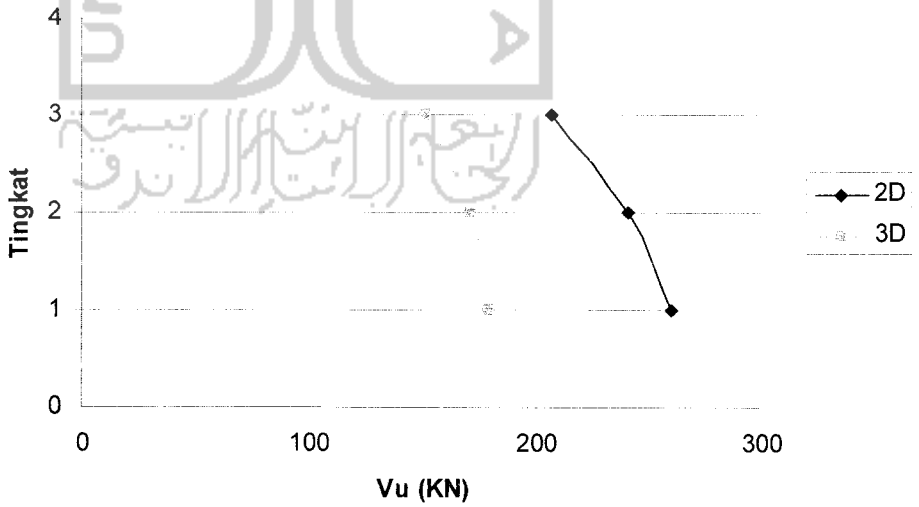
2. **Grafik Hasil Analisis Gaya Geser (Vu) Balok**

   - **Balok Portal As B (Arah X)**



Gambar 6.4 Gaya Geser (Vu) Portal As B Analisis 2D dan 3D

   - **Balok Portal As 1 (Arah Y)**



Gambar 6.5 Gaya Geser (Vu) Portal As 1 Analisis 2D dan 3D

6.2 Hasil Analisis Momen, Gaya Aksial dan Gaya Geser Kolom

○ Tabel Momen (Mu), Gaya Aksial (Pu) dan Gaya Geser (Vu) Kolom K3

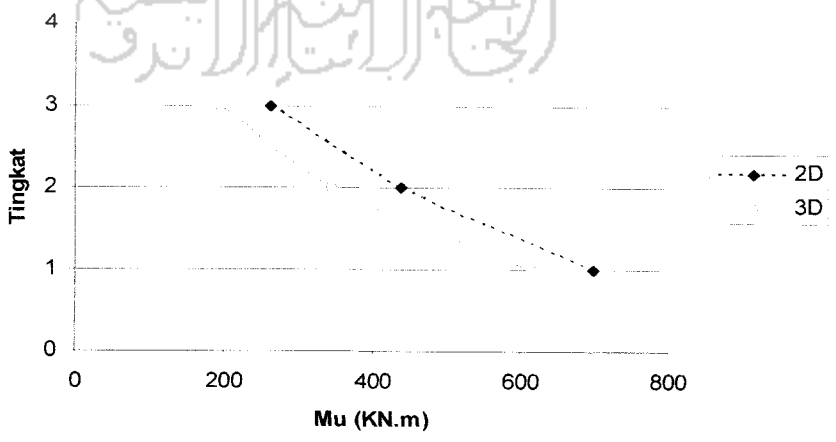
Tingkat	2D		3D		Rasio 2D/3D	
	Mux (KN.m)	Muy (KN.m)	Mux (KN.m)	Muy (KN.m)	Mux (KN.m)	Muy (KN.m)
1	698.745	221.225	615.878	173.612	1.135	1.274
2	440.755	121.077	345.014	92.103	1.277	1.315
3	261.718	76.013	193.419	55.619	1.353	1.367

Tingkat	2D	3D	Rasio 2D/3D
	Pu (KN)	Pu (KN)	Pu (KN)
1	841.239	704.969	1.19
2	501.914	436.327	1.15
3	174.64	161.92	1.08

Tingkat	2D		3D		Rasio 2D/3D	
	Vux (KN)	Vuy (KN)	Vux (KN)	Vuy (KN)	Vux (KN)	Vuy (KN)
1	319.747	80.178	284.367	66.095	1.124	1.213
2	126.297	31.168	119.628	23.02	1.056	1.354
3	73.245	30.729	64.726	26.55	1.132	1.157

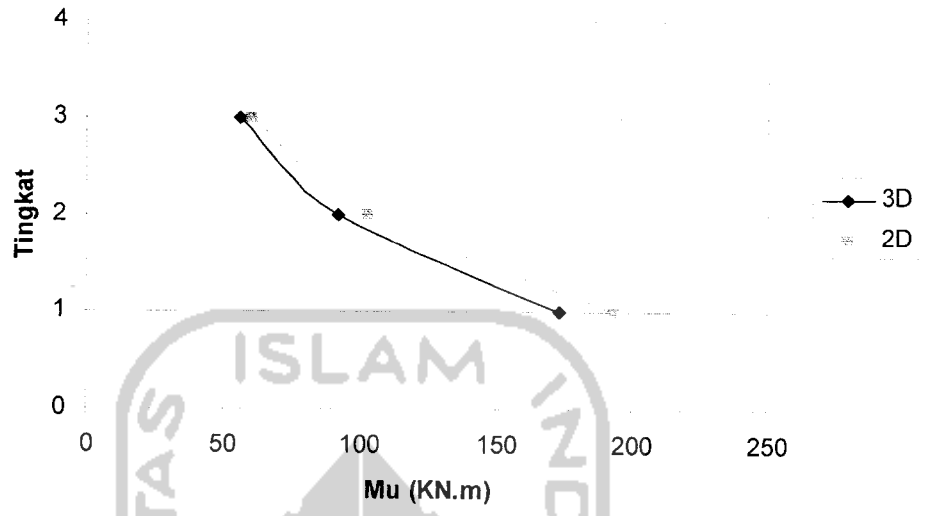
1. Grafik Hasil Analisis Momen Perlu (Mu) Kolom

○ Kolom K3 Arah X (Mux)



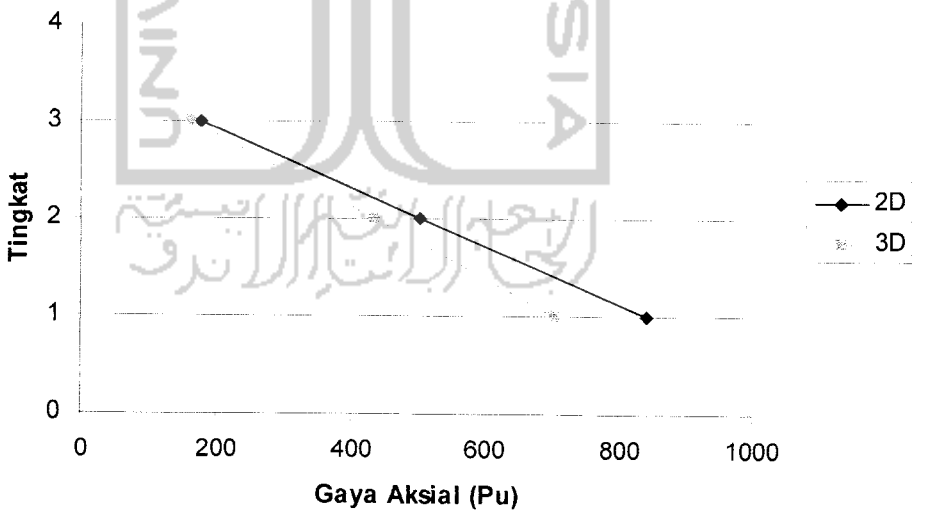
Gambar 6.6 Momen (Mux) Kolom K3

- **Kolom K3 Arah Y (Muy)**



Gambar 6.7 Momen (Muy) Kolom K3

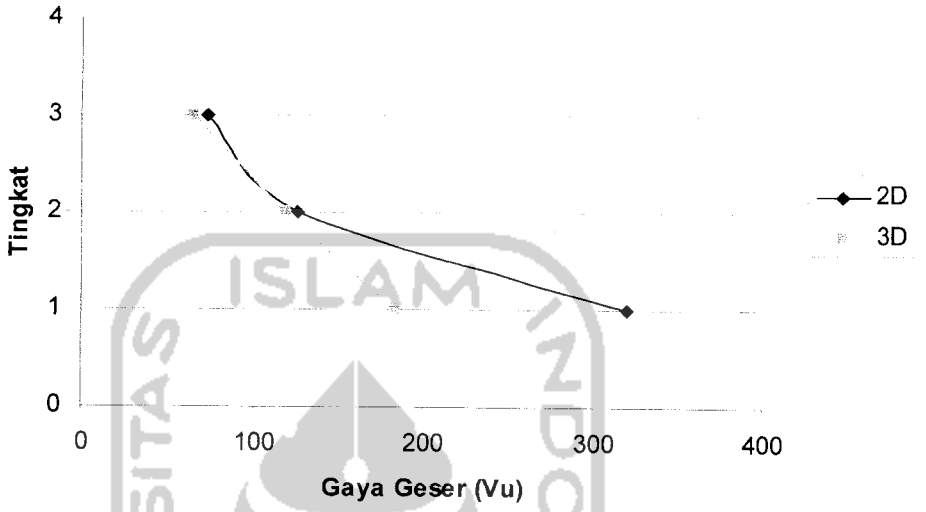
2. Grafik Hasil Analisis Gaya Aksial (Pu) Kolom



Gambar 6.8 Gaya Aksial (Pu) Kolom K3

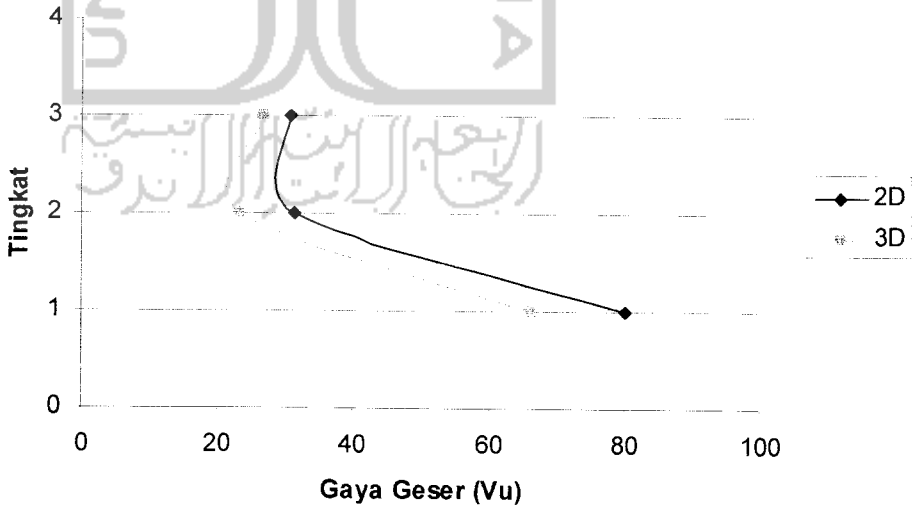
3. **Grafik Hasil Analisis Gaya Geser (Vu) Kolom**

- **Kolom K3 Arah X (Vux)**



Gambar 6.9 Gaya Geser (Vux) Kolom K3

- **Kolom K3 Arah Y (Vuy)**

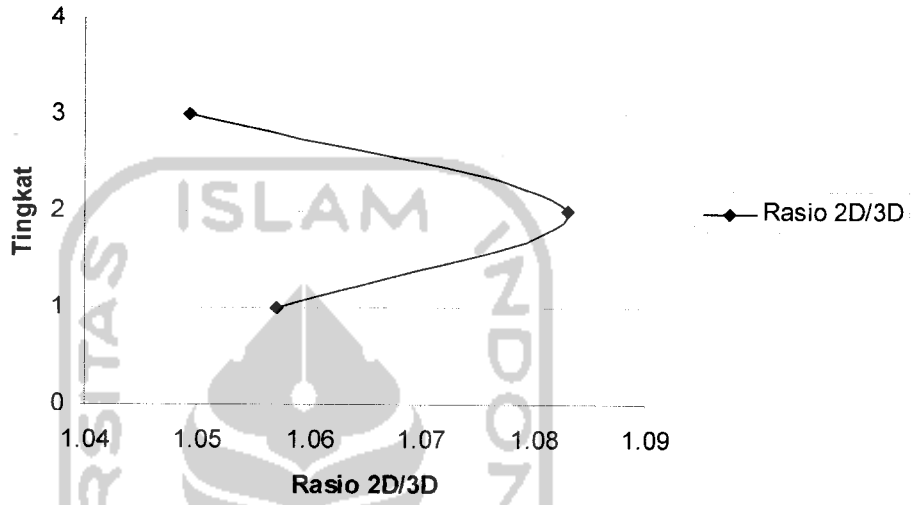


Gambar 6.10 Gaya Geser (Vuy) Kolom K3

6.3 Rasio 2D/3D Momen (Mu) dan Gaya Geser (Vu) Balok

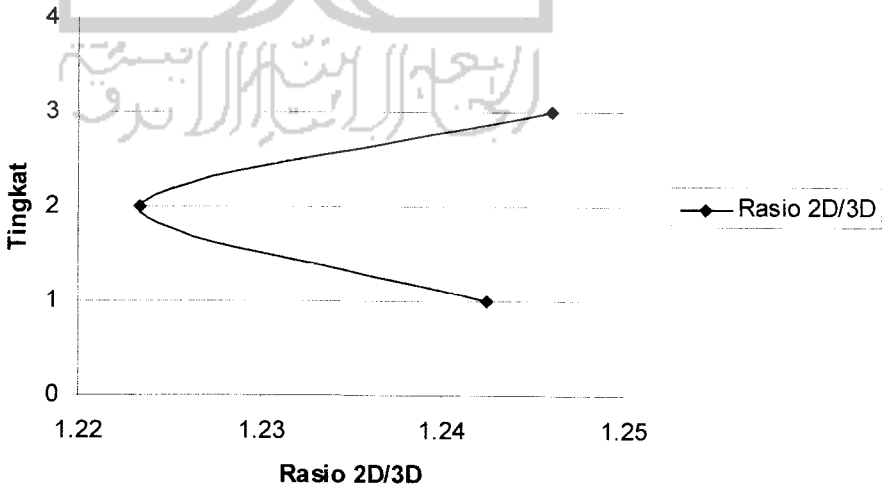
1. Rasio 2D/3D Momen (Mu) Balok

- **Balok Portal As B (Arah X)**



Gambar 6.11 Rasio Momen (Mu) 2D/3D Portal As B

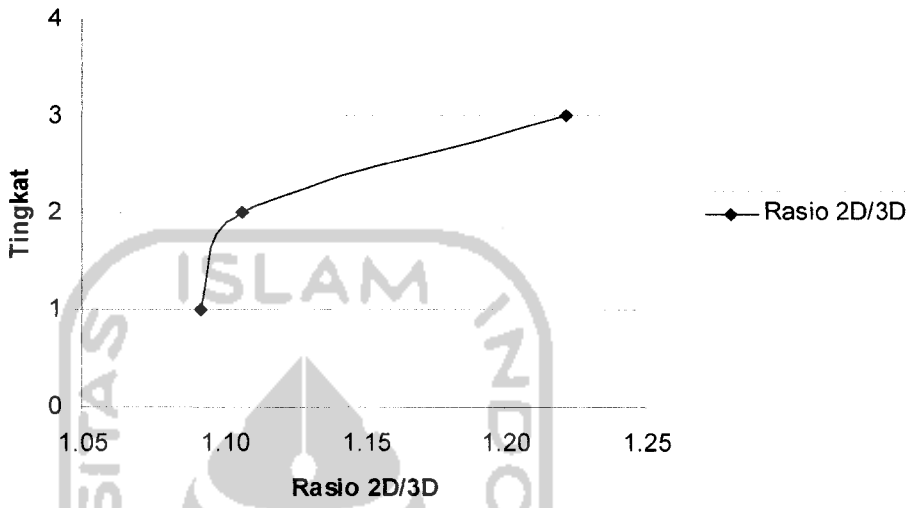
- **Balok Portal As 1 (Arah Y)**



Gambar 6.12 Rasio Momen (Mu) 2D/3D Portal As 1

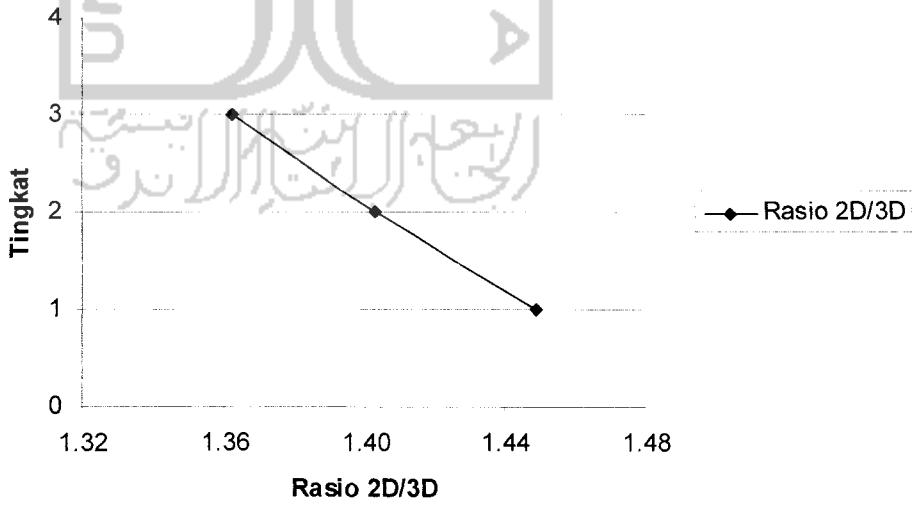
2. **Grafik Rasio Hasil Analisis Gaya Geser (Vu) Balok**

- **Balok Portal As B (Arah X)**



Gambar 6.13 Rasio Gaya Geser (Vu) 2D/3D Portal As B

- **Balok Portal As 1 (Arah Y)**

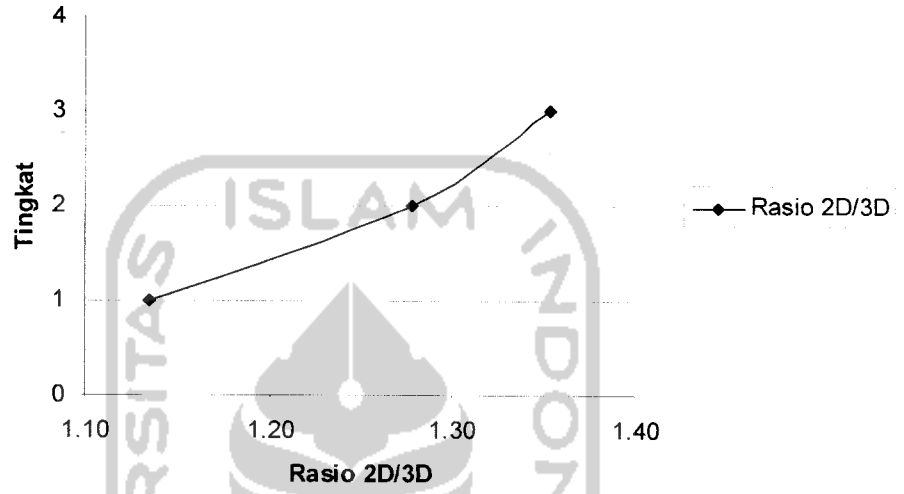


Gambar 6.14 Rasio Gaya Geser (Vu) 2D/3D Portal As 1

6.3 Rasio 2D/3D Momen (Mu) dan Gaya Geser (Vu) Kolom

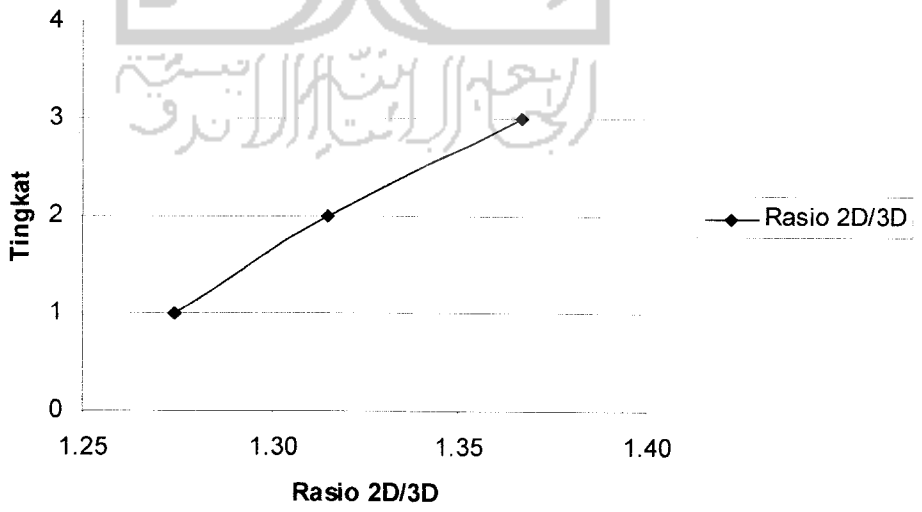
1. Grafik Rasio Hasil Analisis Momen (Mu) Kolom

- **Kolom K3 Arah X (Mux)**



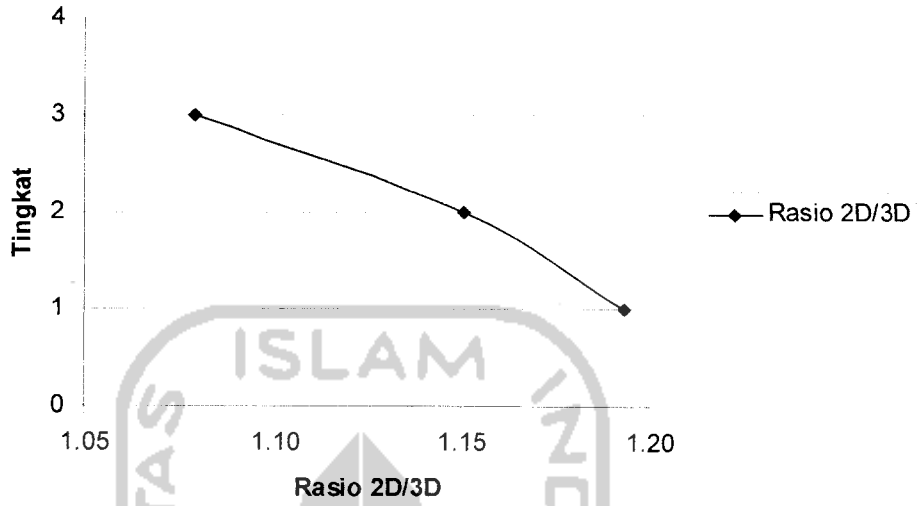
Gambar 6.15 Rasio Momen (Mux) 2D/3D Kolom K3

- **Kolom K3 Arah Y (Muy)**



Gambar 6.16 Rasio Momen (Muy) 2D/3D Kolom K3

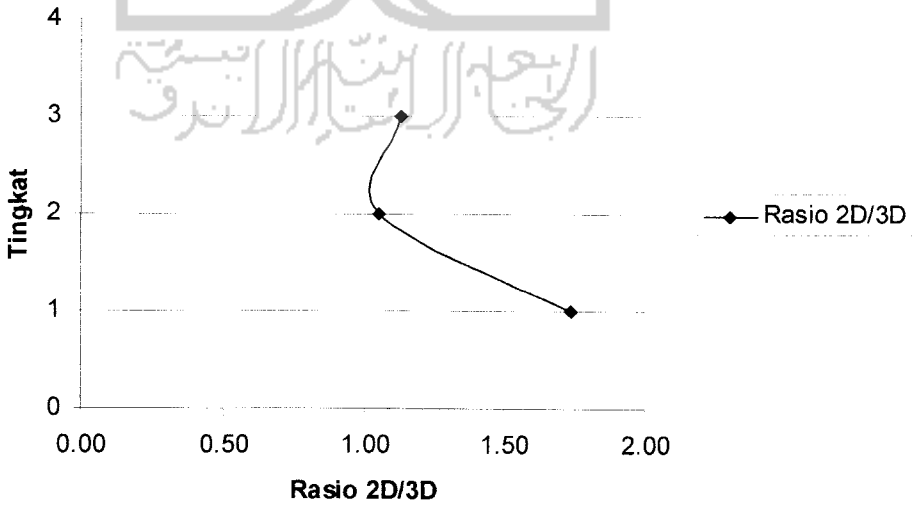
2. Grafik Rasio Hasil Analisis Gaya Aksial (Pu) Kolom



Gambar 6.17 Rasio Gaya Aksial (Pu) 2D/3D Kolom K3

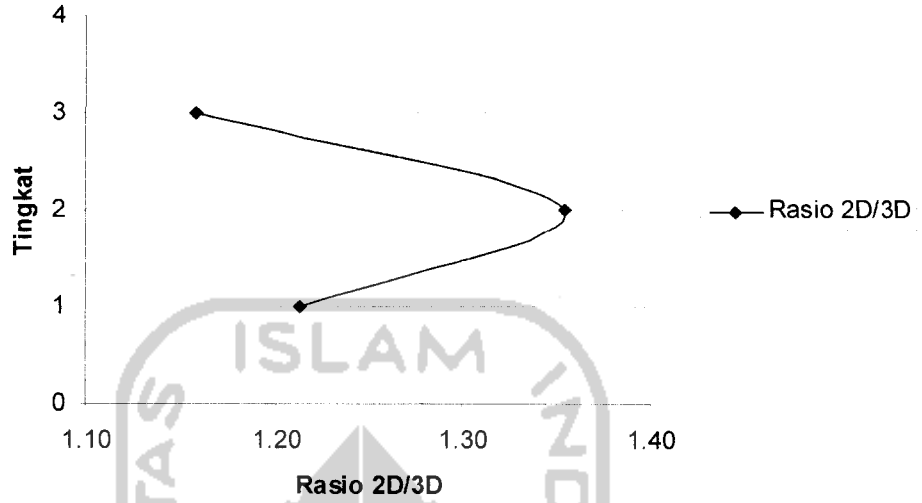
3. Grafik Rasio Hasil Analisis Gaya Geser (Vu) Kolom

- **Kolom K3 Arah X (Vux)**



Gambar 6.18 Rasio Gaya Geser (Vux) 2D/3D Kolom K3

- **Kolom K3 Arah Y (Vuy)**



Gambar 6.19 Rasio Gaya Geser (Vuy) 2D/3D Kolom K3

6.2 Hasil Desain Struktur

- **Tabel Berat Struktur Balok**

Tingkat	2D			
	Profil	Panjang Balok (m)	Berat Struktur (KN/m)	Total Berat Struktur (KN)
1	W16X36	20	0.632	37.92
2	W16X31	12	0.585	14.04
3	W14X26	4	0.465	5.58
Total Berat Struktur				**57.54**

Tingkat	3D			
	Profil	Panjang Balok (m)	Berat Struktur (KN/m)	Total Berat Struktur (KN)
1	W16X36	20	0.632	37.92
2	W16X31	12	0.585	14.04
3	W14X26	4	0.465	5.58
Total Berat Struktur				**57.54**

- **Tabel Berat Struktur Kolom**

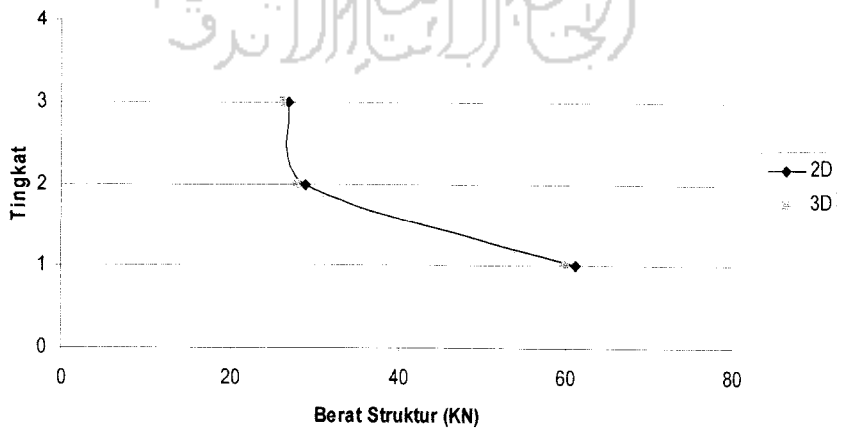
Tingkat	2D			
	Profil	Panjang Kolom (m)	Berat Struktur (KN/m)	Total Berat Struktur (KN)
1	W14X159	9	0.865	23.355
2	W14X99	9	0.82	14.76
3	W14X74	9	0.789	21.303
Total Berat Struktur				**59.418**

Tingkat	3D			
	Profil	Panjang Kolom (m)	Berat Struktur (KN/m)	Total Berat Struktur (KN)
1	W14X99	9	0.82	22.14
2	W14X61	9	0.765	13.77
3	W14X61	9	0.765	20.655
Total Berat Struktur				**56.565**

- **Tabel Berat Struktur Portal As B**

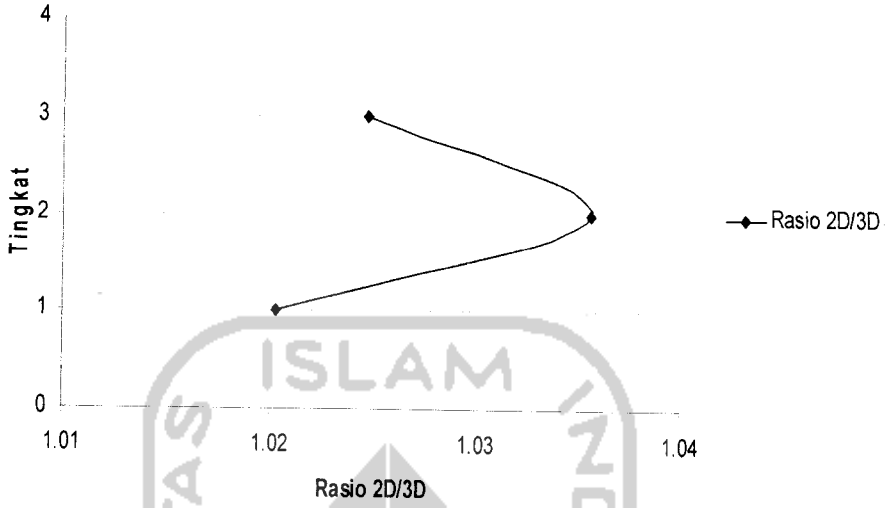
Tingkat	Portal As B		Rasio
	2D	3D	
1	61.275	60.06	1.02
2	28.8	27.81	1.04
3	26.883	26.235	1.02

- **Grafik Berat Struktur Portal As B**



Gambar 6.20 Berat Struktur Portal As B

- **Grafik Rasio Berat Struktur 2D/3D Portal As B**



Gambar 6.21 Rasio Berat Struktur 2D/3D Portal As B

PEMBAHASAN :

- Momen perlu balok hasil analisis dua dimensi (2D) lebih besar dari pada momen perlu balok hasil analisis tiga dimensi (3D). Dikarenakan momen dalam satu join harus didistribusikan kesetiap komponen penampang struktur, momen dengan analisis dua dimensi(2D) didistribusikan pada dua arah bidang struktur, dan momen dengan analisis tiga dimensi (3D) didistribusikan pada tiga arah bidang struktur.
- Semakin tinggi tingkat bangunan, momen yang dihasilkan semakin kecil, dikarenakan beban yang bekerja pada lantai atas lebih kecil dari pada lantai dibawahnya.

- Gaya aksial kolom semakin kebawah semakin besar, dikarenakan gaya aksial kolom paling bawah merupakan penjumlahan dari gaya aksial kolom-kolom lantai sebelumnya dengan gaya aksial kolom tersebut.
- Semakin tinggi tingkat bangunan, gaya geser yang dihasilkan semakin kecil, dikarenakan beban yang bekerja pada lantai atas lebih kecil dari pada lantai dibawahnya.

BAB VII

KESIMPULAN DAN SARAN

7.1 Kesimpulan

Berdasarkan hasil analisis dan perhitungan struktur stadion Sleman dengan menggunakan analisis dua dimensi (2D) dan tiga dimensi (3D), dapat diambil kesimpulan sebagai berikut :

1. Momen-momen dan gaya-gaya yang dihasilkan dari analisis dua dimensi (2D) lebih besar dibandingkan dengan hasil analisis tiga dimensi (3D). Dari Hasil Analisis dapat disimpulkan bahwa :
    a) Rasio momen balok 2D/3D pada portal as B yaitu berkisar dari 1,04 sampai dengan 1,16 dan pada portal as 1 yaitu berkisar dari 1,03 sampai dengan 1,31.
    b) Rasio Gaya Geser balok 2D/3D pada portal as B yaitu berkisar dari 1,02 sampai dengan 1,36 dan pada portal as 1 yaitu berkisar dari 1,20 sampai dengan 1,36.
    c) Rasio momen kolom 2D/3D pada momen kolom arah x yaitu berkisar dari 1,13 sampai dengan 1,35 untuk momen dan pada momen kolom arah y yaitu berkisar dari 1,27 sampai dengan 1,36.
    d) Rasio gaya aksial kolom 2D/3D yaitu berkisar 1,08 sampai dengan 1,19.

e) Rasio gaya geser kolom 2D/3D pada kolom arah x yaitu berkisar dari 1,05 sampai dengan 1,12 dan pada arah y yaitu berkisar dari 1,15 sampai dengan 1,37.

2. Berat struktur baja hasil analisis dua dimensi (2D) lebih berat dibandingkan dengan hasil analisis tiga dimensi (3D) dengan nilai rasio berat struktur 2D/3D yaitu berkisar dari 1,02 sampai dengan 1,1. Hal ini dikarenakan perilaku portal bidang (2D) dan portal ruang (3D) pada struktur stadion Sleman relatif sama. sehingga banyak didapatkan dimensi profil yang sama pada elemen struktur antara hasil desain portal bidang (2D) dan portal ruang (3D).

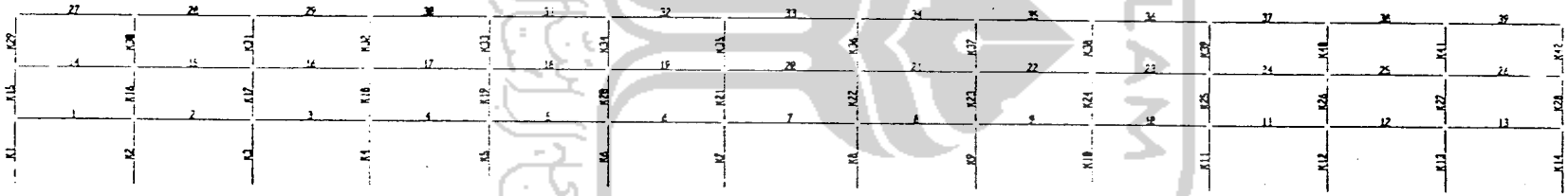
7.2 Saran

Sebagai bahan masukan atau saran demi peningkatan kualitas kajian tentang perbedaan analisis dua dimensi (2D) dan tiga dimensi (3D), maka kami mencoba memberikan saran yaitu :

1. Melanjutkan analisis dan desain tentang perbedaan perilaku dan rasio berat struktur baja antara portal bidang (2D) dengan portal ruang (3D) dengan bentuk struktur yang lebih bervariasi.
2. Melanjutkan analisis dan desain tentang perbedaan perilaku dan rasio berat struktur baja antara portal bidang (2D) dengan portal ruang (3D) pada struktur gedung bertingkat tinggi dengan memakai beban gempa dinamis.

LAMPIRAN A

MOMEN, GAYA AKSIAL DAN GAYA GESER BALOK



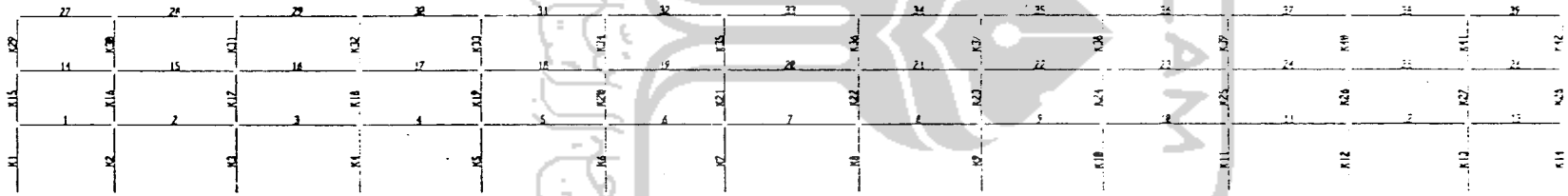
MOMEN BALOK PORTAL AS 1 (ANALISIS 2D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0,9MD-ME (KN.m)
1	0	-106,9237	-50,12083	254,5712	-149,69318	-208,501768	-56,80287	-432,023212	158,33987	-350,80253
1	2,25	34,45977	15,76566	139,4999	48,243678	66,57678	82,38321	66,324566	170,513693	-108,486107
1	4,5	75,84276	36,05253	24,42863	106,179864	148,69526	102,63521	135,62352	92,687114	43,829854
1	6,75	14,34114	6,828152	-90,64264	20,077596	28,1344112	114,68016	123,32654	-77,735614	103,549666
1	9	-143,705	-65,8831	-205,7139	-201,187	-277,85896	-433,001123	-32,6152	-335,0484	76,3794
2	0	-138,5204	-64,29211	163,004	-193,92856	-269,091853	-67,51259	-393,52059	38,33564	-287,67236
2	2,25	16,57758	7,328826	81,01907	23,208612	31,6192176	106,240992	-53,797148	95,938892	-66,099248
2	4,5	68,85844	31,84039	-0,9656241	96,401816	133,574752	113,5046939	115,4363421	61,0067719	62,9384201
2	6,75	17,01721	7,836337	-82,95072	23,824094	32,9587912	-54,693731	111,207709	-67,635231	98,266209
2	9	-137,6411	-63,2771	-164,9356	-192,69754	-266,41268	-393,38202	-63,51082	-288,81259	41,05861
3	0	-137,3166	-63,65654	148,003	-192,24324	-266,630384	-80,43346	-376,43946	24,41806	-271,56794
3	2,25	17,03553	7,792797	74,45958	23,849742	32,9111112	102,695013	-46,224147	89,791557	-59,127603
3	4,5	68,94688	32,13276	0,9161719	96,525632	134,148672	115,7851879	113,9528441	62,9683639	61,1360201
3	6,75	17,11246	7,957097	-72,62724	23,957444	33,2663072	-44,135191	101,119289	-57,226026	88,028454
3	9	-137,1627	-63,32794	-146,1706	-192,02778	-265,919944	-374,09378	-81,75258	-269,61703	22,72417
4	0	-136,8749	-63,47142	147,3303	-191,62486	-265,804152	-80,291	-375,0516	24,14289	-270,51771
4	2,25	17,26407	7,872286	72,82536	24,169698	33,3125416	101,41453	-44,23619	88,363023	-57,287697
4	4,5	68,96228	32,10661	-1,679625	96,547192	134,125312	113,181721	116,540971	60,386427	63,745677
4	6,75	16,91474	7,825321	-75,18461	23,680636	32,8182016	-48,061601	104,307619	-60,961344	91,407876
4	9	-137,5736	-63,56535	-150,6896	-192,60304	-266,79288	-379,34327	-77,96407	-274,50584	26,87336
5	0	-137,3689	-63,63825	122,1873	-192,31646	-266,66388	-106,29363	-350,66823	-1,44471	-245,81931
5	2,25	17,11819	7,84093	62,51861	23,965466	33,087316	90,901368	-34,135852	77,924981	-47,112239
5	4,5	69,16454	32,21073	2,849903	96,830356	134,534616	118,058081	112,358275	65,097989	59,398183
5	6,75	17,46513	8,064913	-56,8188	24,451182	33,8620168	-27,795731	85,841869	-41,100183	72,537417
5	9	-136,675	-63,19028	-116,4875	-191,345	-265,114446	-343,68778	-110,71278	-239,495	-6,52
6	0	-135,3151	-62,5471	117,2381	-189,44114	-262,45348	-107,68712	-342,16332	-4,54549	-239,02169
6	2,25	17,19352	7,893559	56,96888	24,070928	33,2619184	85,494663	-28,443097	72,443048	-41,494712
6	4,5	57,26135	31,22484	-3,300365	94,16589	130,673364	108,638095	115,238825	57,23485	63,83558
6	6,75	13,58344	6,040505	-63,55961	19,016816	25,964936	-41,228977	85,910243	-51,344514	75,794706
6	9	-142,5352	-66,25321	-123,8389	-199,54928	-277,047376	-361,13435	-113,45655	-252,12058	-4,44278
7	0	-163,0235	-76,49008	162,3067	-228,2329	-318,012328	-109,81158	-434,42468	15,58555	-309,02785
7	2,5	24,30989	11,59212	80,07947	34,033846	47,71926	120,843458	-39,315482	101,958371	-58,200569
7	5	87,43118	41,56947	-2,147797	122,403652	171,428568	144,339089	148,634683	76,540265	80,835859
7	7,5	24,73122	11,70764	-84,37506	34,623708	48,409663	-42,9863212	125,760164	-62,116962	106,633158
7	10	-162,1309	-76,25904	-166,6023	-227,05326	-316,631544	-437,47642	-104,27382	-312,56511	20,63949
8	0	-141,3291	-65,62424	101,9249	-197,86074	-274,593704	-133,29426	-337,14406	-25,27129	-229,12109
8	2,25	14,24843	6,456541	51,37045	19,947802	27,4285816	74,925107	-27,815793	64,194037	-38,546863

8	4,5	67,53574	31,42794	0,6160067	94,550036	131,327592	113,2868367	111,6548193	61,5031747	59,9661573
8	6,75	17,22784	7,883727	-49,73843	24,118976	33,2873712	-21,181295	78,295565	-34,233374	65,243486
8	9	-135,3703	-62,76987	-100,2929	-169,51842	-262,876152	-325,50713	-124,92133	-222,12617	-21,54037
9	0	-136,6559	-63,21397	96,47257	-191,31966	-265,130632	-128,72968	-325,67482	-24,51864	-221,46378
9	2,25	17,30091	8,03275	49,30798	24,221274	33,613492	78,101822	-20,514138	64,578799	-33,737161
9	4,5	68,96848	32,17009	0,1433987	96,555872	134,23432	115,0756647	114,7888673	62,2150307	61,9282333
9	6,75	17,04085	7,791803	-49,02119	23,85719	32,9159048	-20,760367	77,262013	-33,684425	64,357955
9	9	-137,177	-63,69586	-98,18578	-192,0478	-266,525776	-326,49404	-130,12248	-221,64508	-25,27352
10	0	-137,0855	-63,40444	97,65527	-191,9197	-265,949704	-130,25177	-325,56231	-25,72168	-221,03222
10	2,25	17,01748	7,898541	48,87331	23,824472	33,0586416	77,192627	-20,553793	64,168042	-33,557578
10	4,5	68,83022	32,09214	9,14E-02	96,362308	133,943688	114,7797596	114,5970484	62,03855364	61,85584236
10	6,75	17,04775	7,770124	-48,69061	23,86685	32,8894984	-20,463186	76,918034	-33,347635	64,033585
10	9	-137,0249	-63,66127	-97,47256	-191,83486	-266,287912	-325,56371	-130,61859	-220,79497	-25,84985
11	0	-137,1129	-63,38095	97,34049	-191,95806	-265,945	-130,57594	-325,25692	-26,06112	-220,7421
11	2,25	17,03537	7,931406	48,66105	23,850918	33,1338936	77,0361	-20,266	63,693783	-33,328217
11	4,5	68,89542	32,13438	-1,84E-02	96,453588	134,089512	114,7904829	114,8272851	61,98747693	62,02427907
11	6,75	17,15925	7,821749	-48,69785	24,02295	33,1058984	-20,285001	77,110699	-33,254525	64,141175
11	9	-136,8671	-63,60027	-97,3773	-191,61394	-266,000952	-325,21809	-130,46349	-220,55769	-25,80309
12	0	-136,4164	-63,01462	95,58977	-190,98296	-264,523072	-131,12453	-322,30407	-27,18499	-218,36453
12	2,25	17,11127	7,967635	48,30383	23,955778	33,28174	76,804989	-19,802671	63,703973	-32,903687
12	4,5	68,34874	31,84051	1,017892	95,688236	132,963304	114,87689	112,841106	62,531758	60,495974
12	6,75	15,991	7,197762	-46,26805	22,3874	30,7056192	-19,881088	72,655012	-31,87615	60,65995
12	9	-138,657	-64,55436	-93,55399	-194,1198	-269,675376	-324,49675	-137,38877	-218,34529	-31,23731
13	0	-143,3527	-66,1444	109,57	-200,69378	-277,85428	-128,59764	-347,73764	-19,44743	-238,58743
13	2,25	14,08205	6,607527	49,92038	19,71487	27,4705032	73,426367	-26,414393	62,594225	-37,246535
13	4,5	75,49918	35,87258	-9,729239	105,698852	147,995144	116,742357	135,200835	58,220023	77,678501
13	6,75	34,5586	15,62638	-69,37885	48,38204	66,472528	-12,28215	126,47555	-38,27611	100,48159
13	9	-107,8194	-50,21944	-129,0285	-150,94716	-209,73438	-308,63122	-50,57422	-226,06596	31,99104
14	0	-104,7883	-52,06024	155,4253	-146,70362	-209,042344	-21,3809	-334,2315	62,11583	-250,73477
14	2,25	36,18844	14,30584	81,9082	50,663816	26,7453654	139,640188	-24,176232	114,477796	-49,338604
14	4,5	76,73816	35,0723	7,391061	107,433424	147,638214	134,549153	119,767031	76,455405	61,673283
14	6,75	13,97674	6,32751	-67,12607	19,507436	66,4632165	-44,026472	90,225668	-54,547004	79,705136
14	9	-145,7357	-65,90416	-141,6432	-204,05798	-278,9481236	-382,4542	-99,1678	-272,82333	10,46307
15	0	-137,7782	-62,77101	95,08645	-192,88948	-265,767456	-133,0184	-369,861231	-28,91393	-219,08683
15	2,25	17,15517	8,26067	47,9694	24,017238	45,832365	76,816274	9,245621	63,409053	-32,529747
15	4,5	69,07071	32,18297	0,852353	96,698994	169,385632	115,920175	143,923121	63,015992	61,311286
15	6,75	16,66343	7,589651	-46,26469	23,328802	45,9132322	-18,678923	85,9652132	-31,267603	61,261777
15	9	-138,7617	-64,11304	-93,38174	-194,26638	-277,047236	-324,00882	-137,24534	-218,26727	-31,50379
16	0	-137,1455	-63,19928	91,55599	-192,0037	-265,693448	-136,21789	-319,32987	-31,87496	-214,98694
16	2,25	17,63892	8,005816	45,77608	24,694488	33,9760096	74,9486	-16,60356	61,651108	-29,901052
16	4,5	69,40549	32,10153	-3,83E-03	97,167686	134,649036	115,3842856	115,3919504	62,46110858	62,46877342

16	6,75	16,84925	7,681625	-45,78374	23,58895	32,5097	-17,883015	73,684465	-30,619415	60,948065
16	9	-138,7248	-63,84766	-91,56366	-194,21472	-268,626016	-321,88108	-138,75376	-216,41599	-33,28866
17	0	-137,2901	-63,06969	92,93945	-192,20614	-265,659624	-134,87836	-320,75726	-30,62164	-216,50054
17	2,25	17,56589	8,090981	46,03613	24,592246	34,0246376	75,206179	-16,866081	61,845431	-30,226829
17	4,5	69,40408	32,14228	-0,8672076	97,165712	134,712544	114,5599684	116,2943836	61,5964644	63,3308796
17	6,75	16,91946	7,677953	-47,77054	23,687244	32,5880768	-19,789235	75,751845	-32,543026	62,998054
17	9	-138,583	-63,89575	-94,67387	-194,0162	-268,5328	-324,86922	-135,52148	-219,39857	-30,05083
18	0	-137,5261	-63,36782	77,65109	-192,53654	-266,419832	-150,74805	-306,05023	-46,1224	-201,42458
18	2,25	17,21054	7,958465	41,16925	24,094756	33,386192	69,780363	-12,358137	53,658736	-25,579764
18	4,5	69,28059	32,17537	4,687407	96,992826	134,6173	119,999485	110,624671	67,039938	57,665124
18	6,75	17,37907	7,876647	-31,79444	24,330698	33,4575192	-3,062909	60,525971	-16,153277	47,435603
18	9	-137,189	-63,53145	-68,27628	-192,0646	-266,27712	-296,43453	-159,88197	-191,74638	-55,19382
19	0	-135,4502	-62,42648	71,5731	-189,63028	-262,422608	-153,39362	-296,53982	-50,33208	-193,47828
19	2,25	17,40155	8,06331	32,54588	24,36217	33,783156	61,49105	-3,60071	48,207275	-16,884485
19	4,5	67,5867	31,44371	-6,481043	94,62138	131,413976	106,066407	119,029093	54,546687	67,309373
19	6,75	13,80029	6,308501	-45,50857	19,320406	26,6539436	-22,639721	68,377419	-33,088309	57,928831
19	9	-142,6527	-65,93609	-84,5358	-199,71378	-276,680984	-321,65513	-152,58353	-212,92323	-43,85163
20	0	-164,0418	-76,99391	96,01716	-229,65852	-302,042323	-177,82691	-369,86123	-51,62046	-243,65478
20	2,5	23,52555	11,00097	48,47219	32,93577	33,262323	108,241235	-9,24056	69,645185	-27,299195
20	5	86,633	40,891	0,9272215	121,2862	130,672652	113,505231	143,9233785	78,8969215	77,0424785
20	7,5	23,67141	10,94185	-46,61774	33,139974	25,945326	54,6942323	85,965282	-25,313471	67,922009
20	10	-163,7502	-77,11215	-94,16271	-229,25028	-263,36256	-393,382325	-179,44968	-241,53789	-53,21247
21	0	-143,1655	-66,19387	89,53927	-200,4317	-277,716792	-148,4582	-327,53674	-39,30968	-218,38822
21	2,25	13,1085	6,139101	48,65474	18,3519	25,5527616	70,524041	-26,785439	60,45239	36,85709
21	4,5	67,09232	31,36769	7,770202	93,929248	130,699088	119,648676	104,108272	68,15329	52,612886
21	6,75	17,48093	8,080655	-33,11433	24,473302	33,906164	-4,056559	62,172101	-17,381493	48,847167
21	9	-134,4207	-62,31576	-73,99885	-188,18898	-261,010056	-297,61946	-149,52174	-194,97749	-46,97977
22	0	-136,9675	-63,57206	61,47105	-191,7545	-266,076296	-166,46201	-289,40411	-61,7997	-164,7418
22	2,25	17,21286	7,86451	30,1428	24,098004	33,238648	58,662742	-1,622858	45,634374	-14,651226
22	4,5	69,10297	32,1917	-1,185445	96,744158	134,430264	113,329819	116,300709	61,007228	63,373118
22	6,75	17,39787	8,003276	-32,51369	24,357018	33,6826856	-3,63297	61,39441	-16,855607	48,171773
22	9	-136,5974	-63,29453	-63,84193	-191,23636	-265,188128	-291,05334	-163,36948	-186,77959	-59,09573
23	0	-137,9549	-63,93101	65,74343	-193,13686	-267,835496	-163,73346	-295,22032	-58,41598	-189,90284
23	2,25	16,59591	7,660721	32,92536	23,234274	32,1722456	60,501173	-5,349547	47,861679	-17,989041
23	4,5	68,85651	32,14307	0,1072847	96,399114	134,056724	114,8781667	114,6635973	62,0781437	61,8635743
23	6,75	17,5219	8,1098	-32,71079	24,53066	34,00196	-3,57471	61,84687	-16,94108	48,4805
23	9	-136,1029	-63,03285	-65,52886	-190,54406	-264,17604	-291,88519	-160,82747	-188,02147	-56,96375
24	0	-138,1947	-64,02997	65,63629	-193,47238	-268,281592	-164,22732	-295,4999	-58,73894	-190,01152
24	2,25	16,52513	7,587766	32,74316	23,135132	31,9705816	60,161082	-5,325238	47,615777	-17,870543
24	4,5	68,95477	32,09512	-0,149961	96,536678	134,099516	114,691883	114,991805	61,909332	62,209254
24	6,75	17,78922	8,088852	-33,04309	24,904908	34,2892272	-3,607174	62,479006	-17,032792	49,053388

24	9	-135,6366	-63,02779	-65,93621	-189,95324	-263,644394	-291,76392	-159,8915	-188,03615	-55,16[illegible]
25	0	-137,7372	-64,176	63,50863	-192,83208	-267,96624	-165,95201	-292,95927	-60,45485	-157,472[illegible]
25	2,25	16,43816	7,546356	32,52332	23,013424	31,7999616	59,795468	-5,251172	47,317664	-17,728978
25	4,5	68,3233	32,15934	1,537999	95,65262	133,442904	115,685299	112,609301	63,028969	59,952971
25	6,75	16,61324	8,256698	-29,44732	23,258536	33,1466048	-1,254734	57,639906	-14,495404	44,399236
25	9	-137,387	-62,75532	-60,43263	-192,3418	-265,272912	-288,05235	-167,18709	-184,08093	-63,21557
26	0	-144,5046	-65,96378	79,24721	-202,30644	-278,947568	-160,12209	-318,61651	-50,80693	-209,30135
26	2,25	13,88304	6,303386	33,6545	19,436256	26,7450656	56,617534	-10,691466	46,149236	-21,159764
26	4,5	76,25314	35,08368	-11,93821	106,754396	147,637656	114,649238	138,525658	56,689616	60,566036
26	6,75	36,26553	14,35271	-57,53092	50,771742	66,482972	0,340426	115,402266	-24,891943	90,169897
26	9	-105,1595	-51,97787	-103,1236	-147,2233	-209,355992	-281,29287	-75,04567	-197,76715	8,48005
27	0	-43,51921	-40,62688	55,4666	-60,926894	-117,22606	-65,326532	-148,316532	16,299311	-94,633689
27	2,25	19,97155	21,92127	30,94613	27,96017	36,951463	43,001232	14,941	48,920525	-12,971735
27	4,5	37,45554	38,86979	6,425662	52,437756	120,853231	94,037325	77,390776	40,135648	27,284324
27	6,75	6,304051	6,307068	-18,09481	8,9256714	38,3863456	14,614332	31,9667392	-12,4211641	23,7564559
27	9	-67,52961	-69,74253	-42,61528	-94,541454	-208,737432	-191,735236	-108,162782	-103,391929	-16,161359
28	0	-64,45279	-65,51447	31,36268	-90,233906	-182,1665	-111,495138	-174,220498	-26,644831	-89,370197
28	2,25	6,815974	6,456464	15,65626	9,5423636	18,5095112	30,2918928	-1,0206272	21,7906366	-8,5218634
28	4,5	31,27324	31,31802	-5,02E-02	43,782536	87,63672	68,79573993	68,89607607	28,09574793	25,1960847
28	6,75	7,704039	7,663969	-15,75659	10,7856546	21,5071972	1,1522258	32,6654058	-8,8229549	22,690225
28	9	-62,67666	-63,09947	-31,46302	-87,747324	-176,171144	-169,774482	-106,848442	-87,872014	-24,945974
29	0	-62,62465	-62,76527	28,62196	-87,67451	-175,574012	-109,29289	-166,53681	-27,740225	-84,984145
29	2,25	8,065906	8,318777	15,04031	11,2922684	22,9891304	33,0381742	2,9575542	22,2996254	-7,7609548
29	4,5	31,94497	32,29345	1,45867	44,722958	90,003484	72,086084	69,168744	30,209143	27,291803
29	6,75	7,797553	7,752505	-12,12297	10,9165742	21,7610716	4,9865986	29,2325386	-5,1051723	19,1407677
29	9	-63,16135	-63,89782	-25,70462	-88,42589	-178,030132	-165,39606	-113,98682	-82,549835	-31,140593
30	0	-62,75212	-63,14516	38,18805	-87,852968	-176,3348	-100,259654	-176,635754	-18,288858	-94,664958
30	2,25	7,855446	7,995847	19,60291	10,9976244	21,62832	35,114212	-2,1805278	26,6728114	-12,5330086
30	4,5	31,7268	32,02747	1,017762	44,41752	83,277232	67,231233	69,081848	29,571902	27,536335
30	5,75	7,646935	7,543486	-17,56735	10,705709	10,21232	6,258323	34,287158	-10,6851085	24,4495915
30	9	-63,16915	-64,04988	-36,15248	-88,43681	-193,859453	-182,489322	-103,70038	-93,004715	-20,699755
31	0	-62,98026	-63,69183	27,22766	-88,172364	-177,48324	-112,040482	-166,495802	-29,454574	-83,909864
31	2,25	7,724529	7,940278	13,07455	10,8143405	21,9736796	30,2842628	4,1351628	20,0266261	-6,1224735
31	4,5	31,91891	32,463	-1,07857	44,686474	90,243492	69,687122	71,844262	27,648449	29,805589
31	6,75	8,387892	8,470105	-15,23169	11,7430488	23,6176384	3,3038854	33,7672654	-7,6825872	22,7607925
31	9	-61,65353	-62,63217	-29,3848	-86,314942	-174,195708	-166,001206	-107,231606	-84,872977	-26,103377
32	0	-60,60248	-61,44111	34,42021	-84,843472	-171,028752	-99,743876	-168,584295	-20,122022	-88,962442
32	2,25	7,615111	7,805992	18,16978	10,6611554	21,6277204	35,1139052	-1,2256548	25,0233799	-11,3161801
32	4,5	29,47283	29,94371	1,919344	41,261962	83,277332	67,23045	63,391762	28,444891	24,606203
32	6,75	3,755695	3,565816	-14,33109	5,257973	10,2121396	-6,25844	22,40374	-10,9509645	17,7112155
32	9	-68,32131	-69,92146	-30,58152	-95,649834	-193,859908	-182,488552	-121,325512	-92,070699	-30,907659



MOMEN BALOK PORTAL AS 2 (ANALISIS 2D)

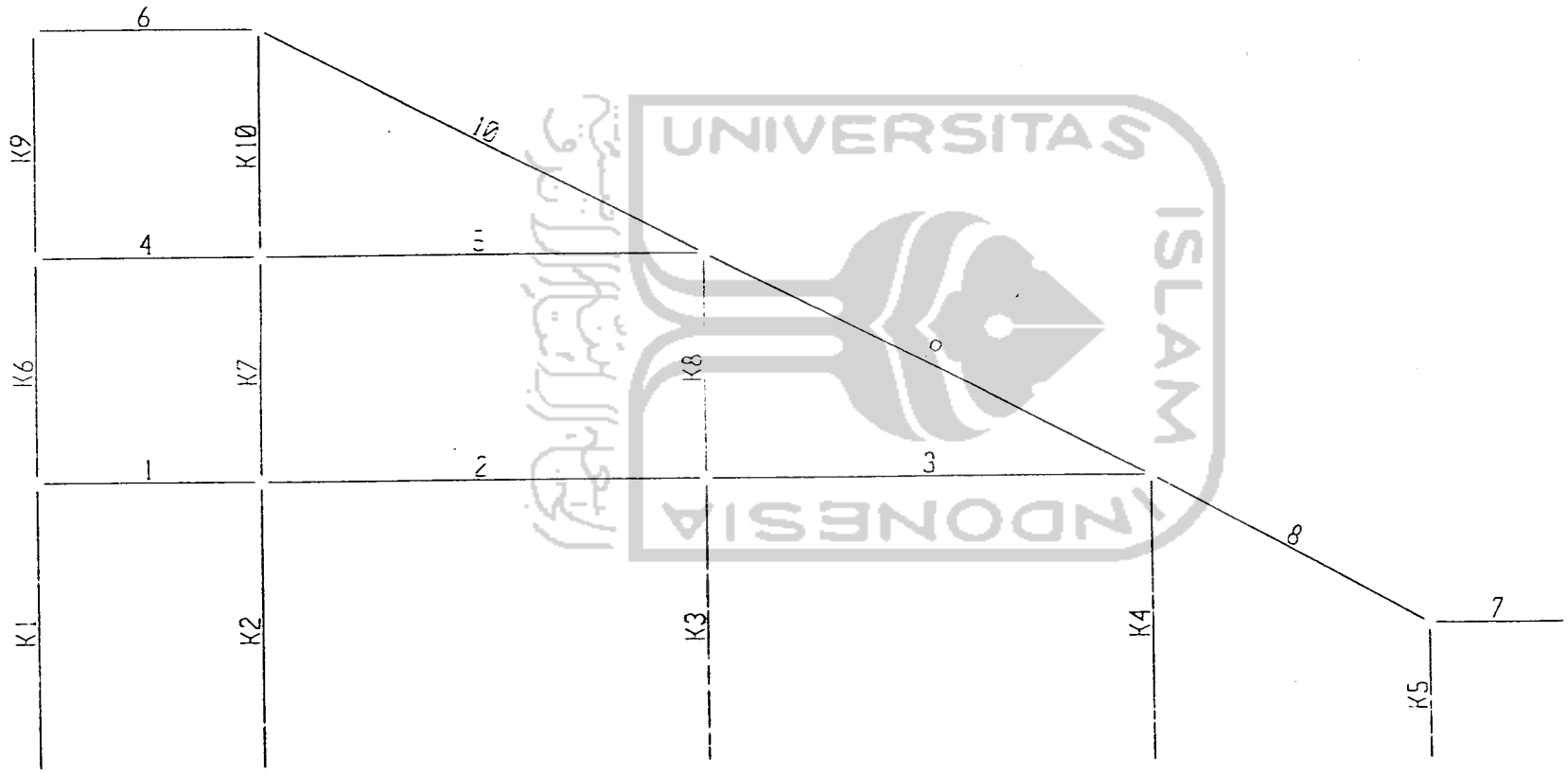
LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0.9MD-ME (KN.m)
1	0	-65,24702	-63,81573	188,0854	-91,345828	-180,401592	-129,232221	-330,197554	-129,332223	-246,807718
1	1,8	37,75572	36,77035	103,9225	52,858008	104,139424	185,999714	-21,845286	137,902648	-69,942352
1	3,6	92,39804	90,28193	19,7597	129,357256	255,328736	220,919278	181,399878	102,917936	63,398536
1	5,4	5,647574	6,149767	-64,40313	7,9066036	16,616716	51,476523	77,3299858	-59,3203134	69,4859466
1	7,2	-121,8563	-116,8624	-148,566	-170,59882	-333,2074	-411,65596	-114,52396	-258,23667	38,89533
2	0	-122,567	-115,889	106,6488	-171,5938	-332,5028	-156,3206	-369,6182	-3,6615	-216,9591
2	2,25	20,31641	18,9136	51,8905	28,442974	54,641452	95,183792	-8,597209	70,175269	-33,605731
2	4,5	63,4716	59,49741	-2,867833	88,86024	171,361776	132,795497	138,531163	54,256607	59,992273
2	6,75	4,288573	3,049973	-57,62616	6,0040022	10,0262444	-49,4298994	65,8224206	-53,7664443	61,4858757
2	9	-154,6227	-147,6162	-112,3845	-216,47178	-421,73316	-445,54794	-220,77894	-251,54493	-26,77593
3	0	-173,2929	-167,0654	113,9069	-242,61006	-475,25612	-261,10798	-488,92578	-42,05471	-269,87251
3	2,25	36,81181	36,14869	57,58485	51,536534	102,012076	137,907712	22,738012	90,715479	-24,454221
3	4,5	102,3323	100,144	1,260792	144,10522	283,749216	224,923552	222,4019C9	93,899862	91,378278
3	6,75	22,45855	22,10817	-55,06326	31,44197	62,323392	-6,00483	104,12169	-34,850565	75,275955
3	9	-201,9995	-195,1465	-111,3973	-282,7993	-554,6336	-548,9332	-326,1586	-293,18685	-70,41225
4	0	-197,8375	-190,8752	108,0272	-276,9725	-542,80532	-320,253	-536,3074	-70,02655	-286,08095
4	2,25	21,68586	21,01781	54,32708	30,360204	59,651528	101,367922	-7,286238	73,844354	-34,809806
4	4,5	97,22495	93,69203	0,6269287	136,11493	266,577188	210,9888987	209,7350413	88,1293837	86,8755263
4	6,75	26,16982	24,33505	-53,07323	36,637748	70,339864	2,665604	108,812064	-29,520392	76,626068
4	9	-188,8696	-184,2407	-106,7734	-264,41744	-521,42864	-517,65762	-304,11082	-276,75604	-63,20924
5	0	-195,7664	-189,2206	104,3629	-274,07296	-537,67264	-319,77738	-528,50318	-71,82686	-280,55266
5	2,25	22,54871	22,22593	52,53483	31,568194	62,619988	101,819242	-3,250418	72,828669	-32,240991
5	4,5	96,87954	94,45374	0,7069033	135,631356	267,381432	211,4159913	210,0023847	87,8983893	86,4847827
5	6,75	24,61616	24,65032	-51,12122	34,452624	68,979904	3,068492	105,310932	-28,966676	73,275764
5	9	-191,6315	-184,3719	-102,9492	-268,2841	-524,95234	-517,2789	-311,3805	-275,41755	-69,51915
6	0	-186,5382	-181,6752	101,6907	-261,15348	-514,52616	-303,83034	-507,21174	-66,19308	-269,57508
6	2,25	25,44946	23,67998	50,75948	35,629244	68,42732	104,978812	3,459852	73,663994	-27,854966
6	4,5	93,45288	89,81635	-0,1716964	130,834032	255,849516	201,7881096	202,1315024	83,9358956	84,2792884
6	6,75	14,86208	13,9215	-51,10288	20,806912	40,108896	19,3466232	82,858876	-37,727008	64,478752
6	9	-207,713	-201,1921	-102,0341	-290,7982	-571,16296	-552,4818	-348,4136	-288,9758	-84,9076
7	0	-229,9973	-223,3297	92,93948	-321,99624	-633,32428	-406,38698	-592,26594	-114,05809	-299,93705
7	2,5	36,73632	36,1442	46,71131	51,430848	101,914304	126,939094	33,516474	79,773998	-13,9 18622
7	5	126,6802	123,7906	0,4831328	177,35228	350,0812	276,2899728	275,3237072	114,4953128	113,5290472
7	7,5	36,61912	36,1442	-45,74504	51,266768	101,773664	34,342104	125,832184	-12,787832	78,702248
7	10	-230,2317	-223,3297	-91,97322	-322,32438	-633,60556	-591,58096	-407,63452	-299,18175	-115,23531
8	0	-208,3123	-201,1921	97,40137	-291,63722	-571,88212	-353,76549	-548,56823	-90,0797	-284,68244
8	2,25	14,47864	13,9215	49,22962	20,270096	39,648768	80,525468	-17,933752	62,260396	-36,198844

8	4,5	93,26533	89,81635	1,057872	130,599462	255,648556	202,816618	200,700874	80,014689	82,999925
8	6,75	25,49782	23,67998	-47,11388	35,696948	68,485352	7,163484	101,391244	-24,165842	70,061918
8	9	-186,274	-181,6752	-95,28563	-260,7836	-514,20912	-500,48963	-309,91837	-262,93223	-72,36097
9	0	-191,3038	-184,3719	93,22224	-267,82532	-524,5596	-320,71422	-507,1587	-78,95118	-265,39566
9	2,25	24,81585	24,65032	46,72672	34,742232	69,219568	101,156096	7,702656	69,061012	-24,392428
9	4,5	96,9513	94,45374	0,2311989	135,73182	267,467544	211,0264989	210,5641011	87,4873689	87,0249711
9	6,75	22,49252	22,22596	-46,26432	31,489528	62,55256	2,952664	95,481304	-26,021052	66,507588
9	9	-195,9505	-189,2206	-92,75984	-274,3307	-537,89356	-517,12104	-331,60136	-269,11529	-83,59561
10	0	-188,7924	-184,2407	91,77843	-264,30936	-521,336	-319,01315	-502,57001	-78,13473	-261,69159
10	2,25	26,20228	24,33505	46,03937	36,683192	70,378816	101,817156	9,738416	69,621422	-22,457318
10	4,5	97,21265	93,69203	0,3003075	136,09771	266,562428	210,6475175	210,0469025	87,7916925	87,1910775
10	6,75	21,6288	21,01781	-45,43876	30,28032	59,583056	1,53361	92,41113	-25,97284	64,90468
10	9	-197,9383	-190,8752	-91,17782	-277,11502	-542,92748	-519,58018	-337,22454	-269,32319	-86,56755
11	0	-201,8819	-195,1465	90,81814	-282,53466	-554,49268	-346,58664	-528,22292	-90,97557	-272,51185
11	2,25	22,51643	22,10817	45,34204	31,525802	62,395188	94,472326	3,788246	65,608627	-25,075453
11	4,5	102,9345	100,144	-0,1340467	144,1083	283,7518	223,5313533	223,7994467	92,5070033	92,7750967
11	6,75	36,75644	36,14869	-45,61014	51,459016	101,945632	34,646278	125,866558	-12,529344	78,690936
11	9	-173,4059	-167,0654	-91,08624	-242,76628	-475,39172	-466,23872	-284,06624	-247,15155	-64,97907
12	0	-154,5145	-147,6162	87,41847	-216,32044	-421,60344	-245,61525	-420,45219	-51,64467	-226,48161
12	2,25	4,343709	3,049973	45,09963	6,0811926	10,0924076	53,3620538	-36,8372062	49,008968	-41,1902919
12	4,5	63,47372	59,49741	2,780788	88,863208	171,36432	138,446662	132,865086	59,907136	54,34556
12	6,75	20,26551	18,9136	-39,53806	28,371714	54,580372	3,694152	82,770272	-21,299101	57,777019
12	9	-122,671	-115,889	-81,8569	-171,7394	-332,6276	-344,9511	-181,2373	-192,2608	-26,547
13	0	-121,7268	-116,8624	108,8833	-170,41752	-333,052	-154,05126	-371,81786	-0,67082	-218,43742
13	1,8	5,705226	6,149767	47,66742	7,9873164	16,6858984	60,8634582	-34,8713818	53,0021234	-42,7327166
13	3,6	92,38386	90,28193	-13,14843	129,337404	255,31172	187,994132	214,290992	-69,997044	96,293904
13	5,4	37,66971	36,77035	-74,16428	52,737594	104,036212	7,809722	156,138282	-40,261541	108,067019
13	7,2	-65,40486	-63,81573	-135,1801	-91,566804	-180,591	-277,481662	-7,121462	-194,044474	76,315726
14	0	-72,02744	-70,91975	83,20469	-100,838416	-199,904528	-74,147988	-240,557368	16,379994	-148,029386
14	1,8	35,51725	34,61032	44,8899	49,72415	97,997212	122,12092	32,34112	76,855425	-12,924375
14	3,6	94,70152	93,0659	6,575117	132,532128	262,547264	213,282841	200,132607	91,806495	78,656251
14	5,4	12,493	13,87771	-31,73967	17,4902	37,195936	2,67232	60,60898	-20,49597	42,96337
14	7,2	-110,469	-104,1905	-70,05445	-154,6566	-299,2676	-306,80775	-166,69885	-169,47655	-29,36765
15	0	-103,6899	-94,71617	58,34631	-145,16586	-275,973752	-160,79774	-277,49036	-34,9746	-151,66722
15	2,25	2,887168	0,1859845	28,8133	4,0420352	3,7621768	32,4638861	-25,1627139	31,4117512	-26,2148488
15	4,5	54,03546	47,97876	-0,7196949	75,649644	141,608568	112,1016171	113,5410069	47,9122191	49,3516089
15	6,75	29,61977	28,62311	-30,2527	41,467678	81,3407	33,914134	94,419534	-3,594907	56,910493
15	9	-102,2402	-90,5763	-59,78569	-143,13628	-267,61032	-273,05023	-153,47885	-151,80187	-32,23049
16	0	-84,42562	-73,38778	59,25515	-118,195868	-218,731192	-115,44337	-233,953674	-16,727903	-135,238208
16	2,25	2,85279	1,243367	29,67093	3,993906	5,4127352	34,337645	-25,004215	32,238441	-27,103419
16	4,5	34,70245	28,76514	0,086711	48,58343	87,667164	70,494791	70,321369	31,318916	31,145494

16	6,75	9,818369	7,77129	-29,49751	13,7457166	24,2161068	-9,9441772	49,0508428	-20,6609779	38,3340421
16	9	-70,49446	-60,33194	-59,08172	-98,692244	-181,124456	-204,007012	-85,843572	-122,526734	-4,363294
17	0	-63,63796	-55,71772	58,71613	-89,093144	-165,513904	-73,365142	-190,801402	1,443966	-115,992294
17	2,25	10,03651	8,894133	29,43201	14,051114	26,2744248	50,369955	-8,494065	38,464869	-20,399151
17	4,5	28,28223	26,39661	0,1458853	39,595122	76,173252	60,4811713	60,1894007	25,5998923	25,3081217
17	6,75	-10,20578	-4,616528	-29,14024	-14,288092	-19,6333808	-46,003704	12,276776	-38,325442	19,955038
17	9	-104,1225	-82,73904	-58,42636	-145,7715	-257,329464	-266,1124	-149,25968	-152,13661	-35,28389
18	0	-145,8499	-109,0439	57,92424	-204,18986	-349,49012	-226,13954	-341,98802	-73,34067	-189,18915
18	2,25	39,90712	27,94118	29,03375	55,869968	92,594432	104,863474	46,795974	64,950158	6,882658
18	4,5	99,01385	70,7075	0,143255	138,61939	231,94862	189,637375	189,380865	89,25572	88,96921
18	6,75	28,86037	16,44259	-28,74724	40,404518	60,940588	22,327794	79,822274	-2,772907	54,721573
18	9	-167,9434	-132,0411	-57,53773	-235,12076	-412,79784	-391,21091	-275,93545	-208,78679	-93,51133
19	0	-144,3014	-126,4589	57,31482	-202,02196	-375,46592	-242,30576	-356,9354	-72,55644	-187,18608
19	2,25	7,629761	14,37525	28,57209	10,6816654	32,1561132	52,1030532	-5,0411268	35,4388749	-21,7053051
19	4,5	59,83263	60,99066	-0,170628	83,765682	169,384212	132,619188	132,960444	53,676739	54,019995
19	6,75	9,697276	10,57484	-28,91335	13,5761864	28,5564752	-6,7017788	51,1249212	-20,1858016	37,6408984
19	9	-140,1663	-134,0598	-57,65607	-196,23282	-382,69524	-359,91543	-244,60329	-163,80574	-68,4936
20	0	-164,1692	-152,2271	53,40262	-229,63688	-440,5664	-295,82732	-402,63296	-94,34946	-201,1551
20	2,5	33,71218	24,07179	26,76529	47,197052	78,96948	91,291696	37,761116	57,106252	3,575672
20	5	95,01965	83,99429	0,1277614	133,02751	248,414444	198,1456314	197,8901086	85,6454464	85,3899236
20	7,5	16,53051	24,07179	-26,50977	23,142714	58,351476	17,398632	70,418172	-11,632311	41,387229
20	10	-156,5025	-152,2271	-53,1473	-219,1035	-431,36636	-393,1774	-286,8828	-193,99955	-87,70495
21	0	-136,9292	-134,0598	56,43235	-191,70088	-378,81072	-241,94249	-354,80719	-66,80393	-179,66863
21	2,25	11,88133	10,57484	28,41975	16,633862	31,17734	53,252186	-3,587314	39,112947	-17,726553
21	4,5	60,96357	60,99066	0,4071582	85,348998	170,74134	134,5541022	133,7397858	55,2743712	54,4600548
21	6,75	7,707573	14,37525	-27,60544	10,7906022	32,2494876	-3,9811024	51,2297776	-20,6686243	34,5422557
21	9	-145,2767	-126,4589	-55,61803	-203,38738	-376,66628	-356,40897	-245,17291	-186,36706	-75,131
22	0	-168,0547	-132,0411	55,096	-235,27658	-412,9314	-278,61074	-388,80274	-99,15323	-206,34523
22	2,25	28,7463	16,44259	27,58925	40,24482	60,803704	78,5274	23,3489	53,46092	-1,71758
22	4,5	98,89703	70,7075	8,25E-02	138,455842	231,808436	189,4664348	189,3014372	89,08982577	88,92482823
22	6,75	39,78753	27,94118	-27,42425	55,702542	92,450924	48,261966	103,110466	8,384527	63,233027
22	9	-145,9722	-109,0439	-54,931	-204,36108	-349,63688	-339,14154	-229,27954	-186,30598	-76,44398
23	0	-103,8371	-82,73904	54,65111	-145,37194	-256,986984	-152,65245	-261,99467	-38,80228	-148,1045
23	2,25	-10,05093	-4,616528	27,35572	-14,071302	-19,4475608	10,678076	-44,033364	18,309883	-36,401557
23	4,5	28,30644	26,39661	6,03E-02	39,629016	76,202304	60,42467488	60,30400112	25,53613288	25,41545912
23	6,75	9,930075	8,894133	-27,23505	13,902105	26,1467028	-6,424827	48,045273	-18,2979825	36,1721175
23	9	-63,87504	-55,71772	-54,53044	-89,425056	-165,7984	-186,898208	-77,837328	-112,017976	-2,957096
24	0	-70,3016	-60,33194	54,27187	-98,42224	-180,893024	-90,42199	-198,96573	-8,99957	-117,54331
24	2,25	9,914053	7,77129	27,16217	13,8796742	24,3309276	46,8303236	-7,4940164	36,0848177	-18,2395223
24	4,5	34,70095	28,76514	5,25E-02	48,58133	87,665364	70,45875282	70,35380718	31,28332782	31,17838218
24	6,75	2,754112	1,243367	-27,05722	3,8557568	5,2943216	-22,5089186	31,6055214	-24,5785192	29,5359208

24	9	-84,62148	-73,38778	-54,16692	-118,470072	-218,966224	-229,100476	-120,766636	-130,326252	-21,992412
25	0	-102,0482	-90,5763	53,99809	-142,86748	-267,37992	-159,03605	-267,03223	-37,84529	-145,84147
25	2,25	29,71887	28,62311	27,42188	41,606418	81,45962	91,707634	36,863874	54,166863	-0,674897
25	4,5	54,04168	47,97876	0,8456713	75,656352	141,616032	113,6744473	111,9831047	49,4831833	47,7918407
25	6,75	2,800522	-0,1859845	-25,73054	3,9207308	3,6582016	-22,1839291	29,2771509	-23,2100702	28,2510098
25	9	-103,8694	-94,71617	-52,30674	-145,41716	-276,189152	-271,66619	-167,05271	-145,7892	-41,17572
26	0	-110,2508	-104,1905	63,14905	-154,35112	-299,00576	-173,34241	-299,64051	-36,07667	-162,37477
26	1,8	12,59056	13,87771	28,50995	17,626784	37,313008	57,496332	0,476432	39,841454	-17,178446
26	3,6	94,67853	93,0659	-6,129145	132,549942	262,519676	200,550991	212,809281	79,061532	91,339822
26	5,4	35,37371	34,61032	-40,76824	49,523194	97,824964	36,290532	117,827012	-8,931901	72,604579
26	7,2	-72,29152	-70,91975	-75,40734	-101,208123	-200,221424	-233,076914	-82,262234	-140,469708	10,344972
27	0	-24,68993	-23,92979	21,23565	-34,565902	-67,91558	-32,322056	-74,793356	-0,985287	-43,456587
27	1,8	13,62483	12,3309	11,82096	19,074762	36,079236	40,501656	16,859736	24,063307	0,441387
27	3,6	30,47064	29,1516	2,406274	42,658896	83,207328	68,122642	63,310094	29,82965	25,017202
27	5,4	0,4595705	0,6123002	-7,008414	0,6433987	1,53116492	-5,8446292	8,1721988	-6,59480055	7,42202745
27	7,2	-51,02046	-47,367	-16,4231	-71,428644	-137,011752	-125,014652	-92,168452	-62,341514	-29,495314
28	0	-55,95359	-51,72457	19,00665	-78,335023	-149,90362	-99,862228	-137,875528	-31,351581	-69,364881
28	2,25	16,37484	15,61224	9,475099	22,924776	44,629392	44,737144	25,766952	24,212452	5,26226
28	4,5	38,20353	35,83966	-5,65E-02	53,484942	103,187692	81,62743714	81,74035486	34,32671914	34,43963586
28	6,75	8,317467	7,551466	-9,568014	11,6444533	22,063308	7,9444124	27,1204404	-2,1022937	17,0737343
28	9	-72,06834	-67,84611	-19,11957	-100,895676	-195,035764	-173,447688	-135,208548	-63,951076	-45,741936
29	0	-65,07651	-61,32771	18,13291	91,107114	-176,216145	-121,286612	-157,552432	-40,435949	-76,701769
29	2,25	9,46891	8,700683	8,899336	13,256474	25,2837648	28,962711	11,164039	17,421355	-0,377317
29	4,5	33,51458	31,6197	-0,3342359	46,920412	90,809016	71,5029601	72,1714319	29,6288861	30,4973579
29	6,75	5,845508	6,023091	-9,567808	8,1837112	16,6515552	3,4698926	22,6055086	-4,3068508	14,8287652
29	9	-72,32331	-66,68289	-18,80138	-101,252634	-193,480596	-172,272242	-134,669402	-83,892359	-46,289599
30	0	-70,87066	-65,44843	19,53756	-99,218924	-189,762328	-130,955692	-170,030812	-44,246034	-83,321154
30	2,25	7,373151	7,032341	9,745081	10,3224114	20,0995268	25,6252032	6,1350412	16,3809169	-3,1092451
30	4,5	35,11721	32,40376	-4,74E-02	49,164094	93,986666	74,49701628	74,59180772	31,55809328	31,65288472
30	6,75	11,14653	9,259571	-9,839872	15,605142	26,1911496	12,795535	32,475279	0,182005	19,871749
30	9	-63,32391	-60,994	-19,63235	-86,653474	-173,579092	-156,615042	-117,360342	-75,623869	-37,359169
31	0	-70,31326	-65,64303	19,9026	-98,438554	-189,40476	-130,118342	-169,921542	-43,379334	-83,184534
31	2,25	6,714855	6,577097	9,908236	9,400797	18,5811812	24,543159	4,726687	15,9516055	-3,8648665
31	4,5	33,24323	31,68784	-8,61E-02	46,540522	90,59242	71,49358718	71,66584482	29,83277818	30,00503582
31	6,75	8,056855	8,282967	-10,03049	11,279597	22,9209732	7,870703	28,031683	-2,8293205	17,3316595
31	9	-67,62926	-6[illegible]23129	-20,07486	-94,680964	-180,725176	-163,461262	-123,311542	-80,941194	-40,791474
32	0	-63,60207	-61,58946	20,06622	-89,126898	-174,93762	-117,917724	-158,050164	-37,229643	-77,362083
32	2,25	10,25155	8,516074	9,971199	14,35217	25,9275784	30,789133	10,846735	19,197594	-0,744804
32	4,5	33,66541	31,51222	-0,1238254	47,131574	90,818044	71,7868866	72,0345374	30,1750436	30,4226944
32	6,75	5,364536	5,99276	-10,21885	7,5103504	16,0258592	2,2113532	22,6490532	-5,3907676	15,0469324
32	9	-73,43609	-66,63609	-20,31387	-102,810526	-194,741052	-175,073268	-134,445528	-86,403351	-45,778611

33	0	-80,51282	-71,85014	19,64622	-112,717948	-211,575608	-148,619304	-188,111744	-52,815318	-92,107758
33	2,5	13,09377	11,04931	9,813759	18,331278	33,39142	36,575593	16,948075	21,596152	1,970634
33	5	44,70248	39,26063	-0,0187053	62,583472	116,459984	92,8849007	92,9223113	40,2135267	40,2509373
33	7,5	12,81504	11,04931	-9,85117	17,941056	33,056944	16,576188	36,278528	1,682366	21,384706
33	10	-81,07027	-71,85014	-19,68363	-113,498378	-212,244548	-188,818094	-149,450834	-92,646873	-53,279613
34	0	-74,39164	-66,63609	20,50771	-104,148296	-195,887712	-135,398348	-176,413768	-46,444766	-87,460186
34	2,25	4,754255	5,99276	10,29664	6,655957	15,293522	21,994506	1,401226	14,5754695	-6,0178105
34	4,5	33,40039	31,51222	8,56E-02	46,760546	90,50002	71,67825815	71,50711785	30,14592115	29,97478085
34	6,75	10,33179	8,516074	-10,1255	14,464506	26,0238664	10,788722	31,039722	-0,826889	19,424111
34	9	-63,23656	-61,58946	-20,33657	-88,531184	-174,427008	-157,809902	-117,136762	-77,249474	-36,576334
35	0	-67,09694	-62,23129	20,52567	-93,935716	-180,086392	-122,221948	-163,273288	-39,861576	-80,912916
35	2,25	8,393312	8,282967	10,27442	11,7506368	23,3247216	28,6293614	8,0805214	17,8284008	-2,7204392
35	4,5	33,38381	31,68784	2,32E-02	46,737334	90,761116	71,77156935	71,72525465	30,06858635	30,02227165
35	6,75	6,659571	6,577097	-10,2281	9,3233994	18,5148404	4,3404822	24,7966822	-4,2344861	16,2217139
35	9	-70,56442	-65,64303	-20,47936	-98,790188	-189,706152	-170,799694	-129,840974	-83,967338	-43,028618
36	0	-63,27485	-60,994	20,47413	-88,58479	-173,52022	-116,44969	-157,39795	-36,473235	-77,421495
36	2,25	11,15832	9,259571	10,22097	15,521648	28,2052976	32,870525	12,428565	20,263456	-0,178482
36	4,5	35,09174	32,40376	-3,22E-02	49,128436	93,95e104	74,48166935	74,54602665	31,55038735	31,61474465
36	6,75	7,310424	7,032341	-10,28533	10,2345936	20,0242544	5,5195198	26,0901798	-3,7059464	16,8647116
36	9	-70,97065	-65,44846	-20,53848	-99,35891	-189,882316	-171,15172	-130,07476	-84,412055	-43,335105
37	0	-72,19481	-66,68259	20,33798	-101,072734	-193,326396	-132,978682	173,654642	-44,637349	-85,313309
37	2,25	5,913006	6,023091	10,2e605	8,2782084	16,7325528	23,3467482	2,8906482	15,549755	-4,9063446
37	4,5	33,52107	31,6197	0,1181321	46,929498	90,816804	71,9631161	71,7268519	30,2870951	30,0508309
37	6,75	9,41439	8,700683	-9,99179	13,180146	25,2183608	10,006161	29,589741	-1,518839	18,464741
37	9	-65,19204	-61,32771	-20,10171	-91,268856	-176,354784	-159,659868	-119,456448	-78,774546	-38,571126
38	0	-71,96327	-67,64611	21,10631	-100,748578	-194,9097	-133,095724	-175,308344	-43,660633	-85,873253
38	2,25	8,371233	7,551466	10,63906	11,7197262	22,1278252	28,2360056	6,9578856	18,1731697	-3,1049503
38	4,5	38,20599	35,83966	0,1718047	53,488386	103,190644	81,8586527	81,5150433	34,5571957	34,2135863
38	6,75	16,326	15,61224	-10,29545	22,8564	44,570784	24,90799	45,49889	4,39795	24,98885
38	9	-56,05374	-51,72457	-20,7627	-78,475236	-150,9238	-139,751758	-98,226358	-71,211066	-29,685665
39	0	-50,90121	-47,367	21,87934	-71,261694	-136,868652	-86,566612	-130,328292	-23,931249	-67,690929
39	1,8	0,5099024	0,6123002	9,051622	0,71394736	1,5916352	10,27567708	-7,62736692	9,51058816	-8,59265584
39	3,6	30,45218	29,1516	-3,776593	42,633052	83,185176	61,917623	69,470809	23,630369	31,183555
39	5,4	13,53752	12,3309	-16,60481	18,952528	35,974464	11,971114	45,180734	-4,421042	28,788578
39	7,2	-24,8461	-23,92979	-29,43302	-34,78454	-68,102984	-83,17813	-24,31209	-51,79451	7,07153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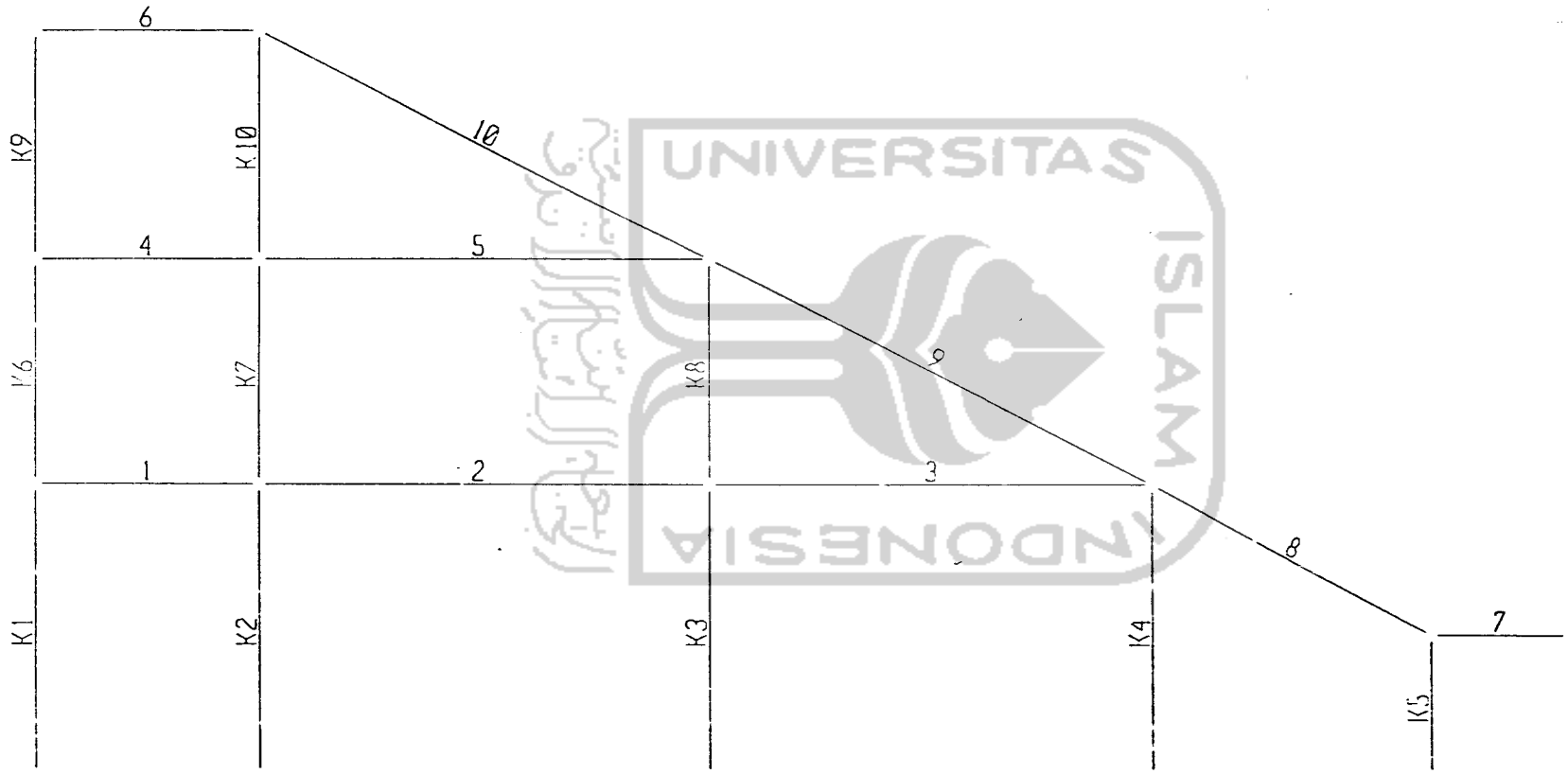
MOMEN BALOK PORTAL A (ANALISIS 2D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0,9MD-ME (KN.m)
1	0	-21,17582	-22,03973	207,5096	-29,646148	-60,674552	160,058886	-254,960314	188,451362	-226,567838
1	1	-3,443539	-4,059676	114,6544	-4,8209546	-10,6277284	106,4624772	-122,8463228	111,5552149	-117,7535851
1	2	3,862481	4,031214	21,79909	5,4354734	11,1089196	30,4892812	-13,1088988	25,2933229	-18,3048571
1	3	-4,347582	-3,316229	-71,05619	-6,0863348	-10,5228248	-79,5892774	62,5231026	-71,9688338	67,1435462
1	4	-22,9835	-20,55284	-163,9115	-32,1769	-60,464744	-212,04454	115,77846	-184,59665	143,22635
2	0	-61,25543	-56,78358	101,7853	-85,757602	-164,360244	-28,504796	-232,075396	46,655413	-156,915187
2	2	19,2168	18,29021	48,50137	26,90352	52,324496	89,85174	-7,151	65,73649	-31,20625
2	4	43,25467	40,32401	-4,782613	60,556538	116,42402	87,447001	97,012227	34,14659	43,711816
2	6	9,550096	9,557805	-58,06659	13,3701344	26,7526032	-37,0486698	79,0845102	-49,4715036	66,6616764
2	8	-57,95884	-52,3484	-111,3506	-81,156376	-153,320048	-233,261608	-10,560408	-163,522556	59,178644
3	0	-49,77863	-45,31279	118,4892	-69,690082	-132,23482	13,442054	-223,536346	73,686433	-163,289967
3	2	-3,579666	-4,398035	55,89215	-5,0115324	-11,3324552	47,1985158	-64,5857842	52,6704506	-50,1138494
3	4	22,34487	19,96717	-6,704847	31,282818	58,761316	40,076167	53,485861	13,405536	26,81523
3	6	26,72186	26,41093	-69,30184	37,410604	74,32372	-10,824678	127,779002	-45,252166	93,351514
3	8	17,77788	23,79808	-131,8988	24,889032	59,410384	-86,767264	177,030336	-115,898708	147,898892
4	0	-27,47219	-30,0934	14,56461	-38,461066	-81,116068	-48,495418	-77,624638	-10,160361	-39,289581
4	1	-4,051736	-4,205907	7,315089	-5,6725144	-11,5916064	-1,7529732	-16,3831512	3,6684726	-10,9617054
4	2	8,962341	11,79242	6,56E-02	12,5472774	29,6226812	22,61279961	22,46165879	8,13167731	8,00053649
4	3	6,420596	12,35242	-7,183948	8,9888344	27,4685872	12,8731872	27,2410832	-1,4054116	12,9624844
4	4	-6,527408	3,023244	14,43347	-9,1383712	-2,9956992	-19,2431156	9,6238244	-20,3061372	8,5588028
5	0	-45,65455	-28,98833	11,08064	-63,91637	-101,166788	-72,69315	-94,85443	-30,008455	-52,169735
5	2	9,900306	5,527095	7,612864	13,8604284	22,3237152	26,0203262	10,7945982	16,5231394	1,2974114
5	4	31,6408	15,76252	4,145091	44,29712	63,188992	57,876571	49,586389	32,621811	24,331529
5	6	15,05665	11,67794	0,6773171	21,07959	36,752924	30,4234771	29,0688429	14,2284821	12,8738479
5	8	-35,24145	-18,56664	-2,790456	-49,47803	-72,308364	-63,886836	-58,305924	-34,597761	-29,016849
6	0	-13,65691	-15,15593	-5,715642	-19,119674	-40,63778	-37,259864	-25,82858	-18,006861	-6,575577
6	1	-1,503794	-1,9969 4	-3,515357	-2,1053116	-4,9996632	-7,3168538	-0,2861398	-4,8687716	2,1619424
6	2	0,8759738	1,27288	-1,315071	1,22636332	3,08777656	1,00897756	3,63911956	-0,52669458	2,10344742
6	3	-11,31209	-10,89563	0,8852151	-15,836926	-31,007516	-23,5849229	-25,3553531	-9,2956659	-11,0660961
6	4	-33,2735	-32,95331	3,095501	-46,5829	-92,653496	-69,796009	-75,967011	-26,860649	-33,031651
7	0	-118,5623	-117,1995	31,1796	-165,98722	-329,79252	-228,29376	-290,65296	-75,52647	-137,88567
7	2,2	0,6098268	4,706349	-2,653522	0,85375752	8,26195056	2,78461916	8,09196316	-2,10467788	3,20236612
7	4,5	55,50652	59,68357	-36,48664	77,709128	162,101536	89,804754	162,778034	13,469228	86,442508
7	6,7	40,19863	40,87055	-70,31976	56,278082	113,631236	18,789146	159,428666	-34,140993	106,498527

7	8,9	-44,10291	-50,44828	-104,1529	-61,744074	-133,64074	-207,524672	0,781128	-143,845519	64,460281
8	0	-60,55709	-59,84055	-3,022099	-84,779926	-168,413548	-135,531257	-129,487059	-57,52348	-51,479282
8	2,2	32,26799	34,58277	-0,3738817	45,175186	94,05402	72,9304763	73,6782397	28,6673093	29,4150727
8	4,5	60,81768	62,07844	2,274335	85,144752	172,30672	137,333991	132,785321	57,010247	52,461577
8	6,7	19,16279	15,78386	4,922553	26,827906	48,249524	43,701761	33,856655	22,169064	12,323958
8	8,9	-91,48575	-103,0165	7,570769	-128,08005	-274,6093	-205,228631	-220,370169	-74,766406	-89,907944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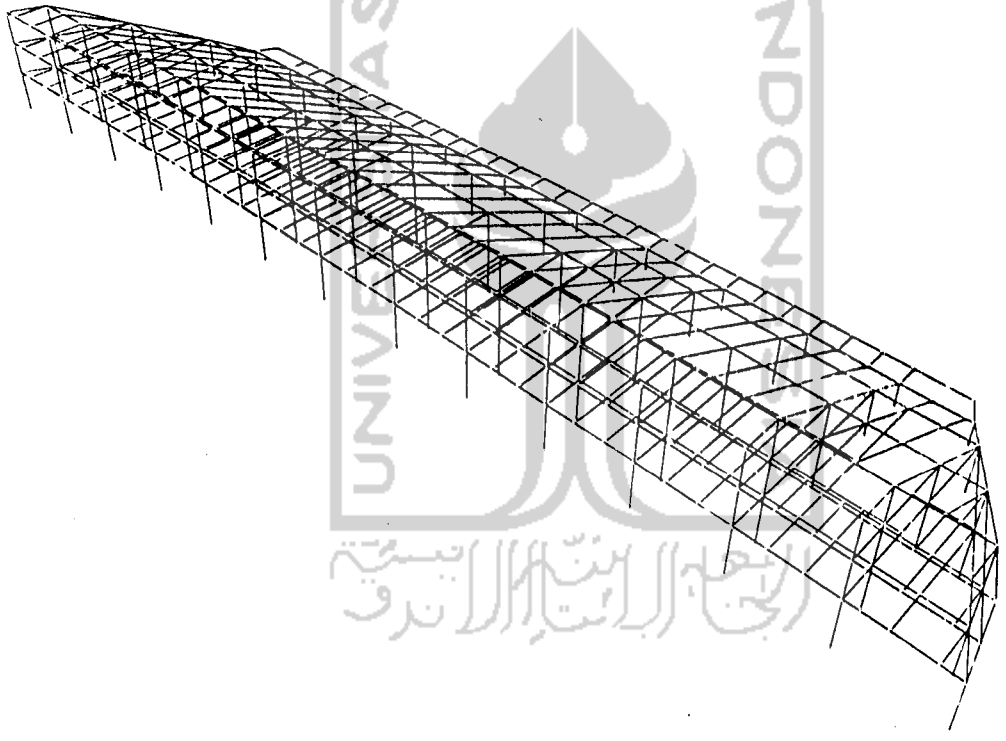
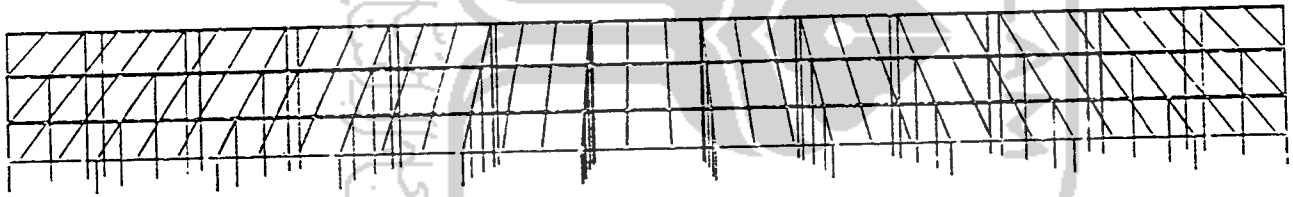
MOMEN BALOK PORTAL AS B (ANALISIS 2D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0,9MD-ME (KN.m)
1	0	-22,27615	-17,23346	99,47969	-31,18661	-54,304916	55,51485	-99,01506	79,431155	-102,2777846
1	1	-3,108994	-2,744542	55,05022	-4,3525916	-8,12206	48,5748852	-17,0960948	52,2521254	-53,7400855
1	2	1,455705	1,952704	10,62076	2,037987	4,8711724	14,32031	37,50826	11,9308945	-18,4885969
1	3	-8,742041	-7,933393	-33,80871	-12,2388574	-23,183862	-52,2325422	59,8143378	-41,6765469	7,478706
1	4	-29,25556	-27,61114	-78,23817	-40,957784	-79,284496	-140,955982	-110,610522	-104,568174	15,501915
2	0	-69,70695	-65,09706	47,89271	-97,58973	-187,803636	-100,85265	-171,12167	-14,843545	-30,766907
2	2	19,02667	18,04209	22,37627	26,640138	51,701748	63,252764	44,016658	39,502073	27,121786
2	4	54,99784	49,61874	-3,140164	76,996976	145,387392	156,476354	144,272748	46,357892	17,567695
2	6	16,03059	15,57038	-28,0566	22,442826	44,149316	6,150488	88,980126	-14,229069	-39,476199
2	8	-75,70311	-70,04047	-54,17304	-105,984354	-202,908484	-225,057232	-203,899372	-122,305839	-0,067746
3	0	-60,26754	-55,68607	43,01517	-84,374556	-161,41876	-84,991948	-153,540308	-11,225616	-45,6628494
3	2	-2,941866	-2,922391	25,53319	-4,1186124	-8,2060648	19,080559	-14,5038302	22,8855106	-3,719566
3	4	24,23736	22,65379	8,0512	33,932304	65,330896	59,789822	61,16941	29,864824	8,742944
3	6	18,66016	18,22996	-9,430788	26,124224	51,560128	31,191364	67,534932	7,363356	-5,926353
3	8	-17,06349	-13,38136	-26,91278	-23,888886	-41,886364	-60,770328	-64,259128	-42,269921	4,10363
4	0	-25,3435	-24,27073	30,40158	-35,4809	-133,3654	-83,2698	-107,51556	-30,15648	-32,9433726
4	1	-2,824214	-2,459918	5,894229	-3,9538996	-7,3249256	0,0452542	-6,2358551	3,3524364	2,5471383
4	2	9,379297	9,559229	0,3868803	13,1310158	26,5499228	21,2012657	25,9348544	8,8282476	5,7514482
4	3	6,820365	6,995043	-5,120469	9,548511	19,3765068	10,059012	25,807301	1,0178595	-0,3284397
4	4	-6,054343	-5,36081	-10,62782	-8,4760802	-15,8425076	-23,2538416	-20,3070376	-16,0767287	-26,565058
5	0	-41,32542	-38,26787	7,681016	-57,855588	-110,819096	-80,177353	-91,597976	-29,511862	-0,2819999
5	2	8,221129	7,07636	3,739602	11,5095806	21,1875308	20,6813168	17,1435272	11,1366181	21,119514
5	4	27,62124	25,23309	-0,2018124	38,669736	73,518432	58,1767656	62,521805	24,6573036	13,0402314
5	6	14,26491	13,38982	-4,143227	19,970874	36,541604	26,364485	38,592353	8,695192	-22,170838
5	8	-29,23785	-25,64095	-8,084641	-40,93299	-76,11094	-68,811011	-60,4287368	-34,398706	-3,359561
6	0	-12,71578	-11,8813	-0,2976332	-17,802092	-34,269032	-27,4378732	-26,4452105	-11,7418352	-0,55764175
6	1	-0,9503055	0,5261545	-0,6950355	-1,3304277	-1,96221444	-2,351557	-0,5740635	-1,55031045	1,7084859
6	2	1,126056	1,03733	-1,092438	1,5764784	3,0109952	1,2961592	3,8784372	-0,0789876	-8,471583
6	3	-10,62669	-11,98252	-1,48984	-14,877366	-31,92406	-26,224388	-22,847306	-11,053861	-27,371855
6	4	-32,06855	-34,79403	-1,887242	-44,89597	-94,152708	-75,163332	-72,9215504	-30,748937	-64,071688
7	0	-73,2877	-49,14438	-0,3547396	-102,60278	-145,576246	-137,4443596	-136,8206833	-66,3136696	-37,7837864
7	0,63	-42,37614	-35,05949	-0,2689367	-59,326596	-106,946552	-86,1797947	-85,7277242	-38,4074627	-23,1796993
7	1,25	-26,05404	-23,31836	-0,1831338	-36,475656	-68,574224	-54,7663418	-54,48587712	-23,6317698	-12,1717962
7	1,88	-13,7277	-9,48347	-9,73E-02	-19,21878	-31,646792	-26,05404088	25,94518204	-12,45220038	0,105568943
7	2,5	9,15E-03	7,67E-03	-1,15E-02	0,012814764	0,023253226	0,007124338	-96,5113177	-0,003289897	-56,96606804
8	0	-63,30844	-62,58823	96,52997	-88,631816	-176,111296	-42,028388	-155,814968	39,552374	-112,398311





MOMEN BALOK PORTAL AS 1 (ANALISIS 3D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0,9MD-ME (KN.m)
141	0	-27,79377	-10,21522	183,2168	-38,911278	-49,696876	139,649056	-226,784544	158,202407	-208,231193
141	0,45	-0,6914774	-0,832127	172,0798	-0,96806836	-2,16117608	170,4179001	-173,7416999	171,4574703	-172,7021297
141	0,9	23,41913	7,969403	160,9428	32,786782	40,8540008	197,015159	-124,870441	182,020017	-139,865583
141	1,35	44,39193	16,0634	149,8058	62,148702	78,971756	219,139516	-80,472084	189,758537	-109,853063
141	1,8	62,62483	23,79291	138,6688	87,674762	113,218452	237,611506	-39,726094	195,031147	-82,306453
142	0	62,62392	23,79633	138,6782	87,673488	113,222832	237,623234	-39,733166	195,039728	-82,316672
142	0,9	86,48367	31,81571	106,4303	121,077138	154,68554	242,026414	29,165814	184,265603	-28,594997
142	1,8	97,69267	36,91909	74,18241	136,769738	176,301748	228,332704	79,967884	162,105813	13,740993
142	2,7	93,99566	37,16247	41,93452	131,594204	172,254984	191,892022	108,022982	126,530794	42,661754
142	3,6	77,64829	34,48985	9,686638	108,707606	148,361708	137,354436	117,98116	79,570099	60,196823
143	0	77,65235	34,49139	9,689986	108,71329	148,369044	137,364196	117,984224	79,577101	60,197129
143	0,9	43,56094	20,3955	-22,70152	60,985316	84,905928	49,967108	95,370148	16,503326	61,906366
143	1,8	-3,181241	3,383606	-55,09302	-4,4537374	1,5962804	-55,5269032	54,6591368	-57,9561369	52,2299031
143	2,7	-64,82922	-18,48829	-87,48452	-90,760908	-107,376328	-183,767874	8,798834	-145,830818	29,138222
143	3,6	-139,1279	-43,27618	-191,876	-194,77906	-266,195233	-352,106323	-18,35366	-317,09111	66,66089
144	0	-135,4412	-40,5286	59,0145	-189,61768	-227,3752	-144,04354	-262,07254	-62,88256	-180,91158
144	0,75	-80,19221	-26,74531	48,08021	-112,269094	-139,023148	-74,895752	-171,056172	-24,092779	-120,253199
144	1,5	-33,33696	-14,64951	37,14592	-46,671744	-63,443568	-17,507942	-91,799782	7,142656	-67,149184
144	2,25	3,819546	-5,366218	26,21163	5,3473644	-4,0024936	25,4288672	-26,9943928	29,6492214	-22,7740386
144	3	32,5823	2,229576	15,27734	45,61522	42,6660816	56,605676	26,050996	44,60141	14,04673
145	0	32,58473	2,232081	15,27726	45,618622	42,6730056	56,611017	26,056497	44,603517	14,048997
145	0,75	47,49236	7,453506	3,392003	66,489304	68,9164416	67,836341	61,052335	46,135127	39,351121
145	1,5	54,00625	10,98743	-8,493255	75,60875	82,387388	67,301675	84,288185	40,11237	57,09888
145	2,25	50,62136	11,70886	-20,37851	71,149032	79,715832	52,316006	93,073026	25,360732	66,117752
145	3	39,24277	10,74278	-32,26377	54,939878	64,279772	25,570334	90,097874	3,054723	67,582263
146	0	39,23975	10,74013	-32,26374	54,93565	64,271908	25,56409	90,09157	3,052035	67,579515
146	0,75	15,44764	4,539403	-44,41678	21,626696	25,8002126	-21,340209	67,493351	-30,513904	58,319656
146	1,5	-15,73822	-3,34682	-56,56982	-23,433508	-25,443976	-60,004504	33,135136	-71,634218	41,505422
146	2,25	-56,62282	-14,04954	-68,72285	-82,071948	-92,826648	-153,119774	-15,674074	-121,483388	15,962312
146	3	-108,9012	-26,43777	-80,87589	-152,46168	-172,981872	-237,9951	-76,24332	-178,68697	-17,13519
147	0	-109,042	-26,97091	90,26379	-152,6588	-174,003856	-67,55752	-248,0851	-7,87401	-198,40159
147	0,75	-59,4649	-14,58627	75,47897	-83,25086	-94,695912	-10,46518	-161,42312	21,96056	-128,99738
147	1,5	-18,2816	-3,869124	60,69415	-25,59424	-28,1605184	34,867106	-86,521194	44,24071	-77,14759
147	2,25	13,20294	3,995522	45,90933	18,484116	22,2363632	65,74838	-26,07028	57,791976	-34,026684
147	3	36,29375	10,19267	31,12451	50,81125	59,860772	84,86968	22,62065	63,788885	1,539865
148	0	36,293	10,19759	31,12447	50,8172	59,873904	84,87976	22,63082	63,79267	1,54373
148	0,75	49,60059	13,22414	16,38445	69,440826	80,679332	89,129298	56,360398	61,024981	28,256081

148	1,5	54,50943	14,56309	1,644418	76,313202	88,71226	81,618824	78,329988	50,702905	47,414069
148	2,25	49,71951	13,06954	-13,09561	69,607314	80,606676	59,657342	85,648562	31,651949	57,643169
148	3	36,53585	9,928493	-27,83564	51,15019	59,7286088	25,935873	81,607153	5,046625	60,717905
149	0	36,53075	9,922677	-27,83573	51,14305	59,7131832	25,923847	81,595307	5,041945	60,713405
149	0,75	13,91361	3,908233	-42,42781	19,479054	22,9495048	-21,823245	63,032375	-29,905561	54,950059
149	1,5	-17,09729	-3,793711	-57,0199	-23,936206	-26,5866856	-81,330359	32,709441	-72,407461	41,632339
149	2,25	-57,80693	-14,30816	-71,61198	-80,929702	-92,261372	-155,288456	-12,064496	-123,638217	19,585743
149	3	-106,9103	-26,5101	-86,20406	-149,67442	-170,70852	-241,00652	-68,5984	-182,42335	-10,01521
150	0	-106,7246	-26,31874	85,11484	-149,41444	-170,179504	-69,27342	-239,5031	-10,9373	-181,16699
150	0,75	-57,89248	-14,48785	70,91402	-81,049472	-92,651536	-13,044806	-154,872846	18,810788	-123,017252
150	1,5	-17,45409	-4,34445	56,71319	-24,435726	-27,696028	31,423832	-82,002548	41,004509	-72,421871
150	2,25	13,28555	2,986448	42,51237	18,59977	20,7209768	61,441478	-23,583262	54,469365	-30,555375
150	3	35,63144	8,629846	28,31154	49,884016	56,5654816	79,699114	23,076034	60,379836	3,756756
151	0	35,63653	8,635349	28,31168	49,891142	56,5803944	79,710865	23,087505	60,384557	3,761197
151	0,75	48,60589	11,5691	14,08305	68,048246	76,837628	83,979218	55,813118	57,528351	29,662251
151	1,5	53,1815	12,81535	-0,1455801	74,4541	84,32236	76,4875699	76,7787301	47,7177699	48,0089301
151	2,25	48,05837	11,2491	-14,37421	67,281718	75,668604	54,544934	83,293354	28,878323	57,626743
151	3	34,54148	7,995355	-28,60284	48,358072	54,242344	20,842291	78,047971	2,484492	59,690172
152	0	34,53725	7,990516	-28,60267	48,35215	54,2295256	20,832546	78,037886	2,480855	59,686195
152	0,75	11,31125	1,758061	-42,61051	15,83575	16,3863976	-27,478949	58,142071	-32,630385	52,990635
152	1,5	-20,3085	-6,161894	-57,01835	-28,4019	-34,2292304	-87,550444	26,486256	-75,296	38,7407
152	2,25	-61,627	-16,89435	-71,2262	-86,2778	-100,98336	-162,07295	-19,62055	-126,6905	15,7619
152	3	-111,3393	-29,3143	-85,43404	-155,87502	-180,51004	-248,3555	-77,48742	-185,63941	-14,77133
153	0	-111,4087	-29,37593	84,88347	-155,97218	-180,691928	-78,1829	-247,94984	-15,38436	-185,1513
153	0,75	-60,19486	-15,80412	70,82379	-84,272804	-97,520424	-17,214162	-158,861742	16,648416	-124,999164
153	1,5	-17,37476	-3,9198	56,76411	-24,324664	-27,121392	31,994598	-81,533622	41,126826	-72,401394
153	2,25	15,74658	5,152016	42,70444	22,045212	27,1391216	66,752352	-18,656528	56,876362	-28,532518
153	3	40,47418	12,53633	28,64476	56,663852	69,627144	89,750106	32,460585	65,071522	7,782002
154	0	40,47718	12,54021	28,64483	56,668052	68,636952	89,757656	32,467996	65,074292	7,784832
154	0,75	53,97114	15,6831	14,49879	75,559596	89,858328	94,947258	65,949678	63,072816	34,075236
154	1,5	59,07135	17,1385	0,3527553	82,69989	98,30722	88,3768753	87,6713647	53,5169703	52,8114597
154	2,25	54,47281	15,78139	-13,79328	76,261934	90,517596	67,355482	94,942042	35,232249	62,818809
154	3	41,48052	12,73678	-27,83932	58,072728	70,155472	34,574084	90,452724	9,393148	65,271788
155	0	41,47785	12,73315	-27,93925	58,06899	70,14646	34,56732	90,44582	9,390815	65,269315
155	0,75	17,18471	5,396006	-42,10469	24,058594	29,2552616	-16,087032	68,122348	-26,638451	57,570929
155	1,5	-15,50218	-3,628639	-56,27013	-21,703052	-24,4084384	-78,501385	34,038875	-70,222092	42,318168
155	2,25	-57,88782	-15,46578	-70,43558	-81,042948	-94,210632	-155,366744	-14,495584	-122,534618	18,336542
155	3	-108,6672	-28,99043	-84,60101	-152,13408	-176,785328	-243,99208	-74,79006	-182,40149	-13,19947
156	0	-107,7321	-28,55954	85,08175	-150,82494	-174,973784	-72,75631	-242,91981	-11,87714	-182,04064
156	0,75	-59,29509	-16,37661	70,78378	-83,013126	-97,356684	-16,746938	-158,314498	17,418199	-124,149361
156	1,5	-19,25184	-5,881183	56,4858	-26,952576	-32,5121008	27,502409	-85,469191	39,159144	-73,812456

156	2,25	11,09267	1,801744	42,18782	15,529738	16,1939944	57,300768	-27,074872	52,171233	-32,204417
156	3	33,04342	7,797172	27,88984	46,260788	52,1275792	75,339116	19,559436	57,628915	1,649238
157	0	33,04782	7,802012	27,88991	46,266948	52,1406032	75,349306	19,569486	57,632948	1,653128
157	0,75	45,0572	10,66994	13,50548	63,08008	71,140544	78,24406	51,2331	54,05696	27,046
157	1,5	48,67284	11,85038	-0,8789402	68,141976	77,368016	69,3788478	71,1367282	42,9266156	44,6844962
157	2,25	42,58972	10,21821	-15,26336	59,625608	67,45696	46,062614	76,589334	23,067388	53,594108
157	3	26,11286	6,898742	-29,64779	39,358004	44,7734192	10,986384	70,281964	-4,346218	54,949364
158	0	28,10803	6,893479	-29,64772	39,351242	44,7592024	10,975395	70,270835	-4,350493	54,944947
158	0,75	3,922996	0,6545353	-44,03475	5,4921944	5,75485328	-38,6726185	49,3968815	-40,5040536	47,5654464
158	1,5	-28,65579	-7,271906	-58,42178	-40,118106	-46,0219976	-100,080634	16,762926	-84,211991	32,531569
158	2,25	-70,93332	-18,01085	-72,80881	-99,306648	-113,937344	-175,939644	-30,322024	-136,648798	8,968822
158	3	-121,6046	-30,43729	-87,19584	-170,24644	-194,625184	-263,55865	-89,16697	-196,63998	-22,2483
159	0	-124,9632	-31,35061	-81,15575	-174,95268	-200,120416	-100,1543	-262,4658	-31,31383	-193,62535
159	0,83	-64,24527	-16,1968	67,68456	-89,943378	-103,009204	-25,606564	-160,975684	9,863617	-125,505303
159	1,67	-13,88678	-3,126288	54,21336	-19,441492	-21,6661988	34,422936	-74,003764	41,715255	-66,711462
159	2,50	24,49817	6,472074	40,74216	34,297438	39,7531224	76,612038	-4,872282	62,790513	-18,693807
159	3,33	52,52069	13,98714	27,27097	73,528966	85,404252	104,282938	49,740998	74,53959	19,997651
160	0	52,52589	13,9935	27,27105	73,536246	85,420668	104,295618	49,753518	74,544351	20,002251
160	0,83	68,87651	17,80964	13,70338	96,427114	111,147236	114,164832	86,758072	75,692239	48,285479
160	1,67	74,86469	19,54248	0,1357141	104,810556	121,105596	109,5158221	109,2443939	67,513935	67,2425069
160	2,50	68,87933	17,80317	-13,43195	96,431062	111,140256	87,026416	113,890316	48,559447	75,423347
160	3,33	52,53153	13,98057	-26,99962	73,544142	85,406748	50,018786	104,018026	20,278757	74,277997
161	0	52,52632	13,97422	-26,99953	73,536648	85,390336	50,006274	104,005334	20,274158	74,273218
161	0,83	24,50572	6,452519	-40,55877	34,308008	39,7308944	-4,699387	76,418153	-18,503622	62,613918
161	1,67	-13,87796	-3,152595	-54,11802	-19,429144	-21,697704	-73,924167	34,311873	-66,608184	41,627856
161	2,50	-64,23588	-16,23007	-67,67726	-89,930232	-103,051168	-160,990386	-25,635866	-125,489552	9,864968
161	3,33	-124,9569	-31,39096	-81,23651	-174,93965	-227,174321	265,57623	-100,10273	-193,69772	-31,2247
162	0	-121,6138	-30,39567	86,55805	-170,25932	-194,569632	-89,77418	-262,89028	-22,89437	-196,01047
162	0,75	-70,94103	-17,97565	72,33905	-99,317442	-113,890595	-30,766036	-175,444136	8,492123	-136,185977
162	1,5	-28,66197	-7,243537	58,12005	-40,126758	-45,9840232	16,482149	-99,757951	32,324277	-83,915823
162	2,25	3,918344	0,6762799	43,90105	5,4856815	5,78405904	49,2793417	-38,5227583	47,4275596	-40,3745404
162	3	28,10491	6,908595	29,68205	39,346074	44,779644	70,316537	10,952437	54,976469	-4,387631
163	0	28,10974	6,913857	29,68213	39,353636	44,7936592	70,327675	10,963415	54,980896	-4,383364
163	0,75	42,58804	10,22671	15,38118	59,623256	67,468364	76,713536	45,951178	53,710416	22,948056
163	1,5	48,6726	11,85207	1,080224	68,14164	77,370432	71,339414	69,178966	44,885564	42,725116
163	2,25	45,0584	10,66492	-13,22073	63,08176	71,133952	51,51427	77,95573	27,33183	53,77329
163	3	33,05046	7,790272	-27,52168	46,270644	52,1249872	19,929144	74,972504	2,223734	57,267094
164	0	33,04606	7,785432	-27,52158	46,264484	52,1119632	19,919124	74,962284	2,219874	57,263034
164	0,75	11,0968	1,783403	-41,82706	15,53552	16,1696048	-26,727497	56,926623	-31,83994	51,81418
164	1,5	-19,24621	-5,906127	-56,13255	-26,944694	-32,5452552	-85,134129	27,130971	-73,454139	38,810961
164	2,25	-59,28797	-16,40816	-70,43803	-83,003158	-97,39862	-157,991754	-17,115594	-123,797203	17,078857

164	3	-107,7235	-28,59769	-84,74351	-150,8129	-175,024504	-242,6094	-73,12238	-181,69468	-12,20764
165	0	-108,6776	-28,9457	83,33139	-152,14864	-176,72624	-76,02743	-242,69021	-14,47845	-181,14123
165	0,75	-57,89627	-15,42954	69,44019	-81,054778	-94,162788	-15,464874	-154,345254	17,333547	-121,546833
165	1,5	-15,50874	-3,600886	55,549	-21,712236	-24,3719056	33,337626	-77,760374	41,591134	-69,506866
165	2,25	17,18005	5,415272	41,6578	24,05207	29,2804952	67,689132	-15,626468	57,119845	-26,195755
165	3	41,47508	12,74393	27,76661	58,065112	70,160334	90,280636	34,747416	65,094182	9,560962
166	0	41,47775	12,74756	27,76668	58,06885	70,169396	90,28754	34,75418	65,096655	9,563295
166	0,75	54,47188	15,78351	13,77975	76,260632	90,619872	94,929516	67,370016	62,804442	35,244942
166	1,5	59,07226	17,13197	-0,207174	82,701164	98,297864	87,811508	88,225856	52,95786	53,372208
166	2,25	53,97389	15,66793	-14,1941	75,553446	89,837256	66,242498	94,630698	34,382401	62,770601
166	3	40,48177	12,51638	-28,18103	56,674478	68,604332	32,913474	89,275534	8,252563	64,614623
167	0	40,47877	12,5125	-28,18093	56,670278	68,594524	32,906094	89,267954	8,249963	64,611823
167	0,75	15,75318	5,119556	-42,2056	22,054452	27,0951056	-18,182228	66,228972	-28,027738	56,383462
167	1,5	-17,36617	-3,960888	-56,23028	-24,312638	-27,1768248	-81,030572	31,429988	-71,859833	40,600727
167	2,25	-60,18426	-15,85383	-70,25496	-84,257964	-97,58724	-158,329902	-17,819982	-124,420794	16,039126
167	3	-111,3961	-29,43426	-84,27964	-155,95454	-180,770168	-247,38924	-78,82996	-184,53613	-15,97685
168	0	-111,3448	-29,29386	83,31025	-155,88272	-180,483936	-79,59737	-246,21787	-16,90007	183,52057
168	0,75	-61,63231	-16,87165	69,52381	-86,285234	-100,953412	-21,306612	-160,354232	14,054731	-124,992889
168	1,5	-20,31355	-6,136933	55,73737	-28,43897	-34,1953528	25,224177	-85,250563	37,455175	-74,019565
168	2,25	11,30646	1,785261	41,95093	15,829044	16,4242016	57,303963	-26,597897	52,126744	-31,775116
168	3	34,53272	8,019996	28,16449	48,345808	54,2712576	77,62375	21,29477	59,243938	2,914958
169	0	34,53696	8,024833	28,16449	48,351744	54,2840848	77,633675	21,304695	59,247754	2,918774
169	0,75	48,05378	11,28094	14,33223	67,275292	75,71404	83,277706	54,613246	57,580632	28,916172
169	1,5	53,17685	12,84954	0,4999679	74,44759	84,371484	77,1617279	76,1617921	48,3591329	47,3591971
169	2,25	48,60117	11,60564	-13,33229	68,041638	76,890428	56,594754	83,259334	30,408763	57,073343
169	3	35,63174	8,674243	-27,16456	49,884436	56,6368768	24,267771	78,596891	4,904006	59,233126
170	0	35,62666	8,66874	-27,16457	49,877324	56,621976	24,256162	78,585302	4,899424	59,228564
170	0,75	13,28041	3,028235	-40,91217	18,592574	20,781668	-21,947443	59,876897	-28,959801	52,864539
170	1,5	-17,45958	-4,299769	-54,65976	-24,443412	-27,8311264	-79,911025	29,408495	-70,373382	36,946138
170	2,25	-57,89833	-14,44027	-68,40735	-81,057662	-92,582428	-152,325616	-15,510916	-120,515847	16,298853
170	3	-106,7308	-26,26828	-82,15494	-149,42312	-170,106208	-236,50018	-72,1903	-178,21266	-13,90278
171	0	-106,9404	-26,36004	85,6442	-149,71556	-170,504544	-69,04432	-240,33272	-10,60216	-181,89056
171	0,75	-57,82973	-14,21545	71,01265	-80,961622	-92,140396	-12,598476	-154,623776	18,965693	-123,059407
171	1,5	-17,11262	-3,758354	56,3811	-23,957948	-26,5487504	32,087362	-80,674838	40,979562	-71,782638
171	2,25	13,90533	3,886241	41,74955	19,467462	22,9043816	62,322187	-21,170913	54,264347	-29,234753
171	3	36,52974	9,843336	27,11801	51,141636	59,5850256	80,797034	26,561014	59,994776	5,758756
172	0	36,53484	9,849159	27,11817	51,148776	59,6004624	80,809137	26,572797	59,999526	5,763186
172	0,75	49,72718	12,95252	12,41485	69,618052	80,396648	85,039986	60,210286	57,169312	32,339612
172	1,5	54,52578	14,36839	-2,288461	76,336092	86,42036	77,510865	82,087787	46,784741	51,361663
172	2,25	49,62562	12,97175	-16,99178	69,475868	80,305544	55,530714	89,514274	27,671278	61,654838
172	3	36,33172	9,887511	-31,69509	50,864408	59,4182416	21,790585	85,180765	1,003458	64,393638

173	0	36,32746	9,882585	-31,69488	50,858444	59,4050896	21,780658	85,170418	0,999834	64,389594
173	0,75	13,24824	3,626966	-46,46021	18,547536	21,7010336	-26,955356	66,005064	-34,556794	58,403626
173	1,5	-18,22473	-4,316154	-61,26553	-25,514622	-28,7755224	-87,45136	35,0797	-77,667787	44,863273
173	2,25	-59,39645	-15,07177	-76,05085	-83,15503	-95,390572	-162,39836	-10,29666	-129,507655	22,594045
173	3	-108,9619	-27,51489	-90,83617	-152,54666	-174,778104	-249,10534	-67,433	-188,90188	-7,22954
174	0	-108,8277	-27,01601	75,43215	-152,35878	-173,818856	-82,1771	-233,0414	-22,51278	-173,37708
174	0,75	-58,56337	-14,33331	64,91563	-81,988718	-93,20934	-19,693724	-149,524984	12,208597	-117,622663
174	1,5	-16,6928	-3,33812	54,3991	-23,36992	-25,372352	31,02962	-77,76858	39,37558	-69,42262
174	2,25	15,47902	4,844575	43,88257	21,670628	26,326144	67,301969	-20,463171	57,813688	-29,951452
174	3	39,25709	11,33977	33,36605	54,959926	65,25214	91,814328	25,082228	68,697431	1,965331
175	0	39,26014	11,34239	33,36613	54,964196	65,259992	91,820688	25,088428	68,700256	1,967996
175	0,75	50,8214	12,59529	22,74562	71,14996	81,138144	96,32659	50,83535	68,48488	22,99364
175	1,5	53,98891	12,16069	12,1251	75,584474	84,243796	89,072482	64,822282	60,715119	36,464919
175	2,25	47,45767	8,913591	1,504585	66,440738	71,2109496	67,36738	64,35821	44,216488	41,207318
175	3	32,53268	3,97899	-9,115931	45,545752	45,4056	33,902275	52,134137	20,163481	38,395343
176	0	32,53028	3,976495	-9,11563	45,542392	45,398728	33,897001	52,128661	20,161422	38,393082
176	0,75	3,735848	-3,339811	-19,34244	5,2301872	-0,86068	-18,1992334	20,4856466	-15,9801768	22,7047032
176	1,5	-33,45234	-12,34362	-29,56905	-46,833276	-59,6926	-82,055478	-22,917378	-59,076155	-0,538056
176	2,25	-80,33927	-24,15992	-39,79565	-112,474978	-135,062996	-160,362694	-80,771394	-112,100993	-32,509693
176	3	-135,6199	-37,66373	-50,02226	-189,86786	-223,005848	-250,42987	-150,38535	-172,08017	-72,03565
177	0	-139,3335	-39,59005	124,7665	-195,0669	-230,54428	-82,02375	-321,557342	-0,63365	-250,16665
177	0,9	-64,95827	-17,22983	89,36693	-90,941578	-105,517652	-5,812824	-184,546684	30,904487	-147,829373
177	1,3	-3,233815	2,214389	53,96733	-4,527341	-10,33724	52,301141	-55,633519	51,0568965	-56,8777635
177	2,7	43,58485	16,79861	18,56772	61,01879	79,179596	87,66815	50,53271	57,794085	20,658645
177	3,6	77,75275	28,46682	-16,83188	108,85385	138,850212	104,93824	138,602	53,145595	86,809355
178	0	77,74868	28,46543	-16,82786	108,848152	138,843104	104,935986	138,591706	53,145952	86,801672
178	0,9	94,12089	31,90084	-54,86499	131,769246	163,986412	89,980918	199,710898	29,843811	139,573791
178	1,8	97,84233	32,42025	-92,90211	136,979262	169,283196	56,928936	242,733156	-4,844013	180,960207
178	2,7	86,65797	28,07965	-130,9392	121,321158	148,017004	1,130014	263,008414	-52,947027	208,931373
178	3,6	62,82286	20,82306	-168,9764	87,952004	108,704328	-72,765908	265,186892	-112,435826	225,516974
179	0	62,82378	20,81955	-168,965	87,953292	108,695816	-72,756914	265,173086	-112,423598	225,506402
179	0,45	44,5719	14,10572	-178,5601	62,40066	76,055432	-110,9681	246,1521	-138,44539	218,67481
179	0,9	23,58014	7,027399	-188,1552	33,012196	39,5400064	-152,831633	223,478767	-166,933074	209,377326
179	1,35	-0,5494385	-0,7584527	-197,7502	-0,7692139	-1,87285052	-199,1679789	196,3324211	-198,2446947	197,2557054
179	1,8	-27,67071	-9,125867	-207,3453	-38,738994	-47,8062392	-249,676019	165,014581	-232,248939	182,441661
180	0	-35,02395	-13,52797	101,1162	-49,03353	-63,673492	45,55949	-156,67291	69,594645	-132,637755
180	0,45	-7,516327	-3,943007	94,90356	-10,5228578	-15,3284036	81,9409606	-107,8661594	88,1388657	-101,6682543
180	0,9	16,99961	5,060396	88,69095	23,799454	28,4961656	114,150878	-63,231022	103,990599	-70,391301
180	1,35	38,37773	13,35627	82,47832	53,728822	67,423308	141,687866	-23,066774	117,018277	-47,938363
180	1,8	57,01596	21,28764	76,26571	79,822344	102,479376	165,972502	13,441082	127,580074	-24,951346
181	0	57,01563	21,2912	76,27116	79,821882	102,484676	165,981116	13,438796	127,585227	-24,957093

181	0,9	82,49384	30,45688	59,24394	115,491376	147,723616	188,693428	70,205548	133,488396	15,000516
181	1,8	95,32129	36,70656	42,21672	133,449306	173,116044	193,308828	108,875388	128,005881	43,572441
181	2,7	93,24295	38,09624	25,1895	130,54013	172,845524	175,17728	124,79828	109,108155	58,729155
181	3,6	78,51384	36,56992	8,162275	109,919376	152,72848	138,948803	122,624253	78,824731	62,500181
182	0	78,51833	36,57184	8,164908	109,925662	152,73694	138,958744	122,628928	78,831405	62,501589
182	0,9	43,33548	21,31656	-9,958184	60,669672	86,109072	63,360952	83,27732	29,043748	48,960116
182	1,8	-4,49812	3,145267	-28,08128	-6,297368	-0,3653168	-30,333757	25,828803	-32,129588	24,032972
182	2,7	-67,23752	-19,88602	-46,20437	-94,132528	-112,502656	-146,775414	-54,366674	-106,718138	-14,309398
182	3,6	-142,6277	-45,83331	-64,32746	-199,57878	-244,486536	-281,31401	-152,65909	-192,69239	-64,03747
183	0	-138,7307	-42,11917	29,73229	-194,22298	-233,867512	-178,86372	-238,3283	-95,12534	-154,58992
183	0,75	-79,32516	-26,36853	23,82502	-111,055224	-137,37984	-97,733702	-145,383742	-47,567624	-95,217664
183	1,5	-28,31333	-12,30538	17,91775	-39,638662	-53,604604	-28,363626	-64,199126	-7,564247	-43,399747
183	2,25	12,99975	-1,054736	12,01048	18,19965	13,9121224	26,555444	2,534484	23,710255	-0,310705
183	3	45,91508	8,50841	6,103216	64,286712	68,716352	69,714522	57,50809	47,430388	35,223956
184	0	45,92092	8,511189	6,10327	64,289288	68,7230064	69,719563	57,513023	47,432098	35,225558
184	0,75	57,46093	11,88555	0,1959863	80,445302	87,969993	81,0346523	80,6426797	51,9108233	51,5188507
184	1,5	60,60719	13,57241	-5,711297	84,850066	94,444484	80,589741	92,012335	48,835174	60,257768
184	2,25	54,0347	12,44678	-11,61658	75,67658	84,780488	65,69384	88,931	37,03065	60,26781
184	3	39,10846	9,63364	-17,52586	54,751844	62,3439[illegible]	39,037932	74,089652	17,671754	52,723474
185	0	39,10818	9,632137	-17,52617	54,751452	62,3412352	39,035783	74,088123	17,671192	52,723532
185	0,75	9,686564	-9,76E-02	-23,68699	13,5611896	11,4676713	-12,16074164	35,21323836	-14,9690824	32,4048976
185	1,5	-28,12881	-11,51489	-29,8478	-39,380304	-52,178396	-75,117262	-15,421662	-55,163729	4,531871
185	2,25	-75,64292	-25,74466	-36,00862	-105,900088	-131,96296	-152,524784	-80,507544	-104,087248	-32,070008
185	3	-131,5508	-41,66193	-42,16943	-184,17112	-224,520048	-241,69232	-157,35346	-160,56515	-76,22629
186	0	-132,3582	-43,2554	45,93918	-185,30148	-228,03848	-156,14606	-248,02442	-73,1832	-165,06156
186	0,75	-72,15019	-23,0539	38,44853	-101,010266	-123,466468	-71,185598	-148,082658	-26,486641	-103,383701
186	1,5	-20,32597	-4,539898	30,95788	-28,470358	-31,6670008	2,014818	-59,900942	12,655507	-49,260253
186	2,25	21,7795	11,1616	23,46723	30,4913	43,99396	60,76423	13,82977	43,06878	-3,86566
186	3	55,50123	25,17561	15,97658	77,701722	106,862452	107,753666	75,800506	65,927687	33,974527
187	0	55,49965	25,176	15,97635	77,69951	106,86118	107,75193	75,79923	65,926035	33,973335
187	0,75	67,84224	27,37613	8,486425	94,979136	125,212496	117,273243	100,300393	69,544441	52,571591
187	1,5	71,79108	27,68875	0,9964967	100,507512	130,771296	115,0345427	112,0415493	65,6084587	63,6154753
187	2,25	66,04118	25,58887	-6,493432	92,457652	120,191608	98,344854	111,331718	52,94363	65,930494
187	3	51,89752	21,60149	-13,98336	72,656528	96,839408	69,895154	97,861874	32,724408	60,691128
188	0	51,89922	21,60125	-13,98345	72,658908	96,841064	69,896864	97,863764	32,725848	60,692748
188	0,75	16,37487	5,798905	-21,47372	22,924818	28,928092	3,975029	46,922469	-6,736337	36,211103
188	1,5	-27,54324	-11,69094	-28,96399	-38,560536	-51,757392	-73,706818	-15,778838	-53,752906	-4,175074
188	2,25	-81,16009	-31,99328	-36,45426	-113,624126	-148,581356	-165,839648	-92,931128	-109,498341	-36,589821
188	3	-143,1707	-53,98312	-43,94453	-200,43898	-258,177832	-269,73249	-181,84343	-172,79816	-84,9091
189	0	-142,8634	-53,69037	45,19788	-200,00876	-257,340672	-179,92857	-270,32433	-33,37916	-173,77494
189	0,75	-60,74199	-31,80981	37,67073	-113,038786	-147,786084	-91,029468	-166,370928	-34,997061	-110,338521

189	1,5	-27,01431	-11,61676	30,14358	-37,620034	-51,003988	-13,890352	-74,177512	5,830721	-54,456459
189	2,25	17,01462	5,763793	22,61643	23,820468	29,6396128	48,797767	3,564907	37,929588	-7,303272
189	3	52,6498	21,45685	15,08928	73,70972	97,51072	99,72589	69,54733	62,4741	32,29554
190	0	52,64706	21,45626	15,08955	73,705884	97,506488	99,722282	69,543182	62,471904	32,292804
190	0,75	66,90238	25,33503	7,562209	93,663332	120,818904	113,180095	98,055677	67,774351	52,649933
190	1,5	72,76395	27,52629	3,49E-02	101,86953	131,358804	114,877895	114,808165	55,52242003	65,45268997
190	2,25	68,92677	26,90506	-7,492478	96,497478	125,76022	102,124706	117,109662	54,541615	69,526571
190	3	56,69584	24,59632	-15,01982	79,374176	107,38912	77,611508	107,651148	36,006436	66,046076
191	0	56,69806	24,59645	-15,01954	79,377284	107,391992	77,614582	107,653662	36,008714	66,047794
191	0,75	23,06956	10,47504	-22,54661	32,325384	44,467536	15,635902	60,729122	-1,766006	43,327214
191	1,5	-18,91269	-5,333866	-30,07369	-26,477766	-31,2294136	-58,102784	2,044596	-47,095111	13,052269
191	2,25	-70,61369	-23,95527	-37,60076	-98,859166	-123,06486	-146,292458	-71,090933	-101,153081	-25,951561
191	3	-130,7084	-44,26418	-45,12784	-182,99176	-227,672768	-246,2421	-155,98642	-162,7654	-72,50972
192	0	-128,7504	-42,8921	44,11249	-180,25056	-223,12784	-153,28009	-241,50507	-71,76287	-159,98785
192	0,75	-74,06404	-26,46073	36,80027	-103,689656	-131,214016	-78,537308	-152,137848	-29,857366	-103,457906
192	1,5	-27,77143	-11,71686	29,48805	-38,680002	-52,072692	-15,554526	-74,530626	4,493763	-54,482337
192	2,25	8,822423	0,2145102	22,17583	12,3513922	10,93012392	32,9772478	-11,3744122	30,1160107	-14,2356493
192	3	37,02253	10,45838	14,8636	51,831542	61,160444	69,749016	40,021816	48,183877	18,459677
193	0	37,02618	10,46269	14,86366	51,836652	61,17172	69,757766	40,030446	48,187222	18,459902
193	0,75	51,85915	14,57142	7,457435	72,60281	85,545252	84,239835	69,364965	54,11067	39,2358
193	1,5	58,29836	16,99265	1,12E-02	81,617704	97,146272	86,96188963	86,93947417	52,47973183	52,45731617
193	2,25	55,03883	16,60139	-7,41502	77,054362	92,60882	75,232966	90,063006	42,119927	56,949967
193	3	43,38554	14,52262	-14,84125	60,739756	75,29884	51,744018	81,426518	24,205736	53,888236
194	0	43,38144	14,51801	-14,84119	60,734016	75,286544	51,734548	81,416928	24,202106	53,884486
194	0,75	15,78281	4,217659	-22,25464	22,095934	25,6876264	0,902391	45,411671	-8,050111	36,459169
194	1,5	-20,20958	-7,770193	-29,6681	-28,293412	-36,6838048	-61,689789	-2,353589	-47,856722	11,479478
194	2,25	-65,90071	-22,57055	-37,08155	-92,260994	-115,193732	-138,732952	-64,569852	-96,392189	-22,229089
194	3	-119,9656	-39,0534	-44,495	-167,97984	-206,47616	-227,53612	-138,54612	-152,48204	-63,49204
195	0	-119,7989	-39,29154	44,80494	-167,71846	-206,625144	-138,24528	-227,85516	-63,01407	-152,62395
195	0,75	-65,24338	-21,7418	37,29616	-91,340732	-113,078936	-62,737696	-137,330016	-21,422882	-96,015202
195	1,5	-19,08162	-5,879554	29,78738	-26,714268	-32,3052304	1,009882	-58,564878	12,613922	-46,960838
195	2,25	17,39139	7,17019	22,2786	24,333946	32,329972	50,306458	5,749258	37,921051	-6,635349
195	3	45,45065	18,53243	14,76983	63,63091	84,192668	87,84304	58,30333	55,875415	26,135755
196	0	45,45146	18,53424	14,76991	63,632044	84,196536	87,845902	58,306082	55,676224	26,136404
196	0,75	56,88459	20,90417	7,112073	79,638426	101,70818	96,277751	82,053605	58,308204	44,084058
196	1,5	59,92396	21,5866	-0,5457628	83,893544	106,447312	92,9495892	94,0411146	53,3858012	54,4773268
196	2,25	53,26459	19,45654	-8,203599	74,570426	95,047972	75,170449	91,577647	39,734532	56,14173
196	3	38,21146	15,63897	-15,86144	53,496044	70,876104	45,631282	77,354162	18,528874	50,251754
197	0	38,21111	15,63749	-15,86139	53,495554	70,873316	45,629432	77,352212	18,528609	50,251389
197	0,75	6,481173	2,824525	-23,31726	9,0736422	12,2966476	-12,7153274	33,9191926	-17,4842043	29,1503157
197	1,5	-33,64252	-11,67594	-30,77314	-47,099528	-59,052528	-82,820104	-21,273824	-61,051408	0,494872

197	2,25	-83,46495	-28,98891	-38,22902	-116,85093	-146,540196	-167,37587	-90,91783	-113,347475	-36,889435
197	3	-141,6811	-47,98938	-45,6849	-198,35354	-246,800328	-263,6916	-172,3218	-173,19789	-81,82809
198	0	-145,4653	-49,02553	43,20986	-203,65142	-252,999208	-180,37403	-266,79375	-87,70891	-174,12863
198	0,83	-77,23969	-27,40997	36,0839	-108,135566	-136,54358	-84,013698	-155,181498	-33,431821	-105,599621
198	1,67	-19,37653	-7,877706	28,95795	-27,127142	-35,8561656	-2,171592	-60,087492	11,519073	-46,396827
198	2,50	26,51311	8,182408	21,832	37,110354	44,9075848	61,83014	18,16614	45,693799	2,029799
198	3,33	62,0403	22,15923	14,70604	86,85642	109,903128	111,31363	81,90155	70,54231	41,13023
199	0	62,0419	22,16249	14,70612	86,85866	109,910264	111,31889	81,90665	70,54383	41,13159
199	0,83	78,3905	25,97608	7,359473	109,7467	135,630328	127,404153	112,685207	77,910923	63,191977
199	1,67	84,37666	27,70538	1,29E-02	118,127324	145,5822	128,9711994	126,9455446	75,95182138	75,92616662
199	2,50	78,38929	25,96452	-7,333818	109,745006	135,61038	112,69785	127,365486	63,216543	77,884179
199	3,33	62,03947	22,13937	-14,68046	86,855258	109,870356	81,906274	111,267194	41,155063	70,515983
200	0	62,03788	22,1361	-14,68039	86,853032	109,863216	81,901166	111,261946	41,153702	70,514482
200	0,83	26,50825	8,147804	-21,79715	37,11155	44,8463864	18,160554	81,754854	2,060275	45,654375
200	1,67	-19,38444	-7,92391	-28,91392	-27,138216	-35,939584	-60,099158	-2,271318	-46,359916	11,467924
200	2,50	-77,25137	-27,46799	-36,03068	-108,151918	-136,650428	-156,200314	-64,138954	-105,556913	-33,495553
200	3,33	-145,4814	-49,09547	-43,14745	-203,67396	-253,130432	-296,82061	-180,5257	-174,08071	-87,78581
201	0	-141,6617	-47,91234	-45,9533	-198,32638	-246,653784	-171,95308	-253,85968	-81,54223	-173,44883
201	0,75	-83,44884	-28,92451	-38,44265	-116,828375	-146,417824	-90,620468	-167,505768	-36,661306	-113,546606
201	1,5	-33,62972	-11,62419	-30,932	-47,081608	-58,954368	-21,047854	-82,911854	0,665252	-61,198748
201	2,25	6,490644	2,863636	-23,42135	9,0869016	12,3705904	34,0737588	-12,7689412	29,2629296	-17,5797704
201	3	38,21726	15,66396	-15,9107	53,504164	70,923048	77,435372	45,613972	50,306234	18,484834
202	0	38,21761	15,66543	-15,91075	53,504654	70,92582	77,437312	45,615812	50,306599	18,485099
202	0,75	53,26744	19,4699	-8,207984	74,574416	95,072768	91,598812	75,182844	50,14868	39,732712
202	1,5	59,92353	21,58687	-0,5052146	83,892942	106,447228	94,0003206	92,9898914	54,4363916	53,4259624
202	2,25	56,88086	20,89135	-7,197555	79,633204	101,683192	81,950827	95,345937	43,995219	58,390329
202	3	45,44445	18,50832	-14,90032	63,62223	84,146652	58,14134	87,94198	25,999685	55,800325
203	0	45,44363	18,50651	-14,90025	63,621082	84,142772	58,138616	87,939116	25,999017	55,799517
203	0,75	17,37102	7,131487	-22,45278	24,319428	32,2556032	5,523931	50,429491	-6,818862	38,086698
203	1,5	-19,09534	-5,931037	-30,00531	-26,733476	-32,4040672	-58,850755	1,159865	-47,191116	12,819504
203	2,25	-65,26045	-21,80606	-37,55783	-91,36483	-113,202236	-137,67643	-62,56077	-96,292235	-21,176575
203	3	-119,8193	-39,36859	-45,11036	-167,74702	-206,772904	-228,26211	-138,04139	-152,94773	-62,72701
204	0	-119,9701	-38,9869	-44,69927	-167,95814	-206,34316	-138,25175	-227,65029	-63,27382	-152,67236
204	0,75	-65,88742	-22,5108	-37,27047	-92,242388	-115,082184	-64,305234	-136,846174	-22,026208	-96,369148
204	1,5	-20,19851	-7,722209	-29,84167	-28,277914	-36,5937464	-2,118751	-61,802091	11,663011	-48,020329
204	2,25	15,79164	4,253884	-22,41287	22,108296	25,7561824	45,616722	0,790982	36,625346	-8,200394
204	3	43,38805	14,54248	-14,98407	60,74327	75,333628	81,59221	51,62407	54,033315	24,065175
205	0	43,39214	14,54709	-14,98414	60,748996	75,345912	81,601798	51,633518	54,037066	24,068786
205	0,75	55,0434	16,61411	-7,429708	77,06076	92,634656	90,095898	75,236482	56,968768	42,109352
205	1,5	58,3009	16,99364	-0,1247246	81,62126	97,150904	86,8299954	87,0794446	52,3460854	52,5955346
205	2,25	51,85965	14,56066	-7,679157	72,60351	85,528636	69,113083	84,471397	38,994528	54,352842

205	3	37,02465	10,44018	-15,23359	51,83451	61,133866	39,63617	70,10535	18,088595	48,555775
206	0	37,021	10,43588	-15,23351	51,8294	61,122608	39,62757	70,09459	18,08539	48,55241
206	0,75	8,819317	0,1809521	-22,80162	12,3470438	10,87270376	-12,0374875	33,5657525	-14,8642347	33,7390053
206	1,5	-27,77611	-11,76147	-30,36972	-38,886554	-52,149684	-75,462522	-14,723082	-55,368219	5,371221
206	2,25	-74,07029	-26,5164	-37,93783	-103,698406	-131,310588	-153,338578	-77,462918	-104,601091	-28,725431
206	3	-128,7582	-42,95882	-45,50594	-180,26148	-223,243952	-242,9746	-151,96272	-161,38832	-76,37644
207	0	-130,679	-44,18373	44,32458	-182,9506	-227,508768	-156,67385	-245,32321	-73,28642	-161,93578
207	0,75	-70,59132	-23,88783	36,96864	-98,827848	-122,930112	-71,628774	-145,566054	-26,563548	-100,500828
207	1,5	-18,89743	-5,279431	29,61261	-26,456402	-31,1240056	1,656263	-57,568957	12,604923	-46,620297
207	2,25	23,0977	10,51647	22,25657	32,33678	44,543592	60,49028	15,97714	43,0445	-1,46864
207	3	56,69909	24,62487	14,90053	79,378726	107,4387	107,564308	77,763248	65,929711	36,128651
208	0	56,69687	24,62474	14,90032	79,375618	107,435828	107,561304	77,760664	65,927503	36,125863
208	0,75	68,92069	26,92047	7,544794	96,488966	125,77758	117,170092	102,080504	69,573415	54,483827
208	1,5	72,75076	27,52869	0,1892674	101,851064	131,346816	115,0188694	114,6403346	65,6649514	65,2554166
208	2,25	66,88207	25,32442	-7,166259	93,634898	120,777556	98,416645	112,749163	53,027604	67,350122
208	3	52,61964	21,43264	-14,52178	73,667496	97,435792	70,054428	99,097988	32,835896	61,879456
209	0	52,62238	21,43322	-14,52195	73,671332	97,440008	70,058126	99,102026	32,838192	61,882092
209	0,75	16,98008	5,727149	-21,87783	23,772112	29,5395344	4,225415	47,981075	-6,595758	37,159902
209	1,5	-27,05597	-11,66642	-29,23371	-37,878356	-51,133436	-73,367294	-14,899874	-53,584083	4,883337
209	2,25	-80,79077	-31,8725	-36,58959	-113,107078	-147,944924	-165,411014	-92,231834	-109,301283	-35,122103
209	3	-142,9193	-53,76607	-43,94547	-200,08702	-257,528872	-299,21532	-181,32376	-172,57284	-84,6819
210	0	-143,1898	-53,89036	46,41318	-200,46572	-258,052336	-179,30494	-272,1313	-82,45764	-175,284
210	0,75	-81,16973	-31,93108	38,55668	-113,637622	-148,190404	-90,778076	-167,891436	-34,496077	-111,609437
210	1,5	-27,54342	-11,6593	30,70018	-38,560788	-51,706984	-14,011224	-75,411584	5,911102	-55,489258
210	2,25	16,38413	5,799976	22,84368	22,937782	28,9409176	48,304612	2,617252	37,589397	-8,097963
210	3	51,91794	21,57175	14,98718	72,685116	96,816328	98,860458	68,886098	61,713326	31,738966
211	0	51,91623	21,57199	14,98751	72,682722	96,81466	98,858976	68,883956	61,712117	31,737097
211	0,75	66,06934	25,5288	7,130817	92,497076	120,129288	111,942825	97,681191	66,593223	52,331589
211	1,5	71,82869	27,79813	-0,7258765	100,560166	130,671436	113,2666815	114,7184345	63,9199445	65,3716975
211	2,25	67,8893	27,25495	-8,58257	95,04502	125,07508	100,13954	117,30468	52,5178	69,66294
211	3	55,55615	25,02427	-16,43926	77,77861	106,706212	75,25239	108,13091	33,561275	66,439795
212	0	55,55774	25,02387	-16,43898	77,780836	106,70748	75,254178	108,132138	33,562985	66,440946
212	0,75	21,84547	10,97934	-24,29554	30,583658	43,781508	12,898254	61,489444	-4,634617	43,956463
212	1,5	-20,26054	-4,752691	-32,1521	-28,364756	-31,9169536	-61,217439	3,086761	-50,366586	13,917614
212	2,25	-72,06529	-23,29722	-40,00866	-100,891406	-123,7539	-149,784228	-69,766908	-104,867421	-24,850101
212	3	-132,2638	-43,52926	-47,86522	-185,16932	-228,363376	-250,11104	-154,3806	-166,90264	-71,1722
213	0	-131,4314	-41,925	41,97072	-184,00396	-224,79768	-157,67196	-241,6134	-76,31754	-160,25898
213	0,75	-75,5401	-25,79432	35,94137	-105,75614	-131,919032	-80,50107	-152,38381	-32,04472	-103,92746
213	1,5	-28,04256	-11,35114	29,91201	-39,259584	-51,812896	-15,090202	-74,914222	4,673706	-55,150314
213	2,25	9,756224	0,2795457	23,88266	13,6587136	12,15474192	35,8696745	-11,8956455	32,6632616	-15,1020584
213	3	39,16126	10,22273	17,85331	54,625764	63,34988	75,069552	39,362932	53,098444	17,391824

214	0	39,16156	10,22431	17,85312	54,826184	63,352768	75,071302	39,365062	53,098524	17,392284
214	0,75	54,07893	13,21429	11,63231	75,710552	86,03758	89,741316	66,476696	60,303347	37,038727
214	1,5	60,60254	14,51678	5,411501	84,843556	95,949896	92,651329	81,828327	59,953787	49,130785
214	2,25	57,4274	13,00677	-0,8093072	80,39836	89,723712	81,1103428	82,7289572	50,8753528	52,4939672
214	3	45,85852	9,809257	-7,030116	64,201928	70,7250352	57,809365	71,869597	34,242552	48,302784
215	0	45,85674	9,806445	-7,030011	64,199436	70,7184	57,804522	71,864544	34,241055	48,301077
215	0,75	12,90848	0,4200138	-13,25003	18,071672	16,16219608	2,6601598	29,1602198	-1,632398	24,867662
215	1,5	-28,43352	-10,65392	-19,47006	-39,806928	-51,166496	-64,244204	-25,304084	-45,060228	-6,120108
215	2,25	-79,47427	-24,54035	-25,69008	-111,263978	-134,633684	-145,599554	-94,219394	-97,210923	-45,836763
215	3	-138,9088	-40,11428	-31,9101	-194,47232	-230,873408	-238,71494	-174,89474	-156,92802	-93,10782
216	0	-142,5509	-42,61236	64,28554	-199,57126	-239,240856	-149,3879	-277,95898	-64,01027	-192,58135
216	0,9	-67,23215	-18,772	46,34305	-94,12501	-110,71378	-53,10753	-145,79363	-14,165885	-106,851985
216	1,8	-4,564112	2,15236	28,40057	-6,3897558	-2,0331584	25,0759956	-31,7251444	24,2928692	-32,5082708
216	2,7	43,19812	18,21672	10,45808	60,477358	80,984496	80,512544	59,590384	49,336388	28,420228
216	3,6	78,30959	31,36508	-7,484406	109,633426	144,155936	117,852182	132,820994	62,994225	77,963037
217	0	78,30512	31,36324	-7,481799	109,627168	144,147328	117,847585	132,811183	62,992809	77,956407
217	0,9	93,11124	33,55862	-25,17408	130,355736	165,42728	120,118028	170,466188	58,626036	108,974196
217	1,8	95,26659	32,83799	-42,86636	133,373226	165,860692	104,291538	190,024258	42,873571	126,606291
217	2,7	82,51614	27,25737	-60,55863	115,522596	142,63116	65,718108	186,835368	13,705896	134,823156
217	3,6	57,11494	18,76075	-78,25091	79,969816	98,555128	9,047768	165,549588	-26,847464	129,654356
218	0	57,11515	18,75757	-78,24443	79,96121	98,550292	9,05132	165,54018	-26,840795	129,648055
218	0,45	38,55135	11,82167	-84,60629	53,97189	65,176292	-26,523	142,68958	-49,910075	119,302505
218	0,9	17,24767	4,521276	-90,96815	24,146738	27,9312456	-65,74967	116,18663	-75,445247	106,491053
218	1,35	-7,193825	-3,48665	-97,33	-10,071355	-14,21123	-109,44924	85,21076	-103,8044425	90,8555575
218	1,8	-34,62701	-12,07614	-103,6919	-48,477814	-60,874236	-157,320452	50,063348	-134,856209	72,527591
219	0	-12,49931	-7,516911	38,85944	-17,499034	-27,0262296	16,343357	-61,375523	27,610061	-50,108819
219	0,45	-0,3485726	2,144163	36,21743	-0,48800164	3,01237368	37,94330588	-34,49155412	35,90371466	-36,53114534
219	0,9	10,88208	11,22367	33,57541	15,234912	31,016368	57,857576	-9,293244	43,369282	-23,781538
219	1,35	21,05661	19,59566	30,9334	29,479254	56,620988	75,796992	13,930192	49,884349	-11,982451
219	1,8	30,54546	27,60314	28,29138	42,763644	80,819576	92,549072	35,966312	55,782294	-0,800466
220	0	30,54823	27,60687	28,29339	42,767522	80,828548	92,557936	35,971156	55,786797	-0,799983
220	0,9	41,01131	35,79254	22,18115	57,415534	106,481636	107,187262	62,824962	59,091329	14,729029
220	1,8	47,15692	41,06241	16,0689	66,019688	122,28816	113,713614	81,581814	58,510128	26,372328
220	2,7	46,88552	41,47228	9,95666	65,639728	122,616272	107,691564	87,778244	52,153628	32,240308
220	3,6	42,29665	38,96616	3,844416	59,21531	113,101836	93,566556	85,877724	41,911401	34,222569
221	0	42,29866	38,96811	3,846384	59,218124	113,107368	93,572886	85,880118	41,915178	34,22241
221	0,9	25,8489	24,74403	-2,933277	36,18846	70,609128	52,829433	58,695987	20,330733	26,197287
221	1,8	5,081953	7,603953	-9,712937	7,1143142	18,2643084	3,9889996	23,4148736	-5,1394493	14,2864247
221	2,7	-22,10259	-14,39613	-16,4926	-30,943626	-49,556916	-57,411836	-24,426636	-36,384931	-3,399731
221	3,6	-53,50431	-39,31221	-23,27226	-75,046034	-127,224708	-126,909642	-80,365122	-71,516139	-24,971619
222	0	-52,00717	-36,94408	10,0616	-72,810038	-121,519132	-89,291084	-109,414284	-36,744853	-56,868053

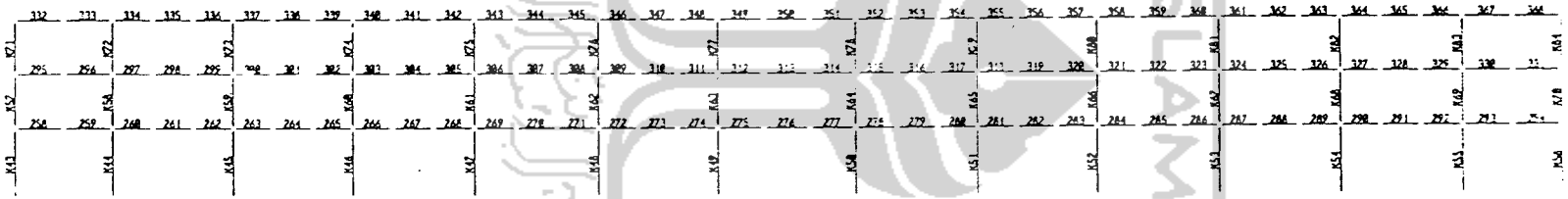
222	0,75	-31,05905	-25,3862	8,104067	-43,48267	-77,88878	-54,552993	-70,761127	-19,849078	-36,057212
222	1,5	-12,74468	-15,51582	6,146532	-17,842552	-40,118928	-24,662904	-36,955968	-5,32368	-17,616744
222	2,25	1,720937	-8,457946	4,188997	2,4093118	-11,4675892	-2,2038246	-10,5818186	5,7378403	-2,6401537
222	3	13,55281	-3,087569	2,231462	18,973934	11,3232616	15,407265	10,944341	14,428991	9,966067
223	0	13,55828	-3,083004	2,231274	18,981592	11,3371296	15,418206	10,955658	14,433726	9,971178
223	0,75	18,41094	2,360418	-1,33E-02	25,775316	25,8697968	24,44023431	24,46685769	16,55653431	16,58315769
223	1,5	20,62985	6,116341	-2,257898	28,88179	34,5419656	28,614263	33,130059	16,308967	20,824763
223	2,25	19,00001	7,059763	-4,502483	26,600014	34,0956328	25,357292	34,362258	12,597526	21,602492
223	3	14,73643	6,315686	-6,747069	20,631002	27,7888136	17,252333	30,746471	6,515718	20,009856
224	0	14,73104	6,311229	-6,747297	20,623456	27,7752144	17,24118	30,735774	6,510639	20,005233
224	0,75	4,254016	1,159952	-9,051169	5,9556224	6,9607424	-2,7863978	15,3159402	-5,2225546	12,8797834
224	1,5	-8,856758	-5,678824	-11,35504	-12,3994612	-19,714228	-27,6619736	-4,9518936	-19,3261222	3,3839578
224	2,25	-25,81628	-15,330	-13,65891	-36,142792	-55,507696	-59,968546	-32,650726	-36,893562	-9,575742
224	3	-45,40956	-26,66888	-15,96279	-63,573384	-97,16168	-97,123142	-65,197562	-56,831394	-24,905814
225	0	-45,60497	-27,4712	15,25276	-63,846358	-98,679884	-66,944404	-97,449924	-25,791713	-56,297233
225	0,75	-25,21463	-13,65058	12,57622	-35,300482	-52,098484	-31,331916	-56,484356	-10,116947	-35,269387
225	1,5	-7,458044	-1,517459	9,899688	-10,4412616	-11,3775872	-0,5674238	-20,3667998	3,1874484	-16,6119276
225	2,25	6,449794	7,803163	7,223152	9,0297116	20,2248136	22,7660678	8,3197638	13,0279666	-1,4183374
225	3	17,72388	15,43626	4,546617	24,813432	45,966704	41,251553	32,158319	20,498109	11,404875
225	0	17,72771	15,43964	4,546323	24,818794	45,976676	41,259215	32,166569	20,501262	11,408616
226	0,75	22,1369	17,95429	2,145168	30,99166	55,291144	46,663738	42,373402	22,068378	17,778042
226	1,5	23,91235	18,78143	-0,2559866	33,47729	58,745108	47,2202634	47,7322366	21,2651284	21,7771016
226	2,25	21,83905	16,79608	-2,657141	30,57467	53,080588	40,345799	45,660081	16,998004	22,312286
226	3	17,13199	13,12323	-5,058296	23,984786	41,555556	28,623322	38,739914	10,360495	20,477087
227	0	17,12761	13,11955	-5,058514	23,978654	41,544412	28,614168	38,731196	10,356335	20,473363
227	0,75	5,590726	4,342913	-7,04504	7,8270164	13,657532	4,0067442	18,0968242	-2,0133866	12,0766934
227	1,5	-8,579902	-6,121222	-9,031567	-12,0118628	-20,0898376	-25,4486714	-7,3855374	-16,7534788	1,3096552
227	2,25	-26,59928	-19,39786	-11,01809	-37,238992	-62,955712	-62,335066	-40,298906	-34,957442	-12,921262
227	3	-47,25241	-34,36199	-13,00462	-66,153374	-111,682076	-104,069502	-78,060262	-55,531789	-29,522549
228	0	-47,12153	-34,13897	18,22853	-65,970142	-111,168188	-72,456276	-108,913336	-24,180847	-60,637907
228	0,75	-26,37257	-19,50083	15,01394	-36,921598	-62,848412	-36,133974	-65,151854	-8,721373	-38,749253
228	1,5	-8,257367	-6,550184	11,79934	-11,5603138	-20,3891345	-4,6596844	-25,2583544	4,3677097	-19,2309703
228	2,25	6,00909	3,587058	8,584748	8,412726	12,9516408	19,383614	2,214118	13,992929	-3,176567
228	3	17,6418	12,0486	5,370153	24,69852	40,43192	38,578913	27,638607	21,247773	10,507467
229	0	17,64622	12,04233	5,3705	24,704708	40,443192	38,588294	27,847294	21,252098	10,511098
229	0,75	22,37976	15,35643	2,594163	31,331664	51,426	44,806305	39,617979	22,735947	17,547621
229	1,5	24,47955	16,98303	-0,1821725	34,27137	56,548308	46,1763175	46,5406625	21,8494225	22,2137675
229	2,25	22,73059	15,79713	-2,958508	31,822826	52,552116	40,11533	46,032346	17,499023	23,416039
229	3	18,34787	12,92373	-5,734845	25,697018	42,695412	29,206329	40,676019	10,778238	22,247928
230	0	18,34412	12,92043	-5,734453	25,681768	42,685632	29,198921	40,667827	10,775255	22,244161
230	0,75	6,971244	4,853319	-8,253929	9,7597416	16,1308032	4,9648628	214727408	-1,9798094	14,5280486

230	1,5	-7,035379	-4,901286	-10,7734	-9,8495306	-16,2845155	-24,1171428	-2,5703426	-17,1052411	4,4415589
230	2,25	-24,89075	-17,4684	-13,29288	-34,84705	-57,81834	-60,63018	-34,04442	-35,694555	-9,108795
230	3	-45,37988	-31,723	-15,81236	-63,531832	-105,212655	-101,991216	-70,366496	-56,654252	-25,029532
231	0	-44,61178	-31,16885	15,32549	-62,456492	-103,404298	-69,377496	-100,028476	-24,825112	-55,476092
231	0,75	-25,27347	-17,72229	12,69711	-35,382858	-58,683829	-35,353344	-60,747564	-10,049013	-35,443233
231	1,5	-8,568908	-5,963231	10,06873	-11,9964712	-19,8238592	-6,1771906	-26,3146506	2,3567128	-17,7807472
231	2,25	4,266903	2,983329	7,440349	6,0016642	9,91761	15,5679616	0,6872636	11,2985617	-3,5821363
231	3	14,50896	10,24239	4,811969	20,312544	33,799576	32,465111	22,841173	17,870033	8,240095
232	0	14,5143	10,24684	4,81195	20,32002	33,812104	32,47595	22,85205	17,87482	8,25092
232	0,75	19,25099	13,49714	2,257739	26,951386	44,696612	38,856067	34,340589	19,58363	15,068152
232	1,5	21,35393	15,05993	-0,2964725	29,895502	49,720604	40,3881735	40,9811185	18,9220645	19,5150095
232	2,25	19,60812	13,81023	-2,850684	27,451368	45,626112	34,48929	40,190658	14,796624	20,497992
232	3	15,22856	10,87302	-5,404895	21,319984	35,671104	23,742397	34,552187	8,300809	19,110599
233	0	15,22377	10,86895	-5,404858	21,313278	35,658844	23,732616	34,542332	8,296535	19,106251
233	0 75	4,703586	3,409618	-7,86156	6,5850204	11,099692	1,1923612	16,9154812	-3,6283326	12,0947674
233	1,5	-8,450346	-5,737215	-10,31826	-11,8304844	-19,3199592	-26,1958902	-5,5593702	-17,9235714	2,7129486
233	2,25	-25,45303	-17,69655	-12,77496	-35,634242	-58,858116	-61,015146	-35,465226	-35,682687	-10,132767
233	3	-45,08946	-31,34338	-15,23167	-63,125244	-104,25678	-100,682402	-70,219062	-55,812184	-25,348844
234	0	-45,16309	-31,43999	15,66728	-63,228326	-104,499692	-69,968418	-101,302976	-24,979501	-56,314061
234	0,75	-24,90284	-17,31096	12,98521	-34,963976	-57,580944	-34,209158	-60,179578	-9,427346	-35,397766
234	1,5	-7,276348	-4,869431	10,30314	-10,1869872	-16,5227072	-3,2979096	-23,9041666	3,7544268	-16,8518532
234	2,25	6,501399	4,759597	7,621065	9,1019586	15,417034	20,1823408	4,9402108	13,4723241	-1,7698059
234	3	17,6454	12,70113	4,938934	24,70356	41,496288	38,814604	28,936616	20,819854	10,941866
235	0	17,64921	12,70444	4,938964	24,708894	41,506156	38,822456	28,944528	20,823253	10,945325
235	0,75	21,50962	15,24505	2,348593	30,113468	50,203624	43,405187	38,708001	21,707251	17,010065
235	1,5	22,73628	16,09816	-0,2417778	31,830792	53,040592	43,1399182	43,6234738	20,2208742	20,7044298
235	2,25	20,11419	14,13877	-2,832149	28,159866	46,75906	35,443649	41,107947	15,270622	20,93492
235	3	14,85836	10,49188	-5,42252	20,801704	34,61704	22,899392	33,744432	7,950004	18,795044
236	0	14,8544	10,48851	-5,422452	20,79616	34,606896	22,891338	33,736242	7,946508	18,791412
236	0,75	2,299549	1,423018	-7,896818	3,2195086	5,0364076	-3,7142212	12,0794148	-5,8271339	9,9665021
236	1,5	-12,88885	-9,329979	-10,37118	-18,04439	-30,3945864	-35,167779	-14,425419	-21,971145	-1,226765
236	2,25	-31,92611	-22,89548	-12,84555	-44,696554	-74,9441	-74,052362	-48,361262	-41,579049	-15,887949
236	3	-53,59711	-38,14847	-15,31991	-75,035954	-125,354084	-117,784912	-87,145092	-63,557309	-32,917489
237	0	-54,87272	-38,68572	15,32898	-76,821808	-127,744416	-89,204004	-119,661964	-34,056468	-64,714428
237	0,83	-29,32715	-20,80337	12,74276	-41,05801	-68,477972	-43,25319	-68,73871	-13,651675	-39,137195
237	1,67	-7,033058	-5,004309	10,15655	-9,8462812	-16,446564	-3,2874286	-23,6005286	3,8267978	-16,4863022
237	2,50	10,50959	7,322598	7,57033	14,713426	24,3276648	27,504436	12,363776	17,028961	1,888301
237	3,33	24,80075	17,56621	4,984114	34,72105	57,866036	52,311224	42,342996	27,304789	17,336561
238	0	24,80621	17,57088	4,984088	34,726694	57,63086	52,32242	42,354244	27,309677	17,341501
238	0 83	30,43223	21,38625	2,461109	42,605122	70,736676	60,366035	55,443817	29,850116	24,927898
238	1,67	32,80677	23,11634	-6,19E-02	45,929478	76,357468	62,42459408	62,54833392	29,46422308	29,58796292

238	2,50	30,42986	21,37827	-2,584849	42,601504	70,721064	55,309253	60,478651	24,833325	29,971723
238	3,33	24,80148	17,55491	-5,107828	34,722072	57,849632	42,208858	52,424514	17,213504	27,42916
239	0	24,79603	17,55025	-5,107782	34,714442	57,835636	42,197704	52,413268	17,208545	27,424209
239	0,83	10,50213	7,298705	-7,519648	14,702982	24,280484	12,381613	27,420909	1,932269	16,971565
239	1,67	-7,043433	-5,036252	-9,931515	-9,8608062	-16,5101228	-23,4198866	-3,5568566	-16,2796047	3,5924253
239	2,50	-29,34073	-20,84357	-12,34338	-41,077022	-68,558588	-68,395826	-43,709066	-33,780037	-14,063277
239	3,33	-54,88971	-38,7343	-14,75525	-76,845594	-127,842532	-119,357202	-89,846702	-64,155989	-34,645489
240	0	-53,58142	-38,10047	15,80157	-75,013988	-125,258456	-86,596604	-118,199744	-32,421708	-64,024648
240	0,75	-31,91266	-22,85483	13,14061	-44,677724	-74,86292	-48,009412	-74,290632	-15,580784	-41,862004
240	1,5	-12,87766	-9,296696	10,47966	-18,028724	-30,3279056	-14,270228	-35,229548	-1,110234	-22,069554
240	2,25	2,308597	1,448941	7,818702	3,2320358	5,088622	12,0379594	-3,5994446	9,8964393	-5,7409647
240	3	14,8611	10,50708	5,157746	20,80554	34,644648	33,498146	23,182654	18,532736	8,217244
241	0	-53,58142	-38,10047	15,80157	-75,013988	-125,258455	-86,596604	-118,199744	32,421708	-64,024648
241	0,75	-31,91266	-22,85483	13,14061	-44,677724	-74,86292	-48,009412	-74,290632	-15,580784	-41,862004
241	1,5	-12,87766	-9,296696	10,47966	-18,028724	-30,3279056	-14,270228	-35,229548	-1,110234	-22,069554
241	2,25	2,308597	1,448941	7,818702	3,2320358	5,088622	12,0379594	-3,5994446	9,8964393	-5,7409647
241	3	14,8611	10,50708	5,157746	20,80554	34,644648	33,498146	23,182654	18,532736	8,217244
242	0	14,86505	10,51044	5,157683	20,81107	34,654764	33,506183	23,190817	18,536228	8,220862
242	0,75	20,11863	14,14971	2,576939	28,166052	46,781892	40,869005	35,715127	20,668706	15,529828
242	1,5	22,73846	16,10148	-3,80E-03	31,833844	53,04852	43,3838277	43,3914353	20,4635097	22,4684183
242	2,25	21,50954	15,24074	-2,584548	30,113356	50,196632	38,46764	43,636736	16,774038	21,943134
242	3	17,64687	12,69251	-5,165291	24,705618	41,48426	28,703463	39,034045	10,716892	21,047474
243	0	17,64306	12,68919	-5,165255	24,700284	41,474376	28,695607	39,026117	10,713499	21,044009
243	0,75	6,49688	4,740292	-7,610726	9,095632	15,3807232	4,925822	20,147274	-1,783534	13,457918
243	1,5	-7,283051	-4,89611	-10,0562	-10,1962714	-16,5734372	-23,6919712	-3,5795712	-16,6109459	3,5014541
243	2,25	-24,91173	-17,34501	-12,50167	-34,876422	-57,646092	-59,740756	-34,737416	-34,922227	-9,918887
243	3	-45,17416	-31,48141	-14,94714	-63,243824	-104,579248	-100,637542	-70,743262	-55,603584	-25,709604
244	0	-45,06669	-31,28635	15,65463	-63,092366	-104,138188	-69,711748	-101,021008	-24,905391	-56,214651
244	0,75	-25,43557	-17,65136	12,98207	-35,609798	-58,76486	-35,191974	-61,156114	-9,909943	-35,874083
244	1,5	-8,438195	-5,703865	10,30951	-11,813473	-19,252018	-5,520189	-26,139209	2,7151345	-17,9038855
244	2,25	4,710425	3,43113	7,63695	5,594595	11,142218	16,72059	1,44669	11,8763325	-3,3975675
244	3	15,2253	10,87862	4,96439	21,31542	35,676152	34,11337	24,18459	18,66716	8,73836
245	0	15,23009	10,88269	4,964375	21,322125	35,689412	34,123173	24,194423	18,671456	8,742706
245	0,75	19,60405	13,80782	2,358214	27,44567	45,617372	39,690894	34,974466	20,001859	15,285431
245	1,5	21,34427	15,04544	-0,2479474	29,681973	49,685828	40,4106166	40,9065114	18,9618956	19,4577904
245	2,25	19,23574	13,47057	-2,854109	26,930036	44,6358	33,699349	39,407567	14,458057	20,166275
245	3	14,49346	10,2082	-5,46027	20,290844	33,725272	22,140082	33,060622	7,583844	18,504384
246	0	14,48812	10,20374	-5,460227	20,283368	33,711728	22,129257	33,049711	7,579081	18,499535
246	0,75	4,260081	2,932773	-7,976131	5,9641134	9,804534	0,0687392	16,0210012	-4,1420581	11,8102039
246	1,5	-8,601709	-6,025695	-10,49203	-12,0423926	-19,9631628	-26,8397758	-5,8557158	-18,2335681	2,7504919
246	2,25	-25,31225	-17,79666	-13,00794	-35,43715	-58,849356	-61,1793	-35,16342	-35,788965	-9,773085

246	3	-44,66654	-31,25513	-15,52384	-62,519155	-103,556056	-100,366818	-69,319138	-55,714726	-24,667046
247	0	-45,39273	-31,71409	14,92332	-63,549822	-105,21382	-71,262046	-101,108685	-25,930137	-55,776777
247	0,75	-24,89455	-17,44899	12,32974	-34,85237	-57,791844	-34,99271	-59,65219	-10,075355	-34,734835
247	1,5	-7,030122	-4,871395	9,736164	-9,8421708	-16,2303784	-3,5713774	-23,0437054	3,4090542	-16,0532738
247	2,25	6,985555	4,893701	7,142587	9,779777	16,2125876	20,418954	6,13378	13,4295865	-0,6555875
247	3	18,36748	12,9713	4,549009	25,714472	42,795056	39,561285	30,463267	21,079741	11,981723
248	0	18,37123	12,9746	4,548648	25,719722	42,804836	39,568724	30,471428	21,082755	11,985459
248	0,75	22,76459	15,85832	2,13355	31,870426	52,69082	45,309378	41,042278	22,621681	18,354581
248	1,5	24,5242	17,05454	-0,2815479	34,33358	56,716304	46,2020321	46,7651279	21,7902321	22,3533279
248	2,25	22,43505	15,43826	-2,696646	31,40907	51,623276	39,663674	45,056966	17,494899	22,886191
248	3	17,71216	12,13449	-5,111743	24,797024	40,669776	28,277339	38,500825	10,829201	21,052687
249	0	17,70774	12,13075	-5,112061	24,790836	40,658488	28,267977	38,492099	10,824905	21,049027
249	0,75	6,088998	3,691854	-7,157342	8,5245972	13,213764	3,8413096	18,1559936	-1,6772438	12,6374402
249	1,5	-8,163493	-6,434545	-9,202624	-11,4286802	-20,0914636	-25,4333606	-7,0281126	-16,5497677	1,8554803
249	2,25	-26,26473	-19,37345	-11,24781	-35,770622	-62,515196	-62,139035	-39,643216	-34,886167	-12,390347
249	3	-46,59973	-33,99984	-13,29319	-65,799022	-110,79942	-103,692706	-77,106326	-55,592947	-29,006567
250	0	-47,08311	-34,10058	17,17854	-65,916354	-111,06066	-73,421772	-107,778852	-25,196259	-59,553339
250	0,75	-26,49335	-19,24506	14,12075	-37,09089	-62,584116	-36,9163	-65,15786	-9,723235	-37,964795
250	1,5	-8,537333	-6,077043	11,06301	-11,9522652	-19,9680684	5,2588326	-27,3848526	3,3794103	13,7466097
250	2,25	5,569933	4,278476	8,00525	7,7979262	13,5294812	18,9676456	2,9571456	13,0181897	-2,9923103
250	3	17,04345	12,94649	4,947466	23,86093	41,166524	38,346116	28,451144	20,286591	10,391619
251	0	17,04787	12,95019	4,947855	23,867018	41,177748	38,355489	28,459779	20,290938	10,395228
251	0,75	21,68021	16,51347	2,303516	30,352294	52,437804	44,83324	40,226204	21,815707	17,208671
251	1,5	23,6788	18,38925	-0,3408181	33,15032	57,83736	46,4629919	47,1446281	20,9701019	21,6517381
251	2,25	21,82864	17,45253	-2,985155	30,560096	54,118416	40,661743	46,632053	16,660621	22,630931
251	3	17,34473	14,82831	-5,629491	24,282622	44,538972	30,012495	41,271477	9,980766	21,239748
252	0	17,34089	14,82495	-5,629113	24,277246	44,528988	30,004905	41,263131	9,977688	21,235914
252	0,75	5,974471	7,07932	-8,026261	8,3642584	18,4962772	6,2224242	22,2749462	-2,6492371	13,4032849
252	1,5	-6,025695	-2,353812	-10,42341	-11,2359744	-13,3969344	-22,4080572	-1,5612372	-17,6465364	3,2002836
252	2,25	-25,87461	-14,59945	-12,82056	-36,224454	-54,408652	-58,469542	-32,828422	-36,107709	-10,466589
252	3	-46,35728	-28,53258	-15,21771	-64,900192	-101,280864	-99,379026	-68,943606	-56,939262	-26,503842
253	0	-46,19188	-27,75401	15,12486	-64,666632	-99,836672	-68,059606	-98,308926	-26,448032	-56,697352
253	0,75	-26,27453	-15,85499	12,89394	-36,784342	-56,89742	-34,500486	-60,268366	-10,763137	-35,531017
253	1,5	-8,990943	-5,643476	10,64322	-12,5873202	-19,8186932	-5,7893876	-27,0758276	2,5513713	-18,7350687
253	2,25	4,4439	1,755539	8,402498	6,22145	8,1415424	15,490717	-1,314279	12,402008	-4,402988
253	3	15,24499	7,467055	6,161778	21,342986	30,241276	31,922821	19,599265	19,882269	7,558713
254	0	15,25015	7,471457	6,161471	21,350252	30,2545472	31,933144	19,610202	19,886633	7,563691
254	0,75	19,91639	8,78019	3,926758	27,882946	37,947972	35,606616	28,7531	21,851509	13,997993
254	1,5	21,94885	8,401423	1,692046	30,72839	39,7808968	36,432089	33,047997	21,446011	18,061919
254	2,25	20,13255	5,210156	-0,5426668	28,16557	32,4953096	28,8265492	29,9118828	17,5766282	18,6619618
254	3	15,68251	0,3313887	-2,777379	21,955514	19,34923392	16,3730217	21,9277797	11,33688	16,891638

255	0	15,67717	0,3268377	-2,777354	21,948038	19,33554432	16,3620877	21,9167957	11,332099	16,886807
255	0.9	4,351935	-4,46558	-4,88678	6,092709	-1,922606	-4,130038	5,643522	-0,9700385	8,8035215
255	1.8	-9,607052	-10,9455	-6,996206	-13,4498728	-29,0412624	-29,4701684	-15,4777564	-15,6425528	-1,6501408
255	2.7	-27,41479	-20,23792	-9,105633	-38,360706	-65,27642	-62,241301	-44,030035	-33,778944	-15,567678
255	3.6	-47,85627	-31,21783	-11,21506	-66,998778	-107,376052	-99,860414	-77,430294	-54,285703	-31,855583
256	0	-48,99337	-32,67355	20,57354	-68,590718	-111,069724	-70,892054	-112,039134	-23,520493	-64,667573
256	0.9	-20,67768	-12,37501	14,8282	-28,948752	-44,613232	-22,360026	-52,016426	-3,781712	-33,438112
256	1.8	3,320537	5,007526	9,082862	4,6487518	11,996686	18,0750324	-0,0906916	12,0713453	6,0943787
256	2.7	20,90175	17,53007	3,337523	29,26245	53,130212	45,949693	39,274647	22,149098	15,474052
256	3.6	34,16549	27,13661	-2,407816	47,831686	84,417164	65,727382	70,543014	28,341125	33,156757
257	0	34,16371	27,13491	-2,405918	47,829194	84,412308	65,725444	70,53728	28,341421	33,153257
257	0.45	40,38898	31,43091	-8,786219	56,544572	98,756232	71,111467	88,683905	27,563863	45,136301
257	0.9	42,29678	32,8109	-15,16652	59,215492	103,253575	68,400516	98,733556	22,900582	53,233622
257	1.35	37,78757	29,3309	-21,54682	52,902598	92,274524	53,129164	96,222804	12,461993	55,555633
257	1.8	28,96088	22,93489	-27,92712	40,545232	71,44888	29,760826	85,615066	-1,852328	53,991912



MOMEN BALOK PORTAL AS 2 (ANALISIS 3D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1.4MD (KN.m)	1.2MD+1.6ML (KN.m)	1.2MD+ML+ME (KN.m)	1.2MD+ML - ME (KN.m)	0.9MD+ME (KN.m)	0.9MD-ME (KN.m)
258	0	-19.38443	-16.98771	187.8659	-27.138202	-50.441652	147.615874	-228.114926	170.419913	-205.311887
258	0,9	24.95673	19.58704	150.794	34.939422	61.28734	200.329116	-101.258884	173.255057	-128.332943
258	1,8	62.54374	51.34637	113.722	87.561236	157.20668	240.120858	12.676858	170.011366	-57.432634
253	2,7	89.09775	74.60168	76.65005	124.73685	226.279988	258.15903	104.89893	156.838025	3.537925
258	3,6	107.7884	92.0854	39.5781	150.90376	276.68272	261.00958	161.85338	136.58756	57.43146
259	0	107.7859	92.08498	39.57739	150.90026	276.679048	261.00545	161.85067	136.5847	57.42992
259	0,9	56.11002	53.59797	2.768211	78.554028	153.088776	123.696205	118.161783	53.267228	47.730807
259	1,8	-3.499157	9.278972	-34.0409	-4.8988198	10.6473668	-28.9609864	39.1209536	-37.1902113	30.8917287
259	2,7	-75.55173	-44.76003	-70.85015	-105.772422	-162.278124	-206.272256	-64.571956	-138.64677	2.853593
259	3,6	-155.5376	-104.631	-107.6593	-217.75264	-354.05472	-398.93542	-183.61682	-247.64314	-59.32454
260	0	-158.6447	-103.8802	64.556	-222.10258	-356.58196	-229.69784	-358.80994	-78.22423	-207.33623
260	0,75	-89.1702	-62.25264	51.61019	-124.83828	-206.608464	-117.6467	-220.86706	-28.643	-131.66336
260	1,5	-24.42195	-24.00004	38.66436	-34.19073	-67.706404	-14.64202	-91.97074	16.684635	-60.644115
260	2,25	32.99005	3.027548	25.71854	46.18607	53.392136	73.934148	22.497008	55.409585	3.972505
260	3	85.6758	37.88014	12.77272	119.94612	163.419184	153.46382	127.91838	89.88094	64.3355
261	0	85.67776	37.88121	12.77308	119.948864	163.423248	153.467602	127.921442	89.883064	64.336904
261	0,75	92.60313	47.12494	1.734962	129.644382	186.52366	159.983658	156.513734	85.077779	81.607855
261	1,5	94.80225	52.99367	-9.303157	132.72315	198.552372	157.453213	176.059527	76.018658	94.625182
261	2,25	89.66512	53.2374	-20.34127	125.531168	192.777984	140.494274	181.176814	60.357338	101.039878
261	3	79.80173	50.10612	-31.37939	111.722422	175.931868	114.488806	177.247586	40.442167	103.200947
262	0	79.80117	50.10626	-31.37791	111.721638	175.93142	114.489754	177.245574	40.443143	103.198963
262	0,75	13.77109	5.260581	42.92059	19.279526	24.9422376	-21.134701	64.706479	-30.526609	55.314571
262	1,5	-56.98525	-42.9601	-54.46327	-79.77935	-137.11846	-165.80567	-56.87913	-105.749995	3.176545
262	2,25	-135.0778	-96.80578	-66.00595	-189.10892	-316.982608	-324.90509	-192.89319	-187.57597	-55.56407
262	3	-217.8967	-154.0265	-77.54863	-305.05536	-507.91844	-493.05117	-337.95391	-273.65566	-118.5561
263	0	-219.7326	-157.7664	87.50104	-307.62564	-516.10536	-333.94448	-508.94656	-110.2563	-285.26038
263	0,75	-126.7516	-87.64004	73.28938	-177.45224	-292.325984	-166.45258	-313.03134	-40.78706	-187.36582
263	1,5	-38.49686	-20.8887	59.07772	-53.895604	-79.618 52	-8.007212	-126.162652	24.430546	-93.724894
263	2,25	42.42163	40.23764	44.86606	59.390262	115.28618	136.009656	46.277536	83.045527	-6.586593
263	3	118.6139	97.98898	30.6544	166.05946	299.119048	270.98006	209.67126	137.40691	76.09811
264	0	118.6072	97.982	30.65499	166.05008	299.09984	270.96563	209.65565	137.40147	76.09149
264	0,75	124.5949	101.1483	16.38003	174.43286	311.35116	267.04221	234.28215	128.51544	95.75538
264	1,5	125.8564	100.9396	2.105068	176.19896	312.53104	254.072348	249.862212	115.375828	111.165692
264	2,25	119.7817	95.10583	-12.16989	167.69438	295.907368	220.67398	251.01376	95.63364	119.97342
264	3	103.9807	85.89711	-26.44485	152.57298	268.212216	190.2291	243.1188	71.63778	124.52748

265	0	108.9892	85,90565	-26,44473	152,58488	268,23608	190,24796	243,13742	71,84565	124,53501
265	0,75	27,46065	21,63524	-40,93694	38,43091	67,557164	13,63708	95,51498	-16,233355	55,644525
265	1,5	-58,91415	-46,01015	-55,43814	-82,33981	-144,19322	-172,02027	-61,15399	-106,365875	2,500405
265	2,25	-152,4152	-119,2806	-69,92735	-213,38128	-373,7472	-372,10619	-232,25149	-207,10103	-67,24633
265	3	-250,7425	-195,9259	-84,42155	-351,0395	-614,37244	-581,23845	-412,39535	-310,0895	-141,2467
266	0	-250,2521	-195,1337	80,23809	-350,35294	-612,51644	-415,19813	-575,67431	-144,9888	-305,46498
266	0,75	-152,2491	-119,484	66,7811	-213,14874	-373,87332	-235,40182	-368,96402	-70,24309	-203,80529
266	1,5	-58,97227	-47,20931	53,32411	-82,561178	-146,30162	-64,651924	-171,300144	0,249067	-106,399153
266	2,25	26,96828	19,44041	39,86712	37,755592	63,463592	91,669466	11,935226	64,138572	-15,595668
266	3	108,1826	82,71513	26,41012	151,45564	262,163328	238,94437	186,12413	123,77446	70,95422
267	0	108,1743	82,70707	26,41017	151,44402	262,140472	238,9264	186,10606	123,76704	70,9467
267	0,75	118,5655	90,70452	12,99821	165,9917	287,405832	245,98133	219,98491	119,70716	93,71074
267	1,5	124,2305	95,32697	-0,4137441	173,9227	301,599752	243,9898259	244,8173141	111,3937059	112,2211941
267	2,25	122,5592	94,32442	-13,8257	171,58288	297,990112	227,56976	255,22116	96,47758	124,12898
267	3	116,1617	89,94688	-27,23766	162,62638	283,309048	202,10326	256,57658	77,30787	131,78319
268	0	116,1683	89,95359	-27,23755	162,63562	283,327704	202,118	256,5931	77,31392	131,78902
268	0,75	39,44753	30,703	-40,67878	55,226542	96,461836	37,361256	118,716816	-5,176003	76,181557
268	1,5	-41,99954	-31,9226	-54,12001	-58,799356	-101,475608	-136,442058	-28,202038	-91,919596	16,320424
268	2,25	-139,7829	-100,1732	-67,56124	-183,09606	-317,2166	-324,67302	-189,55144	-185,26585	-50,14337
268	3	-224,2924	-171,7988	-81,00247	-314,00936	-544,02808	-521,95215	-359,94721	-282,86563	-120,86069
269	0	-224,5866	-171,9204	81,90012	-314,42124	-544,57656	-359,5242	-523,32444	-120,22782	-284,02806
269	0,75	-137,8493	-105,7364	68,25931	-192,98902	-334,5974	-202,89625	-339,41487	-55,80506	-192,32368
269	1,5	-55,8382	-42,92744	54,6185	-78,17348	-135,689744	-55,31478	-164,55178	4,36412	-104,87288
269	2,25	18,83662	14,25654	40,97769	26,371268	45,414408	77,838174	-4,117206	57,930648	-24,024732
269	3	88,7852	68,06551	27,33688	124,29928	215,447056	201,94463	147,27087	107,24356	52,5698
270	0	88,7846	68,06364	27,33709	124,29844	215,443344	201,94225	147,26807	107,24323	52,56905
270	0,75	97,57265	74,47913	13,8341	136,60171	236,253788	205,40041	177,73221	101,649485	73,981285
270	1,5	101,6345	77,51952	0,3311117	142,2883	245,992792	199,8121317	199,1499083	91,3021617	91,1399383
270	2,25	98,36002	74,93511	-13,17188	137,704028	237,9282	179,795254	206,139014	75,352138	101,695898
270	3	90,35933	68,9756	-26,67468	126,503062	218,792156	150,731935	204,081655	54,648537	107,998257
271	0	90,35954	68,9772	-26,67468	126,503356	218,794968	150,733968	204,083328	54,648906	107,998266
271	0,75	21,33294	15,7275	-40,12114	29,866116	50,763528	1,205688	81,448168	-20,921494	59,320786
271	1,5	-52,4199	-40,89721	-53,5676	-73,36785	-128,339416	-157,36869	-50,23349	-100,74551	6,38969
271	2,25	-133,509	-103,1469	-67,01406	-186,9126	-325,24584	-330,37176	-196,34364	-187,17216	-53,14404
271	3	-219,3243	-168,7716	-80,46053	-307,05402	-533,22372	-512,42129	-351,50023	-277,8524	-116,93134
272	0	-220,041	-169,4098	81,40836	-308,0574	-535,10488	-352,05064	-514,86736	-116,62854	-279,44526
272	0,75	-128,2325	-98,73017	67,64059	-179,5255	-311,847272	-184,96858	-320,24976	-47,76866	-183,04984
272	1,5	-41,15032	-31,42551	53,87282	-57,610448	-99,6612	-26,933074	-134,678714	16,837532	-90,908108
272	2,25	38,59565	30,25416	40,10505	54,03391	94,721436	116,67399	36,46389	74,841135	-5,368965

272	3	113,6154	88,55882	26,33727	159,06156	278,032592	251,23457	198,66803	128,59113	75,91659
273	0	113,6083	88,55186	26,33751	159,05162	278,012936	251,21933	198,54431	128,58498	75,90996
273	0,75	118,6531	92,20671	12,70199	166,11434	289,914456	247,29242	221,88944	119,48978	94,0858
273	1,5	118,9717	92,48656	-0,9335303	166,56038	290,744536	234,3190697	236,1861303	106,1409997	106,0080603
273	2,25	111,954	87,14142	-14,56905	156,7356	273,771072	206,91717	236,05527	86,19955	115,32765
273	3	100,2101	78,42127	-28,20457	140,29414	245,726152	170,46882	226,67796	61,98452	118,39366
274	0	100,2182	78,42915	-28,20436	140,30548	245,74848	170,48663	226,89535	61,99202	118,40074
274	0,75	18,14888	14,74659	-41,83371	25,408432	45,3732	-5,308464	78,358956	-25,499718	58,167702
274	1,5	-68,64669	-52,31097	-55,46306	-96,105366	-166,07358	-190,150058	-79,223938	-117,245081	-6,318961
274	2,25	-162,7785	-124,9935	-69,09241	-227,8899	-395,3238	-389,42011	-251,23529	-215,59306	-77,40824
274	3	-261,6366	-201,0511	-82,72176	-366,29124	-635,64568	-597,73678	-432,29326	-318,1947	-152,75118
275	0	-265,4279	-203,6501	77,42343	-371,59906	-624,45932	-444,73515	589,56261	-161,45668	-316,31354
275	0,83	-155,9507	-120,1056	54,47554	-218,33098	-379,3098	-242,7709	-371,72198	-75,88009	-204,63117
275	1,67	-52,30819	-40,72772	51,52265	73,231466	-127,93418	-51,974898	-155,020198	4,445279	-98,630021
275	2,50	42,27736	31,70588	38,56976	59,188304	101,46224	121,008472	43,868952	76,619384	-0,520136
275	3,33	131,0282	99,9729	25,61688	183,43948	317,19048	282,82362	231,56986	143,54226	92,3085
276	0	131,0208	99,9649	25,61712	183,42912	317,1686	282,80698	231,57274	143,53584	92,3016
276	0,83	141,3859	107,6017	12,8118	197,94026	341,8256	290,07658	264,45298	140,05911	114,43551
276	1,67	145,9163	111,0719	6,47E-03	204,28282	352,8146	286,1779319	286,1649853	131,3311419	131,3181981
276	2,50	141,3897	107,5977	-12,79885	197,94558	341,82396	264,46649	290,05419	114,45188	140,04958
276	3,33	131,0284	99,95703	-25,60418	183,43976	317,165328	231,58693	282,79529	92,32138	143,52974
277	0	131,0358	99,96503	-25,60396	183,45012	317,187008	231,60403	282,81195	92,32826	143,53618
277	0,83	42,28601	31,6919	-38,42079	59,200414	101,450252	44,014322	120,855902	-0,363381	76,475199
277	1,67	-52,29687	-40,74806	-51,23762	-73,218418	-127,95554	-154,744324	-52,269084	-98,306603	4,168637
277	2,50	-155,9412	-120,1328	-64,05445	-218,31768	-379,34192	-371,31669	-243,20779	-204,40153	-76,29263
277	3,33	-265,4187	-203,6843	-76,87128	-371,58618	-624,39752	-599,05902	-445,31546	-315,74811	-162,00555
278	0	-261,6451	-201,0138	82,27546	-366,30314	-635,5962	-432,71246	-597,26338	-153,20513	-317,75605
278	0,75	-162,7856	-124,9623	68,67454	-227,89384	-395,2824	-251,63048	-388,97956	-77,8325	-215,18158
278	1,5	-68,55237	-52,2859	55,07362	-95,113318	-166,040284	-79,595124	-189,742364	-6,713513	-116,860753
278	2,25	18,14463	14,76555	41,47271	25,402482	45,398436	78,011816	-4,933604	57,802877	-25,142543
278	3	100,2154	78,44199	27,87179	140,30156	245,765664	226,57226	170,82666	118,06565	62,32207
279	0	100,2073	78,43412	27,87199	140,29022	245,743352	226,55487	170,81089	118,05856	62,31458
279	0,75	111,9528	87,14829	14,39672	156,73392	273,780624	225,88837	207,09493	115,15424	86,3608
279	1,5	118,972	92,48746	0,9214461	166,5608	290,746336	236,1753061	234,3324139	107,9962461	106,1533539
279	2,25	118,655	92,20162	-12,55383	166,117	289,908592	222,03379	247,14145	94,23567	119,34333
279	3	113,6117	88,54079	-26,0291	159,05638	277,999304	198,84573	250,90393	76,22143	128,2796
280	0	113,6188	88,54776	-26,02891	159,06632	278,018976	198,86141	250,91923	76,22801	128,28563
280	0,75	38,60057	30,23695	-39,40544	54,040798	94,699804	37,062194	116,053074	-4,754927	74,235953
280	1,5	-41,14392	-31,44886	-52,96198	-57,601488	99,69088	-133,783544	-27,859584	-89,991508	15,932452

280	2,25	-128,2247	-98,75967	-66,42651	-179,51458	-311,885112	-319,05782	-186,2008	-181,83074	-48,97372
280	3	-220,0317	-169,4455	-79,89504	-308,04438	-535,15084	-513,37858	-353,5885	-277,92357	-118,13349
281	0	-219,3323	-168,7351	79,13523	-307,06522	-533,17492	-352,79863	-511,06909	-118,26384	-276,5343
281	0,75	-133,5158	-103,117	65,82301	-186,92212	-325,20616	-197,51295	-329,15697	-54,34121	-185,98723
281	1,5	-52,42559	-40,87384	52,51078	-73,395826	-128,308852	-51,273768	-156,295328	5,327749	-99,693811
281	2,25	21,32839	15,74429	39,19855	29,859746	50,784932	80,536908	2,139808	58,394101	-20,002999
281	3	90,35612	68,98742	25,88632	126,498568	218,807216	203,301084	151,528444	107,206828	55,434188
282	0	90,35591	68,98582	25,88651	126,498274	218,804404	203,299422	151,520402	107,206829	55,433809
282	0,75	98,35789	74,93905	12,74108	137,701046	237,931948	205,709598	180,227436	101,263181	75,781021
282	1,5	101,6336	77,51727	-0,4043408	142,28704	245,987952	199,0732492	199,8819308	91,0658992	91,8745808
282	2,25	97,57309	74,47048	-13,54976	136,602326	236,240476	178,008428	205,107948	74,266021	101,365541
282	3	88,78632	68,0487	-26,69519	124,300848	215,421504	147,897094	201,287474	53,212498	106,602878
283	0	88,78691	68,05058	-26,69503	124,301674	215,42522	147,899842	201,289902	53,213189	106,603249
283	0,75	18,83938	14,23524	-39,74241	26,375132	45,38364	-2,899914	76,584906	-22,786968	56,697852
283	1,5	-55,83441	-42,9551	-52,78979	-78,168174	-135,729452	-162,746182	-57,166602	-103,040759	2,538821
283	2,25	-137,8445	-105,7704	-65,83716	-192,9823	-334,64604	337,02098	-205,34652	-189,89723	-58,22287
283	3	-224,5807	-171,9608	-78,88456	-314,41298	-544,63412	-520,3422	-362,57308	-281,00719	-123,23807
284	0	-224,3042	-171,7696	79,38431	-314,02582	-543,9964	-361,55033	-520,31895	-122,48947	-281,25809
284	0,75	-130,7921	-100,146	66,23593	-183,10894	-317,18412	-190,86059	-323,33245	-51,47696	-183,94882
284	1,5	-42,00623	-31,69732	53,08756	-58,805722	-101,443188	-29,217236	-135,392356	15,281953	-90,893167
284	2,25	39,44336	30,72633	39,93918	55,220704	96,49416	117,997542	38,119182	75,438204	-4,440156
284	3	116,1667	89,97499	26,7908	162,63338	283,360024	256,16583	202,56423	131,34083	77,75923
285	0	116,1601	89,96828	26,79123	162,62414	283,341368	256,15163	202,56917	131,33532	77,75286
285	0,75	122,5606	94,34375	13,71424	171,58484	298,02272	255,13071	227,70223	124,01878	96,5903
285	1,5	124,2349	95,34422	0,6372544	173,92886	301,632632	245,0633544	243,7888456	112,4486644	111,1741556
285	2,25	118,5729	90,71968	-12,43974	166,00206	287,438968	220,56742	245,4469	94,27587	119,15535
285	3	108,1846	82,72015	-25,51673	151,45844	262,17376	187,02494	238,0584	71,84941	122,88287
286	0	108,1929	82,72621	-25,51637	151,47006	262,196616	187,04332	238,07606	71,85724	122,88998
286	0,75	26,96208	19,4506	-38,71774	37,774912	63,499456	13,111356	90,546636	-14,433868	63,001612
286	1,5	-58,95503	-47,20201	-51,9191	-82,537042	-146,269252	-169,867146	-66,028945	-104,978627	-1,140427
286	2,25	-152,2284	-119,4796	-65,12047	-213,11976	-373,64144	-367,27415	-237,03321	-202,12603	-71,88509
286	3	-250,228	-195,1322	-78,32183	-350,3192	-612,48512	-573,72763	-417,08397	-303,52703	-146,88337
287	0	-250,7316	195,8377	79,80566	-351,02424	-614,21824	-416,90996	-576,52128	-145,85278	-305,4641
287	0,75	-152,408	-119,2265	66,0268	-213,3712	-373,652	-236,0893	-368,1429	-71,1404	-203,194
287	1,5	-58,81073	-45,99029	52,24794	-82,335022	-144,15734	-64,315226	-168,811106	-0,681717	-105,177597
287	2,25	27,4503	21,62091	38,46908	38,43042	67,533816	93,03035	16,09219	63,17435	-13,76381
287	3	108,9851	85,85711	24,69021	152,57914	268,153496	241,32944	191,94902	122,7768	73,39638
288	0	108,9766	85,84857	24,68998	152,56724	268,129632	241,31047	191,93051	122,76892	73,38896
288	0,75	119,7717	95,02359	11,02205	167,68038	295,763784	249,77168	227,72758	118,81658	96,77248

288	1,5	125,8405	100,8236	-2,64558	176,1767	312,32636	249,18632	354,47309	110,61057	115,90232
288	2,25	124,5731	100,9998	-16,31381	174,40234	311,08548	234,17251	366,83213	95,80198	128,4296
288	3	118,5794	97,79866	-29,98174	166,01116	298,773136	210,1122	270,07568	76,73972	136,7032
289	0	118,5861	97,80564	-29,98166	166,02054	298,792344	210,1273	270,09062	76,74583	136,70915
289	0,75	42,38363	40,02177	-43,52444	59,337082	114,895188	47,357686	134,406566	-5,379173	81,669707
289	1,5	-38,54511	-21,13709	-57,06722	-53,963154	-80,073476	-124,458442	-10,324002	-91,757619	22,376621
289	2,25	-126,8101	-87,92095	-70,61001	-177,53414	-292,84564	-310,70308	-169,48306	-184,7391	-43,51908
289	3	-219,8013	-158,0798	-84,15279	-307,72182	-516,68924	-505,99415	-337,66857	-281,97396	-113,66838
290	0	-217,9914	-154,3683	71,98063	-305,18796	-508,57896	-343,07735	-487,93861	-124,21163	-268,17289
290	0,75	-135,1587	-96,95477	61,56934	-189,22218	-317,318072	-197,57587	-320,71455	-63,07349	-183,21217
290	1,5	-57,05215	-42,91625	51,15805	-79,87301	-137,12858	-60,22078	-162,53658	-0,188885	-102,504985
290	2,25	13,71811	5,497263	40,74677	19,205354	25,2573528	62,705765	-18,787775	53,093069	-28,400471
290	3	79,76212	50,53578	30,33548	111,666968	176,571792	176,585804	115,914544	102,121388	41,450428
291	0	79,76268	50,53563	30,33682	111,667724	176,5722	176,587642	115,914002	102,123214	41,449574
291	0,75	89,64131	53,88648	21,16894	125,497834	193,78794	182,624992	140,287113	101,846119	59,508239
291	1,5	94,79372	53,86234	12,00106	132,711208	199,932208	179,615854	155,613744	97,315408	73,313268
291	2,25	92,60987	48,2132	2,83318	129,653813	188,272964	162,176224	155,511864	88,152063	80,515703
291	3	85,69978	39,18905	-6,3347	119,979692	165,542232	135,694095	146,363496	70,795102	83,464502
292	0	85,69778	39,18801	-6,334961	119,976892	165,538152	135,690365	146,360307	70,793041	83,462963
292	0,75	33,05593	10,16977	-16,28775	46,278302	55,938748	33,549135	66,124636	13,462587	46,038087
292	1,5	-24,31218	-22,22347	-26,24054	-34,037052	-64,732168	-77,638626	-25,157546	-46,121502	4,359578
292	2,25	-89,01653	-60,24171	-36,19333	-124,623142	-203,206572	-203,254876	-130,868216	-116,308207	-43,921547
292	3	-158,4471	-101,6349	-46,14613	-221,82594	-352,75236	-337,91755	-245,62529	-189,74852	-96,45626
293	0	-155,383	-101,567	117,6254	-217,5362	-348,9668	-170,4012	-405,652	-22,2193	-257,4701
293	0,9	-75,47603	-44,07557	71,63666	-105,666442	-161,092148	-63,008146	-206,285466	3,710233	-139,567087
293	1,8	-3,502398	7,583856	25,65196	-4,9033572	7,931292	29,0329384	-22,2709816	22,4998018	-28,8041182
293	2,7	56,02783	49,52328	-20,33474	78,436962	146,470644	96,421936	137,091416	30,090307	70,759787
293	3,6	107,6247	85,63071	-66,32145	150,67458	266,158776	148,4589	281,1018	30,54078	163,18368
294	0	107,6273	85,63095	66,32057	150,67822	266,162296	148,46305	281,10439	30,5439	163,18524
294	0,9	88,99609	69,94121	-103,4343	124,594526	218,701244	73,302218	280,170818	-23,337819	183,530781
294	1,8	62,50155	48,47987	-140,548	87,50217	152,569652	-17,06627	264,02073	-84,296605	196,799395
294	2,7	24,97401	18,5145	-177,6617	34,963614	59,592012	-129,178388	226,145012	-155,185091	200,138209
294	3,6	-19,30768	-16,26628	-214,7753	-27,030752	-49,195264	-254,210796	175,339804	-232,152212	197,398388
295	0	-18,67561	-16,07843	102,7379	-26,145854	-48,13622	64,248738	-141,227062	85,929851	-119,545949
295	0,9	24,58834	19,15963	81,64453	34,423676	60,161416	130,310168	-32,978892	103,774036	-59,515024
295	1,8	61,09814	49,58227	60,55115	85,537396	152,6494	183,451188	62,348888	115,539476	-5,562824
295	2,7	86,57494	71,50088	39,45777	121,204916	218,291336	214,848578	135,933038	117,375216	38,459676
295	3,6	104,1884	87,6479	18,36438	145,86076	265,26272	231,03836	194,3096	112,13394	75,40518
296	0	104,1898	87,64966	18,365	145,86572	265,267216	231,04242	194,31242	112,13582	75,40582

296	0,9	61,21861	53,40105	1,399628	85,706054	158,904012	128,26301	125,463754	56,496377	53,697121
296	1,8	10,31408	13,32045	-15,56574	14,439712	33,689615	10,131606	41,263086	-6,283068	24,848412
296	2,7	-53,03385	-36,48015	-32,53111	-74,24739	-122,00886	-132,65188	-67,59966	-80,261575	-15,199355
296	3,6	-124,3151	-92,11275	-49,49648	-174,04114	-296,55852	-290,78735	-191,79439	-161,38007	-62,38711
297	0	-127,3524	-91,49748	36,02383	-178,29336	-299,218848	-208,29653	-280,34419	-78,59333	-150,64099
297	0,75	-76,12742	-57,06506	29,53764	-106,578388	-182,657	-118,880324	-177,955604	-38,977038	-98,052318
297	1,5	-29,62863	-26,00765	23,05145	-41,480082	-77,166596	-38,510556	-84,613456	-3,614317	-49,717217
297	2,25	9,533903	-0,5752277	16,56526	13,3474642	10,52031928	27,4307159	-5,6998041	25,1457727	-7,9847473
297	3	43,97019	21,48219	10,07906	61,558266	87,135732	84,325478	64,167358	49,652231	29,494111
298	0	43,96835	21,47941	10,07901	61,55569	87,129076	84,32044	64,16242	49,650525	29,492505
298	0,75	61,99596	36,78811	3,592834	86,794344	133,256128	114,776096	107,590428	59,389198	52,20353
298	1,5	75,29732	48,72181	-2,893343	105,416248	168,31168	136,185251	141,971937	64,874245	70,660931
298	2,25	81,26243	55,03051	-9,37952	113,767402	185,563732	143,165906	161,924946	63,756667	82,515707
298	3	82,50129	57,95421	-15,8657	115,501806	191,744284	141,100058	172,831458	58,385461	90,116861
299	0	82,49798	57,96233	-15,86487	115,497172	191,737304	141,095036	172,824776	58,383312	90,113052
299	0,75	39,59737	28,07578	-21,88875	55,436316	92,438092	53,703874	97,481374	13,748883	57,526383
299	1,5	-8,029485	-5,185758	-27,91262	-11,241279	-17,9325948	-42,73376	13,09148	-35,1391565	20,6860835
299	2,25	-62,99259	-44,0723	-33,9365	-88,189626	-146,106788	-153,599908	-85,726906	-90,629831	-22,756831
299	3	-122,6819	-86,33385	-39,96037	-171,75466	-285,35243	-273,5125	-193,59176	-150,37408	-70,45334
300	0	-118,0947	-84,57616	42,58354	-165,33256	-277,035496	-183,70926	-268,87334	-63,70169	-148,86877
300	0,75	-73,57302	-51,77273	35,47877	-103,002228	-171,123992	-104,581584	-175,539124	-30,736948	-101,694488
300	1,5	-33,77759	-22,3443	28,37399	-47,288626	-76,283986	-34,503418	-91,251398	-2,025841	-58,773821
300	2,25	-1,318409	1,459131	21,26922	-1,8457726	0,7525188	21,1462602	-21,3921798	20,0826519	-22,4557881
300	3	26,41452	21,88756	14,16445	36,980328	66,71752	67,749434	39,420534	37,937518	9,608618
301	0	26,41611	21,88717	14,16467	36,982554	66,718804	67,751172	39,421832	37,939169	9,609829
301	0,75	37,74017	29,94198	7,059175	52,836238	93,195372	82,289359	68,171009	41,025328	26,906978
301	1,5	44,33798	34,62179	-4,635-02	62,073172	108,60044	87,78104593	87,87368607	39,85786193	39,95050207
301	2,25	43,59955	33,6766	-7,151815	61,03937	106,20202	78,844245	93,147875	32,08778	46,39141
301	3	38,13486	29,35641	-14,25731	53,388804	92,732088	60,860932	89,375552	20,064064	48,578684
302	0	38,13316	29,35666	-14,25722	53,386424	92,730449	60,859232	89,373672	20,062624	48,577064
302	0,75	16,26118	12,66393	-21,36238	22,765652	39,775704	10,814965	53,539726	-6,727318	35,997442
302	1,5	-10,33706	-7,403796	-28,46753	-14,471884	-24,2505456	-43,275798	8,659262	-37,770884	19,164176
302	2,25	-44,27155	-33,09652	-35,57268	-61,98617	-106,080292	-121,79506	-50,6497	-75,417075	-4,271715
302	3	-82,93228	-62,16425	-42,67784	-116,105192	-198,981536	-204,360826	-119,005146	-117,316892	-31,961212
303	0	-61,15109	-60,47318	40,29132	-113,611526	-194,138396	-117,503168	-198,145808	-32,744661	-113,327301
303	0,75	-44,79819	-33,51333	33,56168	-62,717466	-107,379156	-53,709478	-120,832838	-6,756691	-73,880051
303	1,5	-13,17154	-9,928483	26,83204	-18,440156	-31,6914208	1,097709	-52,566371	14,977654	-38,686426
303	2,25	11,11886	8,031367	20,10241	15,566404	26,1928192	41,476409	1,271589	30,109384	-10,095436
303	3	30,68301	22,61622	13,37277	42,956214	73,005564	72,808602	46,063062	40,937479	14,241639

304	0	30,68574	22,6168	13,3725	42,960838	73,009768	72,812188	[illegible]	43,989666	14,244666
304	0,75	33,84175	24,82644	6,643053	47,37845	80,335604	72,081593	[illegible]	37,100623	23,814522
304	1,5	32,27151	23,66508	-8,64E-02	45,180114	76,58994	62,30450107	[illegible]	28,95796807	29,183749[illegible]
304	2,25	23,36503	16,87671	-6,615835	32,711042	55,040772	38,098911	[illegible]	14,212692	27,844382
304	3	9,732291	6,713353	-13,54528	13,6252074	22,420114	4,8468222	[illegible]	-4,7862181	22,3043419
305	0	9,730072	6,713224	-13,54556	13,6221008	22,4172448	4,8437504	[illegible]	-4,7884952	22,3026248
305	0,75	-20,31309	-15,82496	-20,27523	-28,438326	-49,595644	-60,475948	[illegible]	-38,557061	1,993499
305	1,5	-55,08251	-41,73815	-27,00499	-77,115514	-132,880052	-134,842152	[illegible]	-76,579249	-22,569269
305	2,25	-97,18817	-73,27634	-33,7347	-136,063436	-233,857948	-223,636844	[illegible]	-121,204053	-53,734653
305	3	-144,0201	-108,1895	-40,46441	-201,62814	-345,92732	-321,47803	[illegible]	-170,0825	-89,15368
306	0	-153,3755	-115,2253	-42,54626	-214,7257	-368,41108	-256,72964	[illegible]	-95,49169	-180,58421
306	0,75	-77,52886	-58,21773	-35,37333	-108,540404	-186,183	-115,879032	[illegible]	-34,402644	-105,149304
306	1,5	-6,408419	-4,585134	-28,2004	-8,9717866	-15,0263172	15,9251632	[illegible]	22,4328229	-33,9879771
306	2,25	57,37577	43,42246	-21,02747	80,326078	138,32686	132,300854	[illegible]	72,665663	30,810723
306	3	116,4337	88,05505	-13,85454	163,00719	280,60852	241,63003	[illegible]	118,64487	90,93579
307	0	116,4465	88,0647	-13,85547	163,0251	280,63932	241,65597	[illegible]	118,65732	90,94638
307	0,75	119,1228	89,89838	-6,948765	166,77192	286,784768	239,764505	[illegible]	114,159265	100,261755
307	1,5	117,0729	88,35706	-4,21E-02	163,90228	281,838776	228,886597[illegible]	[illegible]	105,4076679	105,3235521
307	2,25	107,6867	81,19073	-6,66465	[illegible]	259,129208	203,55012	[illegible]	90,05338	103,78268
307	3	93,57431	70,64941	-13,77136	131,004034	225,326225	169,167222	[illegible]	70,445519	97,988239
308	0	93,56939	70,64588	-13,77021	130,997146	225,316676	169,158938	[illegible]	70,442241	97,982661
308	0,75	33,18832	25,44462	-20,72399	46,463648	80,537376	44,545614	[illegible]	9,145498	50,593478
308	1,5	-31,91901	-23,13164	-27,67777	-44,686614	-75,313436	-89,112222	[illegible]	-56,404879	-1,049339
308	2,25	-104,3626	-77,3329	-34,63156	-146,10764	-248,96776	-237,19958	[illegible]	-128,5579	-59,29478
308	3	-181,5324	-134,9092	-41,58534	-254,14536	-433,6936	-394,33342	[illegible]	-204,9645	-121,79362
309	0	-176,6392	-130,9776	-41,81721	-247,29488	-421,5312	-301,12743	[illegible]	-117,15807	-200,79249
309	0,75	-110,6061	-82,43084	-34,69902	-154,84854	-264,616664	-180,45914	[illegible]	-64,84647	-134,24451
309	1,5	-49,29926	-37,25912	-27,58082	-69,018964	-118,773704	-68,837412	[illegible]	-16,788514	-71,950154
309	2,25	4,671332	2,287604	-20,46263	6,5398648	9,2657648	28,3559324	[illegible]	24,6668288	-16,2584312
309	3	53,91568	38,45932	-13,34443	75,481952	126,233728	116,502566	[illegible]	61,868542	35,179682
310	0	53,91538	38,45808	-13,34512	75,481532	126,231384	116,501656	[illegible]	61,868962	35,178722
310	0,75	62,93126	45,36033	-6,526073	88,103764	148,09404	127,403915	[illegible]	63,164207	50,112061
310	1,5	67,22088	48,88758	-0,292771	94,109232	158,885184	129,2596589	[illegible]	60,2058149	60,7917691
310	2,25	64,17426	46,78984	-7,112028	89,843964	151,872856	116,686924	[illegible]	50,644806	64,868862
310	3	56,40139	41,31709	-13,93108	78,961946	133,789012	95,067678	[illegible]	36,830171	64,692331
311	0	56,40173	41,31847	-13,93048	78,962422	133,791628	95,070066	[illegible]	36,831077	64,692037
311	0,75	8,480636	6,581867	-21,1539	11,8731704	20,7079904	-4,3950298	[illegible]	37,9127702	-13,5211476
311	1,5	-44,16631	-31,52973	-28,37731	-61,832834	-103,44714	-112,906612	[illegible]	-56,151992	-68,126989
311	2,25	-104,1497	-75,26633	-35,60072	-145,80958	-245,405768	-235,84669	[illegible]	-164,64525	-129,33545

311	3	-163,8593	-122,3779	-42,62414	-236,40302	-398,4358	-367,8332	-282,18492	-194,79751	-109,14923
312	0	-174,44	-126,3065	40,30594	-244,216	-411,4184	-295,32856	-375,94044	-116,69006	-197,30194
312	0,83	-98,02693	-70,93784	33,44576	-137,237702	-231,13286	-155,124396	-222,015916	-54,778477	-121,669997
312	1,67	-27,44861	-19,7358	26,56558	-38,428054	-64,515612	-26,086552	-79,259712	1,881831	-51,289329
312	2,50	34,07279	24,52194	19,7254	47,701906	80,122452	85,134688	45,683888	50,390911	10,940111
312	3,33	89,75943	64,61311	12,86522	125,663202	211,092292	185,189646	159,459206	93,648707	67,918267
313	0	89,7593	64,61159	12,86591	125,66302	211,089704	185,18866	159,45684	93,64928	67,91746
313	0,83	100,1229	72,24467	6,448242	140,17206	235,738952	198,840392	185,943908	96,558852	83,662368
313	1,67	104,6517	75,71116	3,06E-02	146,51238	246,719896	201,3237722	201,2626278	94,21710221	94,15595779
313	2,50	100,1236	72,23335	-6,387097	140,17304	235,72168	185,994573	198,768767	83,724143	96,498337
313	3,33	89,76081	64,58895	-12,80477	125,665134	211,055292	159,497152	185,106692	67,979959	93,589499
314	0	89,76094	64,59047	-12,80407	125,665316	211,05788	159,499528	185,10768	67,980776	93,588916
314	0,83	34,07339	24,48573	-19,68267	47,702746	80,063236	45,691128	85,056468	10,983381	50,348721
314	1,67	-27,44927	-19,78585	-26,56128	-38,428978	-64,596484	-79,286254	-26,165694	-51,255623	1,856937
314	2,50	-98,0294	-71,00214	-33,43988	-137,24116	-231,238704	-222,0773	-155,19754	-121,66634	-54,78658
314	3,33	-174,4446	-126,3853	-40,31849	-244,22244	-411,55	-376,03731	-295,40033	-197,31863	-116,68165
315	0	-168,8541	-122,2943	43,02596	-236,39574	-398,2958	-281,89326	-367,94516	-108,94273	-194,99465
315	0,75	-104,1453	-75,19672	35,77956	-145,80342	-245,289112	-184,39152	-235,95064	-57,95121	-129,51033
315	1,5	-44,16271	-31,47413	28,53316	-61,827794	-103,35386	-55,936222	-113,002542	-11,213279	-68,279599
315	2,25	8,483592	6,62346	21,28676	11,8770288	20,7778464	38,0905304	-4,4829896	28,9219928	-13,6515272
315	3	56,40364	41,34605	14,04036	78,965096	133,838048	123,070778	94,990058	64,803636	36,722916
316	0	56,40331	41,34467	14,04095	78,964634	133,835444	123,069592	94,987692	64,803929	36,722029
316	0,75	64,17528	46,80431	7,179812	89,845392	151,897232	130,994458	116,634834	64,937564	50,57794
316	1,5	67,22099	48,88895	0,3186786	94,109386	158,887508	129,8728166	129,2354594	60,8175696	60,1802124
316	2,25	62,93047	45,34859	-6,542455	88,102658	148,074308	114,322699	127,407609	50,094968	63,179876
316	3	53,91369	38,43322	-13,40359	75,479166	126,18958	89,726058	116,533238	35,118731	61,925911
317	0	53,91399	38,43447	-13,40295	75,479586	126,19194	89,728308	116,534208	35,119641	61,925541
317	0,75	4,668869	2,249007	-20,56483	6,5364166	9,201054	-12,7131802	28,4164798	-16,3628479	24,7668121
317	1,5	-49,3025	-37,31145	-27,72671	-69,0235	-118,861336	-124,20117	-68,74775	-72,09896	-16,64554
317	2,25	-110,6101	-82,49692	-34,88853	-154,85414	-264,727192	-250,11762	-180,34046	-134,43767	-64,66051
317	3	-176,644	-131,0574	-42,05046	-247,3016	-421,66464	-385,08066	-300,97974	-201,03006	-116,92914
318	0	-181,5271	-134,6239	41,86431	-254,13794	-433,55076	-310,79211	-394,52073	-121,51008	-205,2387
318	0,75	-104,358	-77,26292	34,74408	-146,1012	-248,850272	-167,74844	-237,2356	-59,17812	-128,66628
318	1,5	-31,91522	-23,0769	27,62385	-44,681308	-75,221304	-33,751314	-88,999014	-1,099848	-56,347548
318	2,25	33,19136	25,48413	20,50362	46,467904	80,60424	85,817382	44,810142	50,375844	9,368604
318	3	93,57169	70,67014	13,3834	131,000366	225,358252	196,339568	169,572768	97,597921	70,831121
319	0	93,57661	70,67368	13,38429	131,007254	225,36982	196,349902	169,581322	97,603239	70,834659
319	0,75	107,6879	81,19978	6,586272	150,76306	259,145128	217,011532	203,838988	103,505382	90,332838
319	1,5	117,073	88,35089	-0,2117472	163,9022	281,849024	228,6267428	229,0502372	105,1539528	105,5774472

319	2,25	119,1218	89,877	-7,009766	166,77051	286,74936	225,813394	239,832926	100,199854	114,219386
319	3	116,4444	88,02811	-13,80779	163,02216	280,576256	213,9536	241,56918	90,99217	118,60775
320	0	116,4315	88,01846	-13,80667	163,0041	280,547338	213,92959	241,54283	90,98168	118,59502
320	0,75	57,37159	43,36946	-20,55015	80,320226	138,237044	91,665218	132,765518	31,084261	72,184581
320	1,5	-6,414629	-4,654535	-27,29363	-8,9804806	-15,1449108	-39,6457198	24,9415402	-33,0667961	21,5204639
320	2,25	-77,53709	-58,30354	-34,03712	-108,551926	-186,330172	-185,385168	-117,310928	-103,820501	-35,746261
320	3	-153,3858	-115,3275	-40,7806	-214,74012	-368,58696	-340,17106	-258,60986	-178,82782	-97,26662
321	0	-144,0202	-108,1312	43,30964	-201,62828	-345,83416	-237,6458	-324,26508	-86,30854	-172,92782
321	0,75	-97,18735	-73,22035	36,05756	-136,06229	-233,77738	-153,78761	-225,90273	-51,411055	-123,526175
321	1,5	-55,08078	-41,68452	28,80549	-77,113092	-132,792168	-78,975966	-136,586946	-20,767212	-78,378192
321	2,25	-20,31046	-15,7737	21,55341	-28,434644	-49,610472	-18,592642	-51,699662	3,273995	-39,832824
321	3	9,733616	6,762127	14,30134	13,6270624	22,4997424	32,7438062	4,1411262	23,0615944	-5,5410856
322	0	9,735833	6,762253	14,30155	13,6301862	22,5026044	32,7468026	4,1437026	23,0637997	-5,5393003
322	0,75	23,36948	16,92325	7,048966	32,717272	55,120576	52,015592	37,91765	28,081498	13,983566
322	1,5	32,27687	23,70925	-0,2036203	45,187618	76,667044	62,2378737	62,6451143	28,8455627	29,2528033
322	2,25	33,84801	24,87025	-7,456206	47,387214	80,410012	58,031655	72,944068	23,007003	37,919415
322	3	30,69291	22,65626	-14,70679	42,970674	73,081608	44,778962	74,196542	12,914829	42,332409
323	0	30,69018	22,65568	-14,70863	42,966252	73,077334	44,775266	74,192526	12,912532	42,329792
323	0,75	11,12694	8,068474	-21,96086	15,577716	26,2516884	-0,540058	43,381662	-11,946614	31,975106
323	1,5	-13,16254	-9,893727	-29,21309	-18,427556	-31,6250112	-54,901865	3,524315	-41,059378	17,366804
323	2,25	-44,78828	-33,48093	-36,46532	-62,703592	-107,315424	-123,692186	-50,761546	-76,774772	-3,844132
323	3	-81,14027	-60,44313	-43,71756	-113,596378	-194,077332	-201,529014	-114,093894	-116,743803	-29,308683
324	0	-82,91128	-61,92957	40,44144	-116,075792	-198,560648	-120,981666	-201,864546	-34,178712	-115,061592
324	0,75	-44,25531	-32,94592	33,63923	-61,957434	-105,819544	-52,413062	-119,691522	-6,190549	-73,469009
324	1,5	-10,32559	-7,337262	26,83702	-14,455826	-24,1303272	7,10905	-46,56499	17,543989	-36,130051
324	2,25	16,26788	12,64639	20,03481	22,775032	39,75568	52,202656	12,133036	34,675902	-5,393718
324	3	38,1351	29,25505	13,2326	53,38914	92,5702	98,24977	61,78457	47,55419	21,08899
325	0	38,13681	29,25482	13,23227	53,391534	92,571884	88,251262	51,786722	47,555399	21,090859
325	0,75	43,59673	33,49093	6,430254	61,035422	105,901564	92,23726	79,376752	45,667311	32,806803
325	1,5	44,3304	34,35204	-0,3717619	62,06255	108,159744	87,1767581	87,9202819	39,5255981	40,2691219
325	2,25	37,72783	29,58815	-7,173779	52,818962	92,614436	67,607767	82,035325	26,781268	41,128826
325	3	26,399	21,44927	-13,97579	36,9586	65,997632	39,15228	67,10396	9,78331	37,73469
326	0	26,39742	21,44966	-13,97608	36,956388	65,99636	39,150484	67,102644	9,781598	37,733758
326	0,75	-1,340292	0,9371243	-20,77823	-1,8764088	-0,10895152	-21,4494561	20,1070039	-21,9844928	19,5719672
326	1,5	-33,80425	-22,95041	-27,58038	-47,32595	-77,265756	-91,09589	-35,93513	-58,004205	-2,843445
326	2,25	-73,60446	-52,46294	-34,38253	-103,046244	-172,266056	-175,170822	-106,405762	-100,626544	-31,861484
326	3	-118,1309	-85,35048	-41,18466	-165,38326	-278,317848	-268,29224	-185,92288	-147,50249	-65,13313
327	0	-122,682	-87,14505	42,48246	-171,7548	-286,65208	-191,88199	-276,84691	-67,93134	-152,69626
327	0,75	-63,0308	-44,47216	35,76974	-88,24312	-146,792416	-84,33935	-155,87686	-20,95798	92,49746

327	1,5	-8,105863	-5,17327	29,05701	-11,3482082	-16,0042676	14,1567044	-43,957316	21,7617333	-36,3522867
327	2,25	39,48282	28,50062	22,34429	55,275948	92,980376	98,224294	52,535714	57,878828	13,190249
327	3	82,34526	58,79951	15,63157	115,283364	192,893528	173,245392	141,982252	89,742304	58,479164
328	0	82,34853	58,80128	15,63162	115,287942	192,900284	173,251136	141,987896	89,745297	58,482057
328	0,75	81,10248	56,34314	9,360266	113,543472	187,472	163,026382	144,30585	82,352498	63,631966
328	1,5	75,13017	50,50999	3,088916	105,182238	170,972188	143,75511	137,577278	70,706069	64,526237
328	2,25	61,82162	39,05185	-3,182433	86,550268	136,668904	110,055361	116,420227	52,457025	58,821891
328	3	43,78682	24,2187	-9,453783	61,301548	91,294104	67,309101	86,216667	29,954355	48,861921
329	0	43,7886	24,22151	-9,453888	61,30404	91,300736	67,313942	86,221718	29,955852	48,863628
329	0,75	9,345175	2,639786	-15,72602	13,083245	15,4378676	-1,872024	29,580016	-7,3153625	24,1366775
329	1,5	-29,82451	-22,31694	-21,99816	-41,754314	-71,496516	-80,104512	-36,108192	-48,840219	-4,843699
329	2,25	-76,33044	-52,89867	-28,27029	-106,862616	-176,2344	-172,765488	-116,224908	-96,967686	-40,427106
329	3	-127,5026	-86,85539	-34,54243	-178,58764	-292,043744	-274,47294	-205,38808	-149,34877	-60,26391
330	0	-124,8319	-85,81965	-33,80787	-174,76466	-287,10972	-181,81006	-289,4258	-58,54084	-166,15658
330	0,9	-53,15848	-35,06479	34,01107	-74,421972	-119,89384	-64,843896	-132,866036	-13,831562	-81,653702
330	1,8	10,58161	9,858075	14,21428	14,814254	28,470852	36,770287	8,341727	23,737729	-4,690831
330	2,7	61,8783	45,06094	-5,582513	86,62962	146,351464	113,732387	124,897413	50,107957	61,272983
330	3,6	105,2417	74,4315	-25,37931	147,33838	245,38092	175,34253	226,10115	69,33822	120,09684
331	0	105,2405	74,43018	-25,37875	147,3367	245,376888	175,34003	226,09753	69,3377	120,0952
331	0,9	87,5386	61,99301	-46,72712	122,55404	204,235136	120,31221	213,76645	32,05762	125,51186
331	1,8	61,9734	43,78425	-68,07548	86,76276	144,42268	50,07685	186,22781	-12,29942	123,85154
331	2,7	25,3752	17,07146	-89,42384	35,52528	57,764576	-41,90214	136,94554	-66,58616	112,26152
331	3,6	-17,97715	-14,45674	-110,7722	-25,16801	-44,703364	-146,80152	74,74288	-126,951635	94,592765
332	0	-10,73422	-10,04721	28,95674	-15,027908	-28,9566	6,028466	-51,885014	19,295942	-38,617538
332	0,9	22,81756	22,06896	22,65426	31,944584	62,691408	72,104292	26,795772	43,190064	-2,118456
332	1,8	52,05186	51,26913	16,35179	72,872604	144,49264	130,083152	97,379572	63,198464	30,494884
332	2,7	74,96916	75,60931	10,04931	104,816624	210,817688	175,501612	155,402992	77,431554	57,332934
332	3,6	93,36899	97,03348	3,746832	130,716586	267,296356	212,8231	205,329436	87,778923	80,285259
333	0	93,30365	96,98289	4,683656	130,62511	267,137004	213,630926	204,263614	88,656941	79,289629
333	0,9	41,49642	47,86982	1,382328	58,094988	126,387416	99,047852	96,283196	38,729106	35,96445
333	1,8	-14,6283	-4,159259	-1,918999	-20,47962	-24,2087726	-23,632217	-19,794219	-15,084469	-11,246471
333	2,7	-77,17001	-61,04834	-5,220326	-108,038014	-190,281356	-158,872678	-148,432026	-74,673335	-64,232683
333	3,6	-144,0292	-120,8534	-8,521653	-201,64088	-366,20048	-302,210093	-285,166787	-138,147933	-121,104627
343	0	-147,7869	-122,0858	21,51384	-206,90166	-372,68156	-277,91624	-320,94392	-111,49437	-154,52205
343	0,75	-80,66254	-71,08055	17,57554	-112,927556	-210,523928	-150,300058	-185,451138	-55,020746	-90,171826
343	1,5	-16,17189	-21,76264	13,63723	-22,640646	-54,226812	-27,531878	-54,806338	-0,917471	-28,191931
343	2,25	44,47001	24,74237	9,698923	62,258014	92,951804	87,805305	68,407459	49,721932	30,324086
343	3	102,4782	69,56009	5,760616	143,46948	234,269984	198,294546	186,773314	97,990996	86,469764
345	0	102,3112	69,43	8,199878	143,23568	233,86144	200,403318	184,003562	100,273958	83,960202

345	0,75	105,2246	73,86791	3,125156	147,31444	244,458176	203,262586	197,012274	97,827296	91,576984
345	1,5	105,5043	76,61833	-1,949566	147,70602	249,194488	201,273924	205,173056	93,004304	96,903436
345	2,25	101,9352	76,55625	-7,024288	142,70928	244,81224	191,854202	205,902776	84,717392	98,765968
345	3	95,73241	74,80667	-12,09901	134,025374	234,569564	177,586552	201,784572	74,060159	98,258179
346	0	95,78986	74,85236	-9,704009	134,105804	234,711608	180,096183	199,504201	76,506865	95,914883
346	0,75	28,69935	21,73149	-10,82976	40,17909	69,209604	45,34095	67,00047	14,999655	36,659175
346	1,5	-41,02491	-33,07689	-11,95552	-57,434874	-102,152916	-94,262302	-70,351262	-48,877939	-24,966899
346	2,25	-114,5979	-90,69776	-13,08127	-160,43706	-282,633696	-241,29651	-215,13397	-116,21938	-90,05684
346	3	-190,8047	-150,0061	-14,20703	-267,12658	-468,9754	-393,17877	-364,76471	-185,93126	-157,5172
347	0	-188,1515	-148,669	18,43232	-263,4121	-463,6522	-356,01848	-392,86312	-150,90403	-187,76867
347	0,75	-116,39	-91,06953	14,72397	-162,946	-285,379248	-216,01356	-245,4615	-90,02703	-119,47497
347	1,5	-47,26229	-35,15755	11,01561	-66,157206	-112,966828	-80,856688	-102,887908	-31,520451	-53,551671
347	2,25	18,01671	17,94193	7,307259	25,223394	50,32714	46,869241	32,254723	23,522298	8,90778
347	3	80,66196	69,35392	3,598905	112,926744	207,760624	169,747177	162,549367	76,194669	68,996859
348	0	80,5567	69,26876	6,211486	112,77938	207,498056	172,148286	159,725314	78,712516	66,289544
348	0,75	85,65256	72,36299	2,681172	119,913584	218,563856	177,027234	172,46489	79,768476	74,406132
348	1,5	88,11466	73,76971	-0,849142	123,360524	223,769128	178,65816	180,356444	78,454052	80,152336
348	2,25	86,72802	72,36395	-4,379456	121,419726	219,855944	172,058118	180,61703	73,675762	82,434674
348	3	82,70763	69,27065	-7,90977	115,790682	210,082244	160,610066	176,429606	66,527097	82,346637
349	0	82,80957	69,35294	-5,422343	115,933398	210,336188	163,302081	174,146787	69,10627	79,950956
349	0,75	21,19855	17,91915	-8,418813	29,67797	54,1089	34,936597	51,776223	10,659882	27,497508
349	1,5	-43,04623	-35,20214	-11,41528	-60,264722	-107,9789	-98,272896	-75,442336	-50,156887	-27,326327
349	2,25	-111,1397	-91,13593	-14,41175	-155,59558	-279,185128	-238,91532	-210,09162	-114,43748	-85,61398
349	3	-181,867	-148,7572	-17,40822	-254,6138	-456,25192	-384,40582	-349,56938	-181,08852	-145,27208
350	0	-181,2383	-148,0797	15,81844	-253,73362	-454,41348	-349,74722	-381,3841	-147,29603	-178,93291
350	0,75	-110,6392	-90,91253	12,79854	-154,89488	-278,227088	-210,88103	-236,47811	-86,77674	-112,37382
350	1,5	-42,67382	-35,43287	9,778646	-59,743348	-107,901176	-76,862808	-96,4201	-28,627792	-48,185084
350	2,25	21,44281	17,23429	6,758746	30,019934	53,306236	49,724408	36,209916	26,057275	12,539783
350	3	82,92569	68,21395	3,738847	116,095966	208,653148	171,463625	163,985931	78,371968	70,894274
351	0	82,83752	68,14691	6,07058	115,972528	208,44006	173,622514	161,481354	80,624348	68,483183
351	0,75	86,93954	70,9007	2,766594	121,715356	217,768568	177,994742	172,461554	81,01218	75,478992
351	1,5	88,40701	71,96697	-0,5373914	123,770934	221,236524	177,5189505	178,5937334	79,0296376	80,1044204
351	2,25	86,02732	70,22073	-3,841377	120,438248	215,585984	169,612157	177,294911	73,583211	81,265965
351	3	81,01308	66,78703	-7,145363	113,418312	204,074944	156,857363	171,148089	65,766409	80,057135
352	0	81,1215	66,87762	-4,948034	113,5701	204,349992	159,275386	169,171454	68,061316	77,957384
352	0,75	18,94571	15,37807	-7,159177	26,523994	47,339764	30,953745	45,272099	9,891962	24,210316
352	1,5	-45,86383	-37,30898	-9,37032	-64,209362	-115,530954	-102,215396	-83,475256	-50,647767	-31,907127
352	2,25	-114,5221	-93,80853	-11,58146	-160,33094	-287,520168	-242,81651	-219,65359	-114,65135	-91,48843
352	3	-185,8142	-151,4956	-13,79261	-260,13988	-465,37	-388,26525	-360,68003	-181,02539	-153,44017

353	0	-189,0608	-153,9081	19,08267	-264,68512	-473,12592	-361,69839	-399,86373	-151,07205	-189,23739
353	0,75	-113,6153	-92,94418	15,48096	-159,06142	-285,049048	-213,80158	-244,7635	-86,77281	-117,73473
353	1,5	-40,80355	-33,66783	11,87925	-57,12497	-102,832788	-70,75284	-94,51134	-24,843945	-48,602445
353	2,25	28,15943	22,79603	8,277541	39,423202	70,264964	64,864887	48,309805	33,621026	17,065946
353	3	94,48866	77,57239	4,67583	132,284124	237,502216	195,634612	186,282952	89,715624	80,363964
356	0	94,32422	77,44309	6,949275	132,053908	237,098008	197,581429	183,682879	91,841073	77,942523
356	0,75	98,72247	80,40301	3,104164	138,211458	247,11178	201,974138	195,76581	91,954387	85,746059
356	1,5	100,487	81,57543	-0,7409475	140,6818	251,265088	203,5188825	203,0007775	89,6973525	91,1792475
356	2,25	98,40272	80,13535	-4,586059	137,763808	246,259824	193,632555	202,804673	83,976389	93,148507
356	3	93,68472	76,90778	-8,43117	131,158608	235,474112	180,898274	197,760614	75,885078	92,747418
357	0	93,85094	77,04162	-6,255361	131,391316	235,88772	183,407387	195,518109	78,210485	90,721207
357	0,75	29,10826	23,50607	-8,476286	40,751564	72,539624	49,959696	66,912268	17,721148	34,67372
357	1,5	-38,26817	-31,71697	-10,69721	-53,575438	-96,668956	-88,335984	-66,941564	-45,138563	-23,744143
357	2,25	-109,4933	-89,75252	-12,91814	-153,29062	-274,995992	-234,06262	-208,22634	-111,46211	-85,62583
357	3	-183,3523	-149,4756	-15,13906	-256,69322	-459,18372	-384,63742	-354,3593	-180,15613	-149,87801
358	0	-181,0477	-147,5872	18,17845	-253,46678	-453,39676	346,66599	-383,02289	-144,76448	-181,12138
358	0,75	-111,5377	-91,26366	14,69292	-156,15278	-279,867096	-210,41598	-239,80182	-85,69101	-115,07685
358	1,5	-44,6614	-36,62762	11,2074	-62,52596	-112,197872	-79,0139	-101,4287	-26,98786	-51,40266
358	2,25	18,3661	15,19592	7,721871	25,71254	46,352792	44,957111	29,513369	24,251361	8,807619
358	3	78,75986	65,33196	4,236346	110,263804	199,042968	164,080138	155,667446	75,12022	66,647528
359	0	78,66225	65,25362	6,595294	110,12715	198,800492	166,243614	153,053026	77,391319	64,200731
359	0,75	82,3508	67,54061	2,796738	115,29112	207,045936	169,258308	163,664832	76,912458	71,316982
359	1,5	83,4056	68,34011	-1,001818	116,76784	209,430696	167,425012	169,428648	74,063222	76,066858
359	2,25	80,61166	66,2271	-4,800374	112,856324	202,697352	158,160718	167,761466	67,75012	77,350868
359	3	75,18395	62,4266	-8,59893	105,25753	190,1033	144,04841	161,24627	59,066625	76,264485
360	0	75,27044	62,4966	-6,335011	105,378616	190,319088	146,486117	159,156139	61,408385	74,078407
360	0,75	13,11852	10,94154	-8,589123	18,365928	33,248688	18,094641	35,272887	3,217545	20,395791
360	1,5	-51,66715	-42,30102	-10,84324	-72,33401	-129,682212	-115,14484	-93,45836	-57,343675	-35,657195
360	2,25	-120,3016	-98,35608	-13,09735	-168,42224	-301,731648	-255,81535	-229,62065	-121,36879	-95,17409
360	3	-191,5697	-156,0986	-15,35146	-268,19758	-479,6414	-401,3337	-370,63078	-187,76419	-157,05127
361	0	-194,1896	-158,0109	18,02087	-271,86572	-486,8452	-373,01779	-409,05953	-156,74905	-192,79169
361	0,83	-114,6066	-93,86765	14,62837	-160,44924	-287,71616	-216,7672	-246,92394	-88,51757	-117,77431
361	1,67	-38,27496	-31,6077	11,23588	-53,584944	-96,622272	-66,501772	-88,973532	-23,211584	-45,083344
361	2,50	33,30526	26,78008	7,843375	46,627364	82,81444	74,589767	58,903017	37,818109	22,131359
361	3,33	101,634	83,28458	4,450876	142,2876	255,216128	209,696256	200,794504	95,921476	87,019724
362	0	101,4938	83,17394	6,784882	142,09132	254,870864	211,751382	198,181618	98,129302	84,559538
362	0,83	107,1218	86,98856	3,108028	149,97052	267,727856	218,642748	212,426692	99,517648	93,301592
362	1,67	109,4982	88,71987	-0,5688264	153,29748	273,349632	219,5488836	220,6865364	97,9795536	99,1172064
362	2,50	107,1232	86,97904	-4,245681	149,97246	267,714304	211,281199	219,772561	92,165199	100,656561

362	3,33	101,4968	93,15492	-7,922535	142,09552	254,844032	107,028545	212,873615	83,424585	99,269655
363	0	101,6391	83,27087	-5,682697	142,29474	265,200312	199,555093	210,920487	85,792493	97,157887
363	0,83	33,30809	26,75428	-7,982357	46,631326	82,776556	58,741631	74,706345	21,994924	37,959638
363	1,67	-36,27456	-31,84572	-10,28202	-53,584384	-95,882624	-88,057212	-67,493172	-44,729124	-24,165084
363	2,50	-114,6089	-93,91808	-12,58168	-160,45246	-267,799608	-244,03044	-218,86708	-115,72969	-90,56633
363	3,33	-194,195	-158,0739	-14,88134	-271,873	-485,95224	-405,98924	-376,22656	-189,65684	-159,89416
364	0	-191,5626	-156,0333	18,74855	-268,18764	-479,5284	-367,15987	-404,65697	-153,65779	-191,15489
364	0,75	-120,2966	-98,30238	15,23753	-168,41524	-301,639728	-227,42077	-257,89583	-93,02941	-123,50447
364	1,5	-51,63426	-42,25892	11,72652	-72,329964	-129,611384	-92,529512	-115,982552	-34,771314	-58,224354
364	2,25	13,11928	10,97203	8,215508	18,366992	33,298384	34,930674	18,499658	20,02286	3,591844
364	3	75,26907	62,51549	4,704495	105,376698	190,347668	157,542869	148,133879	72,446658	63,037668
365	0	75,1846	62,45068	7,034121	105,25844	190,142608	159,708321	145,638079	74,700261	60,632019
365	0,75	80,61186	66,24029	3,123605	112,856604	202,718696	166,098127	159,850917	75,674279	69,427069
365	1,5	83,40537	66,3424	-0,786911	116,767518	209,434284	167,6419329	169,2157551	74,2779219	75,8517441
365	2,25	82,35013	67,63201	-4,697427	115,290182	207,031372	161,754739	171,149593	69,41769	78,812544
365	3	78,66114	65,23412	-8,607943	110,125596	198,76796	151,019545	168,235431	62,187083	79,402969
366	0	78,70077	65,31767	-6,389911	110,185078	199,021196	153,440683	166,220505	64,494782	77,274604
366	0,75	18,36473	15,16997	-8,625647	25,710822	46,309628	28,581999	45,833293	7,90261	25,153904
366	1,5	-44,66505	-36,66522	-10,86138	-62,53107	-112,262412	-101,12466	-79,4019	-51,059925	-29,337165
366	2,25	-111,5436	-91,31291	-13,09712	-150,16104	-279,952976	-238,26235	-212,06811	-113,48636	-87,29212
366	3	-181,0559	-147,6481	-15,33285	-253,47826	-453,50404	-380,24803	-349,58233	-178,28316	-147,61746
367	0	-183,3484	-149,406	18,50094	-256,68776	-459,06768	-350,92314	-387,92502	-146,51262	-183,5115
367	0,75	-109,4907	-89,69716	15,0104	-153,28698	-274,904296	-206,0756	-236,0964	-83,53123	-113,55203
367	1,5	-38,26668	-31,67577	11,51986	-53,573352	-96,601248	-66,075926	-89,115646	-22,920152	-45,959872
367	2,25	29,10854	23,53312	8,029321	40,751956	72,58324	66,492689	50,434047	34,227007	18,168365
367	3	93,85001	77,0545	4,538781	131,390014	235,907212	194,213295	185,135731	89,00379	79,926228
368	0	93,68575	76,92577	6,782953	131,16005	235,504132	196,131623	182,565717	91,100128	77,534222
368	0,75	98,40483	80,13971	3,040903	137,766762	246,309332	201,265409	195,184603	91,60525	85,523444
368	1,5	100,4902	81,66515	-0,701147	140,68623	251,25408	201,553243	202,955537	89,740033	91,142327
368	2,25	98,72573	80,38008	-4,443197	138,217422	247,080204	194,408959	203,295353	84,41086	93,297254
368	3	94,32956	77,40652	-8,185246	132,061384	237,045904	182,416746	198,787238	76,711358	93,08185
369	0	94,49597	77,54094	-6,038357	132,294358	237,460668	184,897747	196,974461	79,009016	91,08473
369	0,75	28,16689	22,75073	-8,060158	39,433646	70,201436	48,49084	64,611156	17,290043	33,410359
369	1,5	-40,79593	-33,72697	-10,08196	-57,114302	-102,918268	-92,764046	-72,600126	-46,798297	-26,634377
369	2,25	-113,6075	-93,01717	-12,10376	-159,0505	-285,156472	-241,44993	-217,24241	-114,35051	-90,14299
369	3	-189,0528	-153,9949	-14,12556	-264,67392	-473,2552	-394,98382	-366,7327	-184,27308	-156,02196
370	0	-185,7527	-151,4538	20,08457	-260,10978	-465,27732	-354,32047	-394,48961	-147,12886	-187,298
370	0,75	-114,5075	-93,76615	16,28647	-160,3105	-287,43484	-214,88868	-247,46162	-86,77028	-119,34322
370	1,5	-45,65612	-37,76603	12,48838	-64,198568	-115,452992	-80,304994	-105,281754	-28,782128	-53,758888

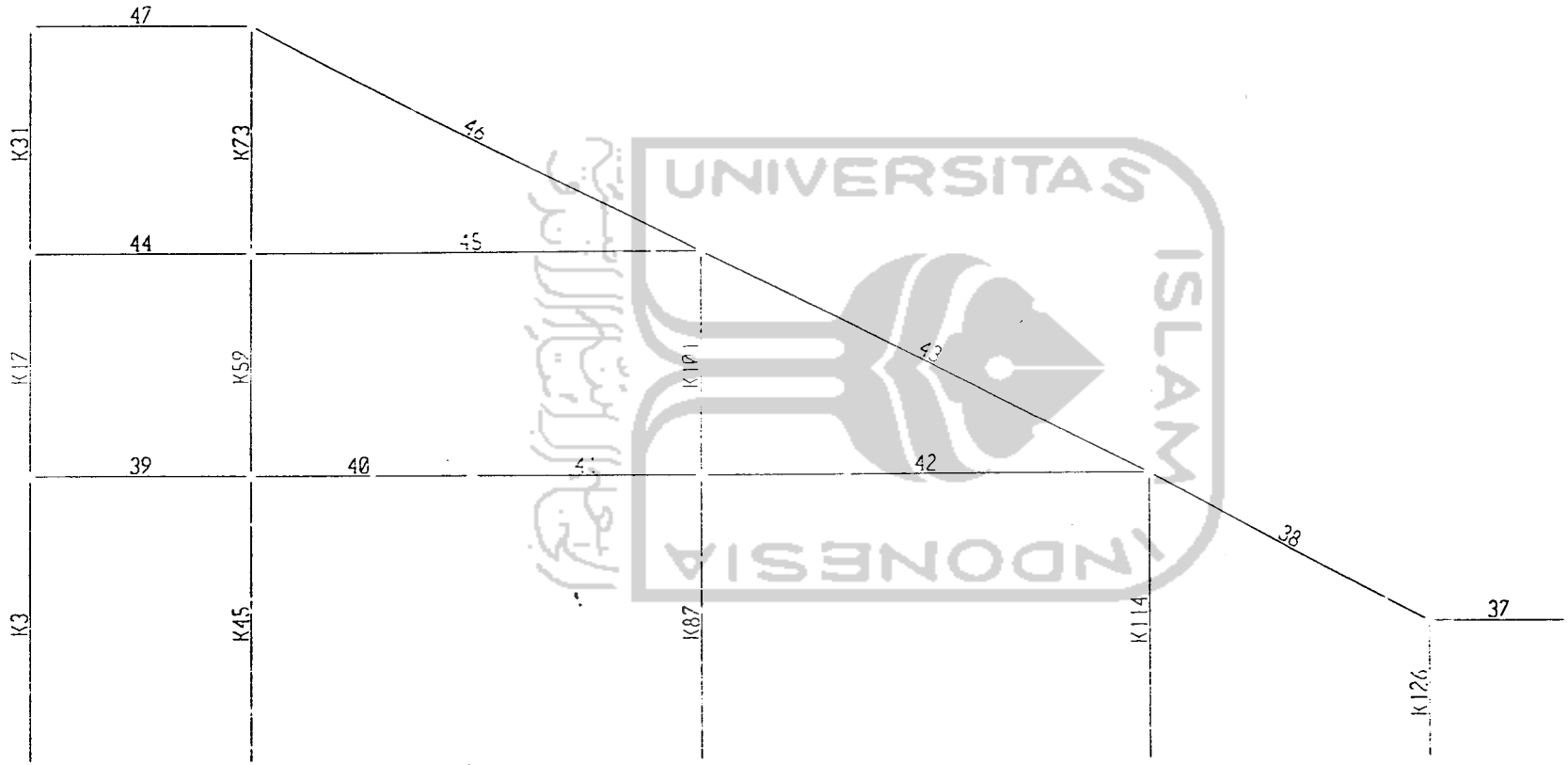
370	2,25	18.94655	15,4218	8.690289	26.525184	47.413432	46.847761	29.487183	25.742193	8.361615
370	3	81.11549	66,92171	4.892196	113.581896	204.413324	169.152494	159.365102	77.896137	68,111745
371	0	81.0095	66,83669	7,246516	113.4133	204.150104	171,294606	156.601574	80.155066	65.662034
371	0,75	86.0155	70,27151	3,307815	120.42184	215,653136	176,798045	170.182415	80.721855	74,106225
371	1,5	88.38796	72,01885	-0,6308859	123.743144	221,295712	177,4535161	178,7152679	78.9182781	80,1800499
371	2,25	86.91157	70,95369	-4,569587	121.676198	217,819788	170,677987	179,817161	73.650826	82,79
371	3	82.80142	68,20102	-8,508287	115,921988	208,483336	159,054437	176,071011	66.012991	83,029565
372	0	82,89233	68,27401	-6,243907	116,049262	208,709212	161,500899	173,988713	68.35919	80,847004
372	0,75	21,39043	17,28959	-9,513008	29,946602	53,33186	33,445098	52,471114	9,738379	28,764395
372	1,5	-42,74522	-35,38232	-12,78211	-59,843308	-107,905976	-99,458694	-73,894474	-51,252808	-25,688588
372	2,25	-110,7296	-90,86674	-16,05121	-155,62144	-278,262304	-239,79347	-207,69105	-115,70765	-83,60543
372	3	-181,3478	-148,0387	-19,32031	-253,68692	-454,47928	-384,97637	-346,33575	-182,53333	-143,89271
373	0	-181,9689	-148,5562	15,16615	-254,75646	-456,0526	-351,75273	-362,06503	-148,60586	-178,93816
373	0,75	-111,209	-91,02017	12,22752	-155,6626	-279,083072	-212,24345	-236,69849	-87,66058	-112,31562
373	1,5	-43,08276	-35,17161	9,288679	-60,315864	-107,973688	-77,582043	-96,159801	-29,495605	-48,063363
373	2,25	21,19469	17,86444	6,350241	29,672566	54,016732	49,648309	36,947827	25,425462	12,72498
373	3	82,63639	69,213	3,411603	115,973746	210,146868	172,03067	165,207465	77,966154	71,142948
374	0	82,7367	69,1365	5,679994	115,83418	209,90484	174,102934	162,742946	80,144824	69,764836
374	0,75	86,82461	72,1576	2,629502	121,554454	219,641692	178,976634	173,71763	80,771651	75,512647
374	1,5	88,27677	73,4912	-0,4209889	123,587478	223,318044	179,0023351	179,8443129	79,0281041	79,8700819
374	2,25	85,68018	72,0123	-3,47148	120,232252	218,275896	171,597036	176,599996	73,820682	80,763642
374	3	80,84985	68,8453	-6,521971	113,18979	207,17326	159,343749	172,387691	68,242894	79,286836
375	0	80,95612	68,93533	-4,369356	113,338568	207,443872	161,713318	170,45203	68,491152	77,229864
375	0,75	18,40941	17,45704	-6,538403	25,773174	50,022556	33,009929	46,086735	10,030066	23,106872
375	1,5	-46,77105	-35,70876	-8,707449	-65,47947	-113,259276	-100,541469	-83,126571	-50,601394	-33,386496
375	2,25	-115,8003	-91,68705	-10,8765	-162,12042	-285,09961	-241,52391	-219,77091	-115,09677	-93,34377
375	3	-187,4632	-149,3528	-13,04554	-262,44848	-463,92032	-387,35418	-361,2631	-161,76242	-155,67134
376	0	-190,0437	-150,6695	20,97522	-266,66118	-469,12364	-357,74672	-399,69716	-150,06411	-192,01455
376	0,75	-114,1292	-90,9579	17,63063	-159,78086	-282,48768	-210,26231	-245,54357	-85,08565	-120,34691
376	1,5	-40,84852	-32,93381	14,28605	-57,157926	-101,71232	-67,665994	-96,238084	-22,477618	-51,049718
376	2,25	26,58342	22,27778	10,94147	40,016785	59,944552	67,519354	45,636414	38,666546	14,783608
376	3	95,38162	75,80187	7,596681	133,534268	235,740936	197,856695	182,662933	93,440339	78,246577
377	0	95,32703	75,76102	9,996953	133,457842	235,610068	200,150409	180,156503	95,79128	75,797374
377	0,75	101,1009	77,90855	4,546938	141,54126	245,97476	203,776568	194,682692	95,537748	86,443872
377	1,5	104,2411	78,36857	-0,9030758	145,93754	250,479032	202,5548142	204,3609658	92,9139142	94,7200658
377	2,25	103,5325	76,01609	-6,35309	144,9455	245,864744	193,902	206,60818	86,82616	99,53234
377	3	100,1902	71,97611	-11,8031	140,26628	235,090015	180,40125	204,00745	78,36808	101,97428
378	0	100,3589	72,11134	-9,748261	140,50246	235,608824	162,793759	202,290281	80,574749	100,071271
378	0,75	41,74082	27,69323	-9,987627	58,437148	94,398152	67,794507	87,769841	27,579111	47,554365

378	1,5	-19,51096	-18,41238	-10,22699	-27,315344	-52,87296	-52,052522	-31,598542	-27,786854	-7,332874
378	2,25	-84,6115	-67,33049	-10,46636	-118,4561	-209,262584	-179,33065	-158,39793	-86,61671	-65,68399
378	3	-152,3458	-117,9361	-10,70573	-213,28412	-371,51272	-311,45679	-290,04533	-147,81695	-126,40549
379	0	-149,0522	-115,7658	21,79063	-208,67308	-364,08792	-272,83781	-316,41907	-112,35635	-155,93761
379	0,9	-78,18841	-60,12321	10,68483	-109,463774	-190,023228	-143,264472	-164,634132	-59,684739	-81,054399
379	1,8	-11,64208	-7,396598	-0,4209781	-16,298912	-25,8050528	-21,7880721	-20,9461159	-10,8988501	-10,0568939
379	2,7	48,48725	40,47002	-11,52678	67,88215	122,936732	67,12794	110,1815	32,111745	55,165305
379	3,6	104,2991	85,42063	-22,63259	146,01874	261,831928	187,94696	233,21214	71,2366	116,50178
380	0	104,322	85,43935	-22,28083	146,0508	261,88936	188,34492	232,90658	71,60897	116,17063
380	0,9	82,78186	67,02572	-24,95188	115,894604	206,579384	141,412072	191,315832	49,551794	99,455554
380	1,8	56,92427	45,69609	-27,62293	79,693978	141,422868	86,362284	141,628144	23,608913	78,854773
380	2,7	24,64958	19,50645	-30,29398	34,509552	60,789936	18,792086	79,380046	-8,109268	52,478692
380	3,6	-11,94239	-9,599178	-32,96503	-16,719346	-29,6895528	-56,895076	9,034984	-43,713181	22,216879

MOMEN BALOK PORTAL AS A (ANALISIS 3D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0,9MD-ME (KN.m)
10	0	-19,67348	-7.175958	-80,01933	-27,542872	-35,0897088	-110,803464	49,235196	-97,725462	62,313198
10	1	-3,670913	1,546838	-34,48771	-5,1392782	-1,9301548	-37,3459676	31,6294524	-37,7915317	31,1838883
10	2	1,9254	2,3583	11,04391	2,69556	6,08376	15,71269	-6,37513	12,77677	-9,31105
10	3	-8,03417	-9,180905	56,57553	-11,247838	-24,330452	37,753621	-75,397439	49,344777	-63,806283
10	4	-28,4	-28,63144	102,1071	-39,76	-79,890304	39,39566	-164,81854	76,5471	-127,6671
11	0	61,98586	44,60232	-4,036139	86,780204	105,2323	114,949213	123,021491	51,751135	59,823413
11	1	49,74282	37,39291	9,779238	69,639948	119,52004	106,863532	87,305056	54,547776	34,9893
11	2	23,37535	19,06683	23,59462	32,72549	58,557348	70,71187	23,52263	44,632435	-2,556805
11	3	-18,94396	-11,95124	37,40999	-26,521544	-41,854736	2,725998	-72,093982	20,360426	-54,459554
11	4	-71,66953	-50,66065	51,22537	-100,337342	-112,36533	-85,658716	-108,39654	-13,277207	-115,727947
12	0	-74,91399	-53,42952	-56,05864	-104,879586	-175,33265	-199,384948	-87,267668	-123,481231	-11,363951
12	1	-29,29993	-20,69294	-43,05312	-41,019902	-68,26862	-98,965976	-12,799736	-69,423057	16,683183
12	2	10,45121	8,048962	-30,04761	14,631694	25,4197912	-9,457196	50,638024	-20,541521	39,453699
12	3	41,01719	29,9322	-17,0421	57,424066	97,112148	62,110728	96,194928	19,873371	53,957571
12	4	62,00205	44,61544	-4,03658	86,80287	102,36985	114,98132	123,05448	51,765265	59,838425
13	0	27,92777	23,98962	-38,0517	39,098878	71,896716	19,451244	95,554644	-12,916707	63,186693
13	2	32,18372	23,70027	-15,93587	45,057208	76,540896	46,384364	78,256604	13,029478	44,901218
13	4	23,51228	16,50515	6,17997	32,917192	54,622976	50,899856	38,539916	27,341022	14,981082
13	6	-6,097477	-4,501523	28,29581	-8,5364678	-14,5194092	16,4773146	-40,1143054	22,8080807	-33,7835393
13	8	-61,96429	-43,90472	50,41164	-86,750006	-144,6047	-67,850228	-198,67432	-5,356221	-106,179501
14	0	-130,0112	-100,6323	4,477336	-182,01568	-317,02512	-252,168404	-261,123076	-112,532744	-121,487416
14	2,24	-2,672279	1,09E-02	-0,7082545	-3,7411906	-3,18923488	-3,99405185	-2,39754285	-3,2033056	-1,6067966
14	4,47	57,50236	46,58915	-6,073845	80,503304	143,545472	109,518137	121,665827	45,678279	57,825969
14	6,71	44,89647	34,13518	-11,34944	62,855058	108,492052	76,661504	99,360384	29,057383	51,756263
14	8,94	-35,7921	-33,19667	-16,62503	-50,10894	-90,065192	-92,77222	-59,52216	-48,83792	-15,58786
15	0	4,110557	16,17658	-6,36048	5,7631798	30,8223964	12,7559684	29,4769284	-4,6555787	12,0653813
15	1	11,11781	15,85992	-4,044642	15,564934	38,717244	25,15665	33,245934	5,981387	14,050671
15	2	7,712801	7,631937	0,2711958	10,7979214	21,4664604	17,158494	16,6161024	7,2127167	6,6703251
15	3	-11,24809	-12,94672	4,587034	-15,747326	-34,21246	-21,857394	-31,031462	-5,536247	-14,710315
15	4	-40,61523	-41,4367	8,902872	-56,861322	-115,036996	-81,272104	-91,078322	-27,650835	-45,456579
16	0	49,02426	31,4402	1,848323	68,633964	109,133432	92,117635	88,420969	45,970157	42,273511
16	1	33,93441	22,90896	2,969357	47,508174	77,375628	66,599609	60,660895	33,510326	27,571612
16	2	12,98164	10,38306	4,09039	18,174296	32,190964	30,051418	21,870638	15,773866	7,593086
16	3	-16,76034	-8,660181	5,211423	-23,464476	-33,9686976	-23,561166	-33,984012	-9,872883	-20,295729
16	4	-52,36525	-31,69809	6,332457	-73,31135	-113,555244	-88,203933	-100,868847	-40,796268	-53,461182

17	0	-46,37467	-28,69556	-4,977182	-64,924538	-101,562532	-89,322366	-79,366032	-46,714385	-36,760021
17	1	-12,26838	-6,40923	-3,271058	-17,175732	-24,976824	-24,402344	-17,860228	-14,3126	-7,770484
17	2	15,97499	11,88246	-1,564933	22,364986	38,181924	29,487515	32,617351	12,812558	15,942424
17	3	35,42914	23,65661	0,1411909	49,600796	80,365804	66,3129689	66,0305871	32,0274169	31,7450351
17	4	49,02037	31,4365	1,847315	68,628518	109,122844	92,108259	88,413629	45,965648	42,271018
18	0	-54,68515	-40,06762	-0,8919659	-76,55921	-129,730372	-106,5817659	-104,7978341	-50,1086009	-48,3246691
18	2,24	38,87132	33,77348	-0,4834201	54,419846	100,683152	79,9356439	80,9024841	34,5007679	35,4676081
18	4,47	65,26347	53,54955	-7,49E-02	91,368858	163,395444	131,7908396	131,9405884	58,66224861	58,81199739
18	6,71	18,87509	14,29343	0,3336714	26,425126	45,519596	37,2772094	36,6098666	17,3212524	16,6539096
18	8,94	-95,59596	-79,84056	0,7422171	-133,834344	-242,460048	-193,8134949	-195,2979291	-85,2941469	-86,7785811
19	0	-18,40654	-8,548223	1,092711	-25,769156	-35,7650048	-29,54336	-31,728752	-15,473175	-17,658597
19	1	-2,921486	1,46955	0,2886969	-4,0900804	-1,1545032	-1,7475363	-2,3249301	-2,3406405	-2,9180343
19	2	2,79022	3,57599	-0,5153172	3,905308	9,069848	6,4089368	7,4395712	1,9958808	3,0265152
19	3	-6,065903	-6,668236	-1,319331	-8,4922642	-17,9482612	-15,2666506	-12,6279686	-6,7706437	-4,1399817
19	4	-24,69538	-24,8238	-2,123345	-34,573532	-69,352536	-56,581601	-52,334911	-24,349187	-20,102497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MOMEN BALOK PORTAL AS B (ANALISIS 3D)

LABEL	STATION	MD (KN.m)	ML (KN.m)	ME (KN.m)	1,4MD (KN.m)	1,2MD+1,6ML (KN.m)	1,2MD+ML+ME (KN.m)	1,2MD+ML - ME (KN.m)	0,9MD+ME (KN.m)	0,9MD-ME (KN.m)
37	0	-72,2877	-49,14438	-0,3547396	-101,20278	-165,376248	-136,2443596	-135,5348804	-65,4136696	-64,7041904
37	0,63	-41,37614	-35,05949	-0,2689367	-57,926596	-105,746552	-84,9797947	-84,4419213	-37,5074627	-36,9695893
37	1,25	-24,05404	-23,31836	-0,1831338	-33,675656	-66,174224	-52,3663418	-52,0000742	-21,8317698	-21,4655022
37	1,88	-10,7277	-9,48347	-9,73E-02	-15,01878	-28,046792	-22,45404088	-22,25937912	-9,75226088	-9,55759912
37	2,50	9,15E-03	7,67E-03	-1,15E-02	0,012814764	0,023253226	0,007124338	0,030180258	-0,003289697	0,019766023
38	0	-44,0253	-35,51538	98,54411	-61,63542	-109,654958	10,19837	-186,88985	58,92134	-138,16688
38	1,41	-19,4028	-14,91544	17,57449	-27,16392	-47,148064	-20,62431	-55,77329	0,11197	-35,03701
38	2,83	-16,36266	-11,93767	-63,39513	-22,907724	-38,735464	-94,967992	31,822268	-78,121524	48,668736
38	4,24	-38,79123	-30,18055	-111,3647	-54,307722	-94,838356	-188,094726	34,634674	-146,276607	76,452593
38	5,66	-82,90577	-66,14155	-130,3344	-116,068078	-205,313404	-250,36548	-35,294074	-204,949593	55,719207
39	0	-29,5674	-29,53819	100,4946	-41,39436	-82,741984	35,47553	-135,51432	73,88394	-127,10526
39	1	-9,350059	-10,43823	55,89697	-13,0900826	-27,9212388	34,2386692	-77,5552708	47,4819169	-64,3120231
39	2	0,5515046	0,8283928	11,29932	0,77210644	1,987234	12,78951832	-9,80912168	11,795674	-10,80296586
39	3	-4,309375	0,4283481	-33,29834	-6,033125	-4,48589304	-38,0412419	28,5554381	-37,1767775	29,4199025
39	4	-19,48603	-7,80503	-77,89599	-27,280442	-35,871284	-109,084256	46,707724	-95,433417	60,358563
40	0	-74,18546	-55,48315	51,18797	-103,859644	-177,795592	-93,317732	-195,693672	-15,578844	-117,954384
40	1	-21,06009	-14,83366	36,75114	-29,484126	-49,005964	-3,354628	-76,856908	17,797059	-55,705221
40	2	21,74951	17,9825	-22,31432	30,449314	54,871412	66,396232	21,767592	41,888879	-2,739761
40	3	49,69999	39,04866	7,877494	69,579986	122,117844	106,566142	90,811154	52,607485	36,852497
40	4	64,91803	50,19815	-6,559331	90,885242	158,218676	121,540455	134,659117	51,866896	64,985558
41	0	64,92352	50,20263	-6,55959	90,892928	158,232432	121,551264	134,670444	51,871578	64,990758
41	1	47,84063	37,37954	-18,11141	66,976882	117,71602	76,676886	112,899706	24,945157	61,167977
41	2	18,02531	14,63978	-29,66323	25,235434	45,05402	6,506922	65,933382	-13,440451	45,886009
41	3	-26,64912	-19,84997	-41,21506	-37,308768	-63,738896	-93,043974	-10,613854	-65,199268	17,230852
41	4	-81,63933	-62,17306	-52,76688	-114,295062	-197,444092	-212,907136	-107,373376	-126,242277	-20,708517
42	0	-63,86885	-47,92962	44,34216	-89,41639	-123,330012	-80,23008	-138,9144	-13,139605	-101,824125
42	2	-3,95466	-3,524178	26,34529	-5,536552	-10,3843308	18,075496	-34,615084	22,786078	-29,904502
42	4	25,81305	19,13127	8,348429	36,13827	61,585692	58,455359	41,758501	31,580174	14,883316
42	6	22,82434	17,78671	-9,648436	31,954076	55,847944	35,527482	54,824354	10,89347	30,190342
42	8	-10,31081	-5,307841	-27,6453	-14,435134	-20,8655176	-45,326113	9,964487	-36,925029	18,365571
43	0	-99,94398	-81,15185	-1,221622	-139,921572	-249,775736	-202,306248	-199,863004	-91,171204	-68,72796
43	2,24	3,660088	3,97076	-1,509927	5,1241232	10,7453216	6,8529386	9,8727926	1,7841522	4,8040062
43	4,47	46,78958	39,07043	-1,798232	65,505412	118,660184	93,419694	97,016158	40,31239	43,908854
43	6,71	25,51038	20,50447	-2,086537	35,714532	63,419608	49,030389	53,203463	20,872805	25,045879
43	8,94	-56,90611	-48,69804	-2,374842	-79,668554	-146,204196	-119,360214	-114,61053	-53,590341	-48,840657
44	0	-44,50103	-43,58318	10,03655	-62,301442	-123,134324	-86,947866	-107,020966	-30,014377	-50,087477
44	1	-12,4224	-13,89366	5,130542	-17,39136	-37,136736	-23,669998	-33,931082	-6,049618	-16,310702

44	2	9,340464	7,962519	0,2245367	13,0766496	33,9485872	19,3956125	18,9465391	8,6309543	6,1918809
44	3	16,34088	18,15203	-4,681468	22,877232	48,652304	33,079618	42,442554	10,025324	19,38526
44	4	13,02552	20,50822	-9,587473	18,235728	48,443776	26,551371	45,726317	2,135495	21,310441
45	0	-40,77022	-27,87597	7,406793	-57,078308	-93,525816	-69,393441	-84,207027	-29,286405	-44,099991
45	2	9,625391	8,468594	3,620085	13,4755474	25,1002196	23,6391482	16,3989782	12,2829369	5,0427669
45	4	29,87456	23,06316	-0,1666222	41,824384	72,750528	58,7460098	59,0792542	26,7204818	27,0537262
45	6	17,3673	13,65773	-3,95333	24,31422	42,693128	30,54516	38,45182	11,67724	19,5839
45	8	-25,28641	-17,49771	-7,740037	-35,400974	-58,340028	-55,581439	-40,101365	-30,497806	-15,017732
46	0	-47,15617	-36,1125	-2,305924	-66,018638	-114,367404	-95,005828	-90,39398	-44,746477	-40,134629
46	2,24	36,60658	32,32342	-2,069977	51,249212	95,645368	74,181339	78,321293	30,875945	35,015899
46	4,47	59,89475	50,73641	-1,83403	83,85265	153,051956	120,77608	124,44414	52,071245	55,739305
46	6,71	18,77424	15,48376	-1,598083	26,283936	47,303104	36,414765	39,610931	15,298733	18,494899
46	8,94	-83,48357	-70,40543	-1,362136	-116,876998	-212,828972	-171,94785	-169,223578	-76,497349	-73,773077
47	0	-25,62351	-25,03601	-0,9566194	-35,872914	-70,805828	-56,7408414	-54,8276026	-24,0177784	-22,1045396
47	1	-6,020179	-6,60703	-1,023246	-8,4282506	-17,7954628	-14,8544908	-12,8079988	-6,4414071	-4,3949151
47	2	3,894038	3,988618	-1,089872	5,4516532	11,05468[illegible]	7,5[illegible]15916	9,7513356	2,4147622	4,5945062
47	3	-0,0208548	2,917599	-1,156499	-0,02919672	4,64313264	1,73607424	4,04907224	-1,17526832	1,13772968
47	4	-13,62486	-5,986753	-1,222125	-19,074804	-28,9286368	-23,55971	-21,11346	-13,485499	-11,039249

AKSIAL BALOK PORTAL AS 1 (ANALISIS 2D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1,4PD (KN)	1,2PD+1,6PL (KN)	1,2PD+PL+PE (KN)	1,2PD+PL - PE (KN)	0,9PD+PE (KN)	0,9PD-PE (KN)
1	0	16,05444	6,396461	-147,994	22,476216	29,4996656	-122,332211	173,655789	-133,545004	162,442996
1	4,5	16,05444	6,396461	-147,994	22,476216	29,4996656	-122,332211	173,655789	-133,545004	162,442996
1	9	16,05444	6,396461	-147,994	22,476216	29,4996656	-122,332211	173,655789	-133,545004	162,442996
2	0	12,53986	5,719265	-152,9297	17,555804	24,198656	-132,162603	173,696797	-141,643826	164,215574
2	4,5	12,53986	5,719265	-152,9297	17,555804	24,198656	-132,162603	173,696797	-141,643826	164,215574
2	9	12,53986	5,719265	-152,9297	17,555804	24,198656	-132,162603	173,696797	-141,643826	164,215574
3	0	10,95376	5,218584	-139,0288	15,335264	21,4942464	-120,665704	157,391896	-129,170416	148,887184
3	4,5	10,95376	5,218584	-139,0288	15,335264	21,4942464	-120,665704	157,391896	-129,170416	148,887184
3	9	10,95376	5,218584	-139,0288	15,335264	21,4942464	-120,665704	157,391896	-129,170416	148,887184
4	0	9,830087	4,920488	-133,9889	13,7621218	19,6688852	-117,2723076	150,7054924	-125,1418217	142,8359783
4	4,5	9,830087	4,920488	-133,9889	13,7621218	19,6688852	-117,2723076	150,7054924	-125,1418217	142,8359783
4	9	9,830087	4,920488	-133,9889	13,7621218	19,6688852	-117,2723076	150,7054924	-125,1418217	142,8359783
5	0	9,048584	4,705724	-127,5733	12,6680176	18,3874592	-112,0092752	143,1373248	-119,4295744	135,7170256
5	4,5	9,048584	4,705724	-127,5733	12,6680176	18,3874592	-112,0092752	143,1373248	-119,4295744	135,7170256
5	9	9,048584	4,705724	-127,5733	12,6680176	18,3874592	-112,0092752	143,1373248	-119,4295744	135,7170256
6	0	8,667331	4,599869	-97,63024	12,1342634	17,7605876	-82,6295738	112,6309062	-89,8296421	105,4308379
6	4,5	8,667331	4,599869	-97,63024	12,1342634	17,7605876	-82,6295738	112,6309062	-89,8296421	105,4308379
6	9	8,667331	4,599869	-97,63024	12,1342634	17,7605876	-82,6295738	112,6309062	-89,8296421	105,4308379
7	0	14,33389	7,258712	-104,4222	20,067446	28,8146072	-79,96282	128,88158	-91,521699	117,322701
7	5	14,33389	7,258712	-104,4222	20,067446	28,8146072	-79,96282	128,88158	-91,521699	117,322701
7	10	14,33389	7,258712	-104,4222	20,067446	28,8146072	-79,96282	128,88158	-91,521699	117,322701
8	0	9,346821	4,84933	-114,0672	13,0855494	18,9751132	-98,0016848	130,1327152	-105,6550611	122,4793389
8	4,5	9,346821	4,84933	-114,0672	13,0855494	18,9751132	-98,0016848	130,1327152	-105,6550611	122,4793389
8	9	9,346821	4,84933	-114,0672	13,0855494	18,9751132	-98,0016848	130,1327152	-105,6550611	122,4793389
9	0	10,23263	5,130991	-91,69708	14,325682	20,4887416	-74,286933	109,107227	-82,487713	100,906447
9	4,5	10,23263	5,130991	-91,69708	14,325682	20,4887416	-74,286933	109,107227	-82,487713	100,906447
9	9	10,23263	5,130991	-91,69708	14,325682	20,4887416	-74,286933	109,107227	-82,487713	100,906447
10	0	11,26818	5,480291	-69,681	15,775452	22,2902816	-50,678893	88,683107	-59,539638	79,822362
10	4,5	11,26818	5,480291	-69,681	15,775452	22,2902816	-50,678893	88,683107	-59,539638	79,822362
10	9	11,26818	5,480291	-69,681	15,775452	22,2902816	-50,678893	88,683107	-59,539638	79,822362
11	0	12,67916	5,915484	-49,01575	17,750824	24,6797664	-27,885274	70,146226	-37,604506	60,426994
11	4,5	12,67916	5,915484	-49,01575	17,750824	24,6797664	-27,885274	70,146226	-37,604506	60,426994
11	9	12,67916	5,915484	-49,01575	17,750824	24,6797664	-27,885274	70,146226	-37,604506	60,426994
12	0	14,43638	6,520085	-29,05937	20,210932	27,755792	-5,215629	52,903111	-16,066628	42,052112
12	4,5	14,43638	6,520085	-29,05937	20,210932	27,755792	-5,215629	52,903111	-16,066628	42,052112

12	9	14,43636	6,520085	-29,03937	20,210932	27,755792	-5,215629	52,903111	-16,066628	42,052112
13	0	16,98403	7,075417	-10,70035	23,777642	31,7015032	16,755903	38,156603	4,585277	25,985977
13	4,5	16,98403	7,075417	-10,70035	23,777642	31,7015032	16,755903	38,156603	4,585277	25,985977
13	9	16,98403	7,075417	-10,70035	23,777642	31,7015032	16,755903	38,156603	4,585277	25,985977
14	0	-10,61719	2,743042	-325,3266	-14,864066	-8,3517608	-335,324186	335,324332	-334,882071	315,771129
14	4,5	-10,61719	2,743042	-325,3266	-14,864066	-8,3517608	-335,324186	335,324332	-334,882071	315,771129
14	9	-10,61719	2,743042	-325,3266	-14,864066	-8,3517608	-335,324186	335 324332	-334,882071	315,771129
15	0	-8,917817	1,582191	-271,6363	-12,4849438	-8,1698748	-280,7554894	123,2170323	-279,6623353	263,0102647
15	4,5	-8,917817	1,582191	-271,6363	-12,4849438	-8,1698748	-280,7554894	123,2170323	-279,6623353	263,6102647
15	9	-8,917817	1,582191	-271,6363	-12,4849438	-8,1698748	-280,7554894	123,2170323	-279,6623353	263,6102647
16	0	-8,034058	1,521425	-233,6306	-11,2476812	-7,2065896	-241,7500446	120,33232	-240,8612522	226,3999478
16	4,5	-8,034058	1,521425	-233,6306	-11,2476812	-7,2065896	-241,7500446	120,33232	-240,8612522	226,3999478
16	9	-8,034058	1,521425	-233,6306	-11,2476812	-7,2065896	-241,7500446	120,33232	-240,8612522	226,3999478
17	0	-7,530315	1,267881	-197,0699	-10,542441	-7,0077684	-204,838397	189,301403	-203,8471835	190,2926165
17	4,5	-7,530315	1,267881	-197,0699	-10,542441	-7,0077684	-204,838397	189,301403	-203,8471835	190,2926165
17	9	-7,530315	1,267881	-197,0699	-10,542441	-7,0077684	-204,838397	189,301403	-203,8471835	190,2926165
18	0	-7,138886	1,161268	-164,6276	-9,9944404	-6,7086344	-172,0329952	157,2222048	-171,0525974	158,2026026
18	4,5	-7,138886	1,161268	-164,6276	-9,9944404	-6,7086344	-172,0329952	157,2222048	-171,0525974	158,2026026
18	9	-7,138886	1,161268	-164,6276	-9,9944404	-6,7086344	-172,0329952	157,2222048	-171,0525974	158,2026026
19	0	-7,13095	0,8306787	-156,0717	-9,98333	-7,22805408	-163,7981613	148,3452387	-162,489555	149,653845
19	4,5	-7,13095	0,8306787	-156,0717	-9,98333	-7,22805408	-163,7981613	148,3452387	-162,489555	149,653845
19	9	-7,13095	0,8306787	-156,0717	-9,98333	-7,22805408	-163,7981613	148,3452387	-162,489555	149,653845
20	0	-11,86139	-0,6587087	-111,3249	-16,605946	-15,28760192	-126,2172767	280,7553323	-122,000151	100,649649
20	5	-11,86139	-0,6587087	-111,3249	-16,605946	-15,28760192	-126,2172767	280,7553323	-122,000151	100,649649
20	10	-11,86139	-0,6587087	-111,3249	16,605946	-15,28760192	-126,2172767	280,7553323	-122,000151	100,649649
21	0	-7,494553	0,6340755	-66,68914	-10,4923742	-7,9789428	-75,0485281	58,3297519	-73,4342377	59,9440423
21	4,5	-7,494553	0,6340755	-66,68914	-10,4923742	-7,9789428	-75,0485281	58,3297519	-73,4342377	59,9440423
21	9	-7,494553	0,6340755	-66,68914	-10,4923742	-7,9789428	-75,0485281	58,3297519	-73,4342377	59,9440423
22	0	-7,650082	0,9354609	-56,54905	-10,7101148	-7,68336096	-64,7936875	48,3044125	-63,4341238	49,6639762
22	4,5	-7,650082	0,9354609	-56,54905	-10,7101148	-7,68336096	-64,7936875	48,3044125	-63,4341238	49,6639762
22	9	-7,650082	0,9354609	-56,54905	-10,7101148	-7,68336096	-64,7936875	48,3044125	-63,4341238	49,6639762
23	0	-7,99095	1,02781	-45,96739	-11,18733	-7,944644	-54,52872	37,40606	-53,159245	38,775535
23	4,5	-7,99095	1,02781	-45,96739	-11,18733	-7,944644	-54,52872	37,40606	-53,159245	38,775535
23	9	-7,99095	1,02781	-45,96739	-11,18733	-7,944644	-54,52872	37,40606	-53,159245	38,775535
24	0	-8,421002	1,284116	-35,56617	-11,7894028	-8,0506168	-44,3872564	26,7450836	-43,1450718	27,9872682
24	4,5	-8,421002	1,284116	-35,56617	-11,7894028	-8,0506168	-44,3872564	26,7450836	-43,1450718	27,9872682
24	9	-8,421002	1,284116	-35,56617	-11,7894028	-8,0506168	-44,3872564	26,7450836	-43,1450718	27,9872682
25	0	-9,020598	1,425874	-24,34438	-12,6288372	-8,5433192	-33,7432236	14,9455364	-32,4629182	16,2258418
25	4,5	-9,020598	1,425874	-24,34438	-12,6288372	-8,5433192	-33,7432236	14,9455364	-32,4629182	16,2258418

25	9	-9,020598	1,425874	-24,34438	-12,6288372	-8,5433192	-33,7432236	14,9455364	-32,4629182	16,2258418
26	0	-9,827668	2,538255	-12,26944	-13,7587352	-7,7319936	-21,5243866	3,0144934	-21,1143412	3,4245388
26	4,5	-9,827668	2,538255	-12,26944	-13,7587352	-7,7319936	-21,5243866	3,0144934	-21,1143412	3,4245388
26	9	-9,827668	2,538255	-12,26944	-13,7587352	-7,7319936	-21,5243866	3,0144934	-21,1143412	3,4245388
27	0	-20,27118	-16,20575	-358,1062	-28,379652	-50,254616	-398,637366	317,575034	-376,350262	339,862138
27	4,5	-20,27118	-16,20575	-358,1062	-28,379652	-50,254616	-398,637366	317,575034	-376,350262	339,862138
27	9	-20,27118	-16,20575	-358,1062	-28,379652	-50,254616	-398,637366	317,575034	-376,350262	339,862138
28	0	-18,95954	-14,49324	-323,5997	-26,543356	-45,940632	-360,844388	286,355012	-340,663286	306,536114
28	4,5	-18,95954	-14,49324	-323,5997	-26,543356	-45,940632	-360,844388	286,355012	-340,663286	306,536114
28	9	-18,95954	-14,49324	-323,5997	-26,543356	-45,940632	-360,844388	286,355012	-340,663286	306,536114
29	0	-18,92763	-14,24838	-295,3287	-26,498682	-45,510564	-332,290236	258,367164	-312,363567	278,293833
29	4,5	-18,92763	-14,24838	-295,3287	-26,498682	-45,510564	-332,290236	258,367164	-312,363567	278,293833
29	9	-18,92763	-14,24838	-295,3287	-26,498682	-45,510564	-332,290236	258,367164	-312,363567	278,293833
30	0	-18,75967	-13,88632	-265,8669	-26,263538	-44,729716	-302,264824	229,468976	-282,750603	248,983197
30	4,5	-18,75967	-13,88632	-265,8669	-26,263538	-44,729716	-302,264824	229,468976	-282,750603	248,983197
30	9	-18,75967	-13,88632	-265,8669	-26,263538	-44,729716	-302,264824	229,468976	-282,750603	248,983197
31	0	-18,67101	-13,68995	-237,1822	-26,139414	-44,309132	-273,277362	201,087038	-253,986109	220,378291
31	4,5	-18,67101	-13,68995	-237,1822	-26,139414	-44,309132	-273,277362	201,087038	-253,986109	220,378291
31	9	-18,67101	-13,68995	-237,1822	-26,139414	-44,309132	-273,277362	201,087038	-253,986109	220,378291
32	0	-18,20938	-13,19059	-206,412	-25,493132	-42,9562	-241,453846	171,370154	-222,800442	190,023558
32	4,5	-18,20938	-13,19059	-206,412	-25,493132	-42,9562	-241,453846	171,370154	-222,800442	190,023558
32	9	-18,20938	-13,19059	-206,412	-25,493132	-42,9562	-241,453846	171,370154	-222,800442	190,023558
33	0	-20,99184	-15,31205	-180,4556	-29,388576	-49,689488	-220,957858	139,953342	-199,348256	161,562944
33	5	-20,99184	-15,31205	-180,4556	-29,388576	-49,689488	-220,957858	139,953342	-199,348256	161,562944
33	10	-20,99184	-15,31205	-180,4556	-29,388576	-49,689488	-220,957858	139,953342	-199,348256	161,562944
34	0	-18,19196	-13,07664	-155,1295	-25,468744	-42,752976	-190,036492	120,222508	-171,502264	138,756736
34	4,5	-18,19196	-13,07664	-155,1295	-25,468744	-42,752976	-190,036492	120,222508	-171,502264	138,756736
34	9	-18,19196	-13,07664	-155,1295	-25,468744	-42,752976	-190,036492	120,222508	-171,502264	138,756736
35	0	-18,77867	-13,59996	-127,5994	-26,290138	-44,29434	-163,733764	91,465036	-144,500203	110,698597
35	4,5	-18,77867	-13,59996	-127,5994	-26,290138	-44,29434	-163,733764	91,465036	-144,500203	110,698597
35	9	-18,77867	-13,59996	-127,5994	-26,290138	-44,29434	-163,733764	91,465036	-144,500203	110,698597
36	0	-18,98092	-13,80815	-101,2279	-26,573288	-44,870144	-137,813154	64,642646	-118,310728	84,145072
36	4,5	-18,98092	-13,80815	-101,2279	-26,573288	-44,870144	-137,813154	64,642646	-118,310728	84,145072
36	9	-18,98092	-13,80815	-101,2279	-26,573288	-44,870144	-137,813154	64,642646	-118,310728	84,145072
37	0	-19,33472	-14,21651	-74,16815	-27,068608	-45,94808	-111,586324	36,749976	-91,569398	56,766902
37	4,5	-19,33472	-14,21651	-74,16815	-27,068608	-45,94808	-111,586324	36,749976	-91,569398	56,766902
37	9	-19,33472	-14,21651	-74,16815	-27,068608	-45,94808	-111,586324	36,749976	-91,569398	56,766902
38	0	-19,60242	-14,55391	-47,95003	-27,443388	-46,80916	-86,026844	9,873216	-65,592208	30,307852
38	4,5	-19,60242	-14,55391	-47,95003	-27,443388	-46,80916	-86,026844	9,873216	-65,592208	30,307852

38	9	-19,60242	-14,55391	-47,95003	-27,443388	-46,80916	-86,026844	9,873216	-65,592208	30,307852
39	0	-21,07039	-16,1648	-19,71696	-29,498546	-51,148148	-61,166228	-21,732308	-38,680311	0,753609
39	4,5	-21,07039	-16,1648	-19,71696	-29,498546	-51,148148	-61,166228	-21,732308	-38,680311	0,753609
39	9	-21,07039	-16,1648	-19,71696	-29,498546	-51,148148	-61,166228	-21,732308	-38,680311	0,753609

AKSIAL BALOK PORTAL AS 2 (ANALISIS 2D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1,4PD (KN)	1,2PD+1,6PL (KN)	1,2PD+PL+PE (KN)	1,2PD+PL - PE (KN)	0,9PD+PE (KN)	0,9PD-PE (KN)
1	0	11,23958	11,17563	-196,2428	15,735412	31,368504	-171,579674	220,905926	-186,127178	206,358422
1	1,8	11,23958	11,17563	-196,2428	15,735412	31,368504	-171,579674	220,905926	-186,127178	206,358422
1	3,6	11,23958	11,17563	-196,2428	15,735412	31,368504	-171,579674	220,905926	-186,127178	206,358422
1	5,4	11,23958	11,17563	-196,2428	15,735412	31,368504	-171,579674	220,905926	-186,127178	206,358422
1	7,2	11,23958	11,17563	-196,2428	15,735412	31,368504	-171,579674	220,905926	-186,127178	206,358422
2	0	7,956331	7,506886	-177,1342	11,1388634	21,5586148	-160,0797168	194,1886832	-169,9735021	184,2948979
2	2,25	7,956331	7,506886	-177,1342	11,1388634	21,5586148	-160,0797168	194,1886832	-169,9735021	184,2948979
2	4,5	7,956331	7,506886	-177,1342	11,1388634	21,5586148	-160,0797168	194,1886832	-169,9735021	184,2948979
2	6,75	7,956331	7,506886	-177,1342	11,1388634	21,5586148	-160,0797168	194,1886832	-169,9735021	184,2948979
2	9	7,956331	7,506886	-177,1342	11,1388634	21,5586148	-160,0797168	194,1886832	-169,9735021	184,2948979
3	0	4,254908	4,008518	-157,5012	5,9568712	11,5195184	-148,3867924	166,6156076	-153,6717828	161,3306172
3	2,25	4,254908	4,008518	-157,5012	5,9568712	11,5195184	-148,3867924	166,6156076	-153,6717828	161,3306172
3	4,5	4,254908	4,008518	-157,5012	5,9568712	11,5195184	-148,3867924	166,6156076	-153,6717828	161,3306172
3	6,75	4,254908	4,008518	-157,5012	5,9568712	11,5195184	-148,3867924	166,6156076	-153,6717828	161,3306172
3	9	4,254908	4,008518	-157,5012	5,9568712	11,5195184	-148,3867924	166,6156076	-153,6717828	161,3306172
4	0	1,925445	2,178346	-139,3206	2,695623	5,7958876	-134,83172	143,80948	-137,5876995	141,0535005
4	2,25	1,925445	2,178346	-139,3206	2,695623	5,7958876	-134,83172	143,80948	-137,5876995	141,0535005
4	4,5	1,925445	2,178346	-139,3206	2,695623	5,7958876	-134,83172	143,80948	-137,5876995	141,0535005
4	6,75	1,925445	2,178346	-139,3206	2,695623	5,7958876	-134,83172	143,80948	-137,5876995	141,0535005
4	9	1,925445	2,178346	-139,3206	2,695623	5,7958876	-134,83172	143,80948	-137,5876995	141,0535005
5	0	8,57041	6,14455	-122,3497	11,998574	20,115772	-105,920658	138,778742	-114,636331	130,063069
5	2,25	8,57041	6,14455	-122,3497	11,998574	20,115772	-105,920658	138,778742	-114,636331	130,063069
5	4,5	8,57041	6,14455	-122,3497	11,998574	20,115772	-105,920658	138,778742	-114,636331	130,063069
5	6,75	8,57041	6,14455	-122,3497	11,998574	20,115772	-105,920658	138,778742	-114,636331	130,063069
5	9	8,57041	6,14455	-122,3497	11,998574	20,115772	-105,920658	138,778742	-114,636331	130,063069
6	0	3,800094	4,608372	-106,5152	5,3201316	11,933508	-97,3467152	115,6836848	-103,0951154	109,9352846
6	2,25	3,800094	4,608372	-106,5152	5,3201316	11,933508	-97,3467152	115,6836848	-103,0951154	109,9352846
6	4,5	3,800094	4,608372	-106,5152	5,3201316	11,933508	-97,3467152	115,6836848	-103,0951154	109,9352846
6	6,75	3,800094	4,608372	-106,5152	5,3201316	11,933508	-97,3467152	115,6836848	-103,0951154	109,9352846
6	9	3,800094	4,608372	-106,5152	5,3201316	11,933508	-97,3467152	115,6836848	-103,0951154	109,9352846
7	0	8,046699	7,938169	-91,15891	11,2653786	22,3571092	-73,5647022	108,7531178	-83,9168809	98,4009391
7	2,5	8,046699	7,938169	-91,15891	11,2653786	22,3571092	-73,5647022	108,7531178	-83,9168809	98,4009391
7	5	8,046699	7,938169	-91,15891	11,2653786	22,3571092	-73,5647022	108,7531178	-83,9168809	98,4009391
7	7,5	8,046699	7,938169	-91,15891	11,2653786	22,3571092	-73,5647022	108,7531178	-83,9168809	98,4009391
7	10	8,046699	7,938169	-91,15891	11,2653786	22,3571092	-73,5647022	108,7531178	-83,9168809	98,4009391

8	0	4,51579	4,608372	-76,74014	6,322106	12,7923432	-66,71282	86,76746	-72,675929	80,804351
8	2,25	4,51579	4,608372	-76,74014	6,322106	12,7923432	-66,71282	86,76746	-72,675929	80,804351
8	4,5	4,51579	4,608372	-76,74014	6,322106	12,7923432	-66,71282	86,76746	-72,675929	80,804351
8	6,75	4,51579	4,608372	-76,74014	6,322106	12,7923432	-66,71282	86,76746	-72,675929	80,804351
8	9	4,51579	4,608372	-76,74014	6,322106	12,7923432	-66,71282	86,76746	-72,675929	80,804351
9	0	9,055567	6,14455	-63,50357	12,6777938	20,6979604	-46,4923396	80,5148004	-55,3535597	71,6535803
9	2,25	9,055567	6,14455	-63,50357	12,6777938	20,6979604	-46,4923396	80,5148004	-55,3535597	71,6535803
9	4,5	9,055567	6,14455	-63,50357	12,6777938	20,6979604	-46,4923396	80,5148004	-55,3535597	71,6535803
9	6,75	9,055567	6,14455	-63,50357	12,6777938	20,6979604	-46,4923396	80,5148004	-55,3535597	71,6535803
9	9	9,055567	6,14455	-63,50357	12,6777938	20,6979604	-46,4923396	80,5148004	-55,3535597	71,6535803
10	0	2,29415	2,178346	-50,83762	3,21181	6,2383336	-45,906294	55,768946	-48,772885	52,902355
10	2,25	2,29415	2,178346	-50,83762	3,21181	6,2383336	-45,906294	55,768946	-48,772885	52,902355
10	4,5	2,29415	2,178346	-50,83762	3,21181	6,2383336	-45,906294	55,768946	-48,772885	52,902355
10	6,75	2,29415	2,178346	-50,83762	3,21181	6,2383336	-45,906294	55,768946	-48,772885	52,902355
10	9	2,29415	2,178346	-50,83762	3,21181	6,2383336	-45,906294	55,768946	-48,772885	52,902355
11	0	4,511415	4,008518	-38,70908	6,315981	11,8273268	-29,286864	48,131296	-34,6488065	42,7693535
11	2,25	4,511415	4,008518	-38,70908	6,315981	11,8273268	-29,286864	48,131296	-34,6488065	42,7693535
11	4,5	4,511415	4,008518	-38,70908	6,315981	11,8273268	-29,286864	48,131296	-34,6488065	42,7693535
11	6,75	4,511415	4,008518	-38,70908	6,315981	11,8273268	-29,286864	48,131296	-34,6488065	42,7693535
11	9	4,511415	4,008518	-38,70908	6,315981	11,8273268	-29,286864	48,131296	-34,6488065	42,7693535
12	0	8,117003	7,506886	-26,95425	11,3638042	21,7514212	-9,7069604	44,2015396	-19,6489473	34,2595527
12	2,25	8,117003	7,506886	-26,95425	11,3638042	21,7514212	-9,7069604	44,2015396	-19,6489473	34,2595527
12	4,5	8,117003	7,506886	-26,95425	11,3638042	21,7514212	-9,7069604	44,2015396	-19,6489473	34,2595527
12	6,75	8,117003	7,506886	-26,95425	11,3638042	21,7514212	-9,7069604	44,2015396	-19,6489473	34,2595527
12	9	8,117003	7,506886	-26,95425	11,3638042	21,7514212	-9,7069604	44,2015396	-19,6489473	34,2595527
13	0	11,30786	11,17563	-17,23426	15,831004	31,45044	7,510802	41,979322	-7,057186	27,411334
13	1,8	11,30786	11,17563	-17,23426	15,831004	31,45044	7,510802	41,979322	-7,057186	27,411334
13	3,6	11,30786	11,17563	-17,23426	15,831004	31,45044	7,510802	41,979322	-7,057186	27,411334
13	5,4	11,30786	11,17563	-17,23426	15,831004	31,45044	7,510802	41,979322	-7,057186	27,411334
13	7,2	11,30786	11,17563	-17,23426	15,831004	31,45044	7,510802	41,979322	-7,057186	27,411334
14	0	-4,601571	-4,623982	-273,6309	-6,4421994	-12,9202564	-283,7767672	263,4850328	-277,7723139	269,4894861
14	1,8	-4,601571	-4,623982	-273,6309	-6,4421994	-12,9202564	-283,7767672	263,4850328	-277,7723139	269,4894861
14	3,6	-4,601571	-4,623982	-273,6309	-6,4421994	-12,9202564	-283,7767672	263,4850328	-277,7723139	269,4894861
14	5,4	-4,601571	-4,623982	-273,6309	-6,4421994	-12,9202564	-283,7767672	263,4850328	-277,7723139	269,4894861
14	7,2	-4,601571	-4,623982	-273,6309	-6,4421994	-12,9202564	-283,7767672	263,4850328	-277,7723139	269,4894861
15	0	-1,691446	-1,560476	-240,2174	-2,3680244	-4,5264968	-243,8076112	236,6271888	-241,7397014	238,6950986
15	2,25	-1,691446	-1,560476	-240,2174	-2,3680244	-4,5264968	-243,8076112	236,6271888	-241,7397014	238,6950986
15	4,5	-1,691446	-1,560476	-240,2174	-2,3680244	-4,5264968	-243,8076112	236,6271888	-241,7397014	238,6950986
15	6,75	-1,691446	-1,560476	-240,2174	-2,3680244	-4,5264968	-243,8076112	236,6271888	-241,7397014	238,6950986

15	9	-1,891446	-1,560476	-240,2174	-2,3680244	-4,5264968	-243,8076112	236,6271888	-241,7397014	236,6950986
16	0	-6,245363	-6,151646	-213,366	-8,7435082	-17,3370692	-227,0120816	199,7199184	-218,9868267	207,7451733
16	2,25	-6,245363	-6,151646	-213,366	-8,7435082	-17,3370692	-227,0120816	199,7199184	-218,9868267	207,7451733
16	4,5	-6,245363	-6,151646	-213,366	-8,7435082	-17,3370692	-227,0120816	199,7199184	-218,9868267	207,7451733
16	6,75	-6,245363	-6,151646	-213,366	-8,7435082	-17,3370692	-227,0120816	199,7199184	-218,9868267	207,7451733
16	9	-6,245363	-6,151646	-213,366	-8,7435082	-17,3370692	-227,0120816	199,7199184	-218,9868267	207,7451733
17	0	-5,12548	-5,058546	-188,2549	-7,175672	-14,2442496	-199,464022	177,045778	-192,867832	183,641968
17	2,25	-5,12548	-5,058546	-188,2549	-7,175672	-14,2442496	-199,464022	177,045778	-192,867832	183,641968
17	4,5	-5,12548	-5,058546	-188,2549	-7,175672	-14,2442496	-199,464022	177,045778	-192,867832	183,641968
17	6,75	-5,12548	-5,058546	-188,2549	-7,175672	-14,2442496	-199,464022	177,045778	-192,867832	183,641968
17	9	-5,12548	-5,058546	-188,2549	-7,175672	-14,2442496	-199,464022	177,045778	-192,867832	183,641968
18	0	-4,948813	-4,838701	-165,1014	-6,9283382	-13,6804972	-175,8786766	154,3241234	-169,5553317	160,6474683
18	2,25	-4,948813	-4,838701	-165,1014	-6,9283382	-13,6804972	-175,8786766	154,3241234	-169,5553317	160,6474683
18	4,5	-4,948813	-4,838701	-165,1014	-6,9283382	-13,6804972	-175,8786766	154,3241234	-169,5553317	160,6474683
18	6,75	-4,948813	-4,838701	-165,1014	-6,9283382	-13,6804972	-175,8786766	154,3241234	-169,5553317	160,6474683
18	9	-4,948813	-4,838701	-165,1014	-6,9283382	-13,6804972	-175,8786766	154,3241234	-169,5553317	160,6474683
19	0	-4,272305	-4,085442	-143,2998	-5,981227	-11,6634732	-152,512008	134,087592	-147,1448745	139,4547255
19	2,25	-4,272305	-4,085442	-143,2998	-5,981227	-11,6634732	-152,512008	134,087592	-147,1448745	139,4547255
19	4,5	-4,272305	-4,085442	-143,2998	-5,981227	-11,6634732	-152,512008	134,087592	-147,1448745	139,4547255
19	6,75	-4,272305	-4,085442	-143,2998	-5,981227	-11,6634732	-152,512008	134,087592	-147,1448745	139,4547255
19	9	-4,272305	-4,085442	-143,2998	-5,981227	-11,6634732	-152,512008	134,087592	-147,1448745	139,4547255
20	0	-6,562772	-6,831616	-123,2118	-9,1878808	-18,805912	-137,9187424	108,5048576	-129,1182948	117,3053052
20	2,5	-6,562772	-6,831616	-123,2118	-9,1878808	-18,805912	-137,9187424	108,5048576	-129,1182948	117,3053052
20	5	-6,562772	-6,831616	-123,2118	-9,1878808	-18,805912	-137,9187424	108,5048576	-129,1182948	117,3053052
20	7,5	-6,562772	-6,831616	-123,2118	-9,1878808	-18,805912	-137,9187424	108,5048576	-129,1182948	117,3053052
20	10	-6,562772	-6,831616	-123,2118	-9,1878808	-18,805912	-137,9187424	108,5048576	-129,1182948	117,3053052
21	0	-4,307928	-4,085442	-104,1297	-6,0310992	-11,7062208	-113,3846556	94,8747444	-108,0068352	100,2525648
21	2,25	-4,307928	-4,085442	-104,1297	-6,0310992	-11,7062208	-113,3846556	94,8747444	-108,0068352	100,2525648
21	4,5	-4,307928	-4,085442	-104,1297	-6,0310992	-11,7062208	-113,3846556	94,8747444	-108,0068352	100,2525648
21	6,75	-4,307928	-4,085442	-104,1297	-6,0310992	-11,7062208	-113,3846556	94,8747444	-108,0068352	100,2525648
21	9	-4,307928	-4,085442	-104,1297	-6,0310992	-11,7062208	-113,3846556	94,8747444	-108,0068352	100,2525648
22	0	-4,935582	-4,838701	-85,26909	-6,9098148	-13,66462	-96,0304894	74,5076906	-89,7111138	80,8270662
22	2,25	-4,935582	-4,838701	-85,26909	-6,9098148	-13,66462	-96,0304894	74,5076906	-89,7111138	80,8270662
22	4,5	-4,935582	-4,838701	-85,26909	-6,9098148	-13,66462	-96,0304894	74,5076906	-89,7111138	80,8270662
22	6,75	-4,935582	-4,838701	-85,26909	-6,9098148	-13,66462	-96,0304894	74,5076906	-89,7111138	80,8270662
22	9	-4,935582	-4,838701	-85,26909	-6,9098148	-13,66462	-96,0304894	74,5076906	-89,7111138	80,8270662
23	0	-5,124557	-5,058546	-67,07665	-7,1743798	-14,243142	-78,2846644	55,8686356	-71,6887513	62,4645487
23	2,25	-5,124557	-5,058546	-67,07665	-7,1743798	-14,243142	-78,2846644	55,8686356	-71,6887513	62,4645487
23	4,5	-5,124557	-5,058546	-67,07665	-7,1743798	-14,243142	-78,2846644	55,8686356	-71,6887513	62,4645487

23	6,75	-5,124557	-5,058546	-67,07665	-7,1743798	-14,243142	-78,2846644	55,8686356	-71,6887513	62,4645487
23	9	-5,124557	-5,058546	-67,07665	-7,1743798	-14,243142	-78,2846644	55,8686356	-71,6887513	62,4645487
24	0	-6,243552	-6,151646	-49,2112	-8,7409728	-17,334896	-62,8551084	35,5672916	-54,8303968	43,5920032
24	2,25	-6,243552	-6,151646	-49,2112	-8,7409728	-17,334896	-62,8551084	35,5672916	-54,8303968	43,5920032
24	4,5	-6,243552	-6,151646	-49,2112	-8,7409728	-17,334896	-62,8551084	35,5672916	-54,8303968	43,5920032
24	6,75	-6,243552	-6,151646	-49,2112	-8,7409728	-17,334896	-62,8551084	35,5672916	-54,8303968	43,5920032
24	9	-6,243552	-6,151646	-49,2112	-8,7409728	-17,334896	-62,8551084	35,5672916	-54,8303968	43,5920032
25	0	-1,69152	-1,560476	-31,99203	-2,368128	-4,5265856	-35,58233	28,40173	-33,514398	30,469662
25	2,25	-1,69152	-1,560476	-31,99203	-2,368128	-4,5265856	-35,58233	28,40173	-33,514398	30,469662
25	4,5	-1,69152	-1,560476	-31,99203	-2,368128	-4,5265856	-35,58233	28,40173	-33,514398	30,469662
25	6,75	-1,69152	-1,560476	-31,99203	-2,368128	-4,5265856	-35,58233	28,40173	-33,514398	30,469662
25	9	-1,69152	-1,560476	-31,99203	-2,368128	-4,5265856	-35,58233	28,40173	-33,514398	30,469662
26	0	-4,603196	-4,623982	-12,59442	-6,4444744	-12,9222064	-22,7422372	2,4466028	-16,7372964	8,4515436
26	1,8	-4,603196	-4,623982	-12,59442	-6,4444744	-12,9222064	-22,7422372	2,4466028	-16,7372964	8,4515436
26	3,6	-4,603196	-4,623982	-12,59442	-6,4444744	-12,9222064	-22,7422372	2,4466028	-16,7372964	8,4515436
26	5,4	-4,603196	-4,623982	-12,59442	-6,4444744	-12,9222064	-22,7422372	2,4466028	-16,7372964	8,4515436
26	7,2	-4,603196	-4,623982	-12,59442	-6,4444744	-12,9222064	-22,7422372	2,4466028	-16,7372964	8,4515436
27	0	-14,54284	-14,2182	-221,6493	-20,359976	-40,200528	-253,318908	189,979692	-234,737856	208,560744
27	1,8	-14,54284	-14,2182	-221,6493	-20,359976	-40,200528	-253,318908	189,979692	-234,737856	208,560744
27	3,6	-14,54284	-14,2182	-221,6493	-20,359976	-40,200528	-253,318908	189,979692	-234,737856	208,560744
27	5,4	-14,54284	-14,2182	-221,6493	-20,359976	-40,200528	-253,318908	189,979692	-234,737856	208,560744
27	7,2	-14,54284	-14,2182	-221,6493	-20,359976	-40,200528	-253,318908	189,979692	-234,737856	208,560744
28	0	-15,3927	-14,61625	-206,4729	-21,54978	-41,85724	-239,56039	173,38541	-220,32633	192,61947
28	2,25	-15,3927	-14,61625	-206,4729	-21,54978	-41,85724	-239,56039	173,38541	-220,32633	192,61947
28	4,5	-15,3927	-14,61625	-206,4729	-21,54978	-41,85724	-239,56039	173,38541	-220,32633	192,61947
28	6,75	-15,3927	-14,61625	-206,4729	-21,54978	-41,85724	-239,56039	173,38541	-220,32633	192,61947
28	9	-15,3927	-14,61625	-206,4729	-21,54978	-41,85724	-239,56039	173,38541	-220,32633	192,61947
29	0	-10,78916	-10,20971	-190,6338	-15,104824	-29,282528	-213,790502	167,477098	-200,344044	180,923556
29	2,25	-10,78916	-10,20971	-190,6338	-15,104824	-29,282528	-213,790502	167,477098	-200,344044	180,923556
29	4,5	-10,78916	-10,20971	-190,6338	-15,104824	-29,282528	-213,790502	167,477098	-200,344044	180,923556
29	6,75	-10,78916	-10,20971	-190,6338	-15,104824	-29,282528	-213,790502	167,477098	-200,344044	180,923556
29	9	-10,78916	-10,20971	-190,6338	-15,104824	-29,282528	-213,790502	167,477098	-200,344044	180,923556
30	0	-9,758893	-9,515602	-174,0936	-13,6624502	-26,9356348	-195,3198736	152,8673264	-182,8766037	165,3105963
30	2,25	-9,758893	-9,515602	-174,0936	-13,6624502	-26,9356348	-195,3198736	152,8673264	-182,8766037	165,3105963
30	4,5	-9,758893	-9,515602	-174,0936	-13,6624502	-26,9356348	-195,3198736	152,8673264	-182,8766037	165,3105963
30	6,75	-9,758893	-9,515602	-174,0936	-13,6624502	-26,9356348	-195,3198736	152,8673264	-182,8766037	165,3105963
30	9	-9,758893	-9,515602	-174,0936	-13,6624502	-26,9356348	-195,3198736	152,8673264	-182,8766037	165,3105963
31	0	-16,76187	-14,01591	-156,883	-23,466618	-42,5397	-191,013154	122,752846	-171,968683	141,797317
31	2,25	-16,76187	-14,01591	-156,883	-23,466618	-42,5397	-191,013154	122,752846	-171,968683	141,797317

31	4,5	-16,76187	-14,01591	-156,883	-23,466618	-42,5397	-191,013154	122,752846	-171,968683	141,797317
31	6,75	-16,76187	-14,01591	-156,883	-23,466618	-42,5397	-191,013154	122,752846	-171,968683	141,797317
31	9	-16,76187	-14,01591	-156,883	-23,466618	-42,5397	-191,013154	122,752846	-171,968683	141,797317
32	0	-12,92177	-13,27943	-139,2833	-18,090478	-36,753212	-168,068854	110,497746	-150,912893	127,653707
32	2,25	-12,92177	-13,27943	-139,2833	-18,090478	-36,753212	-168,068854	110,497746	-150,912893	127,653707
32	4,5	-12,92177	-13,27943	-139,2833	-18,090478	-36,753212	-168,068854	110,497746	-150,912893	127,653707
32	6,75	-12,92177	-13,27943	-139,2833	-18,090478	-36,753212	-168,068854	110,497746	-150,912893	127,653707
32	9	-12,92177	-13,27943	-139,2833	-18,090478	-36,753212	-168,068854	110,497746	-150,912893	127,653707
33	0	-17,3596	-16,45749	-121,7916	-24,30344	-47,163504	-159,08061	84,50259	-137,41524	106,16796
33	2,5	-17,3596	-16,45749	-121,7916	-24,30344	-47,163504	-159,08061	84,50259	-137,41524	106,16796
33	5	-17,3596	-16,45749	-121,7916	-24,30344	-47,163504	-159,08061	84,50259	-137,41524	106,16796
33	7,5	-17,3596	-16,45749	-121,7916	-24,30344	-47,163504	-159,08061	84,50259	-137,41524	106,16796
33	10	-17,3596	-16,45749	-121,7916	-24,30344	-47,163504	-159,08061	84,50259	137,41524	106,16796
34	0	-13,56967	-13,27943	-104,1232	-18,997538	-37,530692	-133,686234	74,560166	-116,335903	91,910497
34	2,25	-13,56967	-13,27943	-104,1232	-18,997538	-37,530692	-133,686234	74,560166	-116,335903	91,910497
34	4,5	-13,56967	-13,27943	-104,1232	-18,997538	-37,530692	-133,686234	74,560166	-116,335903	91,910497
34	6,75	-13,56967	-13,27943	-104,1232	-18,997538	-37,530692	-133,686234	74,560166	-116,335903	91,910497
34	9	-13,56967	-13,27943	-104,1232	-18,997538	-37,530692	-133,686234	74,560166	-116,335903	91,910497
35	0	-17,28174	-14,01591	-85,99887	-24,194436	-43,163544	-120,752868	51,244872	-101,552436	70,445304
35	2,25	-17,28174	-14,01591	-85,99887	-24,194436	-43,163544	-120,752868	51,244872	-101,552436	70,445304
35	4,5	-17,28174	-14,01591	-85,99887	-24,194436	-43,163544	-120,752868	51,244872	-101,552436	70,445304
35	6,75	-17,28174	-14,01591	-85,99887	-24,194436	-43,163544	-120,752868	51,244872	-101,552436	70,445304
35	9	-17,28174	-14,01591	-85,99887	-24,194436	-43,163544	-120,752868	51,244872	-101,552436	70,445304
36	0	-10,15057	-9,515602	-67,80662	-14,210798	-27,4056472	-89,502906	46,110334	-76,942133	58,671107
36	2,25	-10,15057	-9,515602	-67,80662	-14,210798	-27,4056472	-89,502906	46,110334	-76,942133	58,671107
36	4,5	-10,15057	-9,515602	-67,80662	-14,210798	-27,4056472	-89,502906	46,110334	-76,942133	58,671107
36	6,75	-10,15057	-9,515602	-67,80662	-14,210798	-27,4056472	-89,502906	46,110334	-76,942133	58,671107
36	9	-10,15057	-9,515602	-67,80662	-14,210798	-27,4056472	-89,502906	46,110334	-76,942133	58,671107
37	0	-11,06988	-10,20971	-49,61818	-15,497832	-29,619392	-73,111746	26,124614	-59,581072	39,655288
37	2,25	-11,06988	-10,20971	-49,61818	-15,497832	-29,619392	-73,111746	26,124614	-59,581072	39,655288
37	4,5	-11,06988	-10,20971	-49,61818	-15,497832	-29,619392	-73,111746	26,124614	-59,581072	39,655288
37	6,75	-11,06988	-10,20971	-49,61818	-15,497832	-29,619392	-73,111746	26,124614	-59,581072	39,655288
37	9	-11,06988	-10,20971	-49,61818	-15,497832	-29,619392	-73,111746	26,124614	-59,581072	39,655288
38	0	-15,56939	-14,61625	-31,28858	-21,797146	-42,069268	-64,588098	-2,010938	-45,301031	17,276129
38	2,25	-15,56939	-14,61625	-31,28858	-21,797146	-42,069268	-64,588098	-2,010938	-45,301031	17,276129
38	4,5	-15,56939	-14,61625	-31,28858	-21,797146	-42,069268	-64,588098	-2,010938	-45,301031	17,276129
38	6,75	-15,56939	-14,61625	-31,28858	-21,797146	-42,069268	-64,588098	-2,010938	-45,301031	17,276129
38	9	-15,56939	-14,61625	-31,28858	-21,797146	-42,069268	-64,588098	-2,010938	-45,301031	17,276129
39	0	-14,61469	-14,2182	-11,98903	-20,460566	-40,286748	-43,744858	-19,766798	-25,142251	-1,164191

39	1,8	-14,61469	-14,2182	-11,98903	-20,460566	-40,286748	-43,744858	-19,766796	-25,142251	-1,164191
39	3,6	-14,61469	-14,2182	-11,98903	-20,460566	-40,286748	-43,744858	-19,766798	-25,142251	-1,164191
39	5,4	-14,61469	-14,2182	-11,98903	-20,460566	-40,286748	-43,744858	-19,766798	-25,142251	-1,164191
39	7,2	-14,61469	-14,2182	-11,98903	-20,460566	-40,286748	-43,744858	-19,766798	-25,142251	-1,164191

AKSIAL BALOK PORTAL AS A (ANALISIS 2D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1,4PD (KN)	1,2PD+1,6PL (KN)	1,2PD+PL+PE (KN)	1,2PD+PL - PE (KN)	0,9PD+PE (KN)	0,9PD-PE (KN)
1	0	4,727059	5,072043	-36,84793	6,6178826	13,7877396	-26,1034162	47,5924438	-32,5935769	41,1022831
1	1	4,727059	5,072043	-36,84793	6,6178826	13,7877396	-26,1034162	47,5924438	-32,5935769	41,1022831
1	2	4,727059	5,072043	-36,84793	6,6178826	13,7877396	-26,1034162	47,5924438	-32,5935769	41,1022831
1	3	4,727059	5,072043	-36,84793	6,6178826	13,7877396	-26,1034162	47,5924438	-32,5935769	41,1022831
1	4	4,727059	5,072043	-36,84793	6,6178826	13,7877396	-26,1034162	47,5924438	-32,5935769	41,1022831
2	0	11,09074	10,0143	54,97951	15,527036	29,331768	78,302698	-31,656322	64,961176	-44,997844
2	2	11,09074	10,0143	54,97951	15,527036	29,331768	78,302698	-31,656322	64,961176	-44,997844
2	4	11,09074	10,0143	54,97951	15,527036	29,331768	78,302698	-31,656322	64,961176	-44,997844
2	6	11,09074	10,0143	54,97951	15,527036	29,331768	78,302698	-31,656322	64,961176	-44,997844
2	8	11,09074	10,0143	54,97951	15,527036	29,331768	78,302698	-31,656322	64,961176	-44,997844
3	0	8,005392	8,169268	153,3675	11,2075488	22,6772992	171,1432384	-135,5917616	160,5723528	-146,1626472
3	2	8,005392	8,169268	153,3675	11,2075488	22,6772992	171,1432384	-135,5917616	160,5723528	-146,1626472
3	4	8,005392	8,169268	153,3675	11,2075488	22,6772992	171,1432384	-135,5917616	160,5723528	-146,1626472
3	6	8,005392	8,169268	153,3675	11,2075488	22,6772992	171,1432384	-135,5917616	160,5723528	-146,1626472
3	8	8,005392	8,169268	153,3675	11,2075488	22,6772992	171,1432384	-135,5917616	160,5723528	-146,1626472
4	0	-1,060219	-0,7562176	-153,404	-1,4843066	-2,48221096	-155,4324804	151,3755196	-154,3581971	152,4498029
4	1	-1,060219	-0,7562176	-153,404	-1,4843066	-2,48221096	-155,4324804	151,3755196	-154,3581971	152,4498029
4	2	-1,060219	-0,7562176	-153,404	-1,4843066	-2,48221096	-155,4324804	151,3755196	-154,3581971	152,4498029
4	3	-1,060219	-0,7562176	-153,404	-1,4843066	-2,48221096	-155,4324804	151,3755196	-154,3581971	152,4498029
4	4	-1,060219	-0,7562176	-153,404	-1,4843066	-2,48221096	-155,4324804	151,3755196	-154,3581971	152,4498029
5	0	-0,7468036	8,53E-02	-137,5816	-1,04552504	-0,759740608	-138,3924995	136,7707005	-138,2537232	136,9094768
5	2	-0,7468036	8,53E-02	-137,5816	-1,04552504	-0,759740608	-138,3924995	136,7707005	-138,2537232	136,9094768
5	4	-0,7468036	8,53E-02	-137,5816	-1,04552504	-0,759740608	-138,3924995	136,7707005	-138,2537232	136,9094768
5	6	-0,7468036	8,53E-02	-137,5816	-1,04552504	-0,759740608	-138,3924995	136,7707005	-138,2537232	136,9094768
5	8	-0,7468036	8,53E-02	-137,5816	-1,04552504	-0,759740608	-138,3924995	136,7707005	-138,2537232	136,9094768
6	0	-6,317474	-7,058127	113,7848	-8,8444636	-18,873972	-128,4238958	99,1457042	-119,4705266	108,0990734
6	1	-6,317474	-7,058127	-113,7848	-8,8444636	-18,873972	-128,4238958	99,1457042	-119,4705266	108,0990734
6	2	-6,317474	-7,058127	-113,7848	-8,8444636	-18,873972	-128,4238958	99,1457042	-119,4705266	108,0990734
6	3	-6,317474	-7,058127	-113,7848	-8,8444636	-18,873972	-128,4238958	99,1457042	-119,4705266	108,0990734
6	4	-6,317474	-7,058127	-113,7848	-8,8444636	-18,873972	-128,4238958	99,1457042	-119,4705266	108,0990734
7	0	13,71667	13,83747	-290,1776	19,203338	38,599956	-259,880126	320,475074	-277,832597	302,522603
7	2,236068	3,321681	3,475471	-290,1776	4,6503534	9,5467708	-282,7161118	297,6390882	-287,1680871	293,1671129
7	4,472136	-12,37654	-13,02453	-290,1776	-17,327156	-35,691096	-318,053978	262,301222	-301,316486	279,038714
7	6,708204	-28,07476	-29,52453	-290,1776	-39,304664	-80,92896	-353,391842	226,963358	-315,444894	264,910316
7	8,944272	-41,38566	-43,37009	-290,1776	-57,939924	-119,054936	-383,210482	197,144718	-327,424694	252,930506
8	0	4,837087	5,163983	-131,2524	6,7719218	14,0668772	-120,2839126	142,2208874	-126,8990217	135,6057783

8	2,236068	-5,557898	-5,19801	-131,2524	-7,7810572	-14,9862936	-143,1198876	119,3849124	-136,2545082	126,2502918
8	4,472136	-21,25612	-21,69801	-131,2524	-29,758568	-60,22416	-178,457754	84,047046	-150,382908	112,121692
8	6,708204	-36,95434	-38,19801	-131,2524	-51,736076	-105,462024	-213,795618	48,709182	-164,511306	97,993494
8	8,944272	-50,26524	-52,04358	-131,2524	-70,371336	-143,588016	-243,614268	18,890532	-176,491116	86,013684

AKSIAL BALOK PORTAL AS 1 (ANALISIS 3D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1,4PD (KN)	1,2PD+1,6PL (KN)	1,2PD+PL+PE (KN)	1,2PD+PL - PE (KN)	0,9PD+PE (KN)	0,9PD-PE (KN)
141	0	5,594138	1,866817	-88,51641	7,8317932	9,6998728	-79,9366274	97,0961926	-83,4816858	93,5511342
141	0,45	5,594138	1,866817	-88,51641	7,8317932	9,6998728	-79,9366274	97,0961926	-83,4816858	93,5511342
141	0,9	5,594138	1,866817	-88,51641	7,8317932	9,6998728	-79,9366274	97,0961926	-83,4816858	93,5511342
141	1,35	5,594138	1,866817	-88,51641	7,8317932	9,6998728	-79,9366274	97,0961926	-83,4816858	93,5511342
141	1,8	5,594138	1,866817	-88,51641	7,8317932	9,6998728	-79,9366274	97,0961926	-83,4816858	93,5511342
142	0	5,415458	1,709869	-220,6608	7,5816412	9,23434	-212,4523814	228,8692186	-215,7868878	225,5347122
142	0,9	5,415458	1,709869	-220,6608	7,5816412	9,23434	-212,4523814	228,8692186	-215,7868878	225,5347122
142	1,8	5,415458	1,709869	-220,6608	7,5816412	9,23434	-212,4523814	228,8692186	-215,7868878	225,5347122
142	2,7	5,415458	1,709869	-220,6608	7,5816412	9,23434	-212,4523814	228,8692186	-215,7868878	225,5347122
142	3,6	5,415458	1,709869	-220,6608	7,5816412	9,23434	-212,4523814	228,8692186	-215,7868878	225,5347122
143	0	5,481672	1,771442	-223,2893	7,6743408	9,4123136	-214,9398516	231,6387484	-218,3557952	228,2228048
143	0,9	5,481672	1,771442	-223,2893	7,6743408	9,4123136	-214,9398516	231,6387484	-218,3557952	228,2228048
143	1,8	5,481672	1,771442	-223,2893	7,6743408	9,4123136	-214,9398516	231,6387484	-218,3557952	228,2228048
143	2,7	5,481672	1,771442	-223,2893	7,6743408	9,4123136	-214,9398516	231,6387484	-218,3557952	228,2228048
143	3,6	5,481672	1,771442	-223,2893	7,6743408	9,4123136	-214,9398516	231,6387484	-218,3557952	228,2228048
144	0	5,307617	1,774995	-214,8374	7,4306638	9,2091324	-206,6932646	222,9815354	-210,0605447	219,6142553
144	0,75	5,307617	1,774995	-214,8374	7,4306638	9,2091324	-206,6932646	222,9815354	-210,0605447	219,6142553
144	1,5	5,307617	1,774995	-214,8374	7,4306638	9,2091324	-206,6932646	222,9815354	-210,0605447	219,6142553
144	2,25	5,307617	1,774995	-214,8374	7,4306638	9,2091324	-206,6932646	222,9815354	-210,0605447	219,6142553
144	3	5,307617	1,774995	-214,8374	7,4306638	9,2091324	-206,6932646	222,9815354	-210,0605447	219,6142553
145	0	5,43155	1,888543	-213,4652	7,60417	9,5395288	-205,058797	221,871603	-208,576805	218,353595
145	0,75	5,43155	1,888543	-213,4652	7,60417	9,5395288	-205,058797	221,871603	-208,576805	218,353595
145	1,5	5,43155	1,888543	-213,4652	7,60417	9,5395288	-205,058797	221,871603	-208,576805	218,353595
145	2,25	5,43155	1,888543	-213,4652	7,60417	9,5395288	-205,058797	221,871603	-208,576805	218,353595
145	3	5,43155	1,888543	-213,4652	7,60417	9,5395288	-205,058797	221,871603	-208,576805	218,353595
146	0	5,243935	1,751802	-212,0458	7,341509	9,0956052	-204,001276	220,090324	-207,3262585	216,7653415
146	0,75	5,243935	1,751802	-212,0458	7,341509	9,0956052	-204,001276	220,090324	-207,3262585	216,7653415
146	1,5	5,243935	1,751802	-212,0458	7,341509	9,0956052	-204,001276	220,090324	-207,3262585	216,7653415
146	2,25	5,243935	1,751802	-212,0458	7,341509	9,0956052	-204,001276	220,090324	-207,3262585	216,7653415
146	3	5,243935	1,751802	-212,0458	7,341509	9,0956052	-204,001276	220,090324	-207,3262585	216,7653415
147	0	4,729134	1,582975	-193,0462	6,6207876	8,2077208	-185,7882642	200,3041358	-188,7899794	197,3024206
147	0,75	4,729134	1,582975	-193,0462	6,6207876	8,2077208	-185,7882642	200,3041358	-188,7899794	197,3024206
147	1,5	4,729134	1,582975	-193,0462	6,6207876	8,2077208	-185,7882642	200,3041358	-188,7899794	197,3024206
147	2,25	4,729134	1,582975	-193,0462	6,6207876	8,2077208	-185,7882642	200,3041358	-188,7899794	197,3024206
147	3	4,729134	1,582975	-193,0462	6,6207876	8,2077208	-185,7882642	200,3041358	-188,7899794	197,3024206

148	0	4,758544	1,626723	-191,6435	6,6619616	8,3130096	-184,3065242	198,9804758	-187,3608104	195,9261896
148	0,75	4,758544	1,626723	-191,6435	6,6619616	8,3130096	-184,3065242	198,9804758	-187,3608104	195,9261896
148	1,5	4,758544	1,626723	-191,6435	6,6619616	8,3130096	-184,3065242	198,9804758	-187,3608104	195,9261896
148	2,25	4,758544	1,626723	-191,6435	6,6619616	8,3130096	-184,3065242	198,9804758	-187,3608104	195,9261896
148	3	4,758544	1,626723	-191,6435	6,6619616	8,3130096	-184,3065242	198,9804758	-187,3608104	195,9261896
149	0	4,834728	1,7084	-190,1425	6,7686192	8,5351136	-182,6324264	197,6525736	-185,7912448	194,4937552
149	0,75	4,834728	1,7084	-190,1425	6,7686192	8,5351136	-182,6324264	197,6525736	-185,7912448	194,4937552
149	1,5	4,834728	1,7084	-190,1425	6,7686192	8,5351136	-182,6324264	197,6525736	-185,7912448	194,4937552
149	2,25	4,834728	1,7084	-190,1425	6,7686192	8,5351136	-182,6324264	197,6525736	-185,7912448	194,4937552
149	3	4,834728	1,7084	-190,1425	6,7686192	8,5351136	-182,6324264	197,6525736	-185,7912448	194,4937552
150	0	4,746798	1,716169	-172,7655	6,6455172	8,442028	-165,3531734	180,1778266	-168,4933818	177,0376182
150	0,75	4,746798	1,716169	-172,7655	6,6455172	8,442028	-165,3531734	180,1778266	-168,4933818	177,0376182
150	1,5	4,746798	1,716169	-172,7655	6,6455172	8,442028	-165,3531734	180,1778266	-168,4933818	177,0376182
150	2,25	4,746798	1,716169	-172,7655	6,6455172	8,442028	-165,3531734	180,1778266	-168,4933818	177,0376182
150	3	4,746798	1,716169	-172,7655	6,6455172	8,442028	-165,3531734	180,1778266	-168,4933818	177,0376182
151	0	4,709122	1,682564	-171,3897	6,5927708	8,3430488	-164,0561896	178,7232104	-167,1514902	175,6279098
151	0,75	4,709122	1,682564	-171,3897	6,5927708	8,3430488	-164,0561896	178,7232104	-167,1514902	175,6279098
151	1,5	4,709122	1,682564	-171,3897	6,5927708	8,3430488	-164,0561896	178,7232104	-167,1514902	175,6279098
151	2,25	4,709122	1,682564	-171,3897	6,5927708	8,3430488	-164,0561896	178,7232104	-167,1514902	175,6279098
151	3	4,709122	1,682564	-171,3897	6,5927708	8,3430488	-164,0561896	178,7232104	-167,1514902	175,6279098
152	0	4,677084	1,652475	-170,2218	6,5479176	8,2564608	-162,9568242	177,4867758	-166,0124244	174,4311756
152	0,75	4,677084	1,652475	-170,2218	6,5479176	8,2564608	-162,9568242	177,4867758	-166,0124244	174,4311756
152	1,5	4,677084	1,652475	-170,2218	6,5479176	8,2564608	-162,9568242	177,4867758	-166,0124244	174,4311756
152	2,25	4,677084	1,652475	-170,2218	6,5479176	8,2564608	-162,9568242	177,4867758	-166,0124244	174,4311756
152	3	4,677084	1,652475	-170,2218	6,5479176	8,2564608	-162,9568242	177,4867758	-166,0124244	174,4311756
153	0	4,257508	1,376276	-154,6354	5,9605112	7,3110512	-148,1501144	161,1206856	-150,8036428	158,4671572
153	0,75	4,257508	1,376276	-154,6354	5,9605112	7,3110512	-148,1501144	161,1206856	-150,8036428	158,4671572
153	1,5	4,257508	1,376276	-154,6354	5,9605112	7,3110512	-148,1501144	161,1206856	-150,8036428	158,4671572
153	2,25	4,257508	1,376276	-154,6354	5,9605112	7,3110512	-148,1501144	161,1206856	-150,8036428	158,4671572
153	3	4,257508	1,376276	-154,6354	5,9605112	7,3110512	-148,1501144	161,1206856	-150,8036428	158,4671572
154	0	4,252877	1,367971	-153,6503	5,9540278	7,292206	-147,1788766	160,1217234	-149,8227107	157,4778893
154	0,75	4,252877	1,367971	-153,6503	5,9540278	7,292206	-147,1788766	160,1217234	-149,8227107	157,4778893
154	1,5	4,252877	1,367971	-153,6503	5,9540278	7,292206	-147,1788766	160,1217234	-149,8227107	157,4778893
154	2,25	4,252877	1,367971	-153,6503	5,9540278	7,292206	-147,1788766	160,1217234	-149,8227107	157,4778893
154	3	4,252877	1,367971	-153,6503	5,9540278	7,292206	-147,1788766	160,1217234	-149,8227107	157,4778893
155	0	4,2677	1,392667	-152,4992	5,97478	7,3495072	-145,985293	159,013107	-148,65827	156,34013
155	0,75	4,2677	1,392667	-152,4992	5,97478	7,3495072	-145,985293	159,013107	-148,65827	156,34013
155	1,5	4,2677	1,392667	-152,4992	5,97478	7,3495072	-145,985293	159,013107	-148,65827	156,34013
155	2,25	4,2677	1,392667	-152,4992	5,97478	7,3495072	-145,985293	159,013107	-148,65827	156,34013

155	3	4,2677	1,392667	-152,4992	5,97478	7,3495072	-145,985293	159,013107	-148,65827	156,34013
156	0	4,191011	1,474421	-137,0757	5,8674154	7,3882868	-130,5720658	143,5793342	-133,3037901	140,8476099
156	0,75	4,191011	1,474421	-137,0757	5,8674154	7,3882868	-130,5720658	143,5793342	-133,3037901	140,8476099
156	1,5	4,191011	1,474421	-137,0757	5,8674154	7,3882868	-130,5720658	143,5793342	-133,3037901	140,8476099
156	2,25	4,191011	1,474421	-137,0757	5,8674154	7,3882868	-130,5720658	143,5793342	-133,3037901	140,8476099
156	3	4,191011	1,474421	-137,0757	5,8674154	7,3882868	-130,5720658	143,5793342	-133,3037901	140,8476099
157	0	4,225707	1,510285	-136,0014	5,9159898	7,4873044	-129,4202666	142,5825334	-132,1982637	139,8045363
157	0,75	4,225707	1,510285	-136,0014	5,9159898	7,4873044	-129,4202666	142,5825334	-132,1982637	139,8045363
157	1,5	4,225707	1,510285	-136,0014	5,9159898	7,4873044	-129,4202666	142,5825334	-132,1982637	139,8045363
157	2,25	4,225707	1,510285	-136,0014	5,9159898	7,4873044	-129,4202666	142,5825334	-132,1982637	139,8045363
157	3	4,225707	1,510285	-136,0014	5,9159898	7,4873044	-129,4202666	142,5825334	-132,1982637	139,8045363
158	0	4,278993	1,560584	-134,8731	5,9905902	7,631726	-128,1777244	141,5684756	-131,0220063	138,7241937
158	0,75	4,278993	1,560584	-134,8731	5,9905902	7,631726	-128,1777244	141,5684756	-131,0220063	138,7241937
158	1,5	4,278993	1,560584	-134,8731	5,9905902	7,631726	-128,1777244	141,5684756	-131,0220063	138,7241937
158	2,25	4,278993	1,560584	-134,8731	5,9905902	7,631726	-128,1777244	141,5684756	-131,0220063	138,7241937
158	3	4,278993	1,560584	-134,8731	5,9905902	7,631726	-128,1777244	141,5684756	-131,0220063	138,7241937
159	0	5,04863	1,795888	-119,604	7,068082	8,9317768	-111,749756	127,458244	-115,060233	124,147767
159	0,83	5,04863	1,795888	-119,604	7,068082	8,9317768	-111,749756	127,458244	-115,060233	124,147767
159	1,67	5,04863	1,795888	-119,604	7,068082	8,9317768	-111,749756	127,458244	-115,060233	124,147767
159	2,50	5,04863	1,795888	-119,604	7,068082	8,9317768	-111,749756	127,458244	-115,060233	124,147767
159	3,33	5,04863	1,795888	-119,604	7,068082	8,9317768	-111,749756	127,458244	-115,060233	124,147767
160	0	5,047351	1,796221	-118,5147	7,0662914	8,9307748	-110,6616578	126,3677422	-113,9720841	123,0573159
160	0,83	5,047351	1,796221	-118,5147	7,0662914	8,9307748	-110,6616578	126,3677422	-113,9720841	123,0573159
160	1,67	5,047351	1,796221	-118,5147	7,0662914	8,9307748	-110,6616578	126,3677422	-113,9720841	123,0573159
160	2,50	5,047351	1,796221	-118,5147	7,0662914	8,9307748	-110,6616578	126,3677422	-113,9720841	123,0573159
160	3,33	5,047351	1,796221	-118,5147	7,0662914	8,9307748	-110,6616578	126,3677422	-113,9720841	123,0573159
161	0	5,048791	1,798154	-117,4462	7,0683074	8,9355956	-109,5894968	125,3029032	-112,9022881	121,9901119
161	0,83	5,048791	1,798154	-117,4462	7,0683074	8,9355956	-109,5894968	125,3029032	-112,9022881	121,9901119
161	1,67	5,048791	1,798154	-117,4462	7,0683074	8,9355956	-109,5894968	125,3029032	-112,9022881	121,9901119
161	2,50	5,048791	1,798154	-117,4462	7,0683074	8,9355956	-109,5894968	125,3029032	-112,9022881	121,9901119
161	3,33	5,048791	1,798154	-117,4462	7,0683074	8,9355956	-109,5894968	125,3029032	-112,9022881	121,9901119
162	0	4,268207	1,552385	-102,5885	5,9754898	7,6056644	-95,9142666	109,2627334	-98,7471137	106,4298863
162	0,75	4,268207	1,552385	-102,5885	5,9754898	7,6056644	-95,9142666	109,2627334	-98,7471137	106,4298863
162	1,5	4,268207	1,552385	-102,5885	5,9754898	7,6056644	-95,9142666	109,2627334	-98,7471137	106,4298863
162	2,25	4,268207	1,552385	-102,5885	5,9754898	7,6056644	-95,9142666	109,2627334	-98,7471137	106,4298863
162	3	4,268207	1,552385	-102,5885	5,9754898	7,6056644	-95,9142666	109,2627334	-98,7471137	106,4298863
163	0	4,214784	1,504099	-101,401	5,9006976	7,4642992	-94,8391602	107,9628398	-97,6076944	105,1943056
163	0,75	4,214784	1,504099	-101,401	5,9006976	7,4642992	-94,8391602	107,9628398	-97,6076944	105,1943056
163	1,5	4,214784	1,504099	-101,401	5,9006976	7,4642992	-94,8391602	107,9628398	-97,6076944	105,1943056

163	2,25	4,214784	1,504099	-101,401	5,9006976	7,4642992	-94,8391602	107,9626398	-97,6076944	105,1943056
163	3	4,214784	1,504099	-101,401	5,9006976	7,4642992	-94,8391602	107,9626398	-97,6076944	105,1943056
164	0	4,180062	1,47035	-100,3557	5,8520868	7,3686344	-93,8692756	106,8421244	-96,5936442	104,1177558
164	0,75	4,180062	1,47035	-100,3557	5,8520868	7,3686344	-93,8692756	106,8421244	-96,5936442	104,1177558
164	1,5	4,180062	1,47035	-100,3557	5,8520868	7,3686344	-93,8692756	106,8421244	-96,5936442	104,1177558
164	2,25	4,180062	1,47035	-100,3557	5,8520868	7,3686344	-93,8692756	106,8421244	-96,5936442	104,1177558
164	3	4,180062	1,47035	-100,3557	5,8520868	7,3686344	-93,8692756	106,8421244	-96,5936442	104,1177558
165	0	4,245726	1,37798	-86,61906	5,9440164	7,2996392	-80,1462088	93,0919112	-82,7979066	90,4402134
165	0,75	4,245726	1,37798	-86,61906	5,9440164	7,2996392	-80,1462088	93,0919112	-82,7979066	90,4402134
165	1,5	4,245726	1,37798	-86,61906	5,9440164	7,2996392	-80,1462088	93,0919112	-82,7979066	90,4402134
165	2,25	4,245726	1,37798	-86,61906	5,9440164	7,2996392	-80,1462088	93,0919112	-82,7979066	90,4402134
165	3	4,245726	1,37798	-86,61906	5,9440164	7,2996392	-80,1462088	93,0919112	-82,7979066	90,4402134
166	0	4,230659	1,355228	-85,57182	5,9229226	7,2451556	-79,1398012	92,0038388	-81,7642269	89,3794131
166	0,75	4,230659	1,355228	-85,57182	5,9229226	7,2451556	-79,1398012	92,0038388	-81,7642269	89,3794131
166	1,5	4,230659	1,355228	-85,57182	5,9229226	7,2451556	-79,1398012	92,0038388	-81,7642269	89,3794131
166	2,25	4,230659	1,355228	-85,57182	5,9229226	7,2451556	-79,1398012	92,0038388	-81,7642269	89,3794131
166	3	4,230659	1,355228	-85,57182	5,9229226	7,2451556	-79,1398012	92,0038388	-81,7642269	89,3794131
167	0	4,235172	1,365573	-84,36134	5,9292408	7,2671232	-77,9135606	90,8091194	-80,5496852	88,1729948
167	0,75	4,235172	1,365573	-84,36134	5,9292408	7,2671232	-77,9135606	90,8091194	-80,5496852	88,1729948
167	1,5	4,235172	1,365573	-84,36134	5,9292408	7,2671232	-77,9135606	90,8091194	-80,5496852	88,1729948
167	2,25	4,235172	1,365573	-84,36134	5,9292408	7,2671232	-77,9135606	90,8091194	-80,5496852	88,1729948
167	3	4,235172	1,365573	-84,36134	5,9292408	7,2671232	-77,9135606	90,8091194	-80,5496852	88,1729948
168	0	4,644428	1,632396	-70,57466	6,5021992	8,1851472	-63,3689504	77,7803696	-66,3946748	74,7546452
168	0,75	4,644428	1,632396	-70,57466	6,5021992	8,1851472	-63,3689504	77,7803696	-66,3946748	74,7546452
168	1,5	4,644428	1,632396	-70,57466	6,5021992	8,1851472	-63,3689504	77,7803696	-66,3946748	74,7546452
168	2,25	4,644428	1,632396	-70,57466	6,5021992	8,1851472	-63,3689504	77,7803696	-66,3946748	74,7546452
168	3	4,644428	1,632396	-70,57466	6,5021992	8,1851472	-63,3689504	77,7803696	-66,3946748	74,7546452
169	0	4,67734	1,665461	-69,57946	6,548276	8,2775456	-62,301191	76,657729	-65,369854	73,789066
169	0,75	4,67734	1,665461	-69,57946	6,548276	8,2775456	-62,301191	76,657729	-65,369854	73,789066
169	1,5	4,67734	1,665461	-69,57946	6,548276	8,2775456	-62,301191	76,657729	-65,369854	73,789066
169	2,25	4,67734	1,665461	-69,57946	6,548276	8,2775456	-62,301191	76,657729	-65,369854	73,789066
169	3	4,67734	1,665461	-69,57946	6,548276	8,2775456	-62,301191	76,657729	-65,369854	73,789066
170	0	4,715727	1,701968	-68,51128	6,6020178	8,3820212	-61,1504396	75,8721204	-64,2671257	72,7554343
170	0,75	4,715727	1,701968	-68,51128	6,6020178	8,3820212	-61,1504396	75,8721204	-64,2671257	72,7554343
170	1,5	4,715727	1,701968	-68,51128	6,6020178	8,3820212	-61,1504396	75,8721204	-64,2671257	72,7554343
170	2,25	4,715727	1,701968	-68,51128	6,6020178	8,3820212	-61,1504396	75,8721204	-64,2671257	72,7554343
170	3	4,715727	1,701968	-68,51128	6,6020178	8,3820212	-61,1504396	75,8721204	-64,2671257	72,7554343
171	0	4,794507	1,683222	-54,55397	6,7123098	8,4465636	-47,1173396	61,9906004	-50,2389137	58,8690263
171	0,75	4,794507	1,683222	-54,55397	6,7123098	8,4465636	-47,1173396	61,9906004	-50,2389137	58,8690263

171	1,5	4,794507	1,683222	-54,55397	6,7123098	8,4465636	-47,1173396	61,9906004	-50,2389137	58,8990261
171	2,25	4,794507	1,683222	-54,55397	6,7123098	8,4465636	-47,1173396	61,9906004	-50,2389137	58,8990261
171	3	4,794507	1,683222	-54,55397	6,7123098	8,4465636	-47,1173396	61,9906004	-50,2389137	58,8990261
172	0	4,717959	1,603912	-53,13092	6,6051426	8,22781	-45,8654572	60,3963828	-48,8847569	57,3770631
172	0,75	4,717959	1,603912	-53,13092	6,6051426	8,22781	-45,8654572	60,3963828	-48,8847569	57,3770631
172	1,5	4,717959	1,603912	-53,13092	6,6051426	8,22781	-45,8654572	60,3963828	-48,8847569	57,3770631
172	2,25	4,717959	1,603912	-53,13092	6,6051426	8,22781	-45,8654572	60,3963828	-48,8847569	57,3770631
172	3	4,717959	1,603912	-53,13092	6,6051426	8,22781	-45,8654572	60,3963828	-48,8847569	57,3770631
173	0	4,68795	1,562242	-51,83845	6,56313	8,1251272	-44,650668	59,026232	-47,619295	56,1578016
173	0,75	4,68795	1,562242	-51,83845	6,56313	8,1251272	-44,650668	59,026232	-47,619295	56,1578016
173	1,5	4,68795	1,562242	-51,83845	6,56313	8,1251272	-44,650668	59,026232	-47,619295	56,1578016
173	2,25	4,68795	1,562242	-51,83845	6,56313	8,1251272	-44,650668	59,026232	-47,619295	56,1578016
173	3	4,68795	1,562242	-51,83845	6,56313	8,1251272	-44,650668	59,026232	-47,619295	56,1578016
174	0	5,19428	1,737953	-38,44712	7,271992	9,0138608	-30,476031	46,418209	-33,772268	43,1219701
174	0,75	5,19428	1,737953	-38,44712	7,271992	9,0138608	-30,476031	46,418209	-33,772268	43,1219701
174	1,5	5,19428	1,737953	-38,44712	7,271992	9,0138608	-30,476031	46,418209	-33,772268	43,1219701
174	2,25	5,19428	1,737953	-38,44712	7,271992	9,0138608	-30,476031	46,418209	-33,772268	43,1219701
174	3	5,19428	1,737953	-38,44712	7,271992	9,0138608	-30,476031	46,418209	-33,772268	43,1219701
175	0	5,383562	1,874896	-37,50866	7,5369868	9,460108	-29,1734896	45,8438304	-32,6634542	42,3838888
175	0,75	5,383562	1,874896	-37,50866	7,5369868	9,460108	-29,1734896	45,8438304	-32,6634542	42,3838888
175	1,5	5,383562	1,874896	-37,50866	7,5369868	9,460108	-29,1734896	45,8438304	-32,6634542	42,3838888
175	2,25	5,383562	1,874896	-37,50866	7,5369868	9,460108	-29,1734896	45,8438304	-32,6634542	42,3838888
175	3	5,383562	1,874896	-37,50866	7,5369868	9,460108	-29,1734896	45,8438304	-32,6634542	42,3838888
176	0	5,261359	1,762799	-36,6312	7,3659026	9,1341092	-28,5547702	44,7076298	-31,8959769	41,3664231
176	0,75	5,261359	1,762799	-36,6312	7,3659026	9,1341092	-28,5547702	44,7076298	-31,8959769	41,3664231
176	1,5	5,261359	1,762799	-36,6312	7,3659026	9,1341092	-28,5547702	44,7076298	-31,8959769	41,3664231
176	2,25	5,261359	1,762799	-36,6312	7,3659026	9,1341092	-28,5547702	44,7076298	-31,8959769	41,3664231
176	3	5,261359	1,762799	-36,6312	7,3659026	9,1341092	-28,5547702	44,7076298	-31,8959769	41,3664231
177	0	5,381854	1,592767	-26,39888	7,5345956	9,006652	-18,3478882	34,4498718	-21,5552114	31,2425436
177	0,9	5,381854	1,592767	-26,39888	7,5345956	9,006652	-18,3478882	34,4498718	-21,5552114	31,2425436
177	1,8	5,381854	1,592767	-26,39888	7,5345956	9,006652	-18,3478882	34,4498718	-21,5552114	31,2425436
177	2,7	5,381854	1,592767	-26,39888	7,5345956	9,006652	-18,3478882	34,4498718	-21,5552114	31,2425436
177	3,6	5,381854	1,592767	-26,39888	7,5345956	9,006652	-18,3478882	34,4498718	-21,5552114	31,2425436
178	0	5,314499	1,533095	-28,30313	7,4402986	8,8303508	-20,3926362	36,2136238	-23,5200809	33,0661791
178	0,9	5,314499	1,533095	-28,30313	7,4402986	8,8303508	-20,3926362	36,2136238	-23,5200809	33,0661791
178	1,8	5,314499	1,533095	-28,30313	7,4402986	8,8303508	-20,3926362	36,2136238	-23,5200809	33,0661791
178	2,7	5,314499	1,533095	-28,30313	7,4402986	8,8303508	-20,3926362	36,2136238	-23,5200809	33,0661791
178	3,6	5,314499	1,533095	-28,30313	7,4402986	8,8303508	-20,3926362	36,2136238	-23,5200809	33,0661791
179	0	5,513339	1,691465	-29,8428	7,7186746	9,3223508	-21,5353282	38,1502718	-24,8807949	34,8048351

179	0.45	5.513339	1.691465	-29.8428	7.7186746	9.3223508	-21.5353282	38.1502718	-24.8807949	34.8048051
179	0,9	5.513339	1.691465	-29.8428	7.7186746	9.3223508	-21.5353282	38.1502718	-24.8807949	34.8048051
179	1,35	5.513339	1.691465	-29.8428	7.7186746	9.3223508	-21.5353282	38.1502718	-24.8807949	34.8048051
179	1,8	5.513339	1.691465	-29.8428	7.7186746	9.3223508	-21.5353282	38.1502718	-24.8807949	34.8048051
180	0	-1.589443	0,465533	-190.6964	-2,2252202	-1,1624788	-192,1381986	189,2546014	-192.1288987	189,2659013
180	0,45	-1.589443	0,465533	-190.6964	-2,2252202	-1,1624788	-192,1381986	189,2546014	-192.1288987	189,2659013
180	0,9	-1.589443	0,465533	-190.6964	-2,2252202	-1,1624788	-192,1381986	189,2546014	-192.1288987	189,2659013
180	1,35	-1.589443	0,465533	-190.6964	-2,2252202	-1,1624788	-192,1381986	189,2546014	-192.1288987	189,2659013
180	1,8	-1.589443	0,465533	-190.6964	-2,2252202	-1,1624788	-192,1381986	189,2546014	-192.1288987	189,2659013
181	0	-1.60453	0,4545465	-192.6876	-2,246342	-1,1981616	-194,1684895	191,2267105	-194.141677	191,253523
181	0,9	-1.60453	0,4545465	-192.6876	-2,246342	-1,1981616	-194,1684895	191,2267105	-194.141677	191,253523
181	1,8	-1.60453	0,4545465	-192.6876	-2,246342	-1,1981616	-194,1684895	191,2267105	-194.141677	191,253523
181	2,7	-1.60453	0,4545465	-192.6876	-2,246342	-1,1981616	-194,1684895	191,2267105	-194.141677	191,253523
181	3,6	-1.60453	0,4545465	-192.6876	-2,246342	-1,1981616	-194,1684895	191,2267105	-194.141677	191,253523
182	0	-1.525003	0,515175	-197.3307	-2,1350042	-1,0057188	-198,6455256	196,0158744	-198.7032027	195,9581973
182	0,9	-1.525003	0,515175	-197.3307	-2,1350042	-1,0057188	-198,6455256	196,0158744	-198.7032027	195,9581973
182	1,8	-1.525003	0,515175	-197.3307	-2,1350042	-1,0057188	-198,6455256	196,0158744	-198.7032027	195,9581973
182	2,7	-1.525003	0,515175	-197.3307	-2,1350042	-1,0057188	-198,6455256	196,0158744	-198.7032027	195,9581973
182	3,6	-1.525003	0,515175	-197.3307	-2,1350042	-1,0057188	-198,6455256	196,0158744	-198.7032027	195,9581973
183	0	-0.6779357	0,6960546	-188.0332	-0,94910998	0,30016452	-188,1506682	187,9157318	-188.8433421	187,4230579
183	0,75	-0.6779357	0,6960546	-188.0332	-0,94910998	0,30016452	-188,1506682	187,9157318	-188.8433421	187,4230579
183	1,5	-0.6779357	0,6960546	-188.0332	-0,94910998	0,30016452	-188,1506682	187,9157318	-188.8433421	187,4230579
183	2,25	-0.6779357	0,6960546	-188.0332	-0,94910998	0,30016452	-188,1506682	187,9157318	-188.8433421	187,4230579
183	3	-0.6779357	0,6960546	-188.0332	-0,94910998	0,30016452	-188,1506682	187,9157318	-188.8433421	187,4230579
184	0	-0.4554134	0,8898041	-186.3626	-0,63757876	0,87719048	-186,019292	186,705908	-186.7724721	185,9527279
184	0,75	-0.4554134	0,8898041	-186.3626	-0,63757876	0,87719048	-186,019292	186,705908	-186.7724721	185,9527279
184	1,5	-0.4554134	0,8898041	-186.3626	-0,63757876	0,87719048	-186,019292	186,705908	-186.7724721	185,9527279
184	2,25	-0.4554134	0,8898041	-186.3626	-0,63757876	0,87719048	-186,019292	186,705908	-186.7724721	185,9527279
184	3	-0.4554134	0,8898041	-186.3626	-0,63757876	0,87719048	-186,019292	186,705908	-186.7724721	185,9527279
185	0	-0.7052083	0,6849346	-185.1398	-0,98729162	0,2496454	-185,3011154	184,9784846	-185.7744875	184,5051125
185	0,75	-0.7052083	0,6849346	-185.1398	-0,98729162	0,2496454	-185,3011154	184,9784846	-185.7744875	184,5051125
185	1,5	-0.7052083	0,6849346	-185.1398	-0,98729162	0,2496454	-185,3011154	184,9784846	-185.7744875	184,5051125
185	2,25	-0.7052083	0,6849346	-185.1398	-0,98729162	0,2496454	-185,3011154	184,9784846	-185.7744875	184,5051125
185	3	-0.7052083	0,6849346	-185.1398	-0,98729162	0,2496454	-185,3011154	184,9784846	-185.7744875	184,5051125
186	0	-1,39807	0,1846889	-171.1887	-1,957298	-1,38218176	-172,6816951	169,6957049	-172.446963	169,930437
186	0,75	-1,39807	0,1846889	-171.1887	-1,957298	-1,38218176	-172,6816951	169,6957049	-172.446963	169,930437
186	1,5	-1,39807	0,1846889	-171.1887	-1,957298	-1,38218176	-172,6816951	169,6957049	-172.446963	169,930437
186	2,25	-1,39807	0,1846889	-171.1887	-1,957298	-1,38218176	-172,6816951	169,6957049	-172.446963	169,930437
186	3	-1,39807	0,1846889	-171.1887	-1,957298	-1,38218176	-172,6816951	169,6957049	-172.446963	169,930437

187	0	-1,413303	0,1807226	-169,802	-1,9786242	-1,40680744	-171,317241	168,286759	-171,0739727	168,5300273
187	0,75	-1,413303	0,1807226	-169,802	-1,9786242	-1,40680744	-171,317241	168,286759	-171,0739727	168,5300273
187	1,5	-1,413303	0,1807226	-169,802	-1,9786242	-1,40680744	-171,317241	168,286759	-171,0739727	168,5300273
187	2,25	-1,413303	0,1807226	-169,802	-1,9786242	-1,40680744	-171,317241	168,286759	-171,0739727	168,5300273
187	3	-1,413303	0,1807226	-169,802	-1,9786242	-1,40680744	-171,317241	168,286759	-171,0739727	168,5300273
188	0	-1,371823	0,2238274	-168,2088	-1,9205522	-1,28806376	-169,6311602	166,7864398	-169,4434407	166,9741593
188	0,75	-1,371823	0,2238274	-168,2088	-1,9205522	-1,28806376	-169,6311602	166,7864398	-169,4434407	166,9741593
188	1,5	-1,371823	0,2238274	-168,2088	-1,9205522	-1,28806376	-169,6311602	166,7864398	-169,4434407	166,9741593
188	2,25	-1,371823	0,2238274	-168,2088	-1,9205522	-1,28806376	-169,6311602	166,7864398	-169,4434407	166,9741593
188	3	-1,371823	0,2238274	-168,2088	-1,9205522	-1,28806376	-169,6311602	166,7864398	-169,4434407	166,9741593
189	0	-1,295502	0,210474	-150,9348	-1,8137028	-1,217844	-152,2789284	149,5906716	-152,1007518	149,7688482
189	0,75	-1,295502	0,210474	-150,9348	-1,8137028	-1,217844	-152,2789284	149,5906716	-152,1007518	149,7688482
189	1,5	-1,295502	0,210474	-150,9348	-1,8137028	-1,217844	-152,2789284	149,5906716	-152,1007518	149,7688482
189	2,25	-1,295502	0,210474	-150,9348	-1,8137028	-1,217844	-152,2789284	149,5906716	-152,1007518	149,7688482
189	3	-1,295502	0,210474	-150,9348	-1,8137028	-1,217844	-152,2789284	149,5906716	-152,1007518	149,7688482
190	0	-1,317263	0,1845334	-149,1794	-1,8441682	-1,28546216	-150,5755822	147,7832178	-150,3649367	147,9938633
190	0,75	-1,317263	0,1845334	-149,1794	-1,8441682	-1,28546216	-150,5755822	147,7832178	-150,3649367	147,9938633
190	1,5	-1,317263	0,1845334	-149,1794	-1,8441682	-1,28546216	-150,5755822	147,7832178	-150,3649367	147,9938633
190	2,25	-1,317263	0,1845334	-149,1794	-1,8441682	-1,28546216	-150,5755822	147,7832178	-150,3649367	147,9938633
190	3	-1,317263	0,1845334	-149,1794	-1,8441682	-1,28546216	-150,5755822	147,7832178	-150,3649367	147,9938633
191	0	-1,303608	0,1872253	-147,6008	-1,8250512	-1,26476912	-148,9779043	146,2236957	-148,7740472	146,4275528
191	0,75	-1,303608	0,1872253	-147,6008	-1,8250512	-1,26476912	-148,9779043	146,2236957	-148,7740472	146,4275528
191	1,5	-1,303608	0,1872253	-147,6008	-1,8250512	-1,26476912	-148,9779043	146,2236957	-148,7740472	146,4275528
191	2,25	-1,303608	0,1872253	-147,6008	-1,8250512	-1,26476912	-148,9779043	146,2236957	-148,7740472	146,4275528
191	3	-1,303608	0,1872253	-147,6008	-1,8250512	-1,26476912	-148,9779043	146,2236957	-148,7740472	146,4275528
192	0	-0,9672206	0,4459983	-132,6333	-1,35410884	-0,44706744	-133,3479664	131,9186336	-133,5037985	131,7628015
192	0,75	-0,9672206	0,4459983	-132,6333	-1,35410884	-0,44706744	-133,3479664	131,9186336	-133,5037985	131,7628015
192	1,5	-0,9672206	0,4459983	-132,6333	-1,35410884	-0,44706744	-133,3479664	131,9186336	-133,5037985	131,7628015
192	2,25	-0,9672206	0,4459983	-132,6333	-1,35410884	-0,44706744	-133,3479664	131,9186336	-133,5037985	131,7628015
192	3	-0,9672206	0,4459983	-132,6333	-1,35410884	-0,44706744	-133,3479664	131,9186336	-133,5037985	131,7628015
193	0	-0,7506963	0,6250392	-131,3099	-1,05097482	0,09922716	-131,5856964	131,0341036	-131,9855267	130,6342733
193	0,75	-0,7506963	0,6250392	-131,3099	-1,05097482	0,09922716	-131,5856964	131,0341036	-131,9855267	130,6342733
193	1,5	-0,7506963	0,6250392	-131,3099	-1,05097482	0,09922716	-131,5856964	131,0341036	-131,9855267	130,6342733
193	2,25	-0,7506963	0,6250392	-131,3099	-1,05097482	0,09922716	-131,5856964	131,0341036	-131,9855267	130,6342733
193	3	-0,7506963	0,6250392	-131,3099	-1,05097482	0,09922716	-131,5856964	131,0341036	-131,9855267	130,6342733
194	0	-0,9636817	0,4481301	-130,2413	-1,34915438	-0,43940988	-130,9495879	129,5330121	-131,1086135	129,3739865
194	0,75	-0,9636817	0,4481301	-130,2413	-1,34915438	-0,43940988	-130,9495879	129,5330121	-131,1086135	129,3739865
194	1,5	-0,9636817	0,4481301	-130,2413	-1,34915438	-0,43940988	-130,9495879	129,5330121	-131,1086135	129,3739865
194	2,25	-0,9636817	0,4481301	-130,2413	-1,34915438	-0,43940988	-130,9495879	129,5330121	-131,1086135	129,3739865

194	3	-0,9636817	0,4481301	-130,2413	-1,34915438	-0,43940988	-130,9495879	129,5330121	-131,1086135	129,3739865
195	0	-1,21179	0,1476804	-115,3995	-1,696506	-1,21785936	-116,7059676	114,0930324	-116,490111	114,308889
195	0,75	-1,21179	0,1476804	-115,3995	-1,696506	-1,21785936	-116,7059676	114,0930324	-116,490111	114,308889
195	1,5	-1,21179	0,1476804	-115,3995	-1,696506	-1,21785936	-116,7059676	114,0930324	-116,490111	114,308889
195	2,25	-1,21179	0,1476804	-115,3995	-1,696506	-1,21785936	-116,7059676	114,0930324	-116,490111	114,308889
195	3	-1,21179	0,1476804	-115,3995	-1,696506	-1,21785936	-116,7059676	114,0930324	-116,490111	114,308889
196	0	-1,239118	0,1236709	-114,1065	-1,7347652	-1,28906816	-115,4697707	112,7432293	-115,2217062	112,9912938
196	0,75	-1,239118	0,1236709	-114,1065	-1,7347652	-1,28906816	-115,4697707	112,7432293	-115,2217062	112,9912938
196	1,5	-1,239118	0,1236709	-114,1065	-1,7347652	-1,28906816	-115,4697707	112,7432293	-115,2217062	112,9912938
196	2,25	-1,239118	0,1236709	-114,1065	-1,7347652	-1,28906816	-115,4697707	112,7432293	-115,2217062	112,9912938
196	3	-1,239118	0,1236709	-114,1065	-1,7347652	-1,28906816	-115,4697707	112,7432293	-115,2217062	112,9912938
197	0	-1,242896	0,1195845	-112,8001	-1,7400544	-1,30014	-114,1719907	111,4282093	-113,9187064	111,6814936
197	0,75	-1,242896	0,1195845	-112,8001	-1,7400544	-1,30014	-114,1719907	111,4282093	-113,9187064	111,6814936
197	1,5	-1,242896	0,1195845	-112,8001	-1,7400544	-1,30014	-114,1719907	111,4282093	-113,9187064	111,6814936
197	2,25	-1,242896	0,1195845	-112,8001	-1,7400544	-1,30014	-114,1719907	111,4282093	-113,9187064	111,6814936
197	3	-1,242896	0,1195845	-112,8001	-1,7400544	-1,30014	-114,1719907	111,4282093	-113,9187064	111,6814936
198	0	-1,570429	0,1019092	-97,03612	-2,1986006	-1,72146008	-98,8187256	95,2535144	-98,4495061	95,6227339
198	0,83	-1,570429	0,1019092	-97,03612	-2,1986006	-1,72146008	-98,8187256	95,2535144	-98,4495061	95,6227339
198	1,67	-1,570429	0,1019092	-97,03612	-2,1986006	-1,72146008	-98,8187256	95,2535144	-98,4495061	95,6227339
198	2,50	-1,570429	0,1019092	-97,03612	-2,1986006	-1,72146008	-98,8187256	95,2535144	-98,4495061	95,6227339
198	3,33	-1,570429	0,1019092	-97,03612	-2,1986006	-1,72146008	-98,8187256	95,2535144	-98,4495061	95,6227339
199	0	-1,572534	0,1009738	-95,74018	-2,2015476	-1,72548272	-97,526247	93,954113	-97,1554606	94,3248994
199	0,83	-1,572534	0,1009738	-95,74018	-2,2015476	-1,72548272	-97,526247	93,954113	-97,1554606	94,3248994
199	1,67	-1,572534	0,1009738	-95,74018	-2,2015476	-1,72548272	-97,526247	93,954113	-97,1554606	94,3248994
199	2,50	-1,572534	0,1009738	-95,74018	-2,2015476	-1,72548272	-97,526247	93,954113	-97,1554606	94,3248994
199	3,33	-1,572534	0,1009738	-95,74018	-2,2015476	-1,72548272	-97,526247	93,954113	-97,1554606	94,3248994
200	0	-1,570296	0,1039853	-94,45121	-2,1984144	-1,71797872	-96,2315799	92,6708401	-95,8644764	93,0379436
200	0,83	-1,570296	0,1039853	-94,45121	-2,1984144	-1,71797872	-96,2315799	92,6708401	-95,8644764	93,0379436
200	1,67	-1,570296	0,1039853	-94,45121	-2,1984144	-1,71797872	-96,2315799	92,6708401	-95,8644764	93,0379436
200	2,50	-1,570296	0,1039853	-94,45121	-2,1984144	-1,71797872	-96,2315799	92,6708401	-95,8644764	93,0379436
200	3,33	-1,570296	0,1039853	-94,45121	-2,1984144	-1,71797872	-96,2315799	92,6708401	-95,8644764	93,0379436
201	0	-1,259302	0,1011313	-78,3947	-1,7630228	-1,34935232	-79,8047311	76,9846689	-79,5280718	77,2613282
201	0,75	-1,259302	0,1011313	-78,3947	-1,7630228	-1,34935232	-79,8047311	76,9846689	-79,5280718	77,2613282
201	1,5	-1,259302	0,1011313	-78,3947	-1,7630228	-1,34935232	-79,8047311	76,9846689	-79,5280718	77,2613282
201	2,25	-1,259302	0,1011313	-78,3947	-1,7630228	-1,34935232	-79,8047311	76,9846689	-79,5280718	77,2613282
201	3	-1,259302	0,1011313	-78,3947	-1,7630228	-1,34935232	-79,8047311	76,9846689	-79,5280718	77,2613282
202	0	-1,255778	0,1069536	-77,08511	-1,7580892	-1,33580784	-78,48509	75,66513	-78,2153102	75,9549098
202	0,75	-1,255778	0,1069536	-77,08511	-1,7580892	-1,33580784	-78,48509	75,66513	-78,2153102	75,9549098
202	1,5	-1,255778	0,1069536	-77,08511	-1,7580892	-1,33580784	-78,48509	75,66513	-78,2153102	75,9549098

202	2,25	-1,255778	0,1069536	-77,08511	-1,7580892	-1,33580784	-78,48509	75,68513	-78,2153102	75,9549098
202	3	-1,255778	0,1069536	-77,08511	-1,7580892	-1,33580784	-78,48509	75,68513	-78,2153102	75,9549098
203	0	-1,22871	0,1327135	-75,76333	-1,720194	-1,2621104	-77,1050685	74,4215915	-76,869169	74,657491
203	0,75	-1,22871	0,1327135	-75,76333	-1,720194	-1,2621104	-77,1050685	74,4215915	-76,869169	74,657491
203	1,5	-1,22871	0,1327135	-75,76333	-1,720194	-1,2621104	-77,1050685	74,4215915	-76,869169	74,657491
203	2,25	-1,22871	0,1327135	-75,76333	-1,720194	-1,2621104	-77,1050685	74,4215915	-76,869169	74,657491
203	3	-1,22871	0,1327135	-75,76333	-1,720194	-1,2621104	-77,1050685	74,4215915	-76,869169	74,657491
204	0	-0,9980564	0,411777	-59,1687	-1,39727895	-0,53882448	-59,95459068	58,38280932	-60,06695076	58,27044924
204	0,75	-0,9980564	0,411777	-59,1687	-1,39727896	-0,53882448	-59,95459068	58,38280932	-60,06695076	58,27044924
204	1,5	-0,9980564	0,411777	-59,1687	-1,39727896	-0,53882448	-59,95459068	58,38280932	-60,06695076	58,27044924
204	2,25	-0,9980564	0,411777	-59,1687	-1,39727896	-0,53882448	-59,95459068	58,38280932	-60,06695076	58,27044924
204	3	-0,9980564	0,411777	-59,1687	-1,39727896	-0,53882448	-59,95459068	58,38280932	-60,06695076	58,27044924
205	0	-0,7852744	0,5904987	-57,58324	-1,09938416	0,00246864	-57,93507058	57,23140942	-58,28998696	56,87649304
205	0,75	-0,7852744	0,5904987	-57,58324	-1,09938416	0,00246864	-57,93507058	57,23140942	-58,28998696	56,87649304
205	1,5	-0,7852744	0,5904987	-57,58324	-1,09938416	0,00246864	-57,93507058	57,23140942	-58,28998696	56,87649304
205	2,25	-0,7852744	0,5904987	-57,58324	-1,09938416	0,00246864	-57,93507058	57,23140942	-58,28998696	56,87649304
205	3	-0,7852744	0,5904987	-57,58324	-1,09938416	0,00246864	-57,93507058	57,23140942	-58,28998696	56,87649304
206	0	-1,002244	0,4130717	-56,35462	-1,4031416	-0,54177808	-57,1442411	55,5649989	-57,2566396	55,4526004
206	0,75	-1,002244	0,4130717	-56,35462	-1,4031416	-0,54177808	-57,1442411	55,5649989	-57,2566396	55,4526004
206	1,5	-1,002244	0,4130717	-56,35462	-1,4031416	-0,54177808	-57,1442411	55,5649989	-57,2566396	55,4526004
206	2,25	-1,002244	0,4130717	-56,35462	-1,4031416	-0,54177808	-57,1442411	55,5649989	-57,2566396	55,4526004
206	3	-1,002244	0,4130717	-56,35462	-1,4031416	-0,54177808	-57,1442411	55,5649989	-57,2566396	55,4526004
207	0	-1,355104	0,1330032	-41,03226	-1,8971456	-1,41331968	-42,5253816	39,5391384	-42,2518536	39,8126664
207	0,75	-1,355104	0,1330032	-41,03226	-1,8971456	-1,41331968	-42,5253816	39,5391384	-42,2518536	39,8126664
207	1,5	-1,355104	0,1330032	-41,03226	-1,8971456	-1,41331968	-42,5253816	39,5391384	-42,2518536	39,8126664
207	2,25	-1,355104	0,1330032	-41,03226	-1,8971456	-1,41331968	-42,5253816	39,5391384	-42,2518536	39,8126664
207	3	-1,355104	0,1330032	-41,03226	-1,8971456	-1,41331968	-42,5253816	39,5391384	-42,2518536	39,8126664
208	0	-1,367688	0,1333764	-39,89436	-1,9147632	-1,42782336	-41,4022092	38,3865108	-41,1252792	38,6634408
208	0,75	-1,367688	0,1333764	-39,89436	-1,9147632	-1,42782336	-41,4022092	38,3865108	-41,1252792	38,6634408
208	1,5	-1,367688	0,1333764	-39,89436	-1,9147632	-1,42782336	-41,4022092	38,3865108	-41,1252792	38,6634408
208	2,25	-1,367688	0,1333764	-39,89436	-1,9147632	-1,42782336	-41,4022092	38,3865108	-41,1252792	38,6634408
208	3	-1,367688	0,1333764	-39,89436	-1,9147632	-1,42782336	-41,4022092	38,3865108	-41,1252792	38,6634408
209	0	-1,344674	0,1626823	-38,53489	-1,8825436	-1,35331712	-39,9858165	37,0839635	-39,7450966	37,3246834
209	0,75	-1,344674	0,1626823	-38,53489	-1,8825436	-1,35331712	-39,9858165	37,0839635	-39,7450966	37,3246834
209	1,5	-1,344674	0,1626823	-38,53489	-1,8825436	-1,35331712	-39,9858165	37,0839635	-39,7450966	37,3246834
209	2,25	-1,344674	0,1626823	-38,53489	-1,8825436	-1,35331712	-39,9858165	37,0839635	-39,7450966	37,3246834
209	3	-1,344674	0,1626823	-38,53489	-1,8825436	-1,35331712	-39,9858165	37,0839635	-39,7450966	37,3246834
210	0	-1,442493	0,1528981	-19,8698	-2,0194902	-1,48635464	-21,4478935	18,2917065	-21,1680437	18,5715563
210	0,75	-1,442493	0,1528981	-19,8698	-2,0194902	-1,48635464	-21,4478935	18,2917065	-21,1680437	18,5715563

210	1,5	-1,442493	0,1528981	-19,8698	-2,0194902	-1,48635464	-21,4478935	18,2917065	-21,1680437	18,5715563
210	2,25	-1,442493	0,1528981	-19,8698	-2,0194902	-1,48635464	-21,4478935	18,2917065	-21,1680437	18,5715563
210	3	-1,442493	0,1528981	-19,8698	-2,0194902	-1,48635464	-21,4478935	18,2917065	-21,1680437	18,5715563
211	0	-1,48483	0,111676	-17,88431	-2,078762	-1,6031144	-19,55443	16,21419	-19,220657	16,547963
211	0,75	-1,48483	0,111676	-17,88431	-2,078762	-1,6031144	-19,55443	16,21419	-19,220657	16,547963
211	1,5	-1,48483	0,111676	17,88431	-2,078762	-1,6031144	-19,55443	16,21419	-19,220657	16,547963
211	2,25	-1,48483	0,111676	-17,88431	-2,078762	-1,6031144	-19,55443	16,21419	-19,220657	16,547963
211	3	-1,48483	0,111676	-17,88431	-2,078762	-1,6031144	-19,55443	16,21419	-19,220657	16,547963
212	0	-1,47077	0,1171926	-15,95738	-2,059078	-1,57741584	-17,6051114	14,3096486	-17,281073	14,633687
212	0,75	-1,47077	0,1171926	-15,95738	-2,059078	-1,57741584	-17,6051114	14,3096486	-17,281073	14,633687
212	1,5	-1,47077	0,1171926	-15,95738	-2,059078	-1,57741584	-17,6051114	14,3096486	-17,281073	14,633687
212	2,25	-1,47077	0,1171926	-15,95738	-2,059078	-1,57741584	-17,6051114	14,3096486	-17,281073	14,633687
212	3	-1,47077	0,1171926	-15,95738	-2,059078	-1,57741584	-17,6051114	14,3096486	-17,281073	14,633687
213	0	-0,7706441	0,6131069	1,790628	-1,07890174	0,05619812	1,47896198	-2,10229402	1,09704831	-2,48420769
213	0,75	-0,7706441	0,6131069	1,790628	-1,07890174	0,05619812	1,47896198	-2,10229402	1,09704831	-2,48420769
213	1,5	-0,7706441	0,6131069	1,790628	-1,07890174	0,05619812	1,47896198	-2,10229402	1,09704831	-2,48420769
213	2,25	-0,7706441	0,6131069	1,790628	-1,07890174	0,05619812	1,47896198	-2,10229402	1,09704831	-2,48420769
213	3	-0,7706441	0,6131069	1,790628	-1,07890174	0,05619812	1,47896198	-2,10229402	1,09704831	-2,48420769
214	0	-0,5213801	0,8179306	3,348131	-0,72993214	0,68303284	3,54040548	-3,15585652	2,87888891	-3,81737309
214	0,75	-0,5213801	0,8179306	3,348131	-0,72993214	0,68303284	3,54040548	-3,15585652	2,87888891	-3,81737309
214	1,5	-0,5213801	0,8179306	3,348131	-0,72993214	0,68303284	3,54040548	-3,15585652	2,87888891	-3,81737309
214	2,25	-0,5213801	0,8179306	3,348131	-0,72993214	0,68303284	3,54040548	-3,15585652	2,87888891	-3,81737309
214	3	-0,5213801	0,8179306	3,348131	-0,72993214	0,68303284	3,54040548	-3,15585652	2,87888891	-3,81737309
215	0	-0,7429649	0,6223622	4,542645	-1,04015086	0,10422164	4,27344932	-4,81184068	3,87397659	-5,21131341
215	0,75	-0,7429649	0,6223622	4,542645	-1,04015086	0,10422164	4,27344932	-4,81184068	3,87397659	-5,21131341
215	1,5	-0,7429649	0,6223622	4,542645	-1,04015086	0,10422164	4,27344932	-4,81184068	3,87397659	-5,21131341
215	2,25	-0,7429649	0,6223622	4,542645	-1,04015086	0,10422164	4,27344932	-4,81184068	3,87397659	-5,21131341
215	3	-0,7429649	0,6223622	4,542645	-1,04015086	0,10422164	4,27344932	-4,81184068	3,87397659	-5,21131341
216	0	-1,754951	0,281152	18,33301	-2,4569314	-1,656098	16,5082208	-20,1577992	16,7535541	-19,9124659
216	0,9	-1,754951	0,281152	18,33301	-2,4569314	-1,656098	16,5082208	-20,1577992	16,7535541	-19,9124659
216	1,8	-1,754951	0,281152	18,33301	-2,4569314	-1,656098	16,5082208	-20,1577992	16,7535541	-19,9124659
216	2,7	-1,754951	0,281152	18,33301	-2,4569314	-1,656098	16,5082208	-20,1577992	16,7535541	-19,9124659
216	3,6	-1,754951	0,281152	18,33301	-2,4569314	-1,656098	16,5082208	-20,1577992	16,7535541	-19,9124659
217	0	-1,83404	0,2144039	15,1171	-2,567656	-1,85780176	13,1306559	-17,1035441	13,466464	-16,767736
217	0,9	-1,83404	0,2144039	15,1171	-2,567656	-1,85780176	13,1306559	-17,1035441	13,466464	-16,767736
217	1,8	-1,83404	0,2144039	15,1171	-2,567656	-1,85780176	13,1306559	-17,1035441	13,466464	-16,767736
217	2,7	-1,83404	0,2144039	15,1171	-2,567656	-1,85780176	13,1306559	-17,1035441	13,466464	-16,767736
217	3,6	-1,83404	0,2144039	15,1171	-2,567656	-1,85780176	13,1306559	-17,1035441	13,466464	-16,767736
218	0	-1,823918	0,2221805	13,46004	-2,5534952	-1,8332126	11,4935189	-15,4266611	11,8185138	-15,1015662

218	0,45	-1,823918	0,2221805	13,46004	-2,5534852	-1,8332128	11,4935189	-15,4265611	11,8185138	-15,1015662
218	0,9	-1,823918	0,2221805	13,46004	-2,5534852	-1,8332128	11,4935189	-15,4265611	11,8185138	-15,1015662
218	1,35	-1,823918	0,2221805	13,46004	-2,5534852	-1,8332128	11,4935189	-15,4265611	11,8185138	-15,1015662
218	1,8	-1,823918	0,2221805	13,46004	-2,5534852	-1,8332128	11,4935189	-15,4265611	11,8185138	-15,1015662
219	0	-6,624053	-3,011278	-221,1964	-9,2736742	-12,7669084	-232,1565416	210,2362584	-227,1580477	215,2347523
219	0,45	-6,624053	-3,011278	-221,1964	-9,2736742	-12,7669084	-232,1565416	210,2362584	-227,1580477	215,2347523
219	0,9	-6,624053	-3,011278	-221,1964	-9,2736742	-12,7669084	-232,1565416	210,2362584	-227,1580477	215,2347523
219	1,35	-6,624053	-3,011278	-221,1964	-9,2736742	-12,7669084	-232,1565416	210,2362584	-227,1580477	215,2347523
219	1,8	-6,624053	-3,011278	-221,1964	-9,2736742	-12,7669084	-232,1565416	210,2362584	-227,1580477	215,2347523
220	0	-6,380989	-2,776321	-223,3434	-8,9333846	-12,0993004	-233,7769078	212,9098922	-229,0862901	217,6005099
220	0,9	-6,380989	-2,776321	-223,3434	-8,9333846	-12,0993004	-233,7769078	212,9098922	-229,0862901	217,6005099
220	1,8	-6,380989	-2,776321	-223,3434	-8,9333846	-12,0993004	-233,7769078	212,9098922	-229,0862901	217,6005099
220	2,7	-6,380989	-2,776321	-223,3434	-8,9333846	-12,0993004	-233,7769078	212,9098922	-229,0862901	217,6005099
220	3,6	-6,380989	-2,776321	-223,3434	-8,9333846	-12,0993004	-233,7769078	212,9098922	-229,0862901	217,6005099
221	0	-6,356715	-2,785004	-227,8846	-8,899401	-12,0840644	-238,297662	217,471538	-233,6056435	222,1635565
221	0,9	-6,356715	-2,785004	-227,8846	-8,899401	-12,0840644	-238,297662	217,471538	-233,6056435	222,1635565
221	1,8	-6,356715	-2,785004	-227,8846	-8,899401	-12,0840644	-238,297662	217,471538	-233,6056435	222,1635565
221	2,7	-6,356715	-2,785004	-227,8846	-8,899401	-12,0840644	-238,297662	217,471538	-233,6056435	222,1635565
221	3,6	-6,356715	-2,785004	-227,8846	-8,899401	-12,0840644	-238,297662	217,471538	-233,6056435	222,1635565
222	0	-5,567134	-1,965834	-214,3512	-7,7939876	-9,8258952	-222,9975948	205,7048052	-219,3616206	209,3407794
222	0,75	-5,567134	-1,965834	-214,3512	-7,7939876	-9,8258952	-222,9975948	205,7048052	-219,3616206	209,3407794
222	1,5	-5,567134	-1,965834	-214,3512	-7,7939876	-9,8258952	-222,9975948	205,7048052	-219,3616206	209,3407794
222	2,25	-5,567134	-1,965834	-214,3512	-7,7939876	-9,8258952	-222,9975948	205,7048052	-219,3616206	209,3407794
222	3	-5,567134	-1,965834	-214,3512	-7,7939876	-9,8258952	-222,9975948	205,7048052	-219,3616206	209,3407794
223	0	-5,654634	-2,062696	-212,1666	-7,9164876	-10,0858744	-221,0148568	203,3183432	-217,2557706	207,0774294
223	0,75	-5,654634	-2,062696	-212,1666	-7,9164876	-10,0858744	-221,0148568	203,3183432	-217,2557706	207,0774294
223	1,5	-5,654634	-2,062696	-212,1666	-7,9164876	-10,0858744	-221,0148568	203,3183432	-217,2557706	207,0774294
223	2,25	-5,654634	-2,062696	-212,1666	-7,9164876	-10,0858744	-221,0148568	203,3183432	-217,2557706	207,0774294
223	3	-5,654634	-2,062696	-212,1666	-7,9164876	-10,0858744	-221,0148568	203,3183432	-217,2557706	207,0774294
224	0	-5,964119	-2,282666	-210,1141	-8,3497666	-10,8092084	-219,5537088	200,6744912	-215,4818071	204,7463929
224	0,75	-5,964119	-2,282666	-210,1141	-8,3497666	-10,8092084	-219,5537088	200,6744912	-215,4818071	204,7463929
224	1,5	-5,964119	-2,282666	-210,1141	-8,3497666	-10,8092084	-219,5537088	200,6744912	-215,4818071	204,7463929
224	2,25	-5,964119	-2,282666	-210,1141	-8,3497666	-10,8092084	-219,5537088	200,6744912	-215,4818071	204,7463929
224	3	-5,964119	-2,282666	-210,1141	-8,3497666	-10,8092084	-219,5537088	200,6744912	-215,4818071	204,7463929
225	0	-6,090211	-2,596583	-191,8623	-8,5262954	-11,462786	-201,7671362	181,9574638	-197,3434899	186,3811101
225	0,75	-6,090211	-2,596583	-191,8623	-8,5262954	-11,462786	-201,7671362	181,9574638	-197,3434899	186,3811101
225	1,5	-6,090211	-2,596583	-191,8623	-8,5262954	-11,462786	-201,7671362	181,9574638	-197,3434899	186,3811101
225	2,25	-6,090211	-2,596583	-191,8623	-8,5262954	-11,462786	-201,7671362	181,9574638	-197,3434899	186,3811101
225	3	-6,090211	-2,596583	-191,8623	-8,5262954	-11,462786	-201,7671362	181,9574638	-197,3434899	186,3811101

226	0	-6,083358	-2,585538	-189,1186	-8,5167012	-11,4368904	-199,0041676	179,2330324	-194,5936222	183,6435778
226	0,75	-6,083358	-2,585538	-189,1186	-8,5167012	-11,4368904	-199,0041676	179,2330324	-194,5936222	183,6435778
226	1,5	-6,083358	-2,585538	-189,1186	-8,5167012	-11,4368904	-199,0041676	179,2330324	-194,5936222	183,6435778
226	2,25	-6,083358	-2,585538	-189,1186	-8,5167012	-11,4368904	-199,0041676	179,2330324	-194,5936222	183,6435778
226	3	-6,083358	-2,585538	-189,1186	-8,5167012	-11,4368904	-199,0041676	179,2330324	-194,5936222	183,6435778
227	0	-6,196262	-2,699288	-186,8568	-8,6747668	-11,7543752	-196,9916024	176,7219976	-192,4334358	181,2801642
227	0,75	-6,196262	-2,699288	-186,8568	-8,6747668	-11,7543752	-196,9916024	176,7219976	-192,4334358	181,2801642
227	1,5	-6,196262	-2,699288	-186,8568	-8,6747668	-11,7543752	-196,9916024	176,7219976	-192,4334358	181,2801642
227	2,25	-6,196262	-2,699288	-186,8568	-8,6747668	-11,7543752	-196,9916024	176,7219976	-192,4334358	181,2801642
227	3	-6,196262	-2,699288	-186,8568	-8,6747668	-11,7543752	-196,9916024	176,7219976	-192,4334358	181,2801642
228	0	-6,139435	-2,630962	-168,6048	-8,595209	-11,5768612	-178,603084	158,606516	-174,1302915	163,0793085
228	0,75	-6,139435	-2,630962	-168,6048	-8,595209	-11,5768612	-178,603084	158,606516	-174,1302915	163,0793085
228	1,5	-6,139435	-2,630962	-168,6048	-8,595209	-11,5768612	-178,603084	158,606516	-174,1302915	163,0793085
228	2,25	-6,139435	-2,630962	-168,6048	-8,595209	-11,5768612	-178,603084	158,606516	-174,1302915	163,0793085
228	3	-6,139435	-2,630962	-168,6048	-8,595209	-11,5768612	-178,603084	158,606516	-174,1302915	163,0793085
229	0	-6,035398	-2,543714	-166,6003	-8,4495572	-11,31242	-176,3864916	156,8141084	-172,0321582	161,1684418
229	0,75	-6,035398	-2,543714	-166,6003	-8,4495572	-11,31242	-176,3864916	156,8141084	-172,0321582	161,1684418
229	1,5	-6,035398	-2,543714	-166,6003	-8,4495572	-11,31242	-176,3864916	156,8141084	-172,0321582	161,1684418
229	2,25	-6,035398	-2,543714	-166,6003	-8,4495572	-11,31242	-176,3864916	156,8141084	-172,0321582	161,1684418
229	3	-6,035398	-2,543714	-166,6003	-8,4495572	-11,31242	-176,3864916	156,8141084	-172,0321582	161,1684418
230	0	-6,082624	-2,592	-165,1874	-8,5156736	-11,4463488	-175,0785488	155,2962512	-170,6617616	159,7130384
230	0,75	-6,082624	-2,592	-165,1874	-8,5156736	-11,4463488	-175,0785488	155,2962512	-170,6617616	159,7130384
230	1,5	-6,082624	-2,592	-165,1874	-8,5156736	-11,4463488	-175,0785488	155,2962512	-170,6617616	159,7130384
230	2,25	-6,082624	-2,592	-165,1874	-8,5156736	-11,4463488	-175,0785488	155,2962512	-170,6617616	159,7130384
230	3	-6,082624	-2,592	-165,1874	-8,5156736	-11,4463488	-175,0785488	155,2962512	-170,6617616	159,7130384
231	0	-5,892919	-2,478957	-148,1283	-8,2500666	-11,037834	-157,6787598	138,5778402	-153,4319271	142,8246729
231	0,75	-5,892919	-2,478957	-148,1283	-8,2500666	-11,037834	-157,6787598	138,5778402	-153,4319271	142,8246729
231	1,5	-5,892919	-2,478957	-148,1283	-8,2500666	-11,037834	-157,6787598	138,5778402	-153,4319271	142,8246729
231	2,25	-5,892919	-2,478957	-148,1283	-8,2500666	-11,037834	-157,6787598	138,5778402	-153,4319271	142,8246729
231	3	-5,892919	-2,478957	-148,1283	-8,2500666	-11,037834	-157,6787598	138,5778402	-153,4319271	142,8246729
232	0	-5,950741	-2,519479	-146,2189	-8,3310374	-11,1720556	-155,8792682	136,5585318	-151,5745669	140,8632331
232	0,75	-5,950741	-2,519479	-146,2189	-8,3310374	-11,1720556	-155,8792682	136,5585318	-151,5745669	140,8632331
232	1,5	-5,950741	-2,519479	-146,2189	-8,3310374	-11,1720556	-155,8792682	136,5585318	-151,5745669	140,8632331
232	2,25	-5,950741	-2,519479	-146,2189	-8,3310374	-11,1720556	-155,8792682	136,5585318	-151,5745669	140,8632331
232	3	-5,950741	-2,519479	-146,2189	-8,3310374	-11,1720556	-155,8792682	136,5585318	-151,5745669	140,8632331
233	0	-5,892807	-2,489129	-144,7141	-8,2499298	-11,0539748	-154,2745974	135,1536026	-150,0176263	139,4105737
233	0,75	-5,892807	-2,489129	-144,7141	-8,2499298	-11,0539748	-154,2745974	135,1536026	-150,0176263	139,4105737
233	1,5	-5,892807	-2,489129	-144,7141	-8,2499298	-11,0539748	-154,2745974	135,1536026	-150,0176263	139,4105737
233	2,25	-5,892807	-2,489129	-144,7141	-8,2499298	-11,0539748	-154,2745974	135,1536026	-150,0176263	139,4105737

233	3	-5,892807	-2,489129	-144,7141	-8,2499288	-11,0599748	-154,2745974	135,1536036	-150,0176263	139,4105737
234	0	-5,665457	-2,36994	-127,5626	-7,9316398	-10,5904524	-136,7310884	118,3941116	-132,6615113	122,4636887
234	0,75	-5,665457	-2,36994	-127,5626	-7,9316398	-10,5904524	-136,7310884	118,3941116	-132,6615113	122,4636887
234	1,5	-5,665457	-2,36994	-127,5626	-7,9316398	-10,5904524	-136,7310884	118,3941116	-132,6615113	122,4636887
234	2,25	-5,665457	-2,36994	-127,5626	-7,9316398	-10,5904524	-136,7310884	118,3941116	-132,6615113	122,4636887
234	3	-5,665457	-2,36994	-127,5626	-7,9316398	-10,5904524	-136,7310884	118,3941116	-132,6615113	122,4636887
235	0	-5,615073	-2,32964	-125,5374	-7,8611022	-10,4655116	-134,6051276	116,4696724	-130,5909657	120,4838343
235	0,75	-5,615073	-2,32964	-125,5374	-7,8611022	-10,4655116	-134,6051276	116,4696724	-130,5909657	120,4838343
235	1,5	-5,615073	-2,32964	-125,5374	-7,8611022	-10,4655116	-134,6051276	116,4696724	-130,5909657	120,4838343
235	2,25	-5,615073	-2,32964	-125,5374	-7,8611022	-10,4655116	-134,6051276	116,4696724	-130,5909657	120,4838343
235	3	-5,615073	-2,32964	-125,5374	-7,8611022	-10,4655116	-134,6051276	116,4696724	-130,5909657	120,4838343
236	0	-5,721715	-2,430631	-123,9065	-8,010401	-10,7550676	-133,203189	114,609811	-129,0560435	118,7569565
236	0,75	-5,721715	-2,430631	-123,9065	-8,010401	-10,7550676	-133,203189	114,609811	-129,0560435	118,7569565
236	1,5	-5,721715	-2,430631	-123,9065	-8,010401	-10,7550676	-133,203189	114,609811	-129,0560435	118,7569565
236	2,25	-5,721715	-2,430631	-123,9065	-8,010401	-10,7550676	-133,203189	114,609811	-129,0560435	118,7569565
236	3	-5,721715	-2,430631	-123,9065	-8,010401	-10,7550676	-133,203189	114,609811	-129,0560435	118,7569565
237	0	-6,430034	-2,680834	-106,9027	-9,0020476	-12,0053752	-117,2995748	96,5058252	-112,6897306	101,1156694
237	0,83	-6,430034	-2,680834	-106,9027	-9,0020476	-12,0053752	-117,2995748	96,5058252	-112,6897306	101,1156694
237	1,67	-6,430034	-2,680834	-106,9027	-9,0020476	-12,0053752	-117,2995748	96,5058252	-112,6897306	101,1156694
237	2,50	-6,430034	-2,680834	-106,9027	-9,0020476	-12,0053752	-117,2995748	96,5058252	-112,6897306	101,1156694
237	3,33	-6,430034	-2,680834	-106,9027	-9,0020476	-12,0053752	-117,2995748	96,5058252	-112,6897306	101,1156694
238	0	-6,337039	-2,599906	-104,9375	-8,8718546	-11,7642964	-115,1418528	94,7331472	-110,6408351	99,2341649
238	0,83	-6,337039	-2,599906	-104,9375	-8,8718546	-11,7642964	-115,1418528	94,7331472	-110,6408351	99,2341649
238	1,67	-6,337039	-2,599906	-104,9375	-8,8718546	-11,7642964	-115,1418528	94,7331472	-110,6408351	99,2341649
238	2,50	-6,337039	-2,599906	-104,9375	-8,8718546	-11,7642964	-115,1418528	94,7331472	-110,6408351	99,2341649
238	3,33	-6,337039	-2,599906	-104,9375	-8,8718546	-11,7642964	-115,1418528	94,7331472	-110,6408351	99,2341649
239	0	-6,427083	-2,68011	-103,333	-8,9979162	-12,0006756	-113,7256096	92,9403904	-109,1173747	97,5486253
239	0,83	-6,427083	-2,68011	-103,333	-8,9979162	-12,0006756	-113,7256096	92,9403904	-109,1173747	97,5486253
239	1,67	-6,427083	-2,68011	-103,333	-8,9979162	-12,0006756	-113,7256096	92,9403904	-109,1173747	97,5486253
239	2,50	-6,427083	-2,68011	-103,333	-8,9979162	-12,0006756	-113,7256096	92,9403904	-109,1173747	97,5486253
239	3,33	-6,427083	-2,68011	-103,333	-8,9979162	-12,0006756	-113,7256096	92,9403904	-109,1173747	97,5486253
240	0	-5,697229	-2,384279	-86,29	-7,9761206	-10,6515212	-95,5109538	77,0690462	-91,4175061	81,1624939
240	0,75	-5,697229	-2,384279	-86,29	-7,9761206	-10,6515212	-95,5109538	77,0690462	-91,4175061	81,1624939
240	1,5	-5,697229	-2,384279	-86,29	-7,9761206	-10,6515212	-95,5109538	77,0690462	-91,4175061	81,1624939
240	2,25	-5,697229	-2,384279	-86,29	-7,9761206	-10,6515212	-95,5109538	77,0690462	-91,4175061	81,1624939
240	3	-5,697229	-2,384279	-86,29	-7,9761206	-10,6515212	-95,5109538	77,0690462	-91,4175061	81,1624939
241	0	-5,588037	-2,282965	-84,31123	-7,8232518	-10,3583884	-93,2998394	75,3226206	-89,3404633	79,2819967
241	0,75	-5,588037	-2,282965	-84,31123	-7,8232518	-10,3583884	-93,2998394	75,3226206	-89,3404633	79,2819967
241	1,5	-5,588037	-2,282965	-84,31123	-7,8232518	-10,3583884	-93,2998394	75,3226206	-89,3404633	79,2819967

241	2,25	-5,586037	-2,282965	-84,31123	-7,8232515	-10,3583884	-93,2998394	75,3226206	-89,3404633	79,2819967
241	3	-5,586037	-2,282965	-84,31123	-7,8232515	-10,3583884	-93,2998394	75,3226206	-89,3404633	79,2819967
242	0	-5,635837	-2,322935	-82,73946	-7,8901715	-10,4797004	-91,8253994	73,6535206	-87,8117133	77,6672067
242	0,75	-5,635837	-2,322935	-82,73946	-7,8901715	-10,4797004	-91,8253994	73,6535206	-87,8117133	77,6672067
242	1,5	-5,635837	-2,322935	-82,73946	-7,8901715	-10,4797004	-91,8253994	73,6535206	-87,8117133	77,6672067
242	2,25	-5,635837	-2,322935	-82,73946	-7,8901715	-10,4797004	-91,8253994	73,6535206	-87,8117133	77,6672067
242	3	-5,635837	-2,322935	-82,73946	-7,8901715	-10,4797004	-91,8253994	73,6535206	-87,8117133	77,6672067
243	0	-5,8412	-2,396087	-65,71397	-8,17755	-10,8431792	-75,119497	56,308443	-70,97105	60,45659
243	0,75	-5,8412	-2,396087	-65,71397	-8,17755	-10,8431792	-75,119497	56,308443	-70,97105	60,45659
243	1,5	-5,8412	-2,396087	-65,71397	-8,17755	-10,8431792	-75,119497	56,308443	-70,97105	60,45659
243	2,25	-5,8412	-2,396087	-65,71397	-8,17755	-10,8431792	-75,119497	56,308443	-70,97105	60,45659
243	3	-5,8412	-2,396087	-65,71397	-8,17755	-10,8431792	-75,119497	56,308443	-70,97105	60,45659
244	0	-5,896515	-2,426182	-63,746	-8,255121	-10,9577092	-73,248	54,244	-69,0528635	58,4391365
244	0,75	-5,896515	-2,426182	-63,746	-8,255121	-10,9577092	-73,248	54,244	-69,0528635	58,4391365
244	1,5	-5,896515	-2,426182	-63,746	-8,255121	-10,9577092	-73,248	54,244	-69,0528635	58,4391365
244	2,25	-5,896515	-2,426182	-63,746	[illegible]	-10,9577092	-73,248	54,244	-69,0528635	58,4391365
244	3	-5,896515	-2,426182	-63,746	[illegible]	[illegible]	-73,248	54,244	-69,0528635	58,4391365
245	0	-5,836112	-2,385411	-62,19742	-8,1705588	-10,819992	-71,5861654	52,8086746	-67,4499208	56,9449192
245	0,75	-5,836112	-2,385411	-62,19742	-8,1705588	-10,819992	-71,5861654	52,8086746	-67,4499208	56,9449192
245	1,5	-5,836112	-2,385411	-62,19742	-8,1705588	-10,819992	-71,5861654	52,8086746	-67,4499208	56,9449192
245	2,25	-5,836112	-2,385411	-62,19742	-8,1705588	-10,819992	-71,5861654	52,8086746	-67,4499208	56,9449192
245	3	-5,836112	-2,385411	-62,19742	-8,1705588	-10,819992	-71,5861654	52,8086746	-67,4499208	56,9449192
246	0	-6,003796	-2,452703	-45,07019	-8,4053144	-11,12888	-54,7274482	35,4129318	-50,4736064	39,6667736
246	0,75	-6,003796	-2,452703	-45,07019	-8,4053144	-11,12888	-54,7274482	35,4129318	-50,4736064	39,6667736
246	1,5	-6,003796	-2,452703	-45,07019	-8,4053144	-11,12888	-54,7274482	35,4129318	-50,4736064	39,6667736
246	2,25	-6,003796	-2,452703	-45,07019	-8,4053144	-11,12888	-54,7274482	35,4129318	-50,4736064	39,6667736
246	3	-6,003796	-2,452703	-45,07019	-8,4053144	-11,12888	-54,7274482	35,4129318	-50,4736064	39,6667736
247	0	-5,952978	-2,403165	-42,9123	-8,3341692	-10,9886376	-52,4590386	33,3655614	-48,2699802	37,5546198
247	0,75	-5,952978	-2,403165	-42,9123	-8,3341692	-10,9886376	-52,4590386	33,3655614	-48,2699802	37,5546198
247	1,5	-5,952978	-2,403165	-42,9123	-8,3341692	-10,9886376	-52,4590386	33,3655614	-48,2699802	37,5546198
247	2,25	-5,952978	-2,403165	-42,9123	-8,3341692	-10,9886376	-52,4590386	33,3655614	-48,2699802	37,5546198
247	3	-5,952978	-2,403165	-42,9123	-8,3341692	-10,9886376	-52,4590386	33,3655614	-48,2699802	37,5546198
248	0	-6,052192	-2,488467	-41,08799	-8,4730688	-11,2441776	-50,8390874	31,3368926	-46,5349628	35,6410172
248	0,75	-6,052192	-2,488467	-41,08799	-8,4730688	-11,2441776	-50,8390874	31,3368926	-46,5349628	35,6410172
248	1,5	-6,052192	-2,488467	-41,08799	-8,4730688	-11,2441776	-50,8390874	31,3368926	-46,5349628	35,6410172
248	2,25	-6,052192	-2,488467	-41,08799	-8,4730688	-11,2441776	-50,8390874	31,3368926	-46,5349628	35,6410172
248	3	-6,052192	-2,488467	-41,08799	-8,4730688	-11,2441776	-50,8390874	31,3368926	-46,5349628	35,6410172
249	0	-6,073674	-2,496455	-23,5085	-8,5031436	-11,2827368	-33,2933638	13,7236362	-28,9748066	18,0421934
249	0,75	-6,073674	-2,496455	-23,5085	-8,5031436	-11,2827368	-33,2933638	13,7236362	-28,9748066	18,0421934

249	1,5	-6.073674	-2.496455	-23.5085	-8.5031436	-11.2827368	-33.2933638	13.7236362	-28.9745088	16.0421934
249	2.25	-6.073674	-2.496455	-23.5085	-8.5031436	-11.2827368	-33.2933638	13.7236362	-28.9745088	16.0421934
249	3	-6.073674	-2.496455	-23.5085	-8.5031436	-11.2827368	-33.2933638	13.7236362	-28.9745088	16.0421934
250	0	-5,956356	-2.382231	-21.44088	-8,3388984	-10.9591968	-30.9707382	11,9110219	-26.8016004	16.0801596
250	0,75	-5,956356	-2,382231	-21.44088	-8,3388984	-10.9591968	-30,9707382	11,9110219	-26.8016004	16.0801596
250	1,5	-5,956356	-2,382231	-21,44088	-8,3388984	-10.9591968	-30,9707382	11,9110219	-26.8016004	16.0801596
250	2,25	-5,956356	-2,382231	-21,44088	-8,3388984	-10.9591968	-30,9707382	11,9110219	-26.8016004	16.0801596
250	3	-5,956356	-2,382231	-21,44088	-8,3388984	-10.9591968	-30,9707382	11,9110219	-26.8016004	16.0801596
251	0	-5,963941	-2,394843	-19.88038	-8,3495174	-10.988478	-29.4319522	10.3268078	-25.2479269	14.5128331
251	0,75	-5,963941	-2,394843	-19.88038	-8,3495174	-10.988478	-29.4319522	10.3268078	-25.2479269	14.5128331
251	1,5	-5,963941	-2,394843	-19.88038	-8,3495174	-10.988478	-29.4319522	10.3268078	-25.2479269	14.5128331
251	2,25	-5,963941	-2,394843	-19.88038	-8,3495174	-10.988478	-29.4319522	10.3268078	-25.2479269	14.5128331
251	3	-5,963941	-2,394843	-19.88038	-8,3495174	-10.988478	-29.4319522	10.3268078	-25.2479269	14.5128331
252	0	-5,850332	-2.07872	-2.704565	-8.1904648	-10.3463504	-11.8036834	-6.3945534	-7.9693638	-2.5607338
252	0,75	-5,850332	-2.07872	-2.704565	-8.1904648	-10.3463504	-11.8036834	-6.3945534	-7.9693638	-2.5607338
252	1,5	-5,850332	-2.07872	-2.704565	-8.1904648	-10.3463504	-11.8036834	-6.3945534	-7.9693638	-2.5607338
252	2,25	-5,850332	-2.07872	-2.704565	-8.1904648	-10.3463504	-11.8036834	-6.3945534	-7.9693638	-2.5607338
252	3	-5,850332	-2.07872	-2.704565	-8.1904648	-10.3463504	-11.8036834	-6.3945534	-7.9693638	-2.5607338
253	0	-5,542473	-1,855344	-0.1998502	-7,7594622	-9.619518	-8.7061618	-8.3064614	-5.1860759	-4.7883755
253	0,75	-5,542473	-1,855344	-0.1998502	-7,7594622	-9.619518	-8.7061618	-8,3064614	-5.1860759	-4.7883755
253	1,5	-5,542473	-1,855344	-0.1998502	-7,7594622	-9.619518	-8.7061618	-8,3064614	-5.1860759	-4.7883755
253	2,25	-5,542473	-1,855344	-0.1998502	-7,7594622	-9.619518	-8.7061618	-8,3064614	-5.1860759	-4.7883755
253	3	-5,542473	-1,855344	-0.1998502	-7,7594622	-9.619518	-8.7061618	-8,3064614	-5.1860759	-4.7883755
254	0	-5,448115	-1,769754	1,084789	-7,627361	-9.3693444	-7,222703	-9,392281	-3.8185145	-5.9880925
254	0,75	-5,448115	-1,769754	1,084789	-7,627361	-9.3693444	-7,222703	-9,392281	-3.8185145	-5.9880925
254	1,5	-5,448115	-1,769754	1,084789	-7,627361	-9.3693444	-7,222703	-9,392281	-3.8185145	-5.9880925
254	2,25	-5,448115	-1,769754	1,084789	-7,627361	-9.3693444	-7,222703	-9,392281	-3.8185145	-5.9880925
254	3	-5,448115	-1,769754	1,084789	-7,627361	-9.3693444	-7,222703	-9,392281	3.8185145	-5.9880925
255	0	-5,974744	-2,288206	13,41288	-8,3646416	-10.8308224	3,9549812	-22,8707788	6.0356104	-15.7901496
255	0,3	-5,974744	-2,288206	13,41288	-8,3646416	-10.8308224	3,9549812	-22,8707788	6.0356104	-15.7901496
255	1,8	-5,974744	-2,288206	13,41288	-8,3646416	-10.8308224	3,9549812	-22,8707788	6.0356104	-15.7901496
255	2,7	-5,974744	-2,288206	13,41288	-8,3646416	-10.8308224	3,9549812	-22,8707788	6.0356104	-15.7901496
255	3,6	-5,974744	-2,288206	13,41288	-8,3646416	-10.8308224	3,9549812	-22,8707788	6.0356104	-15.7901496
256	0	-5,990353	-2,289346	9,741438	-8,3864942	-10.8513772	0,2636684	-19,2192076	4.3501203	-15.1327557
256	0,9	-5,990353	-2,289346	9,741438	-8,3864942	-10.8513772	0,2636684	-19,2192076	4.3501203	-15.1327557
256	1,8	-5,990353	-2,289346	9,741438	-8,3864942	-10.8513772	0,2636684	-19,2192076	4.3501203	-15.1327557
256	2,7	-5,990353	-2,289346	9,741438	-8,3864942	-10.8513772	0,2636684	-19,2192076	4.3501203	-15.1327557
256	3,6	-5,990353	-2,289346	9,741438	-8,3864942	-10.8513772	0,2636684	-19,2192076	4.3501203	-15.1327557
257	0	-6,258684	-2,507933	7,60227	-8,7621576	-11.5231136	-2,4160838	-17,6206238	1.9694544	-13.2350856

257	0.45	-6,258684	-2,507933	7,60227	-8,7621576	-11,5231136	-2,4160838	-17,6206238	1,9694544	-13,2350856
257	0,9	-6,258684	-2,507933	7,60227	-8,7621576	-11,5231136	-2,4160838	-17,6206238	1,9694544	-13,2350856
257	1,35	-6,258684	-2,507933	7,60227	-8,7621576	-11,5231136	-2,4160838	-17,6206238	1,9694544	-13,2350856
257	1,8	-6,258684	-2,507933	7,60227	-8,7621576	-11,5231136	-2,4160838	-17,6206238	1,9694544	-13,2350856

AKSIAL BALOK PORTAL AS 2 (ANALISIS 3D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1.4PD (KN)	1.2PD+1.6PL (KN)	1.2PD+PL+PE (KN)	1.2PD+PL - PE (KN)	0.9PD-PE (KN)	0.9PD-PE (KN)
258	0	5.985509	4.455132	-224.0735	8.3797126	14.310822	-212.4357572	235.7112428	-218.6865419	229.4604581
258	0.9	5.985509	4.455132	-224.0735	8.3797126	14.310822	-212.4357572	235.7112428	-218.6865419	229.4604581
258	1.8	5.985509	4.455132	-224.0735	8.3797126	14.310822	-212.4357572	235.7112428	-218.6865419	229.4604581
258	2.7	5.985509	4.455132	-224.0735	8.3797126	14.310822	-212.4357572	235.7112428	-218.6865419	229.4604581
258	3.6	5.985509	4.455132	-224.0735	8.3797126	14.310822	-212.4357572	235.7112428	-218.6865419	229.4604581
259	0	6.024351	4.483927	-222.6522	8.4340914	14.4035044	-210.9390518	234.3653482	-217.2302841	228.0741159
259	0.9	6.024351	4.483927	-222.6522	8.4340914	14.4035044	-210.9390518	234.3653482	-217.2302841	228.0741159
259	1.8	6.024351	4.483927	-222.6522	8.4340914	14.4035044	-210.9390518	234.3653482	-217.2302841	228.0741159
259	2.7	6.024351	4.483927	-222.6522	8.4340914	14.4035044	-210.9390518	234.3653482	-217.2302841	228.0741159
259	3.6	6.024351	4.483927	-222.6522	8.4340914	14.4035044	-210.9390518	234.3653482	-217.2302841	228.0741159
260	0	5.546434	3.551555	-197.7715	7.7650076	12.3382088	-187.5642242	207.9787758	-192.7797094	202.7632906
260	0.75	5.546434	3.551555	-197.7715	7.7650076	12.3382088	-187.5642242	207.9787758	-192.7797094	202.7632906
260	1.5	5.546434	3.551555	-197.7715	7.7650076	12.3382088	-187.5642242	207.9787758	-192.7797094	202.7632906
260	2.25	5.546434	3.551555	-197.7715	7.7650076	12.3382088	-187.5642242	207.9787758	-192.7797094	202.7632906
260	3	5.546434	3.551555	-197.7715	7.7650076	12.3382088	-187.5642242	207.9787758	-192.7797094	202.7632906
261	0	5.605957	3.600077	-197.2456	7.8483398	12.4872716	-186.9183746	207.5728254	-192.2002387	202.2909613
261	0.75	5.605957	3.600077	-197.2456	7.8483398	12.4872716	-186.9183746	207.5728254	-192.2002387	202.2909613
261	1.5	5.605957	3.600077	-197.2456	7.8483398	12.4872716	-186.9183746	207.5728254	-192.2002387	202.2909613
261	2.25	5.605957	3.600077	-197.2456	7.8483398	12.4872716	-186.9183746	207.5728254	-192.2002387	202.2909613
261	3	5.605957	3.600077	-197.2456	7.8483398	12.4872716	-186.9183746	207.5728254	-192.2002387	202.2909613
262	0	5.706416	3.677563	-197.125	7.9889824	12.7318	-186.5997378	207.6502622	-191.9892256	202.2607744
262	0.75	5.706416	3.677563	-197.125	7.9889824	12.7318	-186.5997378	207.6502622	-191.9892256	202.2607744
262	1.5	5.706416	3.677563	-197.125	7.9889824	12.7318	-186.5997378	207.6502622	-191.9892256	202.2607744
262	2.25	5.706416	3.677563	-197.125	7.9889824	12.7318	-186.5997378	207.6502622	-191.9892256	202.2607744
262	3	5.706416	3.677563	-197.125	7.9889824	12.7318	-186.5997378	207.6502622	-191.9892256	202.2607744
263	0	5.414944	3.835679	-187.4546	7.5809216	12.6350192	-177.1209882	197.7882118	-182.5811504	192.3280496
263	0.75	5.414944	3.835679	-187.4546	7.5809216	12.6350192	-177.1209882	197.7882118	-182.5811504	192.3280496
263	1.5	5.414944	3.835679	-187.4546	7.5809216	12.6350192	-177.1209882	197.7882118	-182.5811504	192.3280496
263	2.25	5.414944	3.835679	-187.4546	7.5809216	12.6350192	-177.1209882	197.7882118	-182.5811504	192.3280496
263	3	5.414944	3.835679	-187.4546	7.5809216	12.6350192	-177.1209882	197.7882118	-182.5811504	192.3280496
264	0	5.390084	3.799896	-187.6754	7.5461176	12.5479344	-177.4074032	197.9433968	-182.8243244	192.5264756
264	0.75	5.390084	3.799896	-187.6754	7.5461176	12.5479344	-177.4074032	197.9433968	-182.8243244	192.5264756
264	1.5	5.390084	3.799896	-187.6754	7.5461176	12.5479344	-177.4074032	197.9433968	-182.8243244	192.5264756
264	2.25	5.390084	3.799896	-187.6754	7.5461176	12.5479344	-177.4074032	197.9433968	-182.8243244	192.5264756
264	3	5.390084	3.799896	-187.6754	7.5461176	12.5479344	-177.4074032	197.9433968	-182.8243244	192.5264756

265	0	5,326491	3,732079	-187,9809	7,4570874	12,3631156	-177,8570318	198,1047682	-183,1670581	192,7747419
265	0,75	5,326491	3,732079	-187,9809	7,4570874	12,3631156	-177,8570318	198,1047682	-183,1670581	192,7747419
265	1,5	5,326491	3,732079	-187,9809	7,4570874	12,3631156	-177,8570318	198,1047682	-183,1670581	192,7747419
265	2,25	5,326491	3,732079	-187,9809	7,4570874	12,3631156	-177,8570318	198,1047682	-183,1670581	192,7747419
265	3	5,326491	3,732079	-187,9809	7,4570874	12,3631156	-177,8570318	198,1047682	-183,1670581	192,7747419
266	0	4,861619	3,320596	-173,4301	6,8062666	11,1468964	-164,2755612	182,5846388	-169,0546429	177,8055571
266	0,75	4,861619	3,320596	-173,4301	6,8062666	11,1468964	-164,2755612	182,5846388	-169,0546429	177,8055571
266	1,5	4,861619	3,320596	-173,4301	6,8062666	11,1468964	-164,2755612	182,5846388	-169,0546429	177,8055571
266	2,25	4,861619	3,320596	-173,4301	6,8062666	11,1468964	-164,2755612	182,5846388	-169,0546429	177,8055571
266	3	4,861619	3,320596	-173,4301	6,8062666	11,1468964	-164,2755612	182,5846388	-169,0546429	177,8055571
267	0	4,887576	3,343376	-173,683	6,8426064	11,2144928	-164,4745328	182,8914672	-169,3841816	178,0818184
267	0,75	4,887576	3,343376	-173,683	6,8426064	11,2144928	-164,4745328	182,8914672	-169,3841816	178,0818184
267	1,5	4,887576	3,343376	-173,683	6,8426064	11,2144928	-164,4745328	182,8914672	-169,3841816	178,0818184
267	2,25	4,887576	3,343376	-173,683	6,8426064	11,2144928	-164,4745328	182,8914672	-169,3841816	178,0818184
267	3	4,887576	3,343376	-173,683	6,8426064	11,2144928	-164,4745328	182,8914672	-169,3841816	178,0818184
268	0	4,903308	3,357987	-173,7488	6,8646312	11,2567488	-164,5068434	182,9907566	-169,3958228	178,1617772
268	0,75	4,903308	3,357987	-173,7488	6,8646312	11,2567488	-164,5068434	182,9907566	-169,3958228	178,1617772
268	1,5	4,903308	3,357987	-173,7488	6,8646312	11,2567488	-164,5068434	182,9907566	-169,3958228	178,1617772
268	2,25	4,903308	3,357987	-173,7488	6,8646312	11,2567488	-164,5068434	182,9907566	-169,3958228	178,1617772
268	3	4,903308	3,357987	-173,7488	6,8646312	11,2567488	-164,5068434	182,9907566	-169,3958228	178,1617772
269	0	6,469376	4,565061	-158,8212	9,0571264	15,0673488	-146,4928878	171,1495122	-152,9987616	164,6436384
269	0,75	6,469376	4,565061	-158,8212	9,0571264	15,0673488	-146,4928878	171,1495122	-152,9987616	164,6436384
269	1,5	6,469376	4,565061	-158,8212	9,0571264	15,0673488	-146,4928878	171,1495122	-152,9987616	164,6436384
269	2,25	6,469376	4,565061	-158,8212	9,0571264	15,0673488	-146,4928878	171,1495122	-152,9987616	164,6436384
269	3	6,469376	4,565061	-158,8212	9,0571264	15,0673488	-146,4928878	171,1495122	-152,9987616	164,6436384
270	0	6,474069	4,572129	-158,815	9,0636966	15,0842892	-146,4739882	171,1560118	-152,9883379	164,6416621
270	0,75	6,474069	4,572129	-158,815	9,0636966	15,0842892	-146,4739882	171,1560118	-152,9883379	164,6416621
270	1,5	6,474069	4,572129	-158,815	9,0636966	15,0842892	-146,4739882	171,1560118	-152,9883379	164,6416621
270	2,25	6,474069	4,572129	-158,815	9,0636966	15,0842892	-146,4739882	171,1560118	-152,9883379	164,6416621
270	3	6,474069	4,572129	-158,815	9,0636966	15,0842892	-146,4739882	171,1560118	-152,9883379	164,6416621
271	0	6,455723	4,546944	-158,9236	9,0380122	15,021978	-146,6297884	171,2174116	-153,1134493	164,7337507
271	0,75	6,455723	4,546944	-158,9236	9,0380122	15,021978	-146,6297884	171,2174116	-153,1134493	164,7337507
271	1,5	6,455723	4,546944	-158,9236	9,0380122	15,021978	-146,6297884	171,2174116	-153,1134493	164,7337507
271	2,25	6,455723	4,546944	-158,9236	9,0380122	15,021978	-146,6297884	171,2174116	-153,1134493	164,7337507
271	3	6,455723	4,546944	-158,9236	9,0380122	15,021978	-146,6297884	171,2174116	-153,1134493	164,7337507
272	0	5,606724	3,860411	-144,68	7,8494136	12,9047264	-134,0915202	155,2684798	-139,6339484	149,7260516
272	0,75	5,606724	3,860411	-144,68	7,8494136	12,9047264	-134,0915202	155,2684798	-139,6339484	149,7260516
272	1,5	5,606724	3,860411	-144,68	7,8494136	12,9047264	-134,0915202	155,2684798	-139,6339484	149,7260516
272	2,25	5,606724	3,860411	-144,68	7,8494136	12,9047264	-134,0915202	155,2684798	-139,6339484	149,7260516

272	3	5,606724	3,860411	-144,68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
273	0	5,584436	3,836649	-144,7333	7,8182104	12,8399616	-134,1953278	155,2712722	-139,7073076	149,7592924
273	0,75	5,584436	3,836649	-144,7333	7,8182104	12,8399616	-134,1953278	155,2712722	-139,7073076	149,7592924
273	1,5	5,584436	3,836649	-144,7333	7,8182104	12,8399616	-134,1953278	155,2712722	-139,7073076	149,7592924
273	2,25	5,584436	3,836649	-144,7333	7,8182104	12,8399616	-134,1953278	155,2712722	-139,7073076	149,7592924
273	3	5,584436	3,836649	-144,7333	7,8182104	12,8399616	-134,1953278	155,2712722	-139,7073076	149,7592924
274	0	5,540355	3,795249	144,8303	7,756497	12,7208244	-134,386625	155,273975	-139,8439805	149,8166195
274	0,75	5,540355	3,795249	-144,8303	7,756497	12,7208244	-134,386625	155,273975	-139,8439805	149,8166195
274	1,5	5,540355	3,795249	-144,8303	7,756497	12,7208244	-134,386625	155,273975	-139,8439805	149,8166195
274	2,25	5,540355	3,795249	-144,8303	7,756497	12,7208244	-134,386625	155,273975	-139,8439805	149,8166195
274	3	5,540355	3,795249	-144,8303	7,756497	12,7208244	-134,386625	155,273975	-139,8439805	149,8166195
275	0	6,469481	4,437603	-130,8583	9,0572734	14,863542	-118,6573198	143,0592802	-125,0357671	136,6606329
275	0,83	6,469481	4,437603	-130,8583	9,0572734	14,863542	-118,6573198	143,0592802	-125,0357671	136,6606329
275	1,67	6,469481	4,437603	-130,8583	9,0572734	14,863542	-118,6573198	143,0592802	-125,0357671	136,6606329
275	2,50	6,469481	4,437603	-130,8583	9,0572734	14,863542	-118,6573198	143,0592802	-125,0357671	136,6606329
275	3,33	6,469481	4,437603	-130,8583	9,0572734	14,863542	-118,6573198	143,0592802	-125,0357671	136,6606329
276	0	6,473025	4,439563	-130,9571	9,062235	14,8709308	-118,749907	143,164293	-125,1313775	136,7828225
276	0,83	6,473025	4,439563	-130,9571	9,062235	14,8709308	-118,749907	143,164293	-125,1313775	136,7828225
276	1,67	6,473025	4,439563	-130,9571	9,062235	14,8709308	-118,749907	143,164293	-125,1313775	136,7828225
276	2,50	6,473025	4,439563	-130,9571	9,062235	14,8709308	-118,749907	143,164293	-125,1313775	136,7828225
276	3,33	6,473025	4,439563	-130,9571	9,062235	14,8709308	-118,749907	143,164293	-125,1313775	136,7828225
277	0	6,469877	4,43643	-131,0315	9,0578278	14,8621404	-118,8312176	143,2317824	-125,2086107	136,8543893
277	0,83	6,469877	4,43643	-131,0315	9,0578278	14,8621404	-118,8312176	143,2317824	-125,2086107	136,8543893
277	1,67	6,469877	4,43643	-131,0315	9,0578278	14,8621404	-118,8312176	143,2317824	-125,2086107	136,8543893
277	2,50	6,469877	4,43643	-131,0315	9,0578278	14,8621404	-118,8312176	143,2317824	-125,2086107	136,8543893
277	3,33	6,469877	4,43643	-131,0315	9,0578278	14,8621404	-118,8312176	143,2317824	-125,2086107	136,8543893
278	0	5,531937	3,773247	-117,5497	7,7447118	12,6755196	-107,1381286	127,9612714	-112,5709567	122,5284433
278	0,75	5,531937	3,773247	-117,5497	7,7447118	12,6755196	-107,1381286	127,9612714	-112,5709567	122,5284433
278	1,5	5,531937	3,773247	-117,5497	7,7447118	12,6755196	-107,1381286	127,9612714	-112,5709567	122,5284433
278	2,25	5,531937	3,773247	-117,5497	7,7447118	12,6755196	-107,1381286	127,9612714	-112,5709567	122,5284433
278	3	5,531937	3,773247	-117,5497	7,7447118	12,6755196	-107,1381286	127,9612714	-112,5709567	122,5284433
279	0	5,576643	3,813663	-117,7452	7,8073002	12,7938324	-107,2395654	128,2508346	-112,7262213	122,7641787
279	0,75	5,576643	3,813663	-117,7452	7,8073002	12,7938324	-107,2395654	128,2508346	-112,7262213	122,7641787
279	1,5	5,576643	3,813663	-117,7452	7,8073002	12,7938324	-107,2395654	128,2508346	-112,7262213	122,7641787
279	2,25	5,576643	3,813663	-117,7452	7,8073002	12,7938324	-107,2395654	128,2508346	-112,7262213	122,7641787
279	3	5,576643	3,813663	-117,7452	7,8073002	12,7938324	-107,2395654	128,2508346	-112,7262213	122,7641787
280	0	5,599443	3,83634	-117,8089	7,8392202	12,8574756	-107,2532284	128,3645716	-112,7694013	122,8483987
280	0,75	5,599443	3,83634	-117,8089	7,8392202	12,8574756	-107,2532284	128,3645716	-112,7694013	122,8483987
280	1,5	5,599443	3,83634	-117,8089	7,8392202	12,8574756	-107,2532284	128,3645716	-112,7694013	122,8483987

280	2,25	5,599443	3,83634	-117,8069	7,8392202	12,8574756	-107,2532284	128,3645716	-112,7694013	122,8483987
280	3	5,599443	3,83634	-117,8069	7,8392202	12,8574756	-107,2532284	128,3645716	-112,7694013	122,8483987
281	0	6,439867	4,502007	-104,5125	9,0158138	14,9310516	-92,2826526	116,7423474	-98,7166197	110,3083803
281	0,75	6,439867	4,502007	-104,5125	9,0158138	14,9310516	-92,2826526	116,7423474	-98,7166197	110,3083803
281	1,5	6,439867	4,502007	-104,5125	9,0158138	14,9310516	-92,2826526	116,7423474	-98,7166197	110,3083803
281	2,25	6,439867	4,502007	-104,5125	9,0158138	14,9310516	-92,2826526	116,7423474	-98,7166197	110,3083803
281	3	6,439867	4,502007	-104,5125	9,0158138	14,9310516	-92,2826526	116,7423474	-98,7166197	110,3083803
282	0	6,458924	4,526252	-104,638	9,0424936	14,992712	-92,3610392	116,9149608	-98,8249684	110,4510316
282	0,75	6,458924	4,526252	-104,638	9,0424936	14,992712	-92,3610392	116,9149608	-98,8249684	110,4510316
282	1,5	6,458924	4,526252	-104,638	9,0424936	14,992712	-92,3610392	116,9149608	-98,8249684	110,4510316
282	2,25	6,458924	4,526252	-104,638	9,0424936	14,992712	-92,3610392	116,9149608	-98,8249684	110,4510316
282	3	6,458924	4,526252	-104,638	9,0424936	14,992712	-92,3610392	116,9149608	-98,8249684	110,4510316
283	0	6,454843	4,518165	-104,8751	9,0367802	14,9746756	-92,6111234	117,1390766	-99,0657413	110,6844587
283	0,75	6,454843	4,518165	-104,8751	9,0367802	14,9746756	-92,6111234	117,1390766	-99,0657413	110,6844587
283	1,5	6,454843	4,518165	-104,8751	9,0367802	14,9746756	-92,6111234	117,1390766	-99,0657413	110,6844587
283	2,25	6,454843	4,518165	-104,8751	9,0367802	14,9746756	-92,6111234	117,1390766	-99,0657413	110,6844587
283	3	6,454843	4,518165	-104,8751	9,0367802	14,9746756	-92,6111234	117,1390766	-99,0657413	110,6844587
284	0	4,879197	3,29019	-92,23945	6,8308758	11,1193404	-83,0942236	101,3846764	-87,8481727	96,6307273
284	0,75	4,879197	3,29019	-92,23945	6,8308758	11,1193404	-83,0942236	101,3846764	-87,8481727	96,6307273
284	1,5	4,879197	3,29019	-92,23945	6,8308758	11,1193404	-83,0942236	101,3846764	-87,8481727	96,6307273
284	2,25	4,879197	3,29019	-92,23945	6,8308758	11,1193404	-83,0942236	101,3846764	-87,8481727	96,6307273
284	3	4,879197	3,29019	-92,23945	6,8308758	11,1193404	-83,0942236	101,3846764	-87,8481727	96,6307273
285	0	4,863307	3,27383	-92,31787	6,8086298	11,0740964	-83,2080716	101,4276684	-87,9408937	96,6948463
285	0,75	4,863307	3,27383	-92,31787	6,8086298	11,0740964	-83,2080716	101,4276684	-87,9408937	96,6948463
285	1,5	4,863307	3,27383	-92,31787	6,8086298	11,0740964	-83,2080716	101,4276684	-87,9408937	96,6948463
285	2,25	4,863307	3,27383	-92,31787	6,8086298	11,0740964	-83,2080716	101,4276684	-87,9408937	96,6948463
285	3	4,863307	3,27383	-92,31787	6,8086298	11,0740964	-83,2080716	101,4276684	-87,9408937	96,6948463
286	0	4,837337	3,249369	-92,44942	6,7722718	11,0037948	-83,3952466	101,5035934	-88,0958167	96,8030233
286	0,75	4,837337	3,249369	-92,44942	6,7722718	11,0037948	-83,3952466	101,5035934	-88,0958167	96,8030233
286	1,5	4,837337	3,249369	-92,44942	6,7722718	11,0037948	-83,3952466	101,5035934	-88,0958167	96,8030233
286	2,25	4,837337	3,249369	-92,44942	6,7722718	11,0037948	-83,3952466	101,5035934	-88,0958167	96,8030233
286	3	4,837337	3,249369	-92,44942	6,7722718	11,0037948	-83,3952466	101,5035934	-88,0958167	96,8030233
287	0	5,291566	3,632704	-80,44564	7,4081924	12,1622056	-70,4630568	90,4282232	-75,6832306	85,2080494
287	0,75	5,291566	3,632704	-80,44564	7,4081924	12,1622056	-70,4630568	90,4282232	-75,6832306	85,2080494
287	1,5	5,291566	3,632704	-80,44564	7,4081924	12,1622056	-70,4630568	90,4282232	-75,6832306	85,2080494
287	2,25	5,291566	3,632704	-80,44564	7,4081924	12,1622056	-70,4630568	90,4282232	-75,6832306	85,2080494
287	3	5,291566	3,632704	-80,44564	7,4081924	12,1622056	-70,4630568	90,4282232	-75,6832306	85,2080494
288	0	5,355913	3,699208	-80,87959	7,4982782	12,3456284	-70,7532864	91,0058936	-76,0592683	85,6999117
288	0,75	5,355913	3,699208	-80,87959	7,4982782	12,3456284	-70,7532864	91,0058936	-76,0592683	85,6999117

288	1,5	5,355913	3,699208	-80,67959	7,4982782	12,3458284	-70,7532864	91,0058936	-76,0592683	85,6999117
288	2,25	5,355913	3,699208	-80,67959	7,4982782	12,3458284	-70,7532864	91,0058936	-76,0592683	85,6999117
288	3	5,355913	3,699208	-80,67959	7,4982782	12,3458284	-70,7532864	91,0058936	-76,0592683	85,6999117
289	0	5,381804	3,733885	-81,18613	7,5345256	12,4323808	-70,9940802	91,3781798	-76,3425064	86,0297536
289	0,75	5,381804	3,733885	-81,18613	7,5345256	12,4323808	-70,9940802	91,3781798	-76,3425064	86,0297536
289	1,5	5,381804	3,733885	-81,18613	7,5345256	12,4323808	-70,9940802	91,3781798	-76,3425064	86,0297536
289	2,25	5,381804	3,733885	-81,18613	7,5345256	12,4323808	-70,9940802	91,3781798	-76,3425064	86,0297536
289	3	5,381804	3,733885	-81,18613	7,5345256	12,4323808	-70,9940802	91,3781798	-76,3425064	86,0297536
290	0	5,629438	3,585631	-68,22845	7,8812132	12,4923352	-57,8874934	78,5894066	-63,1619558	73,2949442
290	0,75	5,629438	3,585631	-68,22845	7,8812132	12,4923352	-57,8874934	78,5894066	-63,1619558	73,2949442
290	1,5	5,629438	3,585631	-68,22845	7,8812132	12,4923352	-57,8874934	78,5894066	-63,1619558	73,2949442
290	2,25	5,629438	3,585631	-68,22845	7,8812132	12,4923352	-57,8874934	78,5894066	-63,1619558	73,2949442
290	3	5,629438	3,585631	-68,22845	7,8812132	12,4923352	-57,8874934	78,5894066	-63,1619558	73,2949442
291	0	5,52016	3,508027	-66,73331	7,728224	12,2370352	-56,601091	76,885529	-61,765166	71,701454
291	0,75	5,52016	3,508027	-66,73331	7,728224	12,2370352	-56,601091	76,885529	-61,765166	71,701454
291	1,5	5,52016	3,508027	-66,73331	7,728224	12,2370352	-56,601091	76,885529	-61,765166	71,701454
291	2,25	5,52016	3,508027	-66,73331	7,728224	12,2370352	-56,601091	76,885529	-61,765166	71,701454
291	3	5,52016	3,508027	-66,73331	7,728224	12,2370352	-56,601091	76,885529	-61,765166	71,701454
292	0	5,449663	3,459337	-64,64968	7,6295282	12,0745348	-54,6507474	74,6486126	-59,7449833	69,5543767
292	0,75	5,449663	3,459337	-64,64968	7,6295282	12,0745348	-54,6507474	74,6486126	-59,7449833	69,5543767
292	1,5	5,449663	3,459337	-64,64968	7,6295282	12,0745348	-54,6507474	74,6486126	-59,7449833	69,5543767
292	2,25	5,449663	3,459337	-64,64968	7,6295282	12,0745348	-54,6507474	74,6486126	-59,7449833	69,5543767
292	3	5,449663	3,459337	-64,64968	7,6295282	12,0745348	-54,6507474	74,6486126	-59,7449833	69,5543767
293	0	5,982598	4,131358	-52,68778	8,3756372	13,7892904	-41,3773044	63,9982556	-47,3034418	58,0721182
293	0,9	5,982598	4,131358	-52,68778	8,3756372	13,7892904	-41,3773044	63,9982556	-47,3034418	58,0721182
293	1,8	5,982598	4,131358	-52,68778	8,3756372	13,7892904	-41,3773044	63,9982556	-47,3034418	58,0721182
293	2,7	5,982598	4,131358	-52,68778	8,3756372	13,7892904	-41,3773044	63,9982556	-47,3034418	58,0721182
293	3,6	5,982598	4,131358	-52,68778	8,3756372	13,7892904	-41,3773044	63,9982556	-47,3034418	58,0721182
294	0	5,935406	4,100428	-50,39716	8,3095684	13,683172	-39,1742448	61,6200752	-45,0552946	55,7390254
294	0,9	5,935406	4,100428	-50,39716	8,3095684	13,683172	-39,1742448	61,6200752	-45,0552946	55,7390254
294	1,8	5,935406	4,100428	-50,39716	8,3095684	13,683172	-39,1742448	61,6200752	-45,0552946	55,7390254
294	2,7	5,935406	4,100428	-50,39716	8,3095684	13,683172	-39,1742448	61,6200752	-45,0552946	55,7390254
294	3,6	5,935406	4,100428	-50,39716	8,3095684	13,683172	-39,1742448	61,6200752	-45,0552946	55,7390254
295	0	-0,4059778	0,4763156	-255,2221	-0,56836892	0,2749316	-255,2329578	255,2112422	-255,58748	254,85672
295	0,9	-0,4059778	0,4763156	-255,2221	-0,56836892	0,2749316	-255,2329578	255,2112422	-255,58748	254,85672
295	1,8	-0,4059778	0,4763156	-255,2221	-0,56836892	0,2749316	-255,2329578	255,2112422	-255,58748	254,85672
295	2,7	-0,4059778	0,4763156	-255,2221	-0,56836892	0,2749316	-255,2329578	255,2112422	-255,58748	254,85672
295	3,6	-0,4059778	0,4763156	-255,2221	-0,56836892	0,2749316	-255,2329578	255,2112422	-255,58748	254,85672
296	0	-0,3584789	0,517951	-250,9437	-0,50187046	0,39854692	-250,8559237	251,0314763	-251,266331	250,621069

296	0,9	-0,3584789	0,517951	-250,9437	-0,50187046	0,39854692	-250,8559237	251,0314763	-251,266331	250,621069
296	1,8	-0,3584789	0,517951	-250,9437	-0,50187046	0,39854692	-250,8559237	251,0314763	-251,266331	250,621069
296	2,7	-0,3584789	0,517951	-250,9437	-0,50187046	0,39854692	-250,8559237	251,0314763	-251,266331	250,621069
296	3,6	-0,3584789	0,517951	-250,9437	-0,50187046	0,39854692	-250,8559237	251,0314763	-251,266331	250,621069
297	0	-1,64E-02	0,8470476	-227,0733	-0,02296	1,33559616	-226,2459324	227,9006676	-227,08806	227,05854
297	0,75	-1,64E-02	0,8470476	-227,0733	-0,02296	1,33559616	-226,2459324	227,9006676	-227,08806	227,05854
297	1,5	-1,64E-02	0,8470476	-227,0733	-0,02296	1,33559616	-226,2459324	227,9006676	-227,08806	227,05854
297	2,25	-1,64E-02	0,8470476	-227,0733	-0,02296	1,33559616	-226,2459324	227,9006676	-227,08806	227,05854
297	3	-1,64E-02	0,8470476	-227,0733	-0,02296	1,33559616	-226,2459324	227,9006676	-227,08806	227,05854
298	0	-0,23896	0,653298	-228,7439	-0,334544	0,7585248	-228,377354	229,110446	-228,958964	228,528836
298	0,75	-0,23896	0,653298	-228,7439	-0,334544	0,7585248	-228,377354	229,110446	-228,958964	228,528836
298	1,5	-0,23896	0,653298	-228,7439	-0,334544	0,7585248	-228,377354	229,110446	-228,958964	228,528836
298	2,25	-0,23896	0,653298	-228,7439	-0,334544	0,7585248	-228,377354	229,110446	-228,958964	228,528836
298	3	-0,23896	0,653298	-228,7439	-0,334544	0,7585248	-228,377354	229,110446	-228,958964	228,528836
299	0	-0,10308	0,7641429	-228,584	-0,144312	1,09893264	-227,9435531	229,2244469	-228,676772	228,491228
299	0,75	-0,10308	0,7641429	-228,584	-0,144312	1,09893264	-227,9435531	229,2244469	-228,676772	228,491228
299	1,5	-0,10308	0,7641429	-228,584	-0,144312	1,09893264	-227,9435531	229,2244469	-228,676772	228,491228
299	2,25	-0,10308	0,7641429	-228,584	-0,144312	1,09893264	-227,9435531	229,2244469	-228,676772	228,491228
299	3	-0,10308	0,7641429	-228,584	-0,144312	1,09893264	-227,9435531	229,2244469	-228,676772	228,491228
300	0	-0,5783392	0,1487173	-210,0137	-0,80967488	-0,45605936	-210,5589897	209,4684103	-210,5342053	209,4931947
300	0,75	-0,5783392	0,1487173	-210,0137	-0,80967488	-0,45605936	-210,5589897	209,4684103	-210,5342053	209,4931947
300	1,5	-0,5783392	0,1487173	-210,0137	-0,80967488	-0,45605936	-210,5589897	209,4684103	-210,5342053	209,4931947
300	2,25	-0,5783392	0,1487173	-210,0137	-0,80967488	-0,45605936	-210,5589897	209,4684103	-210,5342053	209,4931947
300	3	-0,5783392	0,1487173	-210,0137	-0,80967488	-0,45605936	-210,5589897	209,4684103	-210,5342053	209,4931947
301	0	-0,5631061	0,1526836	-211,4004	-0,78834854	-0,43143356	-211,9234437	210,8773563	-211,9071955	210,8936045
301	0,75	-0,5631061	0,1526836	-211,4004	-0,78834854	-0,43143356	-211,9234437	210,8773563	-211,9071955	210,8936045
301	1,5	-0,5631061	0,1526836	-211,4004	-0,78834854	-0,43143356	-211,9234437	210,8773563	-211,9071955	210,8936045
301	2,25	-0,5631061	0,1526836	-211,4004	-0,78834854	-0,43143356	-211,9234437	210,8773563	-211,9071955	210,8936045
301	3	-0,5631061	0,1526836	-211,4004	-0,78834854	-0,43143356	-211,9234437	210,8773563	-211,9071955	210,8936045
302	0	-0,6045853	0,1095788	-212,9936	-0,84641942	-0,55017628	-213,6095236	212,3776764	-213,5377268	212,4494732
302	0,75	-0,6045853	0,1095788	-212,9936	-0,84641942	-0,55017628	-213,6095236	212,3776764	-213,5377268	212,4494732
302	1,5	-0,6045853	0,1095788	-212,9936	-0,84641942	-0,55017628	-213,6095236	212,3776764	-213,5377268	212,4494732
302	2,25	-0,6045853	0,1095788	-212,9936	-0,84641942	-0,55017628	-213,6095236	212,3776764	-213,5377268	212,4494732
302	3	-0,6045853	0,1095788	-212,9936	-0,84641942	-0,55017628	-213,6095236	212,3776764	-213,5377268	212,4494732
303	0	-0,6474164	7,90E-02	-200,4188	-0,90638296	-0,65049968	-201,1166997	199,7209003	-201,0014748	199,8361252
303	0,75	-0,6474164	7,90E-02	-200,4188	-0,90638296	-0,65049968	-201,1166997	199,7209003	-201,0014748	199,8361252
303	1,5	-0,6474164	7,90E-02	-200,4188	-0,90638296	-0,65049968	-201,1166997	199,7209003	-201,0014748	199,8361252
303	2,25	-0,6474164	7,90E-02	-200,4188	-0,90638296	-0,65049968	-201,1166997	199,7209003	-201,0014748	199,8361252
303	3	-0,6474164	7,90E-02	-200,4188	-0,90638296	-0,65049968	-201,1166997	199,7209003	-201,0014748	199,8361252

304	0	-0,6256552	0,1049772	-202,1742	-0,87591728	-0,58282272	-202,820009	201,528391	-202,7372897	201,6111103
304	0,75	-0,6256552	0,1049772	-202,1742	-0,87591728	-0,58282272	-202,820009	201,528391	-202,7372897	201,6111103
304	1,5	-0,6256552	0,1049772	-202,1742	-0,87591728	-0,58282272	-202,820009	201,528391	-202,7372897	201,6111103
304	2,25	-0,6256552	0,1049772	-202,1742	-0,87591728	-0,58282272	-202,820009	201,528391	-202,7372897	201,6111103
304	3	-0,6256552	0,1049772	-202,1742	-0,87591728	-0,58282272	-202,820009	201,528391	-202,7372897	201,6111103
305	0	-0,6393107	0,1022852	-203,7528	-0,89503498	-0,60351652	-204,4176876	203,0879124	-204,3281796	203,1774204
305	0,75	-0,6393107	0,1022852	-203,7528	-0,89503498	-0,60351652	-204,4176876	203,0879124	-204,3281796	203,1774204
305	1,5	-0,6393107	0,1022852	-203,7528	-0,89503498	-0,60351652	-204,4176876	203,0879124	-204,3281796	203,1774204
305	2,25	-0,6393107	0,1022852	-203,7528	-0,89503498	-0,60351652	-204,4176876	203,0879124	-204,3281796	203,1774204
305	3	-0,6393107	0,1022852	-203,7528	-0,89503498	-0,60351652	-204,4176876	203,0879124	-204,3281796	203,1774204
306	0	-0,1653149	0,4404429	-183,8581	-0,23144086	0,50633076	-183,616035	184,100165	-184,0068834	183,7093166
306	0,75	-0,1653149	0,4404429	-183,8581	-0,23144086	0,50633076	-183,616035	184,100165	-184,0068834	183,7093166
306	1,5	-0,1653149	0,4404429	-183,8581	-0,23144086	0,50633076	-183,616035	184,100165	-184,0068834	183,7093166
306	2,25	-0,1653149	0,4404429	-183,8581	-0,23144086	0,50633076	-183,616035	184,100165	-184,0068834	183,7093166
306	3	-0,1653149	0,4404429	-183,8581	-0,23144086	0,50633076	-183,616035	184,100165	-184,0068834	183,7093166
307	0	-0,209167	0,4032327	-182,198	-0,2928338	0,39417192	-182,0457677	182,3502323	-182,3862503	182,0097497
307	0,75	-0,209167	0,4032327	-182,198	-0,2928338	0,39417192	-182,0457677	182,3502323	-182,3862503	182,0097497
307	1,5	-0,209167	0,4032327	-182,198	-0,2928338	0,39417192	-182,0457677	182,3502323	-182,3862503	182,0097497
307	2,25	-0,209167	0,4032327	-182,198	-0,2928338	0,39417192	-182,0457677	182,3502323	-182,3862503	182,0097497
307	3	-0,209167	0,4032327	-182,198	-0,2928338	0,39417192	-182,0457677	182,3502323	-182,3862503	182,0097497
308	0	-0,150587	0,4523327	-181,0311	-0,2108218	0,54302792	-180,7594717	181,3027283	-181,1666283	180,8955717
308	0,75	-0,150587	0,4523327	-181,0311	-0,2108218	0,54302792	-180,7594717	181,3027283	-181,1666283	180,8955717
308	1,5	-0,150587	0,4523327	-181,0311	-0,2108218	0,54302792	-180,7594717	181,3027283	-181,1666283	180,8955717
308	2,25	-0,150587	0,4523327	-181,0311	-0,2108218	0,54302792	-180,7594717	181,3027283	-181,1666283	180,8955717
308	3	-0,150587	0,4523327	-181,0311	-0,2108218	0,54302792	-180,7594717	181,3027283	-181,1666283	180,8955717
309	0	-0,60997	4,96E-02	-162,0585	-0,853958	-0,652604	-162,740864	161,376136	-162,607473	161,509527
309	0,75	-0,60997	4,96E-02	-162,0585	-0,853958	-0,652604	-162,740864	161,376136	-162,607473	161,509527
309	1,5	-0,60997	4,96E-02	-162,0585	-0,853958	-0,652604	-162,740864	161,376136	-162,607473	161,509527
309	2,25	-0,60997	4,96E-02	-162,0585	-0,853958	-0,652604	-162,740864	161,376136	-162,607473	161,509527
309	3	-0,60997	4,96E-02	-162,0585	-0,853958	-0,652604	-162,740864	161,376136	-162,607473	161,509527
310	0	-0,6161782	4,58E-02	-159,6001	-0,86264948	-0,66613384	-160,2937138	158,9064862	-160,1546604	159,0455396
310	0,75	-0,6161782	4,58E-02	-159,6001	-0,86264948	-0,66613384	-160,2937138	158,9064862	-160,1546604	159,0455396
310	1,5	-0,6161782	4,58E-02	-159,6001	-0,86264948	-0,66613384	-160,2937138	158,9064862	-160,1546604	159,0455396
310	2,25	-0,6161782	4,58E-02	-159,6001	-0,86264948	-0,66613384	-160,2937138	158,9064862	-160,1546604	159,0455396
310	3	-0,6161782	4,58E-02	-159,6001	-0,86264948	-0,66613384	-160,2937138	158,9064862	-160,1546604	159,0455396
311	0	-0,6144135	4,78E-02	-157,0759	-0,8601789	-0,6608162	-157,7653962	156,3864038	-157,6288722	156,5229279
311	0,75	-0,6144135	4,78E-02	-157,0759	-0,8601789	-0,6608162	-157,7653962	156,3864038	-157,6288722	156,5229279
311	1,5	-0,6144135	4,78E-02	-157,0759	-0,8601789	-0,6608162	-157,7653962	156,3864038	-157,6288722	156,5229279
311	2,25	-0,6144135	4,78E-02	-157,0759	-0,8601789	-0,6608162	-157,7653962	156,3864038	-157,6288722	156,5229279

311	3	-0,6144135	4,78E-02	-157,0759	-0,8601789	-0,6606162	-157,7653962	156,3664038	-157,6288722	156,5229279
312	0	-0,6642868	4,34E-02	-139,822	-0,93000152	-0,72770416	-140,5757442	139,0682558	-140,4198581	139,2241419
312	0,83	-0,6642868	4,34E-02	-139,822	-0,93000152	-0,72770416	-140,5757442	139,0682558	-140,4198581	139,2241419
312	1,67	-0,6642868	4,34E-02	-139,822	-0,93000152	-0,72770416	-140,5757442	139,0682558	-140,4198581	139,2241419
312	2,50	-0,6642868	4,34E-02	-139,822	-0,93000152	-0,72770416	-140,5757442	139,0682558	-140,4198581	139,2241419
312	3,33	-0,6642868	4,34E-02	-139,822	-0,93000152	-0,72770416	-140,5757442	139,0682558	-140,4198581	139,2241419
313	0	-0,6558732	5,13E-02	-137,5797	-0,91822248	-0,70496784	-138,3154478	136,8439522	-138,1699859	136,9894141
313	0,83	-0,6558732	5,13E-02	-137,5797	-0,91822248	-0,70496784	-138,3154478	136,8439522	-138,1699859	136,9894141
313	1,67	-0,6558732	5,13E-02	-137,5797	-0,91822248	-0,70496784	-138,3154478	136,8439522	-138,1699859	136,9894141
313	2,50	-0,6558732	5,13E-02	-137,5797	-0,91822248	-0,70496784	-138,3154478	136,8439522	-138,1699859	136,9894141
313	3,33	-0,6558732	5,13E-02	-137,5797	-0,91822248	-0,70496784	-138,3154478	136,8439522	-138,1699859	136,9894141
314	0	-0,6599734	4,82E-02	-135,3171	-0,92396276	-0,71484808	-136,0608681	134,5733319	-135,9110761	134,7231239
314	0,83	-0,6599734	4,82E-02	-135,3171	-0,92396276	-0,71484808	-136,0608681	134,5733319	-135,9110761	134,7231239
314	1,67	-0,6599734	4,82E-02	-135,3171	-0,92396276	-0,71484808	-136,0608681	134,5733319	-135,9110761	134,7231239
314	2,50	-0,6599734	4,82E-02	-135,3171	-0,92396276	-0,71484808	-136,0608681	134,5733319	-135,9110761	134,7231239
314	3,33	-0,6599734	4,82E-02	-135,3171	-0,92396276	-0,71484808	-136,0608681	134,5733319	-135,9110761	134,7231239
315	0	-0,6040041	2,95E-02	-118,8803	-0,84560574	-0,67760492	-119,5756049	118,1849951	-119,4239037	118,3366963
315	0,75	-0,6040041	2,95E-02	-118,8803	-0,84560574	-0,67760492	-119,5756049	118,1849951	-119,4239037	118,3366963
315	1,5	-0,6040041	2,95E-02	-118,8803	-0,84560574	-0,67760492	-119,5756049	118,1849951	-119,4239037	118,3366963
315	2,25	-0,6040041	2,95E-02	-118,8803	-0,84560574	-0,67760492	-119,5756049	118,1849951	-119,4239037	118,3366963
315	3	-0,6040041	2,95E-02	-118,8803	-0,84560574	-0,67760492	-119,5756049	118,1849951	-119,4239037	118,3366963
316	0	-0,6013039	3,24E-02	-116,7528	-0,84182546	-0,66972468	-117,4419647	116,0636353	-117,2939735	116,2116265
316	0,75	-0,6013039	3,24E-02	-116,7528	-0,84182546	-0,66972468	-117,4419647	116,0636353	-117,2939735	116,2116265
316	1,5	-0,6013039	3,24E-02	-116,7528	0,84182546	-0,66972468	-117,4419647	116,0636353	-117,2939735	116,2116265
316	2,25	-0,6013039	3,24E-02	-116,7528	-0,84182546	-0,66972468	-117,4419647	116,0636353	-117,2939735	116,2116265
316	3	-0,6013039	3,24E-02	-116,7528	-0,84182546	-0,66972468	-117,4419647	116,0636353	-117,2939735	116,2116265
317	0	-0,5906433	0,0410689	-114,6087	-0,82690062	-0,64306172	-115,2764031	113,9409969	-115,140279	114,077121
317	0,75	-0,5906433	0,0410689	-114,6087	-0,82690062	-0,64306172	-115,2764031	113,9409969	-115,140279	114,077121
317	1,5	-0,5906433	0,0410689	-114,6087	-0,82690062	-0,64306172	-115,2764031	113,9409969	-115,140279	114,077121
317	2,25	-0,5906433	0,0410689	-114,6087	-0,82690062	-0,64306172	-115,2764031	113,9409969	-115,140279	114,077121
317	3	-0,5906433	0,0410689	-114,6087	-0,82690062	-0,64306172	-115,2764031	113,9409969	-115,140279	114,077121
318	0	-0,1241524	0,4210035	-98,20273	-0,17381336	0,52462272	-97,93070938	98,47475062	-98,31446716	98,09099284
318	0,75	-0,1241524	0,4210035	-98,20273	-0,17381336	0,52462272	-97,93070938	98,47475062	-98,31446716	98,09099284
318	1,5	-0,1241524	0,4210035	-98,20273	-0,17381336	0,52462272	-97,93070938	98,47475062	-98,31446716	98,09099284
318	2,25	-0,1241524	0,4210035	-98,20273	-0,17381336	0,52462272	-97,93070938	98,47475062	-98,31446716	98,09099284
318	3	-0,1241524	0,4210035	-98,20273	-0,17381336	0,52462272	-97,93070938	98,47475062	-98,31446716	98,09099284
319	0	-0,1798938	0,3740309	-97,90473	-0,25185132	0,38257688	-97,74657166	98,06288834	-98,06663442	97,74282558
319	0,75	-0,1798938	0,3740309	-97,90473	-0,25185132	0,38257688	-97,74657166	98,06288834	-98,06663442	97,74282558
319	1,5	-0,1798938	0,3740309	-97,90473	-0,25185132	0,38257688	-97,74657166	98,06288834	-98,06663442	97,74282558

319	2.25	-0.1798938	0.3740309	-97.90473	-0.25185132	[illegible]	[illegible]	[illegible]	-96.0063442	97.74282556
319	3	-0.1798938	0.3740309	-97,90473	-0.25185132	0.38287686	-97.74657166	96.06285534	-96.00663442	97.74282556
320	0	-0.1320274	0.4151757	-96,24718	-0.18483836	0.50584824	-95.99043718	96.50392292	-96.36600466	96.12835534
320	0,75	-0.1320274	0.4151757	-96,24718	-0.18483836	0.50584824	-95,99043718	96.50392292	-96.36600466	96.12835534
320	1,5	-0,1320274	0.4151757	-96,24718	-0.18483836	0.50554824	-95,99043718	96.50392292	-96.36600466	96.12835534
320	2.25	-0.1320274	0.4151757	-96,24718	-0.18483836	0.50584824	-95,99043718	96.50392292	-96.36600466	96.12835534
320	3	-0.1320274	0.4151757	-96,24718	-0.18483836	0.50584824	-95,99043718	96.50392292	-96.36600466	96,12835534
321	0	-0,597793	0,0565726	-77,04807	-0,8369102	-0.62683544	-77,708849	76,387291	-77.5860837	76.5100563
321	0,75	-0.597793	0.0565726	-77,04807	-0,8369102	-0.62683544	-77,708849	76.387291	-77.5860837	76.5100563
321	1,5	-0.597793	0.0565726	-77,04807	-0,8369102	-0.62683544	-77.708849	76.387291	-77.5860837	76.5100563
321	2,25	-0,597793	0.0565726	-77,04807	-0.8369102	-0.62683544	-77,708849	76.387291	-77.5860837	76.5100563
321	3	-0.597793	0.0565726	-77,04807	-0.8369102	-0.62683544	-77.708849	76.387291	-77.5860837	76.5100563
322	0	-0.5852098	5,62E-02	-78,18597	-0,81929372	-0.61233176	-78.83202176	77.53991524	-78.71265862	77,65928118
322	0,75	-0.5852098	5,62E-02	-78.18597	-0.81929372	-0.61233176	-78.83202176	77.53991524	-78.71265862	77.65928118
322	1,5	-0.5852098	5,62E-02	-78.18597	-0.81929372	-0.61233176	-78.83202176	77.53991524	-78.71265862	77.65928118
322	2,25	-0.5852098	5,62E-02	-78.18597	-0.81929372	-0.61233176	-78.83202176	77.53991524	-78.71265862	77.65928118
322	3	-0.5852098	5,62E-02	-78.18597	-0.81929372	-0.61233176	-78.83202176	77.53991524	-78.71265862	77.65928118
323	0	-0.6082239	2,69E-02	-79,54545	-0.85151346	-0.68652868	-80.24841868	78.84248132	-80.09285151	78.99804849
323	0,75	-0.6082239	2.69E-02	-79,54545	-0.85151346	-0.68652868	-80.24841868	78.84248132	-80.09285151	78,99804849
323	1,5	-0.6082239	2,69E-02	-79,54545	-0.85151346	-0.68652868	-80.24841868	78.84248132	-80.09285151	78,99804849
323	2.25	-0.6082239	2,69E-02	-79.54545	-0,85151346	-0.68652868	-80.24841868	78.84248132	-80.09285151	78,99804849
323	3	-0.6082239	2.69E-02	-79,54545	-0,85151346	-0.68652868	-80.24841868	78.84248132	-80.09285151	78,99804849
324	0	-0.5617226	1,76E-02	-67,97901	-0,78641164	-0.64590712	-68.63547712	67.32254288	-68,48456034	67,47345966
324	0,75	-0.5617226	1,76E-02	-67,97901	-0,78641164	-0.64590712	-68.63547712	67,32254288	-68,48456034	67,47345966
324	1,5	-0.5617226	1,76E-02	-67,97901	-0,78641164	-0.64590712	-68.63547712	67.32254288	-68,48456034	67,47345966
324	2,25	-0.5617226	1,76E-02	-67,97901	-0,78641164	-0.64590712	-68.63547712	67.32254288	-68,48456034	67,47345966
324	3	-0.5617226	1,76E-02	-67,97901	-0,78641164	-0.64590712	-68.63547712	67.32254288	-68,48456034	67,47345966
325	0	-0.5193861	5,88E-02	-69,9645	-0.72714054	-0.52918332	-70.52896332	69.40003668	-70.43194749	69,49705251
325	0,75	-0.5193861	5,88E-02	-69,9645	-0,72714054	-0.52918332	-70.52896332	69.40003668	-70.43194749	69,49705251
325	1,5	-0.5193861	5,88E-02	-69,9645	-0,72714054	-0.52918332	-70.52896332	69.40003668	-70.43194749	69,49705251
325	2,25	-0.5193861	5,88E-02	-69,9645	-0,72714054	-0.52918332	-70.52896332	69.40003668	-70,43194749	69,49705251
325	3	-0.5193861	5,88E-02	-69,9645	-0,72714054	-0.52918332	-70.52896332	69.40003668	-70,43194749	69,49705251
326	0	-0,5334463	5,33E-02	-71,89143	-0,74682482	-0.55485556	-72.47826556	71,30459444	-72,37153167	71,41132833
326	0,75	-0,5334463	5,33E-02	-71,89143	-0,74682482	-0.55485556	-72.47826556	71.30459444	-72,37153167	71,41132833
326	1,5	-0,5334463	5,33E-02	-71,89143	-0,74682482	-0.55485556	-72.47826556	71.30459444	-72,37153167	71,41132833
326	2,25	-0.5334463	5,33E-02	-71,89143	-0,74682482	-0.55485556	-72.47826556	71.30459444	-72,37153167	71,41132833
326	3	-0.5334463	5,33E-02	-71,89143	-0,74682482	-0,55485556	-72.47826556	71.30459444	-72,37153167	71,41132833
327	0	-0,0744124	0,6558945	-57,04164	-0,10417736	0.96013632	-56.47504038	57.60823962	-57,10861116	56,97466884
327	0,75	-0,0744124	0.6558945	-57,04164	-0,10417736	0.96013632	-56.47504038	57.60823962	-57,10861116	56,97466884

327	1,5	-0.0744124	0.6558945	57.04164	-0.10417736	0.96013632	-56.47504038	57.60823962	-57.10861116	56.97466884
327	2,25	-0.0744124	0.6558945	-57.04164	-0.10417736	0.96013632	-56.47504038	57.60823962	-57.10861116	56.97466884
327	3	-0.0744124	0.6558945	-57.04164	-0.10417736	0.96013632	-56.47504038	57.60823962	-57.10861116	56.97466884
328	0	-0.2081339	0.5471187	-57.32292	-0.29138746	0.62562924	-57.02556198	57.62027802	-57.51024051	57.13559949
328	0,75	-0.2081339	0.5471187	-57.32292	-0.29138746	0.62562924	-57.02556198	57.62027802	-57.51024051	57.13559949
328	1,5	-0.2081339	0.5471187	-57.32292	-0.29138746	0.62562924	-57.02556198	57.62027802	-57.51024051	57.13559949
328	2,25	-0.2081339	0.5471187	-57.32292	-0.29138746	0.62562924	-57.02556198	57.62027802	-57.51024051	57.13559949
328	3	-0.2081339	0.5471187	-57.32292	-0.29138746	0.62562924	-57.02556198	57.62027802	-57.51024051	57.13559949
329	0	1.35E-02	0.7426872	-58.51743	0.0189	1.20449952	-57.7585428	59.2763172	-58.50528	58.52958
329	0,75	1.35E-02	0.7426872	-58.51743	0.0189	1.20449952	-57.7585428	59.2763172	-58.50528	58.52958
329	1,5	1.35E-02	0.7426872	-58.51743	0.0189	1.20449952	-57.7585428	59.2763172	-58.50528	58.52958
329	2,25	1.35E-02	0.7426872	-58.51743	0.0189	1.20449952	-57.7585428	59.2763172	-58.50528	58.52958
329	3	1.35E-02	0.7426872	-58.51743	0.0189	1.20449952	-57.7585428	59.2763172	-58.50528	58.52958
330	0	-0.1563036	0.3024733	-37.29496	-0.21882504	0.29639296	-37.18005102	37.40986898	-37.43563324	37.15428676
330	0,9	-0.1563036	0.3024733	-37.29496	-0.21882504	0.29639296	-37.18005102	37.40986898	-37.43563324	37.15428676
330	1,8	-0.1563036	0.3024733	-37.29496	-0.21882504	0.29639296	-37.18005102	37.40986898	-37.43563324	37.15428676
330	2,7	-0.1563036	0.3024733	-37.29496	-0.21882504	0.29639296	-37.18005102	37.40986898	-37.43563324	37.15428676
330	3,6	-0.1563036	0.3024733	-37.29496	-0.21882504	0.29639296	-37.18005102	37.40986898	-37.43563324	37.15428676
331	0	-0.1965227	0.2680535	-34.15146	-0.27513178	0.19305836	-34.11923374	34.18368626	-34.32833043	33.97458957
331	0,9	-0.1965227	0.2680535	-34.15146	-0.27513178	0.19305836	-34.11923374	34.18368626	-34.32833043	33.97458957
331	1,8	-0.1965227	0.2680535	-34.15146	-0.27513178	0.19305836	-34.11923374	34.18368626	-34.32833043	33.97458957
331	2,7	-0.1965227	0.2680535	-34.15146	-0.27513178	0.19305836	-34.11923374	34.18368626	-34.32833043	33.97458957
331	3,6	-0.1965227	0.2680535	-34.15146	-0.27513178	0.19305836	-34.11923374	34.18368626	-34.32833043	33.97458957
332	0	-9.419438	-8.021606	-202.2037	-13.1872132	-24.1378952	-221.5286316	182.8787684	-210.6811942	193.7262058
332	0,9	-9.419438	-8.021606	-202.2037	-13.1872132	-24.1378952	-221.5286316	182.8787684	-210.6811942	193.7262058
332	1,8	-9.419438	-8.021606	-202.2037	-13.1872132	-24.1378952	-221.5286316	182.8787684	-210.6811942	193.7262058
332	2,7	-9.419438	-8.021606	-202.2037	-13.1872132	-24.1378952	-221.5286316	182.8787684	-210.6811942	193.7262058
332	3,6	-9.419438	-8.021606	-202.2037	-13.1872132	-24.1378952	-221.5286316	182.8787684	-210.6811942	193.7262058
333	0	-9.480218	-8.042423	-197.1311	-13.2723052	-24.2441384	-216.5497846	177.7124154	-205.6632962	188.5989038
333	0,9	-9.480218	-8.042423	-197.1311	-13.2723052	-24.2441384	-216.5497846	177.7124154	-205.6632962	188.5989038
333	1,8	-9.480218	-8.042423	-197.1311	-13.2723052	-24.2441384	-216.5497846	177.7124154	-205.6632962	188.5989038
333	2,7	-9.480218	-8.042423	-197.1311	-13.2723052	-24.2441384	-216.5497846	177.7124154	-205.6632962	188.5989038
333	3,6	-9.480218	-8.042423	-197.1311	-13.2723052	-24.2441384	-216.5497846	177.7124154	-205.6632962	188.5989038
343	0	-10.951	-8.144927	-179.3276	-15.3314	-26.1730832	-200.613727	158.041473	-189.1835	169.4717
343	0,75	-10.951	-8.144927	-179.3276	-15.3314	-26.1730832	-200.613727	158.041473	-189.1835	169.4717
343	1,5	-10.951	-8.144927	-179.3276	-15.3314	-26.1730832	-200.613727	158.041473	-189.1835	169.4717
343	2,25	-10.951	-8.144927	-179.3276	-15.3314	-26.1730832	-200.613727	158.041473	-189.1835	169.4717
343	3	-10.951	-8.144927	-179.3276	-15.3314	-26.1730832	-200.613727	158.041473	-189.1835	169.4717
345	0	-10.94442	-8.11102	-180.2854	-15.322188	-26.110936	-201.529724	159.041076	-190.135378	170.435422

345	0,75	-10,94442	-8,11102	-160,2854	-15,322188	-26,110936	-201,529724	159,041076	-190,135378	170,435422
345	1,5	-10,94442	-8,11102	-160,2854	-15,322188	-26,110936	-201,529724	159,041076	-190,135378	170,435422
345	2,25	-10,94442	-8,11102	-160,2854	-15,322188	-26,110936	-201,529724	159,041076	-190,135378	170,435422
345	3	-10,94442	-8,11102	-160,2854	-15,322188	-26,110936	-201,529724	159,041076	-190,135378	170,435422
346	0	-10,60983	-7,871068	-161,1407	-14,853762	-25,3255048	-201,743564	160,537836	-190,689547	171,591853
346	0,75	-10,60983	-7,871068	-161,1407	-14,853762	-25,3255048	-201,743564	160,537836	-190,689547	171,591853
346	1,5	-10,60983	-7,871068	-161,1407	-14,853762	-25,3255048	-201,743564	160,537836	-190,689547	171,591853
346	2,25	-10,60983	-7,871068	-161,1407	-14,853762	-25,3255048	-201,743564	160,537836	-190,689547	171,591853
346	3	-10,60983	-7,871068	-161,1407	-14,853762	-25,3255048	-201,743564	160,537836	-190,689547	171,591853
347	0	-9,180225	-7,190567	-168,0468	-12,852315	-22,5211772	-186,255637	149,841963	-176,3110025	159,7865975
347	0,75	-9,180225	-7,190567	-168,0468	-12,852315	-22,5211772	-186,255637	149,841963	-176,3110025	159,7865975
347	1,5	-9,180225	-7,190567	-168,0468	-12,852315	-22,5211772	-186,255637	149,841963	-176,3110025	159,7865975
347	2,25	-9,180225	-7,190567	-168,0468	-12,852315	-22,5211772	-186,255637	149,841963	-176,3110025	159,7865975
347	3	-9,180225	-7,190567	-168,0468	-12,852315	-22,5211772	-186,255637	149,841963	-176,3110025	159,7865975
348	0	-9,237455	-7,242324	-169,4825	-12,932437	-22,6726644	-187,80977	151,15523	-177,7962095	161,1687905
348	0,75	-9,237455	-7,242324	-169,4825	-12,932437	-22,6726644	-187,80977	151,15523	-177,7962095	161,1687905
348	1,5	-9,237455	-7,242324	-169,4825	-12,932437	-22,6726644	-187,80977	151,15523	-177,7962095	161,1687905
348	2,25	-9,237455	-7,242324	-169,4825	-12,932437	-22,6726644	-187,80977	151,15523	-177,7962095	161,1687905
348	3	-9,237455	-7,242324	-169,4825	-12,932437	-22,6726644	-187,80977	151,15523	-177,7962095	161,1687905
349	0	-9,076404	-7,089724	-170,494	-12,7069656	-22,2352432	-188,4754088	152,5125912	-178,6627636	162,3252364
349	0,75	-9,076404	-7,089724	-170,494	-12,7069656	-22,2352432	-188,4754088	152,5125912	-178,6627636	162,3252364
349	1,5	-9,076404	-7,089724	-170,494	-12,7069656	-22,2352432	-188,4754088	152,5125912	-178,6627636	162,3252364
349	2,25	-9,076404	-7,089724	-170,494	-12,7069656	-22,2352432	-188,4754088	152,5125912	-178,6627636	162,3252364
349	3	-9,076404	-7,089724	-170,494	-12,7069656	-22,2352432	-188,4754088	152,5125912	-178,6627636	162,3252364
350	0	-8,676145	-6,658459	-156,9687	-12,146603	-21,0649084	-174,038533	139,898867	-164,7772305	149,1601695
350	0,75	-8,676145	-6,658459	-156,9687	-12,146603	-21,0649084	-174,038533	139,898867	-164,7772305	149,1601695
350	1,5	-8,676145	-6,658459	-156,9687	-12,146603	-21,0649084	-174,038533	139,898867	-164,7772305	149,1601695
350	2,25	-8,676145	-6,658459	-156,9687	-12,146603	-21,0649084	-174,038533	139,898867	-164,7772305	149,1601695
350	3	-8,676145	-6,658459	-156,9687	-12,146603	-21,0649084	-174,038533	139,898867	-164,7772305	149,1601695
351	0	-8,621388	-6,77691	-157,81	-12,3499432	-21,4287216	-175,1725756	140,4474244	-165,7492492	149,8707508
351	0,7	-8,621388	-6,77691	-157,81	-12,3499432	-21,4287216	-175,1725756	140,4474244	-165,7492492	149,8707508
351	1,5	-8,621388	-6,77691	-157,81	-12,3499432	-21,4287216	-175,1725756	140,4474244	-165,7492492	149,8707508
351	2,25	-8,621388	-6,77691	-157,81	-12,3499432	-21,4287216	-175,1725756	140,4474244	-165,7492492	149,8707508
351	3	-8,621388	-6,77691	-157,81	-12,3499432	-21,4287216	-175,1725756	140,4474244	-165,7492492	149,8707508
352	0	-8,722329	-6,6853	-158,1141	-12,2112606	-21,1632748	-175,2661948	140,9620052	-165,9641961	150,2640039
352	0,75	-8,722329	-6,6853	-158,1141	-12,2112606	-21,1632748	-175,2661948	140,9620052	-165,9641961	150,2640039
352	1,5	-8,722329	-6,6853	-158,1141	-12,2112606	-21,1632748	-175,2661948	140,9620052	-165,9641961	150,2640039
352	2,25	-8,722329	-6,6853	-158,1141	-12,2112606	-21,1632748	-175,2661948	140,9620052	-165,9641961	150,2640039
352	3	-8,722329	-6,6853	-158,1141	-12,2112606	-21,1632748	-175,2661948	140,9620052	-165,9641961	150,2640039

353	0	-10,59519	-8,063764	-143,7232	-14,833266	-25,6162504	-164,501192	122,945208	-153,258871	134,187529
353	0,75	-10,59519	-8,063764	-143,7232	-14,833266	-25,6162504	-164,501192	122,945208	-153,258871	134,187529
353	1,5	-10,59519	-8,063764	-143,7232	-14,833266	-25,6162504	-164,501192	122,945208	-153,258871	134,187529
353	2,25	-10,59519	-8,063764	-143,7232	-14,833266	-25,6162504	-164,501192	122,945208	-153,258871	134,187529
353	3	-10,59519	-8,063764	-143,7232	-14,833266	-25,6162504	-164,501192	122,945208	-153,258871	134,187529
356	0	-10,61765	-8,086387	-144,5046	-14,86471	-25,6793992	-165,332167	123,677033	-154,060485	134,948715
356	0,75	-10,61765	-8,086387	-144,5046	-14,86471	-25,6793992	-165,332167	123,677033	-154,060485	134,948715
356	1,5	-10,61765	-8,086387	-144,5046	-14,86471	-25,6793992	-165,332167	123,677033	-154,060485	134,948715
356	2,25	-10,61765	-8,086387	-144,5046	-14,86471	-25,6793992	-165,332167	123,677033	-154,060485	134,948715
356	3	-10,61765	-8,086387	-144,5046	-14,86471	-25,6793992	-165,332167	123,677033	-154,060485	134,948715
357	0	-10,59386	-8,050933	-144,9243	-14,831404	-25,5941248	-165,687865	124,160735	-154,458774	135,389826
357	0,75	-10,59386	-8,050933	-144,9243	-14,831404	-25,5941248	-165,687865	124,160735	-154,458774	135,389826
357	1,5	-10,59386	-8,050933	-144,9243	-14,831404	-25,5941248	-165,687865	124,160735	-154,458774	135,389826
357	2,25	-10,59386	-8,050933	-144,9243	-14,831404	-25,5941248	-165,687865	124,160735	-154,458774	135,389826
357	3	-10,59386	-8,050933	-144,9243	-14,831404	-25,5941248	-165,687865	124,160735	-154,458774	135,389826
358	0	-9,490608	-7,12468	-130,5499	-13,2868512	-22,7882176	-149,0633096	112,0364904	-139,0914472	122,0083528
358	0,75	-9,490608	-7,12468	-130,5499	-13,2868512	-22,7882176	-149,0633096	112,0364904	-139,0914472	122,0083528
358	1,5	-9,490608	-7,12468	-130,5499	-13,2868512	-22,7882176	-149,0633096	112,0364904	-139,0914472	122,0083528
358	2,25	-9,490608	-7,12468	-130,5499	-13,2868512	-22,7882176	-149,0633096	112,0364904	-139,0914472	122,0083528
358	3	-9,490608	-7,12468	-130,5499	-13,2868512	-22,7882176	-149,0633096	112,0364904	-139,0914472	122,0083528
359	0	-9,5878	-7,202499	-131,3907	-13,42292	-23,0293584	-150,098559	112,682841	-140,01972	122,76168
359	0,75	-9,5878	-7,202499	-131,3907	-13,42292	-23,0293584	-150,098559	112,682841	-140,01972	122,76168
359	1,5	-9,5878	-7,202499	-131,3907	-13,42292	-23,0293584	-150,098559	112,682841	-140,01972	122,76168
359	2,25	-9,5878	-7,202499	-131,3907	-13,42292	-23,0293584	-150,098559	112,682841	-140,01972	122,76168
359	3	-9,5878	-7,202499	-131,3907	-13,42292	-23,0293584	-150,098559	112,682841	-140,01972	122,76168
360	0	-9,439881	-7,068127	-131,8784	-13,2158334	-22,6366504	-150,2743842	113,4824158	-140,3742929	123,3825071
360	0,75	-9,439881	-7,068127	-131,8784	-13,2158334	-22,6366504	-150,2743842	113,4824158	-140,3742929	123,3825071
360	1,5	-9,439881	-7,068127	-131,8784	-13,2158334	-22,6366504	-150,2743842	113,4824158	-140,3742929	123,3825071
360	2,25	-9,439881	-7,068127	-131,8784	-13,2158334	-22,6366504	-150,2743842	113,4824158	-140,3742929	123,3825071
360	3	-9,439881	-7,068127	-131,8784	-13,2158334	-22,6366504	-150,2743842	113,4824158	-140,3742929	123,3825071
361	0	-10,85056	-8,07242	-117,4952	-15,190784	-25,936544	-138,588292	96,402108	-127,260704	107,729696
361	0,83	-10,85056	-8,07242	-117,4952	-15,190784	-25,936544	-138,588292	96,402108	-127,260704	107,729696
361	1,67	-10,85056	-8,07242	-117,4952	-15,190784	-25,936544	-138,588292	96,402108	-127,260704	107,729696
361	2,50	-10,85056	-8,07242	-117,4952	-15,190784	-25,936544	-138,588292	96,402108	-127,260704	107,729696
361	3,33	-10,85056	-8,07242	-117,4952	-15,190784	-25,936544	-138,588292	96,402108	-127,260704	107,729696
362	0	-11,01053	-8,206098	-118,2869	-15,414742	-26,3423928	-139,705634	96,868166	-128,196377	108,377423
362	0,83	-11,01053	-8,206098	-118,2869	-15,414742	-26,3423928	-139,705634	96,868166	-128,196377	108,377423
362	1,67	-11,01053	-8,206098	-118,2869	-15,414742	-26,3423928	-139,705634	96,868166	-128,196377	108,377423
362	2,50	-11,01053	-8,206098	-118,2869	-15,414742	-26,3423928	-139,705634	96,868166	-128,196377	108,377423

362	3.33	-11,01053	-8,206098	-118,2869	-15,414742	[illegible]	[illegible]	[illegible]	[illegible]	108,377423
363	0	-10,85242	-8,070474	-118,7608	-15,193388	-25,9356624	-139,854178	97,667422	-128,527978	108,993622
363	0.83	-10,85242	-8,070474	-118,7608	-15,193388	-25,9356624	-139,854178	97,667422	-128,527978	108,993622
363	1.67	-10,85242	-8,070474	-118,7608	-15,193388	-25,9356624	-139,854178	97,667422	-128,527978	108,993622
363	2,50	-10,85242	-8,070474	-118,7608	-15,193388	-25,9356624	-139,854178	97,667422	-128,527978	108,993622
363	3,33	-10,85242	-8,070474	-118,7608	-15,193388	-25,9356624	-139,854178	97,667422	-128,527978	108,993622
364	0	-9,440709	-6,999875	-104,3455	-13,2169926	-22,5286508	-122,6742258	86,0167742	-112,8421381	95,8488619
364	0,75	-9,440709	-6,999875	-104,3455	-13,2169926	-22,5286508	-122,6742258	86,0167742	-112,8421381	95,8488619
364	1,5	-9,440709	-6,999875	-104,3455	-13,2169926	-22,5286508	-122,6742258	86,0167742	-112,8421381	95,8488619
364	2,25	-9,440709	-6,999875	-104,3455	-13,2169926	-22,5286508	-122,6742258	86,0167742	-112,8421381	95,8488619
364	3	-9,440709	-6,999875	-104,3455	-13,2169926	-22,5286508	-122,6742258	86,0167742	-112,8421381	95,8488619
365	0	-9,590155	-7,131961	-105,1527	-13,426217	-22,9193236	-123,792847	86,512553	-113,7838395	96,5215605
365	0,75	-9,590155	7,131961	-105,1527	-13,426217	-22,9193236	-123,792847	86,512553	-113,7838395	96,5215605
365	1,5	-9,590155	-7,131961	-105,1527	-13,426217	-22,9193236	-123,792847	86,512553	-113,7838395	96,5215605
365	2,25	-9,590155	-7,131961	-105,1527	-13,426217	-22,9193236	-123,792847	86,512553	-113,7838395	96,5215605
365	3	-9,590155	-7,131961	-105,1527	-13,426217	-22,9193236	-123,792847	86,512553	-113,7838395	96,5215605
366	0	-9,49452	-7,051857	-105,6049	-13,292328	-22,6763952	-124,050181	87,159619	-114,149968	97,059832
366	0,75	-9,49452	-7,051857	-105,6049	-13,292328	-22,6763952	-124,050181	87,159619	-114,149968	97,059832
366	1,5	-9,49452	-7,051857	-105,6049	-13,292328	-22,6763952	-124,050181	87,159619	-114,149968	97,059832
366	2,25	-9,49452	-7,051857	-105,6049	-13,292328	-22,6763952	-124,050181	87,159619	-114,149968	97,059832
366	3	-9,49452	-7,051857	-105,6049	-13,292328	-22,6763952	-124,050181	87,159619	-114,149968	97,059832
367	0	-10,59683	-7,910366	-91,00382	-14,835562	-25,3727816	-111,630382	70,377258	-100,540967	81,466673
367	0,75	-10,59683	-7,910366	-91,00382	-14,835562	-25,3727816	-111,630382	70,377258	-100,540967	81,466673
367	1,5	-10,59683	-7,910366	-91,00382	-14,835562	-25,3727816	-111,630382	70,377258	-100,540967	81,466673
367	2,25	-10,59683	-7,910366	-91,00382	-14,835562	-25,3727816	-111,630382	70,377258	-100,540967	81,466673
367	3	-10,59683	-7,910366	-91,00382	-14,835562	-25,3727816	-111,630382	70,377258	-100,540967	81,466673
368	0	-10,62225	-7,943527	-91,85909	-14,87115	-25,4563432	-112,549317	71,168863	-101,419115	82,299065
368	0,75	-10,62225	-7,943527	-91,85909	-14,87115	-25,4563432	-112,549317	71,168863	-101,419115	82,299065
368	1,5	-10,62225	-7,943527	-91,85909	-14,87115	-25,4563432	-112,549317	71,168863	-101,419115	82,299065
368	2,25	-10,62225	-7,943527	-91,85909	-14,87115	-25,4563432	-112,549317	71,168863	-101,419115	82,299065
368	3	-10,62225	-7,943527	-91,85909	-14,87115	-25,4563432	-112,549317	71,168863	-101,419115	82,299065
369	0	-10,60139	-7,918603	-92,33624	-14,841946	-25,3914328	-112,976511	71,695969	-101,877491	82,794989
369	0,75	-10,60139	-7,918603	-92,33624	-14,841946	-25,3914328	-112,976511	71,695969	-101,877491	82,794989
369	1,5	-10,60139	-7,918603	-92,33624	-14,841946	-25,3914328	-112,976511	71,695969	-101,877491	82,794989
369	2,25	-10,60139	-7,918603	-92,33624	-14,841946	-25,3914328	-112,976511	71,695969	-101,877491	82,794989
369	3	-10,60139	-7,918603	-92,33624	-14,841946	-25,3914328	-112,976511	71,695969	-101,877491	82,794989
370	0	-8,727499	-6,473767	-77,6845	-12,2184986	-20,831026	-94,6312658	60,7377342	-85,5392491	69,8297509
370	0,75	-8,727499	-6,473767	-77,6845	-12,2184986	-20,831026	-94,6312658	60,7377342	-85,5392491	69,8297509
370	1,5	-8,727499	-6,473767	-77,6845	-12,2184986	-20,831026	-94,6312658	60,7377342	-85,5392491	69,8297509

370	2,25	-8,727499	-6,473767	-77,6845	-12,2184986	-20,831026	-94,6312658	60,7377342	-85,5392491	69,8297509
370	3	-8,727499	-6,473767	-77,6845	-12,2184986	-20,831026	-94,6312658	60,7377342	-85,5392491	69,8297509
371	0	-8,828929	-6,563836	-78,66107	-12,3605006	-21,0968524	-95,8196208	61,5025192	-86,6071061	70,7150339
371	0,75	-8,828929	-6,563836	-78,66107	-12,3605006	-21,0968524	-95,8196208	61,5025192	-86,6071061	70,7150339
371	1,5	-8,828929	-6,563836	-78,66107	-12,3605006	-21,0968524	-95,8196208	61,5025192	-86,6071061	70,7150339
371	2,25	-8,828929	-6,563836	-78,66107	-12,3605006	-21,0968524	-95,8196208	61,5025192	-86,6071061	70,7150339
371	3	-8,828929	-6,563836	-78,66107	-12,3605006	-21,0968524	-95,8196208	61,5025192	-86,6071061	70,7150339
372	0	-8,68713	-6,444354	-79,34759	-12,161982	-20,7355224	-96,2165	62,47868	-87,166007	71,529173
372	0,75	-8,68713	-6,444354	-79,34759	-12,161982	-20,7355224	-96,2165	62,47868	-87,166007	71,529173
372	1,5	-8,68713	-6,444354	-79,34759	-12,161982	-20,7355224	-96,2165	62,47868	-87,166007	71,529173
372	2,25	-8,68713	-6,444354	-79,34759	-12,161982	-20,7355224	-96,2165	62,47868	-87,166007	71,529173
372	3	-8,68713	-6,444354	-79,34759	-12,161982	-20,7355224	-96,2165	62,47868	-87,166007	71,529173
373	0	-9,095833	-6,797606	-64,90175	-12,7341662	-21,7911692	-82,6143556	47,1891444	-73,0879997	56,7155003
373	0,75	-9,095833	-6,797606	-64,90175	-12,7341662	-21,7911692	-82,6143556	47,1891444	-73,0879997	56,7155003
373	1,5	-9,095833	-6,797606	-64,90175	-12,7341662	-21,7911692	-82,6143556	47,1891444	-73,0879997	56,7155003
373	2,25	-9,095833	-6,797606	-64,90175	-12,7341662	-21,7911692	-82,6143556	47,1891444	-73,0879997	56,7155003
373	3	-9,095833	-6,797606	-64,90175	-12,7341662	-21,7911692	-82,6143556	47,1891444	-73,0879997	56,7155003
374	0	-9,260149	-6,947791	-65,83736	-12,9642086	-22,2286444	-83,8973298	47,7773902	-74,1714941	57,5032259
374	0,75	-9,260149	-6,947791	-65,83736	-12,9642086	-22,2286444	-83,8973298	47,7773902	-74,1714941	57,5032259
374	1,5	-9,260149	-6,947791	-65,83736	-12,9642086	-22,2286444	-83,8973298	47,7773902	-74,1714941	57,5032259
374	2,25	-9,260149	-6,947791	-65,83736	-12,9642086	-22,2286444	-83,8973298	47,7773902	-74,1714941	57,5032259
374	3	-9,260149	-6,947791	-65,83736	-12,9642086	-22,2286444	-83,8973298	47,7773902	-74,1714941	57,5032259
375	0	-9,201686	-6,892325	-66,31235	-12,8823604	-22,0697432	-84,2466982	48,3780018	-74,5938674	58,0308326
375	0,75	-9,201686	-6,892325	-66,31235	-12,8823604	-22,0697432	-84,2466982	48,3780018	-74,5938674	58,0308326
375	1,5	-9,201686	-6,892325	-66,31235	-12,8823604	-22,0697432	-84,2466982	48,3780018	-74,5938674	58,0308326
375	2,25	-9,201686	-6,892325	-66,31235	-12,8823604	-22,0697432	-84,2466982	48,3780018	-74,5938674	58,0308326
375	3	-9,201686	-6,892325	-66,31235	-12,8823604	-22,0697432	-84,2466982	48,3780018	-74,5938674	58,0308326
376	0	-10,59515	-7,566557	-51,88546	-14,83321	-24,5206712	-72,166197	31,604723	-61,421095	42,349825
376	0,75	-10,59515	-7,566557	-51,88546	-14,83321	-24,5206712	-72,166197	31,604723	-61,421095	42,349825
376	1,5	-10,59515	-7,566557	-51,88546	-14,83321	-24,5206712	-72,166197	31,604723	-61,421095	42,349825
376	2,25	-10,59515	-7,566557	-51,88546	-14,83321	-24,5206712	-72,166197	31,604723	-61,421095	42,349825
376	3	-10,59515	-7,566557	-51,88546	-14,83321	-24,5206712	-72,166197	31,604723	-61,421095	42,349825
377	0	-10,92678	-7,807526	-53,19525	-15,297492	-25,5041776	-74,114912	32,275588	-63,029352	43,361148
377	0,75	-10,92678	-7,807526	-53,19525	-15,297492	-25,5041776	-74,114912	32,275588	-63,029352	43,361148
377	1,5	-10,92678	-7,807526	-53,19525	-15,297492	-25,5041776	-74,114912	32,275588	-63,029352	43,361148
377	2,25	-10,92678	-7,807526	-53,19525	-15,297492	-25,5041776	-74,114912	32,275588	-63,029352	43,361148
377	3	-10,92678	-7,807526	-53,19525	-15,297492	-25,5041776	-74,114912	32,275588	-63,029352	43,361148
378	0	-10,93928	-7,827618	-53,44146	-15,314992	-25,5513248	-74,396214	32,486706	-63,286812	43,596108
378	0,75	-10,93928	-7,827618	-53,44146	-15,314992	-25,5513248	-74,396214	32,486706	-63,286812	43,596108

378	1.5	-10,93928	-7,827618	-53,44146	-15,314992	-25,6513248	-74,396214	32,486706	-63,286812	43,596108
378	2.25	-10,93928	-7,827618	-53,44146	-15,314992	-25,6513248	-74,396214	32,486706	-63,286812	43,596108
378	3	-10,93928	-7,827618	-53,44146	-15,314992	-25,6513248	-74,396214	32,486706	-63,286812	43,596108
379	0	-9,734668	-7,147335	-33,97993	-13,6285352	-23,1173376	-52,8088666	15,1509934	-42,7411312	25,2187288
379	0,9	-9,734668	-7,147335	-33,97993	-13,6285352	-23,1173376	-52,8088666	15,1509934	-42,7411312	25,2187288
379	1,8	-9,734668	-7,147335	-33,97993	-13,6285352	-23,1173376	-52,8088666	15,1509934	-42,7411312	25,2187288
379	2,7	-9,734668	-7,147335	-33,97993	-13,6285352	-23,1173376	-52,8088666	15,1509934	-42,7411312	25,2187288
379	3,6	-9,734668	-7,147335	-33,97993	-13,6285352	-23,1173376	-52,8088666	15,1509934	-42,7411312	25,2187288
380	0	-9,706835	-7,136219	-30,12462	-13,589569	-23,0661524	-48,909041	11,340199	-38,8607715	21,3884685
380	0,9	-9,706835	-7,136219	-30,12462	-13,589569	-23,0661524	-48,909041	11,340199	-38,8607715	21,3884685
380	1,8	-9,706835	-7,136219	-30,12462	-13,589569	-23,0661524	-48,909041	11,340199	-38,8607715	21,3884685
380	2,7	-9,706835	-7,136219	-30,12462	-13,589569	-23,0661524	-48,909041	11,340199	-38,8607715	21,3884685
380	3,6	-9,706835	-7,136219	-30,12462	-13,589569	-23,0661524	-48,909041	11,340199	-38,8607715	21,3884685

AKSIAL BALOK PORTAL AS A (ANALISIS 3D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1,4PD (KN)	1,2PD+1,6PL (KN)	1,2PD+PL+PE (KN)	1,2PD+PL - PE (KN)	0,9PD+PE (KN)	0,9PD-PE (KN)
10	0	5,311427	5,844408	-16,92456	7,4359978	15,7247652	-4,7064396	29,1426804	-12,1442757	21,7048443
10	1	5,311427	5,844408	-16,92456	7,4359978	15,7247652	-4,7064396	29,1426804	-12,1442757	21,7048443
10	2	5,311427	5,844408	-16,92456	7,4359978	15,7247652	-4,7064396	29,1426804	-12,1442757	21,7048443
10	3	5,311427	5,844408	-16,92456	7,4359978	15,7247652	-4,7064396	29,1426804	-12,1442757	21,7048443
10	4	5,311427	5,844408	-16,92456	7,4359978	15,7247652	-4,7064396	29,1426804	-12,1442757	21,7048443
11	0	13,47246	12,93361	47,5112	18,861444	36,860728	76,611762	-18,410638	59,636414	-35,385986
11	1	13,47246	12,93361	47,5112	18,861444	36,860728	76,611762	-18,410638	59,636414	-35,385986
11	2	13,47246	12,93361	47,5112	18,861444	36,860728	76,611762	-18,410638	59,636414	-35,385986
11	3	13,47246	12,93361	47,5112	18,861444	36,860728	76,611762	-18,410638	59,636414	-35,385986
11	4	13,47246	12,93361	47,5112	18,861444	36,860728	76,611762	-18,410638	59,636414	-35,385986
12	0	13,93363	13,3313	46,05603	19,507082	38,050436	76,107686	-16,004374	58,596297	-33,515763
12	1	13,93363	13,3313	46,05603	19,507082	38,050436	76,107686	-16,004374	58,596297	-33,515763
12	2	13,93363	13,3313	46,05603	19,507082	38,050436	76,107686	-16,004374	58,596297	-33,515763
12	3	13,93363	13,3313	46,05603	19,507082	38,050436	76,107686	-16,004374	58,596297	-33,515763
12	4	13,93363	13,3313	46,05603	19,507082	38,050436	76,107686	-16,004374	58,596297	-33,515763
13	0	8,629584	9,784443	102,6383	12,0814176	26,0106096	122,7782438	-82,4983562	110,4049256	-94,8716744
13	2	8,629584	9,784443	102,6383	12,0814176	26,0106096	122,7782438	-82,4983562	110,4049256	-94,8716744
13	4	8,629584	9,784443	102,6383	12,0814176	26,0106096	122,7782438	-82,4983562	110,4049256	-94,8716744
13	6	8,629584	9,784443	102,6383	12,0814176	26,0106096	122,7782438	-82,4983562	110,4049256	-94,8716744
13	8	8,629584	9,784443	102,6383	12,0814176	26,0106096	122,7782438	-82,4983562	110,4049256	-94,8716744
14	0	19,58324	11,85222	-147,938	27,416536	42,46344	-112,585892	183,290108	-130,313084	165,562916
14	2,24	8,573973	3,323006	-147,938	12,0035622	15,6055772	-134,3262264	161,5497736	-140,2214243	155,6545757
14	4,47	-7,700249	-9,876994	-147,938	-10,7803486	-25,0434892	-167,0552928	128,8207072	-154,8682241	141,0077759
14	6,71	-23,97447	-23,07699	-147,938	-33,564258	-65,662548	-199,784354	96,091646	-169,515023	126,360977
14	8,94	-35,43434	-32,00629	-147,938	-49,608076	-93,731272	-222,465498	73,410502	-179,828906	116,047094
15	0	1,605721	1,492038	-89,13519	2,2480094	4,314126	-85,7162868	92,5540932	-87,6900411	90,5803389
15	1	1,605721	1,492038	-89,13519	2,2480094	4,314126	-85,7162868	92,5540932	-87,6900411	90,5803389
15	2	1,605721	1,492038	-89,13519	2,2480094	4,314126	-85,7162868	92,5540932	-87,6900411	90,5803389
15	3	1,605721	1,492038	-89,13519	2,2480094	4,314126	-85,7162868	92,5540932	-87,6900411	90,5803389
15	4	1,605721	1,492038	-89,13519	2,2480094	4,314126	-85,7162868	92,5540932	-87,6900411	90,5803389
16	0	2,509832	2,419905	-71,43047	3,5137648	6,8836464	-65,9987666	76,8621734	-69,1716212	73,6893188
16	1	2,509832	2,419905	-71,43047	3,5137648	6,8836464	-65,9987666	76,8621734	-69,1716212	73,6893188
16	2	2,509832	2,419905	-71,43047	3,5137648	6,8836464	-65,9987666	76,8621734	-69,1716212	73,6893188
16	3	2,509832	2,419905	-71,43047	3,5137648	6,8836464	-65,9987666	76,8621734	-69,1716212	73,6893188
16	4	2,509832	2,419905	-71,43047	3,5137648	6,8836464	-65,9987666	76,8621734	-69,1716212	73,6893188

17	0	2,312048	2,262902	-72,09483	3,2368672	6,3951008	-67,0574704	77,1321896	-70,0139868	74,1756732
17	1	2,312048	2,262902	-72,09483	3,2368672	6,3951008	-67,0574704	77,1321896	-70,0139868	74,1756732
17	2	2,312048	2,262902	-72,09483	3,2368672	6,3951008	-67,0574704	77,1321896	-70,0139868	74,1756732
17	3	2,312048	2,262902	-72,09483	3,2368672	6,3951008	-67,0574704	77,1321896	-70,0139868	74,1756732
17	4	2,312048	2,262902	-72,09483	3,2368672	6,3951008	-67,0574704	77,1321896	-70,0139868	74,1756732
18	0	0,7510405	-3,100036	-72,6568	1,0514567	-4,058809	-74,8555874	70,4580126	-71,98086355	73,33273645
18	2,24	-10,25823	-11,62925	-72,6568	-14,361522	-30,916676	-96,595926	48,717674	-81,889207	63,424393
18	4,47	-26,53245	-24,82925	-72,6568	-37,14543	-71,56374	-129,32499	15,98861	-96,536005	48,777595
18	6,71	-42,80667	-38,02925	-72,6568	-59,929338	-112,214804	-162,054054	-16,740454	-111,182803	34,130797
18	8,94	-54,26654	-46,95854	-72,6568	-75,973156	-140,253512	-184,735188	-39,421588	-121,496686	23,816914
19	0	-8,391961	-8,854954	-70,60675	-11,7487454	-24,2382796	-89,5320572	51,6814428	-78,1595149	63,0539851
19	1	-8,391961	-8,854954	-70,60675	-11,7487454	-24,2382796	-89,5320572	51,6814428	-78,1595149	63,0539851
19	2	-8,391961	-8,854954	-70,60675	-11,7487454	-24,2382796	-89,5320572	51,6814428	-78,1595149	63,0539851
19	3	-8,391961	-8,854954	-70,60675	-11,7487454	-24,2382796	-89,5320572	51,6814428	-78,1595149	63,0539851
19	4	-8,391961	-8,854954	-70,60675	-11,7487454	-24,2382796	-89,5320572	51,6814428	-78,1595149	63,0539851

AKSIAL BALOK PORTAL AS B (ANALISIS 3D)

LABEL	STATION	PD (KN)	PL (KN)	PE (KN)	1.4PD (KN)	1.2PD+1.6PL (KN)	1.2PD+PL+PE (KN)	1.2PD+PL - PE (KN)	0.9PD-PE (KN)	0.9PD-PE (KN)
37	0	-0.1497492	-8.05E-02	0.9787018	-0.20964888	-3.09E-01	7.18E-01	-1.24E+00	0.84392752	-1.11347608
37	0.63	-0.1497492	-8.05E-02	0.9787018	-0.20964888	-3.09E-01	7.18E-01	-1.24E+00	0.84392752	-1.11347608
37	1.25	-0.1497492	-8.05E-02	0.9787018	-0.20964888	-3.09E-01	7.18E-01	-1.24E+00	0.84392752	-1.11347608
37	1.88	-0.1497492	-8.05E-02	0.9787018	-0.20964888	-3.09E-01	7.18E-01	-1.24E+00	0.84392752	-1.11347608
37	2.50	-0.1497492	-8.05E-02	0.9787018	-0.20964888	-3.09E-01	7.18E-01	-1.24E+00	0.84392752	-1.11347608
38	0	20.85248	15.79088	-275.4425	29.193472	5.03E+01	-2.35E+02	3.16E+02	-256.675268	294.209732
38	1.41	15.64098	11.85012	-275.4425	21.897372	3.77E+01	-2.45E+02	3.06E+02	-261.365618	289.519382
38	2.83	6.09983	3.900414	-275.4425	8.539762	1.36E+01	-2.64E+02	2.87E+02	-269.952653	280.932347
38	4.24	-3.441642	-4.049586	-275.4425	-4.8182988	-1.06E+01	-2.84E+02	2.67E+02	-278.539978	272.3450222
38	5.66	-8.641038	-7.9797	-275.4425	-12.0982932	-2.31E+01	-2.94E+02	2.57E+02	-283.2199742	267.6650258
39	0	10.38535	9.61854	-93.2756	14.53949	2.79E+01	-7.12E+01	1.15E+02	-83.928785	102.622415
39	1	10.38535	9.61854	-93.2756	14.53949	2.79E+01	-7.12E+01	1.15E+02	-83.928785	102.622415
39	2	10.38535	9.61854	-93.2756	14.53949	2.79E+01	-7.12E+01	1.15E+02	-83.928785	102.622415
39	3	10.38535	9.61854	-93.2756	14.53949	2.79E+01	-7.12E+01	1.15E+02	-83.928785	102.622415
39	4	10.38535	9.61854	-93.2756	14.53949	2.79E+01	-7.12E+01	1.15E+02	-83.928785	102.622415
40	0	22.82913	20.46033	-52.207	31.960782	6.01E+01	-4.35E+00	1.00E+02	-31.660783	72.753217
40	1	22.82913	20.46033	-52.207	31.960782	6.01E+01	-4.35E+00	1.00E+02	-31.660783	72.753217
40	2	22.82913	20.46033	-52.207	31.960782	6.01E+01	-4.35E+00	1.00E+02	-31.660783	72.753217
40	3	22.82913	20.46033	-52.207	31.960782	6.01E+01	-4.35E+00	1.00E+02	-31.660783	72.753217
40	4	22.82913	20.46033	-52.207	31.960782	6.01E+01	-4.35E+00	1.00E+02	-31.660783	72.753217
41	0	23.38421	20.89911	-58.39079	32.737894	6.15E+01	-9.43E+00	1.07E+02	-37.345001	79.436579
41	1	23.38421	20.89911	-58.39079	32.737894	6.15E+01	-9.43E+00	1.07E+02	-37.345001	79.436579
41	2	23.38421	20.89911	-58.39079	32.737894	6.15E+01	-9.43E+00	1.07E+02	-37.345001	79.436579
41	3	23.38421	20.89911	-58.39079	32.737894	6.15E+01	-9.43E+00	1.07E+02	-37.345001	79.436579
41	4	23.38421	20.89911	-58.39079	32.737894	6.15E+01	-9.43E+00	1.07E+02	-37.345001	79.436579
42	0	23.40814	20.989	-19.26363	32.771396	6.17E+01	2.98E+01	6.83E+01	1.803696	40.330956
42	2	23.40814	20.989	-19.26363	32.771396	6.17E+01	2.98E+01	6.83E+01	1.803696	40.330956
42	4	23.40814	20.989	-19.26363	32.771396	6.17E+01	2.98E+01	6.83E+01	1.803696	40.330956
42	6	23.40814	20.989	-19.26363	32.771396	6.17E+01	2.98E+01	6.83E+01	1.803696	40.330956
42	8	23.40814	20.989	-19.26363	32.771396	6.17E+01	2.98E+01	6.83E+01	1.803696	40.330956
43	0	4.073071	7.46E-02	-274.86	5.7022994	5.01E+00	-2.70E+02	2.80E+02	-271.1942361	278.5257639
43	2.24	-6.193783	-8.096327	-274.86	-8.6712962	-2.04E+01	-2.90E+02	2.59E+02	-260.4344047	269.2955953
43	4.47	-20.596	-20.09633	-274.86	-28.8344	-5.69E+01	-3.20E+02	2.30E+02	-293.3984	256.3236
43	6.71	-34.99823	-32.09633	-274.86	-48.997522	-9.34E+01	-3.49E+02	2.01E+02	-306.358407	243.361593
43	8.94	-45.62944	-40.60465	-274.86	-63.881216	-1.20E+02	-3.70E+02	1.80E+02	-315.926496	233.793504

44	0	1,313362	1,222109	-145,7623	1,8387068	3,53E+00	-1,43E+02	1,49E+02	-144,5802742	146,9443258
44	1	1,313362	1,222109	-145,7623	1,8387068	3,53E+00	-1,43E+02	1,49E+02	-144,5802742	146,9443258
44	2	1,313362	1,222109	-145,7623	1,8387068	3,53E+00	-1,43E+02	1,49E+02	-144,5802742	146,9443258
44	3	1,313362	1,222109	-145,7623	1,8387068	3,53E+00	-1,43E+02	1,49E+02	-144,5802742	146,9443258
44	4	1,313362	1,222109	-145,7623	1,8387068	3,53E+00	-1,43E+02	1,49E+02	-144,5802742	146,9443258
45	0	0,5678537	0,8083223	-137,9077	0,79499518	1,97E+00	-1,36E+02	1,39E+02	-137,3966317	138,4187683
45	2	0,5678537	0,8083223	-137,9077	0,79499518	1,97E+00	-1,36E+02	1,39E+02	-137,3966317	138,4187683
45	4	0,5678537	0,8083223	-137,9077	0,79499518	1,97E+00	-1,36E+02	1,39E+02	-137,3966317	138,4187683
45	6	0,5678537	0,8083223	-137,9077	0,79499518	1,97E+00	-1,36E+02	1,39E+02	-137,3966317	138,4187683
45	8	0,5678537	0,8083223	-137,9077	0,79499518	1,97E+00	-1,36E+02	1,39E+02	-137,3966317	138,4187683
46	0	-6,468759	-8,972504	-120,7738	-9,0562626	-2,21E+01	-1,38E+02	1,04E+02	-126,5956831	114,9519169
46	2,24	-16,73561	-17,14046	-120,7738	-23,429854	-4,75E+01	-1,58E+02	8,35E+01	-135,635849	105,711751
46	4,47	-31,13783	-29,14046	-120,7738	-43,592952	-8,40E+01	-1,87E+02	5,13E+01	-148,797847	92,749753
46	6,71	-45,54005	-41,14046	-120,7738	-63,75607	-1,20E+02	-2,17E+02	2,50E+01	-161,759845	79,787755
46	8,94	-56,17126	-49,66178	-120,7738	-78,630764	-1,47E+02	-2,39E+02	3,72E+00	-171,327934	70,219666
47	0	-11,52358	-11,29421	-110,9898	-16,133012	-3,19E+01	-1,31E+02	8,59E+01	-121,361022	100,618578
47	1	-11,52358	-11,29421	-110,9898	-16,133012	-3,19E+01	-1,36E+02	8,59E+01	-121,361022	100,618578
47	2	-11,52358	-11,29421	-110,9898	-16,133012	-3,19E+01	-1,36E+02	8,59E+01	-121,361022	100,618578
47	3	-11,52358	-11,29421	-110,9898	-16,133012	-3,19E+01	-1,36E+02	8,59E+01	-121,361022	100,618578
47	4	-11,52358	-11,29421	-110,9898	-16,133012	-3,19E+01	-1,36E+02	8,59E+01	-121,361022	100,618578

GAYA GESER RENCANA BALOK (ANALISIS 2D)

As 1 (Analisis 2D)

Balok	VD (KN)	VL (KN)	VE (KN)	L' (m)	Mpt (KN.m)	VU (KN)		Vu rencana (KN)
						{1}	{2}	
1	86,248	36,467	51,143	8,54	503,900	251,542	326,303	251,542
2	85,081	36,037	26,786	8,54	503,900	249,926	227,261	249,926
3	92,296	39,527	32,891	8,54	503,900	260,329	262,083	260,329
4	87,093	36,254	33,119	8,54	458,840	240,841	255,113	240,841
5	84,967	35,697	20,347	8,54	458,840	238,011	201,195	201,195
6	92,550	39,562	19,018	8,54	458,840	249,043	206,912	206,912
7	37,205	37,951	10,898	8,54	262,190	131,164	107,213	107,213
8	36,112	36,567	7,222	8,54	262,190	129,161	90,507	90,507
9	39,221	39,455	5,907	8,54	262,190	134,336	90,423	90,423

As 2 (Analisis 2D)

Balok	VD (KN)	VL (KN)	VE (KN)	L' (m)	Mpb (KN.m)	VU (KN)		Vu rencana (KN)
						{1}	{2}	
1	92,732	68,325	45,365	8,54	458,840	263,643	326,901	263,643
2	118,332	96,352	25,037	8,54	667,770	362,199	290,320	290,320
3	145,362	110,369	26,365	8,54	762,000	425,919	335,079	425,919
4	60,362	42,365	50,362	8,54	371,580	189,340	295,065	189,340
5	116,398	88,325	10,652	8,54	458,840	302,042	226,448	226,448
6	105,362	76,352	15,982	8,54	503,900	294,421	228,538	294,421
7	65,632	50,020	35,035	8,54	181,080	150,417	243,908	150,417
8	112,210	86,360	9,936	8,54	221,230	234,823	217,576	234,823
9	105,362	87,874	9,896	8,54	262,190	237,914	209,955	209,955

As A (Analisis 2D)

Balok	VD (KN)	VL (KN)	VE (KN)	L' (m)	Mpb (KN.m)	VU (KN)		Vu rencana (KN)
						{1}	{2}	
1	20,797	18,903	92,855	3,54	298,650	220,010	405,830	220,010
2	38,079	34,283	26,642	7,54	298,650	149,975	169,404	149,975
3	6,401	2,061	31,299	7,54	298,650	95,852	133,906	95,852
4	15,109	10,996	7,250	3,54	181,080	136,165	52,627	52,627
5	29,519	18,512	1,734	7,54	262,190	121,179	51,614	51,614
6	24,016	23,724	2,200	3,54	164,690	143,031	49,482	49,482
7	49,166	52,005	15,131	8,48	376,900	183,082	145,824	145,824
8	60,949	64,895	1,184	8,48	376,900	203,366	110,323	110,323

As B (Analisis 2D)

Balok	VD (KN)	VL (KN)	VE (KN)	L' (m)	Mpb (KN.m)	VU (KN)		Vu rencana (KN)
						{1}	{2}	
1	22,675	22,097	44,430	3,54	181,077	150,792	215,979	150,792
2	53,186	61,277	12,758	7,54	262,193	170,964	145,494	145,494
3	32,937	30,455	8,741	7,54	262,193	131,254	89,716	89,716
4	24,381	23,684	5,507	3,54	181,077	153,992	63,488	63,488
5	29,047	25,996	1,971	7,54	221,225	112,404	55,738	55,738
6	23,496	24,475	0,397	3,54	164,690	142,783	42,023	42,023
7	11,773	18,750	0,325	2,04	164,690	201,109	24,802	23,502
8	35,735	34,751	56,035	5,15	337,164	204,289	284,398	204,289
9	54,071	54,712	0,238	8,48	376,902	190,023	93,194	93,194
10	56,428	58,408	0,093	8,48	376,902	194,699	97,291	97,291

LAMPIRAN B

MOMEN, GAYA AKSIAL DAN GAYA GESER KOLOM

Tabel Momen Rencana Kolom (Analisis 3D)

Kolom K - 3

Join lantai	Lokasi M,k	hn		α		Mpb		Mu,k y	Mu,k x
		Arah Y	Arah X			B1	B2		
		m	m	Arah Y	Arah X	KN.m	KN.m	KN.m	KN.m
3	Bawah	3,62	3,57	1,00	1,00	136,013	181,077	229,492	562,044
2	Atas	3,62	3,57	0,50	0,50	181,077	371,577	152,765	576,667
	Bawah	3,60	3,54	0,50	0,50	181,077	371,577	151,921	571,821
1	Atas	3,60	3,54	0,56	0,56	221,225	458,838	208,619	793,665
	Bawah	4,93	4,67	0,44	0,44	221,225	458,838	173,612	636,255
Dasar	Atas	4,93	4,67	1,00	1,00	0,000	0,000	105,365	359,256

Join lantai	Lokasi M,k	Arah Y			Arah X			Mu,k	Mu,k x
		MD	ML	ME	MD	ML	ME		
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	20,127	20,336	5,325	11,589	12,362	45,335	55,619	193,419
2	Atas	24,721	24,844	2,122	11,698	12,018	42,926	50,575	191,749
	Bawah	20,509	21,127	14,232	12,196	11,695	91,133	92,103	345,014
1	Atas	18,832	19,019	8,033	12,549	11,827	80,360	64,239	342,414
	Bawah	9,102	7,841	129,245	10,467	10,433	149,525	531,821	615,878
Dasar	Atas	9,581	9,633	110,173	11,132	10,919	143,530	457,006	612,937

Join lantai	Lokasi M,k	Mu,k y		Mu,k x		Mu,k pakai		Mu,k Desain	
		(1)	(2)	(1)	(2)	Mu,k y	Mu,k x	Mu,k y	Mu,k x
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	229,49	55,32	562,04	193,42	55,619	193,419	55,619	193,419
2	Atas	152,76	50,57	576,67	191,75	50,575	191,749		
	Bawah	151,92	92,10	571,82	345,01	92,103	345,014	92,103	345,014
1	Atas	208,62	64,24	793,67	342,41	64,239	342,414		
	Bawah	173,61	531,82	636,26	615,68	173,612	615,878	173,612	615,878
Dasar	Atas	101,24	457,01	345,36	612,94	101,235	345,356		

Kolom K - 4

Join lantai	Lokasi M,k	hn		α		Mpb		Mu,k y	Mu,k x
		Arah Y	Arah X			B1	B2		
		m	m	Arah Y	Arah X	KN.m	KN.m	KN.m	KN.m
3	Bawah	3,62	3,57	1,00	1,00	136,013	221,225	458,985	686,660
2	Atas	3,62	3,57	0,50	0,50	181,077	458,838	305,529	712,092
	Bawah	3,60	3,54	0,50	0,50	181,077	458,838	303,841	706,108
1	Atas	3,60	3,54	0,56	0,56	221,225	594,031	417,239	1027,513
	Bawah	4,93	4,67	0,44	0,44	221,225	594,031	347,224	823,723
Dasar	Atas	4,93	4,67	1,00	1,00	0,000	0,000	196,356	359,256

Join lantai	Lokasi M,k	Arah Y			Arah X			Mu,k y	Mu,k x
		MD	ML	ME	MD	ML	ME		
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	36,308	31,551	11,979	13,415	10,999	55,179	107,263	242,312
2	Atas	27,680	23,257	14,448	11,903	10,024	54,798	102,637	238,489
	Bawah	28,796	24,626	19,149	11,117	10,649	100,722	123,463	421,555
1	Atas	32,521	27,440	16,938	11,613	10,655	106,216	120,497	444,126
	Bawah	13,509	10,763	135,396	10,869	10,032	183,044	563,178	750,233
Dasar	Atas	19,496	16,285	124,331	11,521	10,075	182,008	528,860	746,895

Join lantai	Lokasi M,k	Mu,k y		Mu,k x		Mu,k pakai		Mu,k Desain	
		(1)	(2)	(1)	(2)	Mu,k y	Mu,k x	Mu,k y	Mu,k x
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	458,93	107,26	686,66	242,31	107,263	242,312	107,263	242,312
2	Atas	305,53	102,64	712,09	238,49	102,637	238,489		
	Bawah	303,84	123,46	706,11	421,56	123,463	421,555	123,463	444,126
1	Atas	417,24	120,50	1027,51	444,13	120,497	444,126		
	Bawah	347,22	563,18	823,72	750,23	347,224	750,233	347,224	750,233
Dasar	Atas	108,256	528,86	366,266	746,89	108,256	366,266		

Kolom K - 5

Join lantai	Lokasi M,k	hn		α		Mpb		Mu,k y	Mu,k x
		Arah Y	Arah X			B1	B2		
		m	m	Arah Y	Arah X	KN.m	KN.m	KN.m	KN.m
3	Bawah	3,62	3,57	1,00	1,00	136,013	221,225	229,492	686,660
2	Atas	3,62	3,57	0,50	0,50	181,077	458,838	152,765	712,092
	Bawah	3,60	3,54	0,50	0,50	181,077	458,838	151,921	706,108
1	Atas	3,60	3,54	0,56	0,56	221,225	594,031	208,619	1027,513
	Bawah	4,93	4,67	0,44	0,44	221,225	594,031	173,612	823,723
Dasar	Atas	4,93	4,67	1,00	1,00	0,000	0,000	105,365	359,256

Join lantai	Lokasi M,k	Arah Y			Arah X			Mu,k y	Mu,k x
		MD	ML	ME	MD	ML	ME		
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	19,976	19,670	14,606	10,457	10,869	10,228	92,232	178,893
2	Atas	25,655	25,064	10,957	10,193	10,801	35,216	87,145	158,496
	Bawah	24,548	23,942	14,646	10,345	10,721	105,882	100,010	441,303
1	Atas	22,253	21,349	17,407	10,006	10,404	103,522	107,008	431,298
	Bawah	5,485	5,444	126,457	10,145	10,083	146,852	515,131	604,624
Dasar	Atas	7,339	8,218	107,936	10,138	10,133	144,618	444,658	595,703

Join lantai	Lokasi M,k	Mu,k y		Mu,k x		Mu,k pakai		Mu,k Desain	
		(1)	(2)	(1)	(2)	Mu,k y	Mu,k x	Mu,k y	Mu,k x
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	229,49	92,23	686,66	178,89	92,232	178,893	92,232	178,893
2	Atas	152,76	87,14	712,09	158,50	87,145	158,496		
	Bawah	151,92	100,01	706,11	441,30	100,010	441,303	100,010	441,303
1	Atas	208,62	107,01	1027,51	431,30	107,008	431,298		
	Bawah	173,61	515,13	823,72	604,62	173,612	604,624	173,612	604,624
Dasar	Atas	105,69	444,66	359,26	595,70	105,685	359,256		

Kolom K - 6

Join lantai	Lokasi M,k	hn		α		Mpb		Mu,k y	Mu,k x
		Arah Y	Arah X			B1	B2		
		m	m	Arah Y	Arah X	KN.m	KN.m	KN.m	KN.m
3	Bawah	3,62	3,57	1,00	1,00	136,013	221,225	458,985	686,660
2	Atas	3,62	3,57	0,50	0,50	181,077	458,838	305,529	712,092
	Bawah	3,60	3,54	0,50	0,50	181,077	458,838	303,841	706,108
1	Atas	3,60	3,54	0,56	0,56	221,225	594,031	417,239	1027,513
	Bawah	4,93	4,67	0,44	0,44	221,225	594,031	347,224	823,723
Dasar	Atas	4,93	4,67	1,00	1,00	0,000	0,000	205,321	359,256

Join lantai	Lokasi M,k	Arah Y			Arah X			Mu,k y	Mu,k x
		MD	ML	ME	MD	ML	ME		
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	33,582	30,171	10,082	2,478	1,204	35,252	95,713	144,583
2	Atas	23,354	21,068	11,505	3,022	1,648	34,444	34,580	142,225
	Bawah	30,444	27,327	20,503	1,563	0,108	38,100	132,209	354,328
1	Atas	36,353	31,393	18,786	0,318	1,686	86,602	134,466	347,632
	Bawah	10,334	18,971	130,647	0,829	1,062	110,603	544,474	443,938
Dasar	Atas	18,400	16,332	120,317	1,480	2,025	108,453	511,513	436,602

Join lantai	Lokasi M,k	Mu,k y		Mu,k x		Mu,k pakai		Mu,k Desain	
		(1)	(2)	(1)	(2)	Mu,k y	Mu,k x	Mu,k y	Mu,k x
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	458,98	95,71	686,66	144,58	95,713	144,583	95,713	144,583
2	Atas	305,53	84,58	712,09	142,22	84,580	142,225		
	Bawah	303,84	132,21	706,11	354,33	132,209	354,328	134,466	354,328
1	Atas	417,24	134,47	1027,51	347,63	134,466	347,632		
	Bawah	347,22	544,47	823,72	443,94	347,224	443,938	347,224	443,938
Dasar	Atas	111,16	511,51	368,52	436,60	111,156	368,523		

Kolom K - 1

Join lantai	Lokasi M,k	hn		α		Mpb		Mu,k y	Mu,k x
		Arah Y	Arah X			B1	B2		
		m	m	Arah Y	Arah X	KN.m	KN.m	KN.m	KN.m
3	Bawah	3,62	3,57	1,00	1,00	164,690	199,185	277,879	309,124
2	Atas	3,62	3,57	0,50	0,50	181,077	408,734	152,765	317,167
	Bawah	3,60	3,54	0,50	0,50	181,077	408,734	151,921	314,502
1	Atas	3,60	3,54	0,56	0,56	181,077	504,722	170,759	436,516
	Bawah	4,93	4,67	0,44	0,44	181,077	504,722	142,104	349,940
Dasar	Atas	4,93	4,67	1,00	1,00	0,000	0,000	105,305	359,256

Join lantai	Lokasi M,k	Arah Y			Arah X			Mu,k y	Mu,k x
		MD	ML	ME	MD	ML	ME		
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	4,727	2,095	10,618	10,374	6,570	17,788	49,192	86,889
2	Atas	9,728	2,181	10,225	12,301	6,104	18,618	53,664	92,285
	Bawah	9,148	1,475	15,638	14,229	5,780	32,928	74,267	151,677
1	Atas	6,046	0,942	20,900	14,350	5,779	36,518	91,326	166,182
	Bawah	0,725	0,750	43,268	4,092	1,587	69,325	174,317	283,004
Dasar	Atas	6,034	1,944	106,722	8,011	3,138	65,623	435,101	273,674

Join lantai	Lokasi M,k	Mu,k y		Mu,k x		Mu,k pakai		Mu,k Desain	
		(1)	(2)	(1)	(2)	Mu,k y	Mu,k x	Mu,k y	Mu,k x
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	277,88	49,19	309,12	86,89	49,192	86,889	53,664	92,285
2	Atas	152,76	53,66	317,17	92,29	53,664	92,285		
	Bawah	151,92	74,27	314,50	151,68	74,267	151,677	91,326	166,182
1	Atas	170,76	91,33	436,52	166,18	91,326	166,182		
	Bawah	142,10	174,32	349,94	283,00	142,104	283,004	142,104	283,004
Dasar	Atas	101,24	435,10	156,24	273,67	101,305	156,235		

Kolom K - 2

Join lantai	Lokasi M,k	hn		α		Mpb		Mu,k y	Mu,k x
		Arah Y	Arah X			B1	B2		
		m	m	Arah Y	Arah X	KN.m	KN.m	KN.m	KN.m
3	Bawah	3,62	3,57	1,00	1,00	164,690	199,185	555,759	309,124
2	Atas	3,62	3,57	0,50	0,50	181,077	408,734	305,529	317,167
	Bawah	3,60	3,54	0,50	0,50	181,077	408,734	303,841	314,502
1	Atas	3,60	3,54	0,56	0,56	181,077	504,722	341,517	436,516
	Bawah	4,93	4,67	0,44	0,44	181,077	504,722	284,209	349,940
Dasar	Atas	4,93	4,67	1,00	1,00	0,000	0,000	168,756	359,256

Join lantai	Lokasi M,k	Arah Y			Arah X			Mu,k y	Mu,k x
		MD	ML	ME	MD	ML	ME		
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	8,654	7,442	22,985	11,171	10,001	29,728	106,046	137,318
2	Atas	6,783	2,679	3,816	11,55	9,755	17,253	24,743	87,750
	Bawah	7,767	2,359	36,51	11,806	9,685	49,549	156,540	217,206
1	Atas	12,265	6,452	41,506	11,454	9,525	46,663	183,968	205,158
	Bawah	3,756	2,091	100,359	3,253	2,665	90,073	406,989	365,528
Dasar	Atas	12,72	7,672	53,712	6,289	5,203	94,794	233,998	389,324

Join lantai	Lokasi M,k	Mu,k y		Mu,k x		Mu,k pakai		Mu,k Desain	
		(1)	(2)	(1)	(2)	Mu,k y	Mu,k x	Mu,k y	Mu,k x
		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	555,76	106,05	309,12	137,32	106,046	137,318	106,046	137,318
2	Atas	305,53	24,74	317,17	87,75	24,743	87,750		
	Bawah	303,84	156,54	314,50	217,21	156,540	217,206	183,968	217,206
1	Atas	341,52	183,97	436,52	205,16	183,968	205,158		
	Bawah	284,21	406,99	349,94	365,53	284,209	349,940	284,209	349,940
Dasar	Atas	108,256	234,00	120,325	389,32	108,256	120,325		

Tabel Momen Rencana Kolom (Analiasis 2D)

Kolom K - 3

Portal Arah X

Join lantai	Lokasi M,k	hn	α	MD	ML	ME	Mpb	Mu, k		Mu, k pakai	Mu, k desain
								{1}	{2}		
		m		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	3.57	1.00	2.170	2.622	54.048	262.193	813.819	220.108	220.108	261.718
2	Atas	3.57	0.50	3.077	4.228	63.978	458.838	712.092	261.718	261.718	
	Bawah	3.54	0.50	5.808	0.511	102.681	458.838	706.108	417.950	417.950	440.755
1	Atas	3.54	0.56	6.236	1.695	108.106	503.902	871.614	440.755	440.755	
	Bawah	4.67	0.44	1.052	0.104	188.612	503.902	698.745	755.762	698.745	698.745
Dasar	Atas	4.67	1.00	1.542	0.542	240.183	0.000	359.256	962.853	359.256	

Portal Arah Y

Join lantai	Lokasi M,k	hn	α	MD	ML	ME	Mpb	Mu, k		Mu, k pakai	Mu, k desain
								{1}	{2}		
		m		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	3.62	1.00	30.310	31.551	12.979	136.013	428.081	72.320	72.320	76.013
2	Atas	3.62	0.50	37.680	23.257	14.448	181.077	284.958	76.013	76.013	
	Bawah	3.60	0.50	38.796	24.626	19.149	181.077	283.383	115.365	115.365	121.077
1	Atas	3.60	0.56	42.521	27.440	16.938	231.235	406.753	121.077	121.077	
	Bawah	4.93	0.44	53.509	10.763	135.396	231.235	338.498	221.225	231.235	231.235
Dasar	Atas	4.93	1.00	59.496	16.285	124.331	0.000	359.256	576.860	124.331	

Kolom K - 4

Portal Arah X

Join lantai	Lokasi M,k	hn	α	MD	ML	ME	Mpb	Mu, k		Mu, k pakai	Mu, k desain
								{1}	{2}		
		m		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	3.57	1.00	5.415	2.952	66.358	262.193	813.819	273.406	273.406	310.207
2	Atas	3.57	0.50	1.903	0.024	76.978	458.838	712.092	310.207	310.207	
	Bawah	3.54	0.50	1.117	0.649	112.681	458.838	706.108	452.391	452.391	514.687
1	Atas	3.54	0.56	1.613	0.655	128.106	667.773	1155.066	514.687	514.687	
	Bawah	4.67	0.44	0.869	0.032	201.612	667.773	925.979	807.506	807.506	807.506
Dasar	Atas	4.67	1.00	1.521	0.075	250.183	0.000	359.256	1002.594	359.256	

Portal Arah Y

Join lantai	Lokasi M,k	hn	α	MD	ML	ME	Mpb	Mu, k		Mu, k pakai	Mu, k desain
								{1}	{2}		
		m		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	3.57	1.00	36.308	31.551	13.179	136.013	422.169	112.063	112.063	112.063
2	Atas	3.57	0.50	27.680	23.257	14.562	181.077	281.022	103.094	103.094	
	Bawah	3.54	0.50	28.796	24.626	20.320	181.077	278.660	128.149	128.149	158.221
1	Atas	3.54	0.56	32.521	27.440	26.369	221.225	382.660	158.221	158.221	
	Bawah	4.67	0.44	13.509	10.763	122.365	221.225	306.766	511.053	306.766	359.256
Dasar	Atas	4.67	1.00	19.496	16.285	125.652	0.000	359.256	534.146	359.256	

Kolom K - 5

Portal Arah X

Join lantai	Lokasi M,k	hn	α	MD	ML	ME	Mpb	Mu, k		Mu, k pakai	Mu, k desain
								{1}	{2}		
		m		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	3.57	1.00	0.076	0.645	52.999	262.193	813.819	212.409	212.409	240.569
2	Atas	3.57	0.50	0.052	0.334	60.085	458.838	712.092	240.569	240.569	
	Bawah	3.54	0.50	1.541	0.269	131.939	458.838	706.108	529.739	529.739	535.452
1	Atas	3.54	0.56	2.122	0.468	133.168	503.902	871.614	535.452	535.452	
	Bawah	4.67	0.44	1.797	0.847	179.771	503.902	698.745	721.664	698.745	698.745
Dasar	Atas	4.67	1.00	1.655	0.783	233.144	0.000	359.256	934.953	359.256	

Portal Arah Y

Join lantai	Lokasi M,k	hn	α	MD	ML	ME	Mpb	Mu, k		Mu, k pakai	Mu, k desain
								{1}	{2}		
		m		KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m	KN.m
3	Bawah	3.57	1.00	19.976	19.670	14.606	136.013	422.169	92.232	92.232	92.232
2	Atas	3.57	0.50	25.655	25.064	10.957	181.077	281.022	87.145	87.145	
	Bawah	3.54	0.50	24.548	23.942	14.646	181.077	278.660	100.010	100.010	107.008
1	Atas	3.54	0.56	22.253	21.349	17.407	221.225	382.660	107.008	107.008	
	Bawah	4.67	0.44	5.485	5.444	126.457	221.225	306.766	515.131	221.225	221.225
Dasar	Atas	4.67	1.00	7.339	8.218	107.936	0.000	359.256	444.658	221.225	

Tabel Gaya Aksial Rencana Kolom (Analisis 3D)

Kolom K3

Kolom Lantai	Ln (m)		Aksial kolom (KN)			MPb (KN.m)		Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
	B1	B2	PD,k	PL,k	PE,k	B1	B2	{1}	{2}		
3	3,54	8,54	-85,795	-60,434	-5,861	136,013	181,077	234,369	156,615	156,615	161,920
	3,54	8,54	-90,216	-60,434	-5,861	181,077	371,577	296,355	161,920	161,920	
2	3,54	8,54	-255,22	-137,782	-13,967	181,077	371,577	550,824	431,023	431,023	436,327
	3,54	8,54	-259,64	-137,782	-13,967	221,225	458,838	587,242	436,327	436,327	
1	3,54	8,54	-488,888	-291,817	9,209	221,225	458,838	989,689	695,738	695,738	704,969
	3,54	8,54	-496,58	-291,817	9,209	0,000	0,000	827,817	704,969	704,969	

Kolom K4

Kolom Lantai	Ln (m)		Aksial kolom (KN)			MPb (KN.m)		Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
	B1	B2	PD,k	PL,k	PE,k	B1	B2	{1}	{2}		
3	7,54	8,54	-228,648	-171,207	33,654	136,013	181,077	460,293	245,365	225,365	245,270
	7,54	8,54	-246,069	-171,207	33,654	181,077	371,577	549,176	246,270	246,270	
2	7,54	8,54	-430,038	-299,284	20,059	181,077	371,577	876,824	585,452	585,452	590,757
	7,54	8,54	-434,459	-299,284	20,059	221,225	458,838	907,227	590,757	590,757	
1	7,54	8,54	-622,328	-421,138	-24,957	221,225	458,838	1232,436	1057,191	1057,191	1064,021
	7,54	8,54	-628,02	-421,138	-24,957	0,000	0,000	1101,616	1064,021	1064,021	

Kolom K5

Kolom Lantai	Ln (m)		Aksial kolom (KN)			MPb (KN.m)		Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
	B1	B2	PD,k	PL,k	PE,k	B1	B2	{1}	{2}		
3	3,54	8,54	-76,861	-54,56	3,235	136,013	181,077	218,821	105,573	106,573	111,878
	3,54	8,54	-81,282	-54,56	3,235	181,077	371,577	280,606	111,878	111,878	
2	3,54	8,54	-279,795	-134,913	5,401	181,077	371,577	573,615	381,607	381,607	386,911
	3,54	8,54	-284,215	-134,913	5,401	221,225	458,838	610,034	386,911	336,911	
1	3,54	8,54	-449,186	-189,646	38,596	221,225	458,838	840,723	479,462	479,462	486,293
	3,54	8,54	-454,878	-189,646	38,596	0,000	0,000	676,750	486,293	486,293	

Kolom K6

Kolom Lantai	Ln (m)		Aksial kolom (KN)			MPb (KN.m)		Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
	P1	B2	PD,k	PL,k	PE,k	B1	B2	{1}	{2}		
3	7,54	8,54	-252,511	-196,599	36,66	136,013	181,077	550,050	254,673	254,673	259,978
	7,54	8,54	-256,932	-196,599	36,66	181,077	371,577	611,259	259,978	259,978	
2	7,54	8,54	-433,65	-318,568	36,325	181,077	371,577	924,880	534,364	534,364	539,669
	7,54	8,54	-438,071	-318,568	36,325	221,225	458,838	960,608	539,669	539,669	
1	7,54	8,54	-647,917	-411,666	20,537	221,225	458,838	1278,699	901,185	901,185	908,017
	7,54	8,54	-653,61	-411,666	20,537	0,000	0,000	1118,540	908,017	908,017	

Kolom K1

Kolom Lantai	Ln (m)		Aksial kolom (KN)			MPb (KN.m)		Pu,k (KN)		Pu,k (KN)	Pu k rencana (KN)
	B1	B2	PD,k	PL,k	PE,k	B1	B2	(1)	(2)		
3	3,54	8,54	-61,622	-20,367	-4,505	164,690	181,077	153,814	102,150	102,150	108,845
	3,54	8,54	-67,201	-20,367	-4,505	181,077	371,577	186,608	108,845	108,845	
2	3,54	8,54	-82,253	-37,452	-21,692	181,077	371,577	220,352	204,198	204,198	210,892
	3,54	8,54	-87,832	-37,452	-21,692	181,077	458,838	236,428	210,892	210,892	
1	3,54	8,54	-157,712	-56,887	-28,603	181,077	458,838	330,209	332,110	332,110	332,110
	3,54	8,54	-152,02	-56,887	-28,603	0,000	0,000	219,352	325,280	219,352	

Kolom K2

Kolom Lantai	Ln (m)		Aksial kolom (KN)			MPb (KN.m)		Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
	B1	B2	PD,k	PL,k	PE,k	B1	B2	(1)	(2)		
3	7,54	8,54	-72,727	-54,665	50,95	164,690	181,077	198,011	89,195	89,195	94,500
	7,54	8,54	-68,306	-54,665	50,95	181,077	371,577	240,155	94,500	94,500	
2	7,54	8,54	-178,903	-126,407	107,944	181,077	371,577	431,611	153,889	153,889	159,194
	7,54	8,54	-174,482	-126,407	107,944	181,077	458,838	447,405	159,194	159,194	
1	7,54	8,54	-262,902	-182,094	187,509	181,077	458,838	598,717	343,507	343,507	350,337
	7,54	8,54	-257,21	-182,094	187,509	0,000	0,000	461,269	350,337	350,337	

Tabel Gaya Aksial Rencana Kolom (Analisis 2D)

Kolom K3

Kolom Lantai	Ln (m)	Aksial kolom (KN)			MPb (KN.m)	Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
		PD,k	PL,k	PE,k		(1)	(2)		
3	8,54	-92,167	-93,119	-3,917	262,193	255,955	172,830	172,830	174,640
	8,54	-93,676	-93,119	-3,917	458,838	303,591	174,640	174,640	
2	8,54	-285,791	-184,125	-16,095	458,838	600,867	499,392	499,392	501,914
	8,54	-287,892	-184,125	-16,095	503,902	613,627	501,914	501,914	
1	8,54	-479,191	-275,605	-30,800	503,902	910,545	836,033	836,033	841,239
	8,54	-483,530	-275,605	-30,800	0,000	797,092	841,239	841,239	

Kolom K4

Kolom Lantai	Ln (m)	Aksial kolom (KN)			MPb (KN.m)	Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
		PD,k	PL,k	PE,k		(1)	(2)		
3	8,54	-238,521	-175,203	35,595	262,193	495,814	231,607	231,607	255,709
	8,54	-258,648	-175,103	35,595	458,836	562,895	255,709	255,709	
2	8,54	-440,038	-299,265	20,059	458,838	883,724	597,442	597,442	614,757
	8,54	-454,459	-299,284	20,059	667,773	947,817	614,757	614,757	
1	8,54	-705,465	-368,265	34,957	667,773	1283,804	1170,519	1170,519	1170,336
	8,54	-705,325	-368,236	-34,957	0,000	1127,239	1170,336	1170,336	

Kolom K5

Kolom Lantai	Ln (m)	Aksial kolom (KN)			MPb (KN.m)	Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
		PD,k	PL,k	PE,k		(1)	(2)		
3	8,54	-85,706	-89,606	-0,944	262,193	245,481	151,428	151,428	154,172
	8,54	-87,993	-89,606	-0,944	458,838	293,935	154,172	154,172	
2	8,54	-280,361	-179,683	-1,539	458,838	590,503	432,430	432,430	434,809
	8,54	-282,344	-179,683	-1,539	503,902	603,138	434,809	434,809	
1	8,54	-431,007	-269,607	-5,290	503,902	853,654	673,173	673,173	678,380
	8,54	-435,346	-269,607	-5,290	0,000	740,200	678,380	678,380	

Kolom K6

Kolom Lantai	Ln (m)	Aksial kolom (KN)			MPb (KN.m)	Pu,k (KN)		Pu,k (KN)	Pu,k rencana (KN)
		PD,k	PL,k	PE,k		(1)	(2)		
3	8,54	-262,511	-236,599	36,66	262,193	585,469	286,673	286,673	294,378
	8,54	-268,932	-236,599	36,66	458,838	638,264	294,378	294,378	
2	8,54	-433,65	-318,568	40,325	458,838	897,285	518,364	518,364	595,669
	8,54	-498,071	-318,569	40,325	667,773	1013,358	595,669	595,669	
1	8,54	-727,917	-441,666	30,537	667,773	1384,449	972,185	972,185	979,017
	8,54	-733,61	-441,666	30,537	0,000	1234,040	979,017	979,017	

Tabel Gaya Geser Rencana Kolom (Analisis 3D)

Kolom K3

Kolom Lantai	hn (m)		Mu,k Desain (KN.m)		Gaya Geser Portal Arah Y (KN)			Gaya Geser Portal Arah X (KN)			Vu,k y (KN)		Vu,k x (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Arah X	Mu,k y	Mu,k x	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k y	Vu,k x	Vu,k y	Vu,k x
3	3,62	3,57	55,619	136,419	11,212	11,295	1,862	-0,822	-1,095	16,565	30,729	26,550	76,425	64,726	26,550	64,726	26,550	64,726
					11,212	11,295	1,862	-0,822	-1,095	16,565	30,729	26,550	76,425	64,726	26,550	64,726		
2	3,6	3,54	92,103	248,014	9,835	10,036	1,550	-1,186	-0,881	30,373	51,168	23,020	140,121	119,628	23,020	119,628	23,020	119,628
					9,835	10,036	1,550	-1,186	-0,881	30,373	51,168	23,020	140,121	119,628	23,020	119,628		
1	4,73	4,67	156,315	478,878	3,613	3,393	46,489	-0,331	-0,263	46,224	66,095	191,988	205,087	184,367	66,095	184,367	66,095	184,367
					3,613	3,393	46,489	-0,331	-0,263	46,224	66,095	191,988	205,087	184,367	66,095	184,367		

Kolom K4

Kolom Lantai	hn (m)		Mu,k Desain (KN.m)		Gaya Geser Portal Arah Y (KN)			Gaya Geser Portal Arah X (KN)			Vu,k y (KN)		Vu,k x (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Arah X	Mu,k y	Mu,k x	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k y	Vu,k x	Vu,k y	Vu,k x
3	3,62	3,57	67,263	105,312	15,997	13,702	1,607	-0,329	-0,256	12,494	37,162	32,475	58,998	49,453	32,475	49,453	32,475	49,453
					15,997	13,702	1,607	-0,329	-0,256	12,494	37,162	32,475	58,998	49,453	32,475	49,453		
2	3,6	3,54	123,436	244,555	15,329	13,017	6,522	-0,683	-0,326	30,235	68,576	50,991	136,167	119,957	50,991	119,957	50,991	119,957
					15,329	13,017	6,522	-0,683	-0,326	30,235	68,576	50,991	136,167	119,957	50,991	119,957		
1	4,73	4,67	156,315	453,233	6,408	5,252	50,432	-0,464	-0,125	43,699	66,095	212,044	194,104	174,177	66,095	174,177	66,095	174,177
					6,408	5,252	50,432	-0,464	-0,125	43,699	66,095	212,044	194,104	174,177	66,095	174,177		

Kolom K5

Kolom Lantai	hn (m)		Mu,k Desain (KN.m)		Gaya Geser Portal Arah Y (KN)			Gaya Geser Portal Arah X (KN)			Vu,k y (KN)		Vu,k x (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Arah X	Mu,k y	Mu,k x	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k y	Vu,k x	Vu,k y	Vu,k x
3	3,62	3,57	52,232	125,496	11,408	11,184	1,391	-0,163	-0,417	15,361	28,857	24,846	70,306	61,040	24,414	61,040	24,414	61,040
					11,408	11,184	1,391	-0,163	-0,417	15,361	28,857	24,846	70,306	61,040	24,414	61,040		
2	3,6	3,54	100,610	232,303	3,269	3,799	29,536	-0,234	-0,501	42,375	55,561	123,966	131,245	168,969	55,561	131,245	55,561	131,245
					3,269	3,799	29,536	-0,234	-0,501	42,375	55,561	123,966	131,245	168,969	55,561	131,245		
1	4,73	4,67	156,315	467,624	2,490	2,653	45,513	-0,551	-0,419	44,946	66,095	186,367	200,267	178,913	66,095	178,913	66,095	178,913
					2,490	2,653	45,513	-0,551	-0,419	44,946	66,095	186,367	200,267	178,913	66,095	178,913		

Kolom K6

Kolom Lantai	hn (m)		Mu,k Desain (KN.m)		Gaya Geser Portal Arah Y (KN)			Gaya Geser Portal Arah X (KN)			Vu,k y (KN)		Vu,k x (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Arah X	Mu,k y	Mu,k x	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k y	Vu,k x	Vu,k y	Vu,k x
3	3,62	3,57	59,713	104,583	14,234	12,810	1,147	-0,375	-0,713	12,424	32,991	28,074	58,590	48,890	28,074	48,890	28,074	48,890
					14,234	12,810	1,147	-0,375	-0,713	12,424	32,991	28,074	58,590	48,890	28,074	48,890		
2	3,6	3,54	132,209	234,328	16,699	14,680	7,322	-0,311	-0,394	28,675	73,449	56,667	132,389	114,130	56,667	114,130	56,667	114,130
					16,699	14,680	7,322	-0,311	-0,394	28,675	73,449	56,667	132,389	114,130	56,667	114,130		
1	4,73	4,67	156,315	443,938	5,579	4,913	48,371	-0,448	-0,599	42,535	66,095	202,635	190,123	169,303	66,095	169,303	66,095	169,303
					5,579	4,913	48,371	-0,448	-0,599	42,535	66,095	202,635	190,123	169,303	66,095	169,303		

Kolom K1

Kolom	hn (m)		Mu.k Desain (KN.m)		Gaya Geser Portal Arah Y (KN)			Gaya Geser Portal Arah X (KN)			Vu.k y (KN)		Vu.k x (KN)		Vu.k (KN)		Vu.k pakai (KN)	
Lantai	Arah Y	Arah X	Mu.k y	Mu.k x	VD.k	VL.k	VE.k	VD.k	VL.k	VE.k	{1}	{2}	{1}	{2}	Vu.k y	Vu.k x	Vu.k y	Vu.k x
3	3,62	3,57	55,619	136,419	3,614	1,069	8,461	-5,669	-3,17	12,601	30,729	38,715	76,425	42,016	30,729	42,016	30,729	42,016
					3,614	1,069	8,461	-5,669	-3,17	12,601	30,729	38,715	76,425	42,016	30,729	42,016		
2	3,6	3,54	92,103	248,014	3,798	0,604	21,884	-7,145	-2,89	22,362	51,168	92,396	140,121	79,429	51,168	79,429	51,168	79,429
					3,798	0,604	21,884	-7,145	-2,89	22,362	51,168	92,396	140,121	79,429	51,168	79,429		
1	4,73	4,67	156,315	478,876	1,312	0,232	29,124	-2,35	-0,918	43,679	66,095	118,186	205,087	171,437	66,095	171,437	66,095	171,437
					1,312	0,232	29,124	-2,35	-0,918	43,679	66,095	118,186	205,087	171,437	66,095	171,437		

Kolom K2

Kolom	hn (m)		Mu.k Desain (KN.m)		Gaya Geser Portal Arah Y (KN)			Gaya Geser Portal Arah X (KN)			Vu.k y (KN)		Vu.k x (KN)		Vu.k (KN)		Vu.k pakai (KN)	
Lantai	Arah Y	Arah X	Mu.k y	Mu.k x	VD.k	VL.k	VE.k	VD.k	VL.k	VE.k	{1}	{2}	{1}	{2}	Vu.k y	Vu.k x	Vu.k y	Vu.k x
3	3,62	3,57	67,263	105,312	3,859	2,53	6,7	-5,65	-4,939	9,245	37,162	32,696	58,998	27,695	32,696	27,695	32,696	27,695
					3,859	2,53	6,7	-5,65	-4,939	9,245	37,162	32,696	58,998	27,695	32,696	27,695		
2	3,6	3,54	123,436	244,555	5,008	2,203	42,004	-5,815	-4,802	24,033	68,576	175,127	135,167	66,833	68,576	66,833	68,576	66,833
					5,008	2,203	42,004	-5,815	-4,802	24,033	68,576	175,127	135,167	66,833	68,576	66,833		
1	4,73	4,67	156,315	453,233	3,199	1,915	29,917	[illegible]	-1,528	[illegible]	66,095	124,464	134,104	163,900	66,095	163,900	66,095	163,900
					3,199	1,915	29,917	[illegible]	-1,528	[illegible]	66,095	124,464	134,104	163,900	66,095	163,900		

Tabel Gaya Geser Rencana Kolom (2D)

Kolom K1

Kolom Lantai			Gaya Geser Portal Arah X (KN)			Gaya Geser Portal Arah Y (KN)			Vu,k x (KN)		Vu,k y (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Mu,k y	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k x	Vu,k y	Vu,k x	Vu,k y
3	3.57	136.419	3.614	1.069	8.461	-14.834	-7.066	26.988	76.425	38.715	76.425	86.618	76.425	86.618	76.425	86.618
			3.614	1.069	8.461	-14.834	-7.066	26.988	76.425	38.715	76.425	86.618	76.425	86.618		
2	3.54	248.014	3.798	0.604	21.884	-30.888	-13.463	44.961	140.121	92.396	140.121	136.047	140.121	136.047	140.121	136.047
			3.798	0.604	21.884	-30.888	-13.463	44.961	140.121	92.396	140.121	136.047	140.121	136.047		
1	4.67	478.878	1.312	0.232	29.124	-20.27118	-16.206	101.153	205.087	118.186	205.087	372.184	205.087	372.184	205.087	372.184
			1.312	0.232	29.124	-20.27118	-16.206	101.153	205.087	118.186	205.087	372.184	205.087	372.184		

Kolom K2

Kolom Lantai			Gaya Geser Portal Arah X (KN)			Gaya Geser Portal Arah Y (KN)			Vu,k x (KN)		Vu,k y (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Mu,k y	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k x	Vu,k y	Vu,k x	Vu,k y
3	3.57	105.312	3.859	2.53	6.7	-11.365	-5.066	27.688	58.998	32.696	58.998	94.581	32.696	94.581	32.696	94.581
			3.859	2.53	6.7	-11.365	-5.066	27.688	58.998	32.696	58.998	94.581	32.696	94.581		
2	3.54	244.555	5.008	2.203	42.004	-20.888	-11.463	44.961	138.167	175.127	138.167	149.047	138.167	149.047	138.167	149.047
			5.008	2.203	42.004	-20.888	-11.463	44.961	138.167	175.127	138.167	149.047	138.167	149.047		
1	4.67	453.233	3.199	1.915	29.917	-22.352	-15.213	111.235	194.104	124.464	194.104	410.511	194.104	410.511	194.104	410.511
			3.199	1.915	29.917	-22.352	-15.213	111.235	194.104	124.464	194.104	410.511	194.104	410.511		

Kolom K3

Kolom Lantai	hn	Mu,k desain	Gaya Geser Portal Arah X (KN)			Gaya Geser Portal Arah Y (KN)			Vu,k x (KN)		Vu,k y (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	(m)	(KN.m)	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k x	Vu,k y	Vu,k x	Vu,k y
3	3.57	136.419	11.212	11.295	1.862	5.032	3.245	28.271	76.425	26.550	76.425	120.745	26.550	120.745	26.550	120.745
			11.212	11.295	1.862	5.032	3.245	28.271	76.425	26.550	76.425	120.745	26.550	120.745		
2	3.54	248.014	9.835	10.036	1.550	7.916	5.184	66.277	140.121	23.020	140.121	277.197	23.020	277.197	23.020	277.197
			9.835	10.036	1.550	7.916	5.184	66.277	140.121	23.020	140.121	277.197	23.020	277.197		
1	4.67	478.878	3.613	3.393	46.489	-10.670	-8.317	80.178	205.087	191.988	205.087	303.747	205.087	303.747	205.087	303.747
			3.613	3.393	46.489	-10.670	-8.317	80.178	205.087	191.988	205.087	303.747	205.087	303.747		

Kolom K4

Kolom Lantai			Gaya Geser Portal Arah X (KN)			Gaya Geser Portal Arah Y (KN)			Vu,k x (KN)		Vu,k y (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Mu,k y	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k x	Vu,k y	Vu,k x	Vu,k y
3	3.57	105.312	15.997	13.702	1.607	-0.329	-0.256	12.494	58.998	32.475	58.998	49.453	32.475	49.453	32.475	49.453
			15.997	13.702	1.607	-0.329	-0.256	12.494	58.998	32.475	58.998	49.453	32.475	49.453		
2	3.54	244.555	15.329	13.017	6.522	-0.683	-0.326	30.235	138.167	50.991	138.167	119.957	50.991	119.957	50.991	119.957
			15.329	13.017	6.522	-0.683	-0.326	30.235	138.167	50.991	138.167	119.957	50.991	119.957		
1	4.67	453.233	6.408	5.252	50.432	-0.464	-0.125	43.699	194.104	212.044	194.104	174.177	194.104	174.177	194.104	174.177
			6.408	5.252	50.432	-0.464	-0.125	43.699	194.104	212.044	194.104	174.177	194.104	174.177		

Kolom K5

Kolom Lantai			Gaya Geser Portal Arah X (KN)			Gaya Geser Portal Arah Y (KN)			Vu,k x (KN)		Vu,k y (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Mu,k y	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k x	Vu,k y	Vu,k x	Vu,k y
3	3.57	125.496	11.408	11.184	1.391	-0.163	-0.417	15.361	70.306	24.846	70.306	61.040	24.414	61.040	24.414	61.040
			11.408	11.184	1.391	-0.163	-0.417	15.361	70.306	24.846	70.306	61.040	24.414	61.040		
2	3.54	232.303	3.269	3.799	29.536	-0.234	-0.501	42.375	131.245	123.966	131.245	168.969	131.245	131.245	131.245	131.245
			3.269	3.799	29.536	-0.234	-0.501	42.375	131.245	123.966	131.245	168.969	131.245	131.245		
1	4.67	467.624	2.490	2.653	45.513	-0.551	-0.419	44.946	200.267	186.367	200.267	178.913	200.267	178.913	200.267	178.913
			2.490	2.653	45.513	-0.551	-0.419	44.946	200.267	186.367	200.267	178.913	200.267	178.913		

Kolom K6

Kolom Lantai			Gaya Geser Portal Arah X (KN)			Gaya Geser Portal Arah Y (KN)			Vu,k x (KN)		Vu,k y (KN)		Vu,k (KN)		Vu,k pakai (KN)	
	Arah Y	Mu,k y	VD,k	VL,k	VE,k	VD,k	VL,k	VE,k	{1}	{2}	{1}	{2}	Vu,k x	Vu,k y	Vu,k x	Vu,k y
3	3.57	104.583	14.234	12.810	1.147	-0.375	-0.713	12.424	58.590	28.074	58.590	48.890	28.074	48.890	28.074	48.890
			14.234	12.810	1.147	-0.375	-0.713	12.424	58.590	28.074	58.590	48.890	28.074	48.890		
2	3.54	234.328	16.699	14.680	7.322	-0.311	-0.394	28.675	132.389	56.667	132.389	114.130	56.667	114.130	56.667	114.130
			16.699	14.680	7.322	-0.311	-0.394	28.675	132.389	56.667	132.389	114.130	56.667	114.130		
1	4.67	443.938	5.579	4.913	48.371	-0.448	-0.599	42.535	190.123	202.635	190.123	169.303	190.123	169.303	190.123	169.303
			5.579	4.913	48.371	-0.448	-0.599	42.535	190.123	202.635	190.123	169.303	190.123	169.303		

LAMPIRAN C

PEMBEBANAN GEMPA

Pembebanan Gempa Portal 1

No	Bagian	Berat	Satuan	P (m) panjang x	l (m) lebar y	t (m) tinggi z	Total (KN)	Ket
	lantai 3							
	Beban Mati							
1	Pelat lantai	4.32	KN/m2	118	2	1	1003.968	
2	blk induk	1.444	KN/m	146	1	1	210.824	
3	blk anak	0.832	KN/m	52	1	1	43.264	1 = 1 satuan
4	kolom	1.131	KN/m	28	1	1	31.668	
5	dinding	2.5	KN/m2	116.2	1	2	581	
					WD		**1870.724**	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	116.2	2	0.5	581	Reduksi = 0.5
					WL		**581**	
					W3		**2451.724**	
	lantai 2							
	Beban Mati							
1	Pelat lantai	4.64	KN/m2	118	2	1	1078.336	
2	blk induk	1.444	KN/m	146	1	1	210.824	
3	blk anak	0.832	KN/m	52	1	1	43.264	1 = 1 satuan
4	kolom	1.131	KN/m	56	1	1	63.336	
5	dinding	2.5	KN/m2	116.2	1	4	1162	
					WD		**2557.76**	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	116.2	2	0.5	581	Reduksi = 0.5
					WL		**581**	
					W2		**3138.76**	
	lantai 1							
	Beban Mati							
1	Pelat lantai	4.64	KN/m2	118	2	1	1078.336	
2	blk induk	1.444	KN/m	146	1	1	210.824	
3	blk anak	0.832	KN/m	52	1	1	43.264	1 = 1 satuan
4	kolom	1.131	KN/m	64.05	1	1	72.44055	
5	dinding	2.5	KN/m2	116.2	1	4.58	1330.49	
					WD		**2735.355**	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	116.2	2	0.5	581	Reduksi = 0.5
					WL		**581**	
					W1		**3316.355**	
					W total		**8906.839**	

$V = C\ I\ K\ Wt$

Dimana:

C = Koefisien gempa dasar
T = Waktu getar bangunan (0.06H^3/4)
H = Tinggi Bangunan = 13.15
I = Faktor keutamaan Bangunan
K = Faktor jenis struktur
Wt = Berat total bangunan
Vx,y = Gaya gempa horizontal

T = 0.587
C = 0.07
I = 1.5
K = 1

$Vx,y = C * I * K * Wt = 935.21805$

Distribusi Beban Gempa

No	Bagian	Wi (KN)	Hi (M)	Wi Hi (KN.m)	Fx,y (KN)
1	tingkat 3	2451.724	13.15	32240.1706	306.3654
2	tingkat 2	3138.76	9.15	28719.654	344.1756
3	tingkat 1	3316.35455	5.15	17079.22593	204.677
			Wi Hi	78039.05053	

Pembebanan Gempa Portal 2

No	Bagian	Berat	Satuan	P (m) panjang x	l (m) lebar y	t (m) tinggi z	Total (KN)	Ket
	lantai 3							
	Beban Mati							
1	Pelat lantai	4.32	KN/m2	114.4	2	1	988.416	1 = 1 satuan
2	Pelat Tribun	4.8	KN/m2	114.4	2	1	1098.24	
2	blk induk	1.444	KN/m	140.2	1	1	202.4488	
3	blk anak	0.832	KN/m	52	1	1	43.264	
4	kolom	1.131	KN/m	28	1	1	31.668	
5	dinding	2.5	KN/m2	116.2	1	2	581	
					WD		2945.037	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	114.4	2	0.5	572	Reduksi = 0.5
					WL		572	
					W3		3517.037	
	lantai 2							
	Beban Mati							
1	Pelat lantai	4.64	KN/m2	116.2	2	1	1078.336	1 = 1 satuan
2	blk induk	1.444	KN/m	140.2	1	1	202.4488	
3	blk anak	0.832	KN/m	52	1	1	43.264	
4	kolom	1.131	KN/m	56	1	1	63.336	
5	dinding	2.5	KN/m2	116.2	1	4	1162	
					WD		2549.385	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	116.2	2	0.5	581	Reduksi = 0.5
					WL		581	
					W2		3130.385	
	lantai 1							
	Beban Mati							
1	Pelat lantai	4.64	KN/m2	116.2	2	1	1078.336	1 = 1 satuan
2	blk induk	1.444	KN/m	140.2	1	1	202.4488	
3	blk anak	0.832	KN/m	52	1	1	43.264	
4	kolom	1.131	KN/m	64.05	1	1	72.44055	
5	dinding	2.5	KN/m2	116.2	1	4.58	1330.49	
					WD		2726.979	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	116.2	2	0.5	581	Reduksi = 0.5
					WL		581	
					W1		3307.979	
					W total		9955.401	

$V = C\ I\ K\ Wt$

Dimana:

C = Koefisien gempa dasar
T = Waktu getar bangunan (0.06H^3/4)
Hi = Tinggi Bangunan = 13.15
I = Faktor keutamaan Bangun
K = Faktor jenis struktur
Wt = Berat total bangunan
Vx,y = Gaya gempa horizontal

T = 0.587
C = 0.07
I = 1.5
K = 1

Vx,y = C * I * K * Wt = 1045.317

Distribusi Beban Gempa

No	Bagian	Wi (KN)	Hi (M)	Wi Hi (KN.m)	Fx,y (KN)
1	tingkat 3	3517.0368	13.15	46249.03392	525.8988
2	tingkat 2	3130.3848	9.15	28643.02092	325.7005
3	tingkat 1	3307.97935	5.15	17036.09365	193.7178
			Wi Hi	91928.14849	

Pembebanan Gempa Portal B

No	Bagian	Berat	Satuan	P (m) panjang x	l (m) lebar y	t (m) tinggi z	Total (KN)	Ket
	lantai 3							
	Beban Mati							
1	Pelat lantai	4.32	KN/m2	9	4	1	155.52	1 = 1 satuan
2	Pelat tribun	4.8	KN/m2	9	4.49	1	193.968	
3	blk induk	1.444	KN/m	22	1	1	31.768	
4	blk anak	0.832	KN/m	8	1	1	6.656	
5	blk miring induk	1.444	KN/m	4.49	1	1	6.48356	
6	blk miring anak	0.803	KN/m	8.98	1	1	7.21094	
7	kolom	1.131	KN/m	4	1	1	4.524	
8	dinding	2.5	KN/m2	4.5	1	2	22.5	
					WD		428.6305	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	9	4	0.5	90	Reduksi = 0.5
2	Pelat tribun	5	KN/m2	9	4.49	0.5	101.025	
					WL		191.025	
					W3		619.6555	
	lantai 2							
	Beban Mati							
1	Pelat lantai	4.64	KN/m2	9	8	1	334.08	1 = 1 satuan
2	Pelat tribun	4.8	KN/m2	9	8.98	1	387.936	
3	blk induk	1.444	KN/m	30	1	1	43.32	
4	blk anak	0.832	KN/m	20	1	1	16.64	
5	blk miring induk	1.444	KN/m	8.98	1	1	12.96712	
6	blk miring anak	0.803	KN/m	17.96	1	1	14.42188	
7	kolom	1.131	KN/m	12	1	1	13.572	
8	dinding	2.5	KN/m2	9	1	4	90	
					WD		912.937	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	9	8	0.5	180	Reduksi = 0.5
2	Pelat tribun	5	KN/m2	9	8.98	0.5	202.05	
					WL		382.05	
					W2		1294.987	
	lantai 1							
	Beban Mati							
1	Pelat lantai	4.64	KN/m2	9	14	1	584.64	1 = 1 satuan
2	Pelat tribun	4.8	KN/m2	9	10.1	1	436.32	
3	Pelat kantilever	4.32	KN/m2	9	2.5	1	97.2	
3	blk induk	1.444	KN/m	42.5	1	1	61.37	
4	blk anak	0.832	KN/m	20	1	1	16.64	
5	blk miring induk	1.444	KN/m	10.1	1	1	14.5844	
6	blk miring anak	0.803	KN/m	20.2	1	1	16.2206	
7	kolom	1.131	KN/m	18.3	1	1	20.6973	
8	dinding	2.5	KN/m2	9	1	4.58	103.05	
					WD		1350.722	
	Beban Hidup							
1	Pelat lantai	5	KN/m2	9	14	0.5	315	Reduksi = 0.5
2	Pelat tribun	5	KN/m2	9	10.1	0.5	227.25	
					WL		542.25	
					W1		1892.972	
					W total		3807.615	

$V = C\ I\ K\ Wt$

Dimana:

C = Koefisien gempa dasar
T = Waktu getar bangunan (0.06H^3/4)
H = Tinggi Bangunan = 13.15
I = Faktor keutamaan Bangunan
K = Faktor jenis struktur
Wt = Berat total bangunan
Vx,y = Gaya gempa horizontal

T = 0.586966
C = 0.07
I = 1.5
K = 1

$Vx,y = C * I * K * Wt$ = 399.7996

Distribusi Beban Gempa

No	Bagian	Wi (KN)	Hi (M)	Wi Hi (KN.m)	Fx,y (KN)
1	tingkat 3	619.6555	13.15	8148.469825	109.5176
2	tingkat 2	1294.987	9.15	11849.13105	159.2554
3	tingkat 1	1892.9723	5.15	9748.807345	131.0265
			Wi Hi	29746.40822	

LAMPIRAN D

DESAIN BALOK

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS 1 (ANALISIS 2D)

Balok	B1		B2		B3		B4	
Batang	1 dan 13		2 s/d 6 dan 8 s/d 12		7		14 dan 26	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	433,001	277,659	393,521	269,092	437,476	316,012	382,454	278,948
MA (KN.m)	82,383	66,577	53,797	31,619	120,843	47,719	139,64	26,745
MB (KN.m)	102,635	148,695	115,436	133,575	144,339	171,429	134,549	147,638
MC(KN.m)	114,680	28,134	111,208	32,959	42,99	48,41	44,026	66,483
Cb	2,30	2,21	2,30	2,30	2,30	2,25	2,30	2,22
Profil	W18x60	W18x60	W18x60	W18x60	W18x60	W18x60	W18x55	W18x55
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,93	42,93	42,93	42,93	42,93	42,93	42,42	42,42
X1 (Mpa)	15739,55	15789,55	15789,55	15789,55	15789,55	15789,55	14548,45	14548,45
X2 (1/Mpa)^2	0,000128	0,000128	0,000128	0,000128	0,000128	0,000128	0,000180	0,000180
Zx (mm^3)	2015608,87	2015608,87	2015608,87	2015608,87	2015608,87	2015608,87	1835351,17	1835351,17
Sx (mm^3)	1769802,91	1769802,91	1769802,91	1769802,91	1769802,9	1769802,91	1610848,39	1610848,39
Lp (mm)	2136,87	2136,87	2136,87	2136,87	2136,87	2136,87	2111,58	2111,58
Lr (mm)	6807,00	6807,00	6807,00	6807,00	6807,00	6807,00	6515,39	6515,39
L (mm)	3600	3600	3000	3000	3333	3333	3600	3600
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	503,90	503,90	503,90	503,90	503,90	503,90	458,84	458,84
Mr (KN.m)	318,56	318,56	318,56	318,56	318,56	318,56	289,95	289,95
Mn (KN.m)	1075,42	984,07	1080,19	1080,19	1049,50	1025,58	924,04	893,63
Mn pakai (KN.m)	503,9	503,9	503,9	503,9	503,9	503,9	458,84	458,84
0.9 Mn (KN.m)	453,51	453,51	453,51	453,51	453,51	453,51	412,956	412,956
0.9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	173,656		173,656		128,882		535,324	
Ag (mm2)	11354,816		11354,816		11354,816		10451,592	
T (KN)	2554,834		2554,834		2554,834		2351,608	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		9000		10000		9000	
Defleksi diizinkan (mm)	25,00		25,00		27,78		25,00	
Defleksi dari SAP	9,60		8,60		7,10		13,10	
	AMAN		AMAN		AMAN		AMAN	

Baiok	B5		B6		B7		B8	
Batang	20		15 s/d 19 dan 21 s/d 25		27 dan 39		28 s/d 32 dan 34 s/d 38	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	393,382	302.04	369,861	277,047	191,735	208,737	182.489	193,859
MA (KN.m)	108,241	33.282	9,24	45,832	43,001	36,951	35,114	21,628
MB (KN.m)	113,505	130.673	143,923	169,385	94,037	120,85	57,231	83,277
MC(KN.m)	54,694	25.945	85,965	45,913	14,614	38.386	6.258	10,212
Cb	2,30	2.30	2,30	2,10	2,30	2.12	2,30	2,30
Profil	W18x55	W18x55	W18x55	W18x55	W16x36	W16x36	W16x36	W16x36
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,42	42.42	42,42	42,42	38.61	38.61	38,61	38,61
X1 (Mpa)	14548,45	14548.45	14548,45	14548,45	11721,50	11721,50	11721,50	11721,50
X2 (1/Mpa)^2	0,000189	0.000189	0,000189	0.000189	0.000439	0.000439	0.000438	0.000438
Zx (mm^3)	1835351,17	1835351.17	1835351,17	1835351,17	1048772,10	1048772,10	1046772,10	1048772,10
Sx (mm^3)	1610848,39	1610848.39	1610848,39	1610848,39	925869,12	925869,12	925869,12	925869,12
Lp (mm)	2111,58	2111.58	2111,58	2111,58	1921,92	1921,92	1921,92	1921,92
Lr (mm)	6515,39	6515.39	6515,39	6515,39	5562,76	5562,76	5562,76	5562,76
L (mm)	3000	3000	3333	3333	3000	3000	3000	3000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Penampang	458,84	458.84	458,84	458,84	262,19	262,19	262,19	262,19
Mp (KN.m)	289,95	289.95	289,95	289,95	166,66	166,66	166,66	166,66
Mr (KN.m)	976,96	976.96	947,59	867,14	537,98	495,68	537,98	537,98
Mn (KN.m)	458,84	458.84	458,84	458,84	262,19	262,19	262,19	262,19
Mn pakai (KN.m)	412,956	412.956	412,956	412,956	235,971	235,971	235 971	235,971
0,9.Mn (KN.m)	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
0.9Mn > Mu								
Kuat Tarik Tersedia								
P (KN)	280,755		123,217		220,958		360,844	
Ag (mm2)	10451,592		10451,592		6938,696		6838,696	
T (KN)	2351,608		2351,608		1538,707		1538,707	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		10000		10000		9000	
Defleksi Ijinkan (mm)	25,00		27,78		27,78		25,00	
Defleksi dari SAP	12,10		15,00		17,00		16,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B9	
Batang	33	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	193.393	191.407
MA (KN.m)	76.833	18.243
MB (KN.m)	90.242	107.877
MC(KN.m)	4.222	60.714
Cb	2.22	2.09
Profil	W16x36	W16x36
fy (Mpa)	250	250
fr (Mpa)	70	70
E (Mpa)	200000	200000
ry (mm)	38.61	38.61
X1 (Mpa)	11721.50	11721.50
X2 (1/Mpa)^2	0.000438	0.000438
Zx (mm^3)	1048772.10	1048772.10
Sx (mm^3)	925869.12	925869.12
Lp (mm)	1921.92	1921.92
Lr (mm)	5562.76	5562.76
L (mm)	3600	3600
	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak
Mp (KN.m)	262.19	262.19
Mr (KN.m)	166.66	166.66
Mn (KN.m)	464.90	455.11
Mn pakai (KN.m)	262.19	262.19
0.9.Mn (KN.m)	235.971	235.971
0.9Mn > Mu	AMAN	AMAN
Kuat Tarik Tersedia		
P (KN)	398.637	
Ag (mm2)	6838.696	
T (KN)	1538.707	
T > P (KN)	AMAN	
Kontrol Defleksi		
L (mm)	9000	
Defleksi diizinkan (mm)	25.00	
Defleksi dari SAP	16.00	
	AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS 2 (ANALISIS 2D)

Balok	B1		B2		B3		B4	
Batang	1 dan 13		2 s/d 6 dan 8s/d 12		7		14 dan 26	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN m)	411,656	333,207	552,482	571,163	392,266	633,606	305,606	299,258
MA (KN.m)	185,999	104,139	104,979	68,427	33,516	101,914	122,121	97,997
MB (KN.m)	220,919	255,329	201,768	255,65	275,324	350,081	213,283	262,547
MC(KN.m)	51,476	16,917	19,347	40,109	125,832	101,774	2,87	37,266
Cb	1,96	1,88	2,30	2,30	2,30	2,20	1,92	1,70
Profil	W18x55	W18x55	W18x76	W18x76	W18x86	W18x86	W18x46	W18x46
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,42	42,42	66,29	66,29	66,80	66,80	32,77	32,77
X1 (Mpa)	14549,45	14548,45	44955,40	44955,40	16961,70	16961,70	14203,70	14203,70
X2 (1/Mpa)^2	0,000160	0,000160	0,000028	0,000028	0,000085	0,000085	0,000212	0,000212
Zx (mm^3)	1835351,17	1835351,17	2671091,43	2671091,43	3047993,90	3047993,90	1486306,70	1486306,70
Sx (mm^3)	1610848,39	1610848,39	2392511,34	2392511,34	2720252,62	2720252,62	1291300,64	1291300,64
Lp (mm)	2111,58	2111,58	3300,14	3300,14	3325,42	3325,42	1631,10	1631,10
Lr (mm)	6515,39	6515,39	25546,93	25546,93	10795,03	10795,03	5045,28	5045,28
L (mm)	3600	3600	3000	3000	3333	3333	3600	3600
	Lp<L<Lr	Lp<L<Lr	L < Lr	L < Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	458,84	458,84	667,77	667,77	762,00	762,00	371,58	371,58
Mr (KN.m)	289,95	289,95	-	-	489,65	489,65	232,43	232,43
Mn (KN.m)	787,48	754,92	667,77	667,77	1751,96	1677,95	560,02	494,45
Mn pakai (KN.m)	458,84	458,84	667,77	667,77	762	762	371,58	371,58
0,9.Mn (KN.m)	412,956	412,956	600,993	600,993	685,8	685,8	334,422	334,422
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	220,906		194,189		108,753		269,489	
Ag (mm2)	10451,592		14367,068		16322,548		6709,660	
T (KN)	2351,608		3237,090		3672,573		1959,674	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	7200		9000		10000		7200	
Defleksi diizinkan (mm)	20,00		25,00		27,78		20,00	
Defleksi dari SAP	12,00		11,50		12,50		16,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7		B8	
Batang	15 s/d 19 dan 21 s/d 25		20		27 dan 39		26 s/d 32 dan 34 s/d 38	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	391,211	412,798	402,633	321,366	130,328	136,869	176,414	195,888
MA (KN.m)	104,863	92,594	37,761	78,969	7,827	1,592	1,401	15,294
MB (KN.m)	189,667	231,949	197,89	248,414	69,471	83,185	71,607	90,5
MC(KN.m)	22,328	60,941	70,418	58,351	45,181	35,074	31,04	20,024
Cb	2,30	2,13	2,30	1,32	2,14	2,17	2,30	2,30
Profil	W18x55	W18x55	W18x60	W18x60	W16x26	W16x26	W16x31	W16x31
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,42	42,42	42,93	42,93	28,45	28,45	29,72	29,72
X1 (Mpa)	14548,45	14548,45	15789,55	15789,55	10135,65	10135,65	11997,30	11997,30
X2 (1/Mpa)^2	0,000180	0,000180	0,000126	0,000126	0,000860	0,000860	0,000421	0,000421
Zx (mm^3)	1835351,17	1835351,17	2015608,87	2015608,87	734308,23	734308,23	884901,46	884901,46
Sx (mm^3)	1610848,39	1610848,39	1769802,91	1769802,91	629263,26	629263,26	773469,42	773469,42
Lp (mm)	2111,58	2111,58	2136,87	2136,87	1416,15	1416,15	1479,37	1479,37
Lr (mm)	6515,39	6515,39	6807,00	6807,00	4044,07	4044,07	4350,88	4350,88
L (mm)	3000	3000	3333	3333	3600	3600	3000	3000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	459,84	458,84	503,90	503,90	181,08	181,08	221,23	221,23
Mr (KN.m)	289,95	289,95	318,56	318,56	113,27	113,27	139,22	139,22
Mn (KN.m)	976,96	905,55	1049,60	830,01	286,40	270,93	408,94	408,94
Mn pakai (KN.m)	458,84	458,84	503,9	503,9	181,08	181,08	221,23	221,23
0,9.Mn (KN.m)	412,956	412,956	453,51	453,51	162,972	162,972	199,107	199,107
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	238,695		117,305		208,561		192,62	
Ag (mm2)	10451,592		11354,816		4954,829		5883,859	
T (KN)	2351,608		2554,834		1114,836		1323,868	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		10000		7200		9000	
Defleksi diizinkan (mm)	25,00		27,78		20,00		25,00	
Defleksi dari SAP	16,00		17,00		17,00		17,50	
	AMAN		AMAN		AMAN		AMAN	

Balok	B9	
Batang	33	
Kombinasi Beban	**Gravitasi&Gempa**	**Gravitasi**
Mu (KN.m)	188,818	212,245
MA (KN.m)	36,576	33,391
MB (KN.m)	92,885	116,46
MC(KN.m)	16,576	33,057
Cb	2,30	2,22
Profil	**W16x36**	**W16x36**
fy (Mpa)	250	250
fr (Mpa)	70	70
E (Mpa)	200000	200000
ry (mm)	38,61	38,61
X1 (Mpa)	11721,50	11721,50
X2 (1/Mpa)^2	0,000438	0,000438
Zx (mm^3)	1048772,10	1048772,10
Sx (mm^3)	925869,12	925869,12
Lp (mm)	1921,92	1921,92
Lr (mm)	5562,76	5562,76
L (mm)	3333	3333
	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak
Mp (KN.m)	262,19	262,19
Mr (KN.m)	166,65	166,66
Mn (KN.m)	517,88	499,57
Mn pakai (KN.m)	262,19	262,19
0,9 Mn (KN.m)	235,971	235,971
0,9Mn > Mu	**AMAN**	**AMAN**
Kuat Tarik Tersedia		
P (KN)	106,168	
Ag (mm2)	6838,696	
T (KN)	1538,707	
T > P (KN)	**AMAN**	
Kontrol Defleksi		
L (mm)	10000	
Defleksi diizinkan (mm)	27,78	
Defleksi dari SAP	18,50	
	AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS A (ANALISIS 2D)

Balok	B1		B2		B3		B4	
Batang	1		2		3		4	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	254,96	60,674	233,261	164,36	223,536	102,235	77,624	81,116
MA (KN.m)	112,846	10,628	89,852	52,324	64,586	11,332	16,383	11,592
MB (KN.m)	13,109	11,109	87,447	116,424	53,486	55,761	22,462	29,623
MC(KN.m)	62,523	10,523	37,049	26,753	127,779	74,324	27,241	27,469
Cb	2,30	2,30	2,22	1,84	2,07	2,01	2,30	2,30
Profil	W16x40	W16x40	W16x40	W16x40	W16x40	W16x40	W16x26	W16x26
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	39,88	39,88	39,88	39,88	39,88	39,88	26,45	26,45
X1 (Mpa)	13031,55	13031,55	13031,55	13031,55	13031,55	13031,55	10135,65	10135,65
X2 (1/Mpa)^2	0,000271	0,000271	0,000271	0,000271	0,000271	0,000271	0,000860	0,000860
Zx (mm^3)	1194616,97	1194616,97	1194616,97	1194616,97	1194616,97	1194616,97	724308,23	724308,23
Sx (mm^3)	1060243,04	1060243,04	1060243,04	1060243,04	1060243,04	1060243,04	629263,26	629263,26
Lp (mm)	1985,14	1985,14	1985,14	1985,14	1985,14	1985,14	1416,15	1416,15
Lr (mm)	5866,61	5866,61	5866,61	5866,61	5866,61	5866,61	4044,07	4044,07
L (mm)	4000	4000	4000	4000	8000	8000	4000	4000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lr < L	Lr < L	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	293,65	298,65	298,65	298,65	298,65	298,65	181,08	181,08
Mr (KN.m)	190,84	190,84	190,84	190,84	-	-	113,27	113,27
Mn (KN.m)	558,19	558,19	538,67	447,68	252,82	245,43	263,13	263,13
Mn pakai (KN.m)	298,65	298,65	298,65	298,65	252,82	245,43	181,08	181,08
0,9.Mn (KN.m)	268,965	268,965	268,785	268,785	227,538	220,887	162,972	162,972
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	47,592		78,302		171,143		155,432	
Ag (mm2)	7612,888		7612,888		7612,888		4954,8288	
T (KN)	1712,900		1712,900		1712,900		1114,836	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	4000		8000		8000		4000	
Defleksi diizinkan (mm)	11,11		22,22		22,22		11,11	
Defleksi dari SAP	5,20		11,00		7,00		2,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7	
Batang	5		6		7 dan 8	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	114,854	121,167	75,967	92,653	290,653	329,792
MA (KN.m)	10,795	22,324	12,286	14,999	8,092	8,262
MB (KN.m)	49,586	83,189	25,355	51,007	162,778	162,101
MC(KN.m)	29,069	36,753	13,639	13,088	129,429	113,631
Cb	2,37	1,8[illegible]	2,30	2,30	2,10	2,24
Profil	W16x36	W16x36	W14x22	W14x22	W16x50	W16x50
fy (Mpa)	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000
ry (mm)	33,61	38,61	27,43	26,42	40,39	40,39
X1 (Mpa)	11721,50	11721,50	13031,55	11100,95	16134,30	16134,30
X2 (1/Mpa)^2	0,000438	0,000438	0,000282	0,000574	0,000116	0,000116
Zx (mm^3)	1048772,10	1048772,10	658759,97	544058,52	1507609,89	1507609,89
Sx (mm^3)	925869,12	925869,12	578463,36	475224,86	1327352,18	1327352,18
Lp (mm)	1921,92	1921,92	1365,57	1315,00	2010,43	2010,43
Lr (mm)	5562,76	5562,76	4087,62	3795,48	6459,19	6459,19
L (mm)	8000	8000	4000	4000	8980	8980
	Lr < L	Lr < L	Lr < L	Lr < L	Lr < L	Lr < L
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	262,19	262,19	164,69	136,01	376,90	376,90
Mr (KN.m)	-	-	-	-	-	-
Mn (KN.m)	229,15	179,94	247,57	180,71	326,91	349,05
Mn pakai (KN.m)	206,29	178,63	164,69	136,01	326,91	376,9
0,9.Mn (KN.m)	185,661	160,947	148,221	122,409	294,219	339,21
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia						
P (KN)	138,392		128,424		243,614	
Ag (mm2)	6838,696		4167,088		9483,852	
T (KN)	1538,707		942,095		2133,867	
T > P (KN)	AMAN		AMAN		AMAN	
Kontrol Defleksi						
L (mm)	8000		4000		8980	
Defleksi diizinkan (mm)	22,22		11,11		24,94	
Defleksi dari SAP	7,00		1,10		13,00	
	AMAN		AMAN		AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS B (ANALISIS 2D)

Balok	B1		B2		B3		B4	
Batang	1		2		3		4	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN m)	140.956	79.284	225.057	202.908	153.54	161.419	107.516	133.365
MA (KN m)	46.575	8.122	63.25	51.702	14.504	8.206	6.236	7.325
MB (KN m)	52.233	23.184	156.476	145.387	61.169	65.331	25.935	26.55
MC(KN m)	14.32	4.871	6.151	44.149	67.535	51.66	25.807	9.877
Cb	2.30	2.30	2.01	1.84	2.19	2.30	2.30	2.01
Profil	W16x26	W16x26	W16x36	W16x36	W16x36	W16x36	W16x26	W16x26
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	28.45	28.45	38.61	38.61	38.61	38.61	28.45	28.45
X1 (Mpa)	10135.65	10135.65	11721.50	11721.50	11721.50	11721.50	10135.65	10135.65
X2 (1/Mpa)^2	0.000860	0.000860	0.000439	0.000439	0.000439	0.000439	0.000860	0.000860
Zx (mm^3)	724308.23	724308.23	1048772.10	1048772.10	1048772.10	1048772.10	724308.23	724308.23
Sx (mm^3)	629263.26	629263.26	925869.12	925869.12	925869.12	925869.12	629263.26	629263.26
Lp (mm)	1416.15	1416.15	1921.92	1921.92	1921.92	1921.92	1416.15	1416.15
Lr (mm)	4044.07	4044.07	5562.76	5562.76	5562.76	5562.76	4044.07	4044.07
L (mm)	4000	4000	4000	4000	8000	8000	4000	4000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lr < L	Lr < L	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	181.08	181.08	262.19	262.19	262.19	262.19	181.08	181.08
Mr (KN.m)	113.27	113.27	166.66	166.66	-	-	113.27	113.27
Mn (KN.m)	263.13	263.13	418.26	362.68	211.92	222.12	263.13	263.13
Mn pakai (KN.m)	181.08	181.08	262.19	262.19	211.92	222.12	181.08	181.08
0.9 Mn (KN.m)	162.972	162.972	235.971	235.971	190.728	199.908	162.972	162.972
0.9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	104.09		77.774		26,319		147.255	
Ag (mm2)	4951.829		6838.696		6838.696		4954.829	
T (KN)	1114.836		1538.707		1538.707		1114.836	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	4000		8000		8000		4000	
Defleksi diizinkan (mm)	11.11		22.22		22.22		11.11	
Defleksi dari SAP	1.20		11.60		6.10		1.50	
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7		B8	
Batang	5		6		7		8	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	91,598	101,819	75,164	94,153	137,444	145,576	269,596	176,111
MA (KN.m)	17,144	21,188	2,362	1,982	54,765	68,574	21,515	17,528
MB (KN.m)	82,522	73,518	1,296	31,924	86,19	106,92	131,512	49,34
MC (KN.m)	36,592	28,542	30,224	3,011	26,054	31,647	47,971	11,395
Cb	1,58	1,92	2,30	2,30	1,00	1,00	2,30	2,30
Profil	W16x31	W16x31	W14x26	W14x26	W14x26	W14x26	W16x45	W16x45
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	29,72	29,72	27,43	27,43	27,43	27,43	39,88	39,88
X1 (Mpa)	11997,30	11997,30	13031,55	13031,55	13031,55	13031,55	14617,40	14617,40
X2 (1/Mpa)^2	0,000421	0,000421	0,000292	0,000292	0,000292	0,000292	0,000174	0,000174
Zx (mm^3)	884901,46	884901,46	658759,97	658759,97	658759,97	658759,97	1348655,37	1348655,37
Sx (mm^3)	773469,42	773469,42	578463,36	578463,36	925869,12	925869,12	1191339,55	1191339,55
Lp (mm)	1479,37	1479,37	1365,57	1365,57	1365,57	1365,57	1985,14	1985,14
Lr (mm)	4350,88	4350,88	4087,62	4087,62	4087,62	4087,62	6125,12	6125,12
L (mm)	8000	8000	4000	4000	2500	2500	5612	5612
	Lr < L	Lr < L	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	221,23	221,23	164,69	164,69	164,69	164,69	337,16	337,16
Mr (KN.m)	-	-	104,12	104,12	166,66	166,66	214,44	214,44
Mn (KN.m)	91,51	115,45	243,97	243,97	165,51	165,51	528,20	528,20
Mn pakai (KN.m)	102,64	115,45	164,69	164,69	165,51	165,51	337,16	337,16
0,9 Mn (KN.m)	92,556	103,905	148,221	148,221	148,959	148,959	303,444	303,444
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	142,285		76,85		0		303,783	
Ag (mm2)	5883,859		4961,280		4961,280		8580,628	
T (KN)	1323,868		1116,288		1116,288		1930,641	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	8000		4000		2500		5612	
Defleksi diizinkan (mm)	22,22		11,11		6,94		15,59	
Defleksi dari SAP	6,00		1,10		3,1000		0,56	
	AMAN		AMAN		AMAN		AMAN	

Balok	B9	
Batang	9 dan 10	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	226.904	298.842
MA (KN.m)	3.956	6.653
MB (KN.m)	100.691	130.793
MC(kN.m)	53.054	70.311
Cb	2.30	2.30
Profil	W16x50	W16x50
fy (Mpa)	250	250
fr (Mpa)	70	70
E (Mpa)	200000	200000
ry (mm)	40.39	40.39
X1 (Mpa)	16134.30	16134.30
X2 (1/Mpa^2)	0.000116	0.000116
Zx (mm^3)	1507609.69	1507609.69
Sx (mm^3)	1327352.18	1327352.18
Lp (mm)	2010.43	2010.43
Lr (mm)	6459.19	6459.19
L (mm)	8940	8940
	Lr < L	Lr < L
Penampang	Kompak	Kompak
Mp (KN.m)	376.90	376.90
Mr (KN.m)	-	-
Mn (KN.m)	360.03	360.03
Mn pakai (KN.m)	358.05	358.05
0,9 Mn (KN.m)	322.245	322.245
0.9Mn > Mu	AMAN	AMAN
Kuat Tarik Tersedia		
P (KN)	305.495	
Ag (mm2,	9483.852	
T (KN)	2133.867	
T > P (KN)	AMAN	
Kontrol Defleksi		
L (mm)	8980	
Defleksi diizinkan (mm)	24.94	
Defleksi dari SAP	9.80	
	AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS 1 (ANALISIS 3D)

Balok	B1		B2		B3		B4	
Batang	141 s/d 143 dan 177 s/d 179		144 s/d 158 dan 162 s/d 176		159 s/d 161		180 s/d 182 dan 216 s/d 218	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	352,106	266,195	263,557	227,375	265,576	227,174	321,557	230,544
MA (KN.m)	49,967	84,906	38,673	63,444	38,673	39,731	55,633	10,337
MB (KN.m)	83,768	107,376	100,081	149,023	100,081	103,081	64,547	105,518
MC(KN.m)	55,523	10,036	75,94	14,003	75,94	21,695	50,633	79,179
Cb	2,30	2,30	2,30	2,03	2,30	2,30	2,30	2,30
Profil	W18x55	W18x55	W18x40	W18x40	W18x40	W18x40	W18x46	W18x46
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,42	42,42	32,26	32,26	32,26	32,26	32,77	32,77
X1 (Mpa)	14546,45	14546,45	12479,95	12479,95	12479,95	12479,95	14203,70	14203,70
X2 (1/Mpa)^2	0,000180	0,000180	0,000382	0,000382	0,000382	0,000382	0,000212	0,000212
Zx (mm^3)	1935351,17	1935351,17	1284745,82	1284745,82	1284745,82	1284745,82	1486306,70	1486306,70
Sx (mm^3)	1610848,39	1610848,39	1120875,18	1120875,18	1120875,18	1120875,18	1291300,64	1291300,64
Lp (mm)	2111,58	2111,58	1605,81	1605,81	1605,81	1605,81	1631,10	1631,10
Lr (mm)	6515,39	6515,39	4779,52	4779,52	4779,52	4779,52	5045,28	5045,28
L (mm)	3600	3600	3000	3000	3333	3333	3600	3600
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	458,84	458,84	321,19	321,19	321,19	321,19	371,58	371,58
Mr (KN.m)	289,95	289,95	201,76	201,76	201,76	201,76	232,43	232,43
Mn (KN.m)	924,04	924,04	618,06	546,76	589,24	589,24	670,07	670,07
Mn pakai (KN.m)	458,84	458,84	321,19	321,19	321,19	321,19	371,58	371,58
0.9 Mn (KN.m)	412,956	412,956	289,071	289,071	289,071	289,071	334,422	334,422
0.9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	231,639		222,982		127,456		196,012	
Ag (mm2)	9433,852		7612,886		7612,886		8709,660	
T (KN)	2133,667		1712,900		1712,900		1959,674	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		9000		10000		9000	
Defleksi diizinkan (mm)	25,00		25,00		27,78		25,00	
Defleksi dari SAP	8,50		8,50		7,00		12,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7		B8	
Batang	183 s/d 197 dan 201 s/d 215		198 s/d 200		219 s/d 221 dan 255 s/d 257		222 s/d 236 dan 240 s/d 254	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	299,215	258,176	296,821	253,131	158,91	127,225	118,199	125,258
MA (KN.m)	4,225	28,928	18,16	44,646	52,629	18,264	35,239	30,326
MB (KN.m)	103,367	146,581	60,099	136,65	57,412	70,609	74,291	108,663
MC(KN.m)	65,411	51,757	56,2	35,94	13,989	49,857	9,599	5,099
Cb	2,30	2,30	2,30	2,30	2,30	1,98	2,05	2,30
Profil	W18x46	W18x46	W18x46	W18x46	W16x26	W16x26	W16x26	W16x26
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	32,77	32,77	32,77	32,77	28,45	28,45	28,45	28,45
X1 (Mpa)	14203,70	14203,70	14203,70	14203,70	13135,65	13135,65	13135,65	13135,65
X2 (1/Mpa)^2	0,000212	0,000212	0,000212	0,000212	0,000660	0,000660	0,000660	0,000660
Zx (mm^3)	1486306,70	1486306,70	1486306,70	1486306,70	724038,28	724038,28	724038,28	724038,28
Sx (mm^3)	1291300,64	1291300,64	1291300,64	1291300,64	629263,26	629263,26	629263,26	629263,26
Lp (mm)	1631,10	1631,10	1631,10	1631,10	1416,15	1416,15	1416,15	1416,15
Lr (mm)	5045,28	5045,28	5045,28	5045,28	4044,07	4044,07	4044,07	4044,07
L (mm)	3000	3000	3333	3333	3600	3600	3000	3000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	371,58	371,58	371,58	371,58	181,08	181,08	181,08	181,08
Mr (KN.m)	232,43	232,43	232,43	232,43	113,27	113,27	113,27	113,27
Mn (KN.m)	726,31	726,31	695,10	695,10	286,67	246,72	332,12	322,46
Mn pakai (KN.m)	371,58	371,58	371,58	371,58	181,08	181,08	181,08	181,08
0,9.Mn (KN.m)	334,422	334,422	334,422	334,422	162,972	162,972	162,972	162,972
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	187,915		98,819		238,298		222,996	
Ag (mm2)	8709,660		8709,660		4954,829		4954,829	
T (KN)	1959,674		1959,674		1114,836		1114,836	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		10000		9000		9000	
Defleksi diizinkan (mm)	25,00		27,78		25,00		25,00	
Defleksi dari SAP	11,00		13,00		15,00		15,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B9	
Batang	237 s/d 239	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	119,862	187,843
MA (KN.m)	23,601	24,261
MB (KN.m)	68,739	68,559
MC(KN.m)	12,364	16,51
Cb	2,30	2,30
Profil	W16x26	W16x26
fy (Mpa)	250	250
fr (Mpa)	70	70
E (Mpa)	200000	200000
ry (mm)	28,45	28,45
X1 (Mpa)	10135,65	10135,65
X2 (1/Mpa)^2	0,000860	0,000860
Zx (mm^3)	724308,23	724308,23
Sx (mm^3)	629263,26	629263,26
Lp (mm)	1416,15	1416,15
Lr (mm)	4044,07	4044,07
L (mm)	3333	3333
	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak
Mp (KN.m)	181,08	181,08
Mr (KN.m)	113,27	113,27
Mn (KN.m)	302,72	302,72
Mn pakai (KN.m)	181,08	181,08
0.9 Mn (KN.m)	162,972	162,972
0.9Mn > Mu	AMAN	AMAN
Kuat Tarik Tersedia		
P (KN)	117,299	
Ag (mm2)	4954,829	
T (KN)	1114,836	
T > P (KN)	AMAN	
Kontrol Defleksi		
L (mm)	10000	
Defleksi diizinkan (mm)	27,76	
Defleksi dari SAP	16,00	
	AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS 2 (ANALISIS 3D)

Balok	B1		B2		B3		B4	
Batang	258 s/d 259 dan 293 s/d 294		260 s/d 274 dan 278 s/d 292		275 s/d 277		295 S/D 296 dan 340 s/d 341	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	398,935	354,055	508,947	507,916	559,563	566,459	296,559	174,041
MA (KN.m)	28,961	10,647	113,031	24,94	121,722	179,309	103,452	85,537
MB (KN.m)	123,698	113,088	126,163	237,963	185,02	127,934	145,263	195,884
MC(KN.m)	106,272	112,278	46,276	116,983	43,869	101,452	41,263	14,44
Cb	2,30	2,30	2,30	2,30	2,30	2,30	2,11	1,43
Profil	W16x55	W16x55	W18x71	W18x71	W18x76	W18x76	W18x46	W18x46
Fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,42	42,42	43,18	43,18	66,29	66,29	32,77	32,77
X1 (Mpa)	14548,45	14548,45	15478,60	15478,60	44956,40	44956,40	14203,70	14203,70
X2 (1/Mpa^2)	0,000180	0,000180	0,000078	0,000078	0,000028	0,000028	0,000212	0,000212
Zx (mm^3)	1838351,17	1838351,17	2376124,28	2376124,28	2671091,43	2671091,43	1486306,70	1486306,70
Sx (mm^3)	1610848,39	1610848,39	2081187,13	2081187,13	2392511,34	2392511,34	1291300,64	1291300,64
Lp (mm)	2111,58	2111,58	2149,51	2149,51	3300,14	3300,14	1631,10	1631,10
Lr (mm)	6515,39	6515,39	7423,32	7423,32	25546,93	25546,93	5045,28	5045,28
L (mm)	3600	3600	3600	3600	3333	3333	3600	3600
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	458,84	458,84	594,03	594,03	667,77	667,77	371,58	371,58
Mr (KN.m)	289,95	289,95	374,61	374,61	430,65	430,65	232,43	232,43
Mn (KN.m)	924,04	924,04	1284,88	1284,88	1535,07	1535,07	614,81	417,37
Mn pakai (KN.m)	458,84	458,84	594,03	594,03	667,77	667,77	371,58	371,58
0.9 Mn (KN.m)	412,956	412,956	534,627	534,627	600,993	600,993	334,422	334,422
0.9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	235,711		237,873		143,164		265,212	
Ag (mm2)	9483,852		7612,885		7612,888		8709,66	
T (KN)	2133,8667		1712,8999		1712,8998		1959,6735	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		9000		10000		9000	
Defleksi diizinkan (mm)	25,00		25,00		27,78		25,00	
Defleksi dari SAP	10,00		9,60		11,30		14,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7		B8	
Batang	297 s/d 311 dan 315 s/d 329		312 s/d 314		342 s/d 343 dan 379 s/d 380		345 s/d 359 dan 364 s/d 378	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	338,434	236,403	391,55	244,222	130,328	136,869	176,414	195,688
MA (KN.m)	118,774	69,019	80,122	47,702	7,827	1,592	1,401	15,294
MB (KN.m)	151,873	94,109	135,722	140,173	59,471	83,185	71,507	90,5
MC(KN.m)	103,147	78,962	80,055	38,429	45,161	35,974	31,04	26,024
Cb	2,19	2,09	2,44	2,14	2,14	2,17	2,30	2,30
Profil	W18x55	W18x55	W18x55	W18x55	W16x26	W16x26	W16x31	W16x31
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	42,42	42,42	42,42	42,42	28,45	28,45	29,72	29,72
X1 (Mpa)	14548,45	14548,45	14548,45	14548,45	10135,65	10135,65	11997,30	11997,30
X2 (1/Mpa)^2	0,000160	0,000160	0,000160	0,000160	0,000880	0,000880	0,000421	0,000421
Zx (mm^3)	1835351,17	1835351,17	1835351,17	1835351,17	794308,33	794308,33	884901,46	884901,46
Sx (mm^3)	1610846,39	1610846,39	1610846,39	1610846,39	629263,28	629263,28	773469,42	773469,42
Lp (mm)	2111,58	2111,58	2111,58	2111,58	1416,15	1416,15	1479,37	1479,37
Lr (mm)	6515,39	6515,39	6515,39	6515,39	4044,07	4044,07	4350,88	4350,88
L (mm)	3600	3600	3000	3000	3600	3600	3000	3000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	458,84	458,84	458,84	458,84	181,08	181,08	221,23	221,23
Mr (KN.m)	289,95	289,95	289,95	289,95	113,27	113,27	139,22	139,22
Mn (KN.m)	841,37	841,16	1038,28	907,02	236,40	270,93	408,94	408,94
Mn pakai (KN.m)	458,84	458,84	458,84	458,84	181,08	181,08	221,23	221,23
0,9.Mn (KN.m)	412,956	412,956	412,956	412,956	162,972	162,972	199,107	199,107
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	213,61		391,55		158,041		160,354	
Ag (mm2)	9483,652		7812,888		7612,888		5883,659	
T (KN)	2133,8667		1712,8998		1712,8998		1323,868	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	9000		9000		10000		9000	
Defleksi diizinkan (mm)	25,00		25,00		27,78		25,00	
Defleksi dari SAP	14,50		15,00		16,00		16,00	
	AMAN		AMAN		AMAN		AMAN	

Balok	B9	
Batang	360 s/d 363	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	185,236	202,245
MA (KN.m)	36,576	33,391
MB (KN.m)	62,885	96,46
MC(KN.m)	16,576	33,057
Cb	2,30	2,32
Profil	**W15x36**	**W16x36**
fy (Mpa)	250	250
fr (Mpa)	70	70
E (Mpa)	200000	200000
ry (mm)	38,61	38,61
X1 (Mpa)	11721,50	11721,50
X2 (1/Mpa)^2	0,013435	0,009488
Zx (mm^3)	1048772,10	1048772,10
Sx (mm^3)	925869,12	925869,12
Lp (mm)	1921,92	1921,92
Lr (mm)	5562,76	5562,76
L (mm)	3333	3333
	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak
Mp (KN.m)	262,19	262,19
Mr (KN.m)	166,66	166,66
Mn (KN.m)	517,88	521,85
Mn pakai (KN.m)	262,19	262,19
0,9.Mn (KN.m)	235,971	235,971
0,9Mn > Mu	AMAN	AMAN
Kuat Tarik Tersedia		
P (KN)	113,482	
Ag (mm2)	6838,696	
T (KN)	1538,707	
T > P (KN)	**AMAN**	
Kontrol Defleksi		
L (mm)	10000	
Defleksi diizinkan (mm)	27,78	
Defleksi dari SAP	16,50	
	AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS A (ANALISIS 3D)

Balok	B1		B2		B3		B4	
Batang	10		11 dan 12		13		15	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	164,819	79,89	123,055	155,787	193,674	144,605	91,078	115,037
MA (KN.m)	31,629	11,93	12,799	69,269	38,539	54,623	16,616	21,466
MB (KN.m)	75,397	24,33	96,194	97,112	78,257	76,541	33,246	38,717
MC(KN.m)	16,375	16,084	50,638	25,42	40,114	14,519	31,031	34,212
Cb	2,30	2,30	1,74	1,84	2,37	2,07	2,30	2,30
Profil	W16x31	W16x31	W16x31	W16x31	W16x36	W16x36	W16x26	W16x26
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	29,72	29,72	29,72	29,72	38,61	38,61	28,45	28,45
X1 (Mpa)	11997,30	11997,30	11997,30	11997,30	11721,50	11721,50	10135,65	10135,65
X2 (1/Mpa) 2	0,000421	0,000421	0,000421	0,000421	0,000438	0,000438	0,000860	0,000860
Zx (mm^3)	884901,46	884901,46	884901,46	884901,46	1048772,10	1048772,10	724308,23	724308,23
Sx (mm^3)	773469,42	773469,42	773469,42	773469,42	925869,12	925869,12	629263,26	629263,26
Lp (mm)	1479,37	1479,37	1479,37	1479,37	1921,92	1921,92	1416,15	1416,15
Lr (mm)	4350,88	4350,88	4350,88	4350,88	5562,76	5562,76	4044,07	4044,07
L (mm)	4000	4000	4000	4000	8000	8000	4000	4000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lr < L	Lr < L	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	221,23	221,23	221,23	221,23	262,19	262,19	181,08	181,08
Mr (KN.m)	139,22	139,22	139,22	139,22	-	-	113,27	113,27
Mn (KN.m)	343,26	343,26	260,07	274,44	229,36	199,48	263,13	263,13
Mn pakai (KN.m)	221,23	221,23	221,23	221,23	219,72	204,6	181,08	181,08
0,9 Mn (KN.m)	199,107	199,107	199,107	199,107	196,848	184,14	162,972	162,972
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	29,143		78,912		122,7782438		92,554	
Ag (mm2)	5883,859		5883,859		6838,696		4954,829	
T (KN)	1323,868		1323,868		1538,707		1114,836	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	4000		8000		8000		4000	
Defleksi dizinkan (mm)	11,11		22,22		22,22		11,11	
Defleksi dari SAP								
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7	
Batang	16 dan 17		19		14 dan 18	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	100,869	113,555	69,582	89,352	261,123	317,025
MA (KN.m)	21,871	32,191	11,748	11,155	12,397	13,169
MB (KN.m)	60,661	70,376	23,267	45,949	121,666	143,545
MC(KN.m)	39,984	33,969	16,409	19,07	99,36	108,065
Cb	1,85	1,86	2,30	2,30	2,21	2,30
Profil	W16x26	W16x26	W14x22	W14x22	W16x50	W16x50
fy (Mpa)	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000
ry (mm)	28,45	28,45	27,43	26,42	40,39	40,39
X1 (Mpa)	10135,65	10135,65	13031,55	11100,95	16134,30	16134,30
X2 (1/Mpa)^2	0,000860	0,000860	0,000292	0,000574	0,000116	0,000116
Zx (mm^3)	724309,23	724309,23	658759,97	544050,52	1597609,89	1597609,89
Sx (mm^3)	629263,26	629263,26	578463,86	475224,86	1327352,19	1327352,19
Lp (mm)	1416,15	1416,15	1365,57	1315,00	2010,43	2010,43
Lr (mm)	4044,07	4044,07	4067,62	3795,48	8459,19	8459,19
L (mm)	4000	4000	4000	4000	8980	8980
	Lp<L<Lr	Lp<L<Lr	Lr < L	Lr < L	Lr < L	Lr < L
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	181,08	181,08	164,69	136,01	376,90	376,90
Mr (KN.m)	113,27	113,27	-	-	-	-
Mn (KN.m)	212,01	212,59	247,57	180,71	344,55	358,05
Mn pakai (KN.m)	181,08	181,08	164,69	136,01	376,9	376,9
0,9.Mn (KN.m)	162,972	162,972	148,221	122,409	339,21	339,21
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia						
P (KN)	77,132		63,054		161,55	
Ag (mm2)	4954,829		4187,088		9483,852	
T (KN)	1114,836		942,095		2133,867	
T > P (KN)	AMAN		AMAN		AMAN	
Kontrol Defleksi						
L (mm)	8000		4000		8980	
Defleksi diizinkan (mm)	22,22		11,11		24,94	
Defleksi dari SAP						
	AMAN		AMAN		AMAN	

TABEL DESAIN BALOK TERHADAP LENTUR - PORTAL AS B (ANALISIS 3D)

Balok	B1		B2		B3		B4	
Batang	39		40 dan 41		42		44	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	135,514	82,742	212,907	197,444	138,914	123,33	102,021	123,134
MA (KN.m)	19,809	11,987	66,396	54,871	34,615	10,384	33,931	37,137
MB (KN.m)	77,555	27,921	121,54	108,219	54,824	61,586	42,443	48,652
MC(KN.m)	28,555	14,486	16,607	45,054	41,759	55,848	16,947	23,949
Cb	2,30	2,30	2,10	2,01	2,18	2,05	2,30	2,30
Profil	W16x26	W16x26	W16x36	W16x36	W16x31	W16x31	W16x26	W16x26
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	28,45	28,45	38,61	38,61	29,72	29,72	28,45	28,45
X1 (Mpa)	10135,65	10135,65	11721,50	11721,50	11997,30	11997,30	10135,65	10135,65
X2 (1/Mpa^2	0,000860	0,000860	0,000439	0,000439	0,000421	0,000421	0,000860	0,000860
Zx (mm^3)	724308,23	724308,23	1048772,10	1048772,10	884901,46	884901,46	724308,23	724308,23
Sx (mm^3)	629263,26	629263,26	925869,12	925869,12	773469,42	773469,42	629263,26	629263,26
Lp (mm)	1416,15	1416,15	1921,92	1921,92	1479,37	1479,37	1416,15	1416,15
Lr (mm)	4044,07	4044,07	5562,76	5562,76	4350,88	4350,88	4044,07	4044,07
L (mm)	4000	4000	4000	4000	8000	8000	4000	4000
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lr < L	Lr < L	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	181,08	181,08	262,19	262,19	221,23	221,23	181,08	181,08
Mr (KN.m)	113,27	113,27	166,66	166,66	-	-	113,27	113,27
Mn (KN.m)	263,13	263,13	430,05	417,96	158,79	144,49	263,13	263,13
Mn pakai (KN.m)	181,08	181,08	262,19	262,19	158,79	144,49	181,08	181,08
0,9 Mn (KN.m)	162,972	162,972	235,971	235,971	142,911	130,041	162,972	162,972
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	102,622		79,437		40,331		146,944	
Ag (mm2)	4954,829		3835,696		5883,659		4954,829	
T (KN)	1114,836		1539,707		1323,868		1114,836	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	4000		8000		8000		4000	
Defleksi diizinkan (mm)	11,11		22,22		22,22		11,11	
Defleksi dari SAP	1,08		6,10		3,50		1,20	
	AMAN		AMAN		AMAN		AMAN	

Balok	B5		B6		B7		B8	
Batang	45		47		37		38	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	84,207	93,526	89,741	86,806	135,244	55,159	250,365	205,313
MA (KN.m)	16,399	25,1	14,854	11,055	84,98	9,577	20,624	47,14
MB (KN.m)	69,079	62,751	27,572	27,795	52,366	28,921	188,095	94,838
MC(KN.m)	38,452	42,693	11,736	14,643	22,454	11,34	94,968	38,735
Cb	1,62	1,70	2,30	2,30	1,00	1,00	1,81	2,30
Profil	W16x31	W16x31	W14x26	W14x26	W14x26	W14x26	W16x40	W16x40
fy (Mpa)	250	250	250	250	250	250	250	250
fr (Mpa)	70	70	70	70	70	70	70	70
E (Mpa)	200000	200000	200000	200000	200000	200000	200000	200000
ry (mm)	29,72	29,72	27,43	27,43	27,43	27,43	39,88	39,88
X1 (Mpa)	11997,30	11997,30	13031,55	13031,55	13031,55	13031,55	13031,55	13031,55
X2 (1/Mpa)^2	0,000421	0,000421	0,000293	0,000293	0,000293	0,000293	0,000271	0,000271
Zx (mm^3)	884901,46	884901,46	685789,97	685789,97	685789,97	685789,97	1194616,97	1194616,97
Sx (mm^3)	773469,42	773469,42	678463,36	678463,36	925669,12	925669,12	1060243,04	1060243,04
Lp (mm)	1479,37	1479,37	1365,57	1365,57	1365,57	1365,57	1985,14	1985,14
Lr (mm)	4350,88	4350,88	4087,62	4087,62	4087,62	4087,62	5866,61	5866,61
L (mm)	8000	8000	4000	4000	2500	2500	5610	5610
	Lr < L	Lr < L	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
Mp (KN.m)	221,23	221,23	164,69	164,69	164,69	164,69	298,65	298,65
Mr (KN.m)	-	-	104,13	104,13	166,66	166,66	190,84	190,84
Mn (KN.m)	113,16	105,92	243,97	243,97	185,51	185,51	359,15	455,33
Mn pakai (KN.m)	113,16	105,92	164,69	164,69	166,66	166,66	298,65	298,65
0,9 Mn (KN.m)	101,844	95,328	148,221	148,221	149,994	149,994	268,785	268,785
0,9Mn > Mu	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN
Kuat Tarik Tersedia								
P (KN)	138,419		100,619		0,844		294,21	
Ag (mm2)	5883,859		4961,280		4961,280		7612,888	
T (KN)	1323,868		1116,288		1116,288		1712,900	
T > P (KN)	AMAN		AMAN		AMAN		AMAN	
Kontrol Defleksi								
L (mm)	8000		4000		2500		5610	
Defleksi diizinkan (mm)	22,22		11,1		6,94		15,58	
Defleksi dari SAP	3,00		1,00		3,00		0,50	
	AMAN		AMAN		AMAN		AMAN	

Balok	B9	
Batang	43 dan 46	
Kombinasi Beban	Gravitasi&Gempa	Gravitasi
Mu (KN.m)	202.306	249,776
MA (KN.m)	6.853	10,745
MB (KN.m)	93.42	118,66
MC(KN.m)	49.03	63,42
Cb	2.30	2,30
Profil	W16x45	W16x45
fy (Mpa)	250	250
fr (Mpa)	70	70
E (Mpa)	200000	200000
ry (mm)	39.88	39,88
X1 (Mpa)	14617.40	14617,40
X2 (1/Mpa)^2	0.000174	0,000174
Zx (mm^3)	1348655.37	1348655.37
Sx (mm^3)	1191339.55	1191339.55
Lp (mm)	1985.14	1985,14
Lr (mm)	6125.12	6125,12
L (mm)	8940	8940
	Lr < L	Lr < L
Penampang	Kompak	Kompak
Mp (KN.m)	337.16	337,16
Mr (KN.m)	-	-
Mn (KN.m)	295.76	295,76
Mn pakai (KN.m)	295.76	295,76
0.9 Mn (KN.m)	266.184	266.184
0.9Mn > Mu	AMAN	AMAN
Kuat Tarik Tersedia		
P (KN)	278,256	
Ag (mm2)	8580.626	
T (KN)	1930,641	
T > P (KN)	AMAN	
Kontrol Defleksi		
L (mm)	8980	
Defleksi diizinkan (mm)	24,94	
Defleksi dari SAP	3,27	
	AMAN	

Kuat Geser Nominal Balok Portal 1 (Analisis 2D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	251,542	463,296	440,131	10,541	41,754	4883,603	659,286	0,382	Aman
2	249,926	463,296	440,131	10,541	41,754	4883,603	659,286	0,379	Aman
3	260,329	463,296	440,131	10,541	41,754	4883,603	659,286	0,395	Aman
4	240,841	459,994	436,994	9,906	44,114	4556,701	615,155	0,392	Aman
5	201,195	459,994	436,994	9,906	44,114	4556,701	615,155	0,327	Aman
6	206,912	459,994	436,994	9,906	44,114	4556,701	615,155	0,336	Aman
7	107,213	402,844	382,702	7,493	51,075	3018,510	407,499	0,263	Aman
8	90,507	402,844	382,702	7,493	51,075	3018,510	407,499	0,222	Aman
9	90,423	402,844	382,702	7,493	51,075	3018,510	407,499	0,222	Aman

Kuat Geser Nominal Balok Portal 2 (Analisis 2D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	263,643	459,994	436,994	9,906	44,114	4556,701	615,155	0,429	Aman
2	290,320	462,534	439,407	10,795	40,705	4993,055	674,062	0,431	Aman
3	425,919	467,106	443,751	12,192	36,397	5694,956	768,819	0,554	Aman
4	189,340	458,724	435,788	9,144	47,658	4194,572	566,267	0,334	Aman
5	226,448	459,994	436,994	9,906	44,114	4556,701	615,155	0,368	Aman
6	294,421	463,296	440,131	10,541	41,754	4883,603	659,286	0,447	Aman
7	150,417	398,526	378,600	6,350	59,622	2530,640	341,636	0,440	Aman
8	234,823	403,352	383,184	6,985	54,858	2817,414	380,351	0,617	Aman
9	209,955	402,844	382,702	7,493	51,075	3018,510	407,499	0,515	Aman

Kuat Geser Nominal Balok Portal A (Analisis 2D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ Vn (KN)	Rasio	Chek
1	220,010	406,654	386,321	7,747	49,867	3150,349	425,297	0,517	Aman
2	149,975	406,654	386,321	7,747	49,867	3150,349	425,297	0,353	Aman
3	95,852	406,654	386,321	7,747	49,867	3150,349	425,297	0,225	Aman
4	52,627	398,526	378,600	6,350	59,622	2530,640	341,636	0,154	Aman
5	51,614	402,844	382,702	7,493	51,075	3018,510	407,499	0,127	Aman
6	49,482	348,996	331,546	5,842	56,752	2038,835	275,243	0,180	Aman
7	145,824	413,004	392,354	9,652	40,650	3986,315	538,152	0,271	Aman
8	110,325	413,004	392,354	9,652	40,650	3986,315	538,152	0,205	Aman

Kuat Geser Nominal Balok Portal B (Analisis 2D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	150,792	398,526	378,600	6,350	59,622	2530,640	341,636	0,441	Aman
2	145,494	402,844	382,702	7,493	51,075	3018,510	407,499	0,357	Aman
3	89,716	402,844	382,702	7,493	51,075	3018,510	407,499	0,220	Aman
4	63,488	398,526	378,600	6,350	59,622	2530,640	341,636	0,186	Aman
5	55,738	403,352	383,184	6,985	54,858	2817,414	380,351	0,147	Aman
6	42,023	353,314	335,648	6,477	51,822	2288,415	308,936	0,136	Aman
7	23,502	353,314	335,648	6,477	51,822	2288,415	308,936	0,076	Aman
8	204,289	409,702	389,217	8,763	44,416	3590,219	484,680	0,421	Aman
9	93,194	413,004	392,354	9,652	40,650	3986,315	538,152	0,173	Aman
10	97,291	413,004	392,354	9,652	40,650	3986,315	538,152	0,181	Aman

Kuat Geser Nominal Balok Portal 1 (Analisis 3D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	179,711	459,994	436,994	9,906	44,114	4556,701	615,155	0,292	Aman
2	159,379	454,660	431,927	8,001	53,984	3637,735	491,094	0,325	Aman
3	168,125	454,660	431,927	8,001	53,984	3637,735	491,094	0,342	Aman
4	167,778	458,724	435,788	9,144	47,658	4194,572	566,267	0,296	Aman
5	171,649	458,724	435,788	9,144	47,658	4194,572	566,267	0,303	Aman
6	151,895	458,724	435,788	9,144	47,658	4194,572	566,267	0,268	Aman
7	87,725	398,526	378,600	6,350	59,622	2530,640	341,636	0,257	Aman
8	54,938	398,526	378,600	6,350	59,622	2530,640	341,636	0,161	Aman
9	60,570	398,526	378,600	6,350	59,622	2530,640	341,636	0,177	Aman

Kuat Geser Nominal Balok Portal 2 (Analisis 3D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	260,934	459,994	436,094	9,906	44,114	4556,701	615,155	0,424	Aman
2	234,286	469,138	445,681	12,573	35,447	5898,472	796,294	0,294	Aman
3	406,372	462,534	439,407	10,795	40,705	4993,055	674,062	0,603	Aman
4	176,504	458,724	435,788	9,144	47,658	4194,572	566,267	0,312	Aman
5	201,011	459,994	436,994	9,906	44,114	4556,701	615,155	0,327	Aman
6	275,373	459,994	436,994	9,906	44,114	4556,701	615,155	0,448	Aman
7	124,403	398,526	378,600	6,350	59,622	2530,640	341,636	0,364	Aman
8	219,784	403,352	383,184	6,985	54,858	2817,414	380,351	0,578	Aman
9	165,602	402,844	382,702	7,493	51,075	3018,510	407,499	0,406	Aman

Kuat Geser Nominal Balok Portal A (Analisis 3D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	223,026	403,352	383,184	6,985	54,858	2817,414	380,351	0,586	Aman
2	173,135	403,352	383,184	6,985	54,858	2817,414	380,351	0,455	Aman
3	136,881	402,844	382,702	7,493	51,075	3018,510	407,499	0,336	Aman
4	70,009	398,526	378,600	6,350	59,622	2530,640	341,636	0,205	Aman
5	60,728	398,526	378,600	6,350	59,622	2530,640	341,636	0,178	Aman
6	37,781	348,996	331,546	5,842	56,752	2036,835	275,243	0,137	Aman
7	81,549	413,004	392,354	9,652	40,650	3936,315	538,152	0,152	Aman
8	96,965	413,004	392,354	9,652	40,650	3986,315	538,152	0,180	Aman

Kuat Geser Nominal Balok Portal B (Analisis 3D)

Balok	Vu (KN)	d (mm)	h (mm)	tw (mm)	h/tw	Aw (mm²)	ϕ.Vn (KN)	Rasio	Chek
1	138,123	398,526	378,600	6,350	59,622	2530,640	341,636	0,404	Aman
2	136,617	402,844	382,702	7,493	51,075	3018,510	407,499	0,335	Aman
3	68,090	402,844	382,702	7,493	51,075	3018,510	407,499	0,167	Aman
4	26,707	398,526	378,600	6,350	59,622	2530,640	341,636	0,078	Aman
5	47,396	403,352	383,184	6,985	54,858	2817,414	380,351	0,125	Aman
6	24,396	353,314	335,648	6,477	51,822	2288,415	308,936	0,079	Aman
7	51,308	353,314	335,648	6,477	51,822	2288,415	308,936	0,166	Aman
8	199,536	409,702	389,217	8,763	44,416	3590,219	484,680	0,412	Aman
9	73,393	413,004	392,354	9,652	40,650	3936,315	538,152	0,136	Aman
10	87,678	413,004	392,354	9,652	40,650	3986,315	538,152	0,163	Aman

LAMPIRAN E

DESAIN KOLOM

Tabel Desain Kolom Terhadap Lentur dan Aksial (Analisis 3D)

Kolom	Kolom K3			Kolom K4			Kolom K5			Kolom K6		
Lantai	3	2	1	3	2	1	3	2	1	3	2	1
Mu,k y (KN.m)	55,619	92,103	173,612	107,263	123,463	347,224	92,232	100,01	173,612	95,713	134,466	347,224
Mu,k x (KN.m)	193,419	345,014	615,878	242,312	444,126	750,233	178,693	441,303	604,624	144,583	354,328	443,938
Pu (KN)	161,92	436,327	704,962	246,27	590,757	1064,021	111,878	386,911	483,293	259,978	539,669	908,017
Profil kolom	**W14x74**	**W14x99**	**W14x159**	**W14x90**	**W14x120**	**W14x193**	**W14x82**	**W14x109**	**W14x159**	**W14x82**	**W14x109**	**W14x176**
L kolom (mm)	4000	4000	5000	4000	4000	5000	4000	4000	5000	4000	4000	5000
rx (mm)	153,416	156,718	162,052	155,956	158,496	165,1	153,67	157,988	162,052	153,67	157,988	163,322
ry (mm)	62,992	94,234	101,6	93,98	94,996	102,87	62,992	94,742	101,6	62,992	94,742	102,108
Zx (mm^3)	2054770,064	2834962,072	4703087,368	2572769,048	3474057,568	5817407,72	2277801,896	3146316,288	4703087,368	2277801,896	3146316,288	5243860,48
Zy (mm^3)	665314,7984	1369958,55	2392511,344	1238862,038	1671480,528	2949671,52	734140,4672	1519080,833	2392511,344	734140,4672	1519080,833	2671091,432
Sx (mm^3)	1835351,168	2572769,048	4162314,256	2343350,152	3113542,16	5079989,84	2015608,872	2834962,072	4162314,256	2015608,872	2834962,072	4604764,984
X1 (Mpa)	22684,55	21995,05	28821,1	21995,05	24063,55	36405,6	24822	24063,55	28821,1	24822	24063,55	36405,6
X2 (1/Mpa)^2	0,00000184	0,00000189	0,00000066	0,00000189	0,00000132	0,00000027	0,00000131	0,00000132	0,00000066	0,00000131	0,00000132	0,00000027
A (mm^2)	14064,488	18774,156	30128,972	18774,156	20645,12	36645,088	15548,356	20645,12	30128,972	15548,356	20645,12	33419,286
Ky	2,95	2,25	1,75	2,12	2	1,65	2,95	2,25	1,65	2,12	2	1,65
kx	1,7	1,5	1,4	2,1	1,9	1,65	1,7	1,5	1,65	2,1	1,9	1,65
(K.L)x/rx	44,324	38,285	43,196	53,861	47,951	49,970	44,251	37,978	50,910	54,663	48,105	50,514
(K.L)y/ry	187,325	95,507	86,122	90,232	84,214	81,656	187,325	94,995	82,677	134,620	84,440	82,266
(K.L)/r dipakai	187,325	95,507	86,555	90,232	84,214	81,656	187,325	94,995	82,677	134,62	84,44	82,898
ϕc.Fcr (Mpa)	42,06	131,21	142,93	137,21	145,55	148,93	42,06	131,21	146,86	81,91	145,55	146,86
ϕPn (KN)	591,545	2463,392	4306,435	2576,011	3004,968	5457,626	653,956	2708,884	4424,846	1273,606	3004,968	4908,074
Lp (mm)	3135,762	4690,996	5057,680	4078,354	4728,931	5120,901	3135,762	4716,287	5057,680	3135,762	4716,287	5082,969
Lr (mm)	11309,202	16406,926	23067,701	16362,703	18054,960	29455,713	12349,097	18006,685	23067,701	12349,097	18006,685	29237,523
	Lp<L<Lr	Lp > Lb	Lp > Lb	Lp > Lb	Lp > Lb	Lp > Lb	Lp<L<Lr	Lp > Lb	Lp > Lb	Lp<L<Lr	Lp > Lb	Lp > Lb
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
ϕMn, x (KN.m)	464,573	637,866	1058,195	578,873	781,663	1308,917	512,505	707,921	1058,195	512,505	707,921	1179,869
ϕMn, y KN.m)	149,698	308,241	538,315	278,744	376,083	663,676	165,182	341,793	536,315	165,182	341,793	600,996
Mu,x/ϕMn,x	0,416	0,541	0,582	0,419	0,568	0,573	0,349	0,623	0,571	0,282	0,501	0,376
Mu,y/ϕMn,y	0,372	0,299	0,323	0,385	0,328	0,523	0,556	0,293	0,323	0,579	0,393	0,578
Pu/ϕPn	0,27	0,18	0,16	0,10	0,20	0,19	0,17	0,14	0,11	0,20	0,18	0,19
	Pu/ϕPn ≥ 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn ≥ 0.2	Pu/ϕPn < 0.2	Pu/ϕPn ≥ 0.2
Persamaan Interaksi	0,97	0,93	0,99	0,85	0,99	1,19	0,99	0,99	0,95	0,97	0,98	0,94
Chek Persamaan Interaksi	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN	AMAN

Kolom	Kolom K1			Kolom K2		
Lantai	3	2	1	3	2	1
Mu,k x (KN.m)	53,664	91,326	142,104	106,046	183,968	284,209
Mu,k y (KN.m)	92,285	166,182	323,004	137,318	217,206	349,94
Pu (KN)	108,845	210,892	332,11	94,5	159,194	350,357
Profil kolom	**W14x61**	**W14x82**	**W14x109**	**W14x82**	**W14x99**	**W14x145**
L kolom (mm)	4000	4000	5000	4000	4000	4000
rx (mm)	151,892	153,67	157,988	153,67	156,718	160,762
ry (mm)	62,23	62,992	94,742	62,992	94,234	101,092
Zx (mm^3)	1671480,528	2277801,896	3146316,288	2277801,896	2834962,072	4260636,64
Zy (mm^3)	537495,6992	734140,4672	1519080,833	734140,4672	1369958,55	2179479,512
Sx (mm^3)	1510387,301	2015608,872	2834962,072	2015608,872	2572739,048	3801798,648
X1 (Mpa)	18754,4	24822	24063,55	24822	21995,05	28821,1
X2 (1/Mpa)^2	0,00000381	0,00000131	0,00000132	0,00000131	0,00000159	0,00000066
A (mm^2)	11548,364	15548,356	20645,12	15548,356	18774,156	26032,206
Kx	2,95	2,25	1,75	2,12	2	1,68
ky	1,7	1,5	1,4	2,1	1,9	1,65
(K.L)x/rx	44,769	39,045	44,307	54,663	48,195	41,049
(K.L)y/ry	189,619	142,875	92,356	134,626	84,895	66,474
(K.L)/r dipakai	188,6,19	142,875	92,356	134,62	84,895	66,474
φc.Fcr (Mpa)	41,37	72,40	136,91	81,91	144,60	167,55
φPn (KN)	477,756	1125,662	2826,441	1273,605	2718,404	4194,109
Lp (mm)	3097,829	3135,762	4719,287	3135,762	4690,998	5032,392
Lr (mm)	9305,960	12349,097	18006,685	12349,097	16406,926	22952,382
	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp<L<Lr	Lp > Lb	Lp > Lb
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
φMn, x (KN.m)	376,083	512,505	707,921	512,505	637,849	958,643
φMn, y KN.m)	120,937	165,182	341,793	165,182	305,211	490,383
Mu,x/φMn,x	0,245	0,324	0,455	0,268	0,341	0,365
Mu,y/φMn,y	0,444	0,553	0,416	0,642	0,597	0,580
Pu/φPn	0,23	0,19	0,12	0,07	0,06	0,08
	Pu/φPn < 0,2	Pu/φPn < 0,2	Pu/φPn < 0,2	Pu/φPn < 0,2	Pu/φPn < 0,2	Pu/φPn < 0,2
Persamaan Interaksi	0,84	0,97	0,93	0,95	0,97	0,99
Chek Persamaan Interaksi	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**

Tabel Desain Kolom Terhadap Lentur dan Aksial (Analisis 2D)

Kolom	Kolom K3			Kolom K4			Kolom K5		
Lantai	3	2	1	3	2	1	3	2	1
Mu,k y (KN.m)	76.013	121.077	231.235	112.063	158.221	359.256	92.232	100.01	173.612
Mu,k x (KN.m)	261.718	440.755	698.745	310.207	514.687	807.506	240.569	535.452	698.745
Pu (KN)	174.64	501.914	841.229	246.27	590.757	1064.021	111.878	386.911	486.293
Profil kolom	**W14x82**	**W14x109**	**W14x176**	**W14x90**	**W14x159**	**W14x193**	**W14x82**	**W14x109**	**W14x176**
L kolom (mm)	4000	4000	5000	4000	5000	5000	4000	4000	5000
rx (mm)	153.67	157.988	163.322	155.956	162.052	165.1	153.67	157.988	163.322
ry (mm)	62.992	94.742	102.108	93.98	101.6	102.87	62.992	94.742	102.108
Zx (mm^3)	2277801.9	3146316.29	5243860.48	2572769.05	4703087.37	5817407.72	2277801.9	3146316.29	5243860.48
Zy (mm^3)	734140.467	1519080.83	2671091.43	1238862.04	2392511.34	2949671.52	734140.467	1519080.83	2671091.43
Sx (mm^3)	2015608.87	2834962.07	4604764.98	2343350.15	4162314.26	5079989.84	2015608.87	2834962.07	4604764.98
X1 (Mpa)	24822	24063.55	36405.6	21995.05	28821.1	36405.6	24822	24063.55	36405.6
X2 (1/Mpa)^2	0.00000131	0.00000132	0.00000027	0.00000189	0.00000066	0.00000027	0.00000131	0.00000132	0.00000027
A (mm^2)	15548.356	20645.12	33419.288	18774.156	30128.972	36645.088	15548.356	20645.12	33419.288
Ky	2.95	2.25	1.68	2.12	1.75	1.68	2.95	2.25	1.68
kx	1.7	1.5	1.65	2.1	1.4	1.65	1.7	1.5	1.65
(K.L)x/rx	44.251	37.978	50.514	53.861	43.196	49.970	44.251	37.978	50.514
(K.L)y/ry	187.325	94.995	82.266	90.232	86.122	81.656	187.325	94.995	82.266
(K.L)/r dipakai	187.325	94.995	82.898	90.232	86.555	81.656	187.325	94.995	82.898
ϕc.Fcr (Mpa)	42.06	131.21	146.86	137.21	142.93	148.93	42.06	131.21	146.86
ϕPn (KN)	653.956	2708.884	4908.074	2576.011	4306.435	5457.626	653.956	2708.884	4908.074
Lp (mm)	3135.762	4716.287	5082.969	4678.354	5057.680	5120.901	3135.762	4716.287	5082.969
Lr (mm)	12349.097	18006.685	29237.523	16362.703	23067.701	29455.713	12349.097	18006.685	29237.523
	Lp<L<Lr	Lp > Lb	Lp > Lb	Lp > Lb	Lp > Lb	Lp > Lb	Lp<L<Lr	Lp > Lb	Lp > Lb
Penampang	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak	Kompak
ϕMn, x (KN.m)	512.505	707.921	1179.869	578.873	1058.195	1708.917	512.505	787.921	1179.869
ϕMn, y KN.m)	265.182	441.793	600.996	278.744	538.315	863.676	265.182	441.793	600.996
Mu,x/ϕMn,x	0.511	0.623	0.592	0.536	0.486	0.473	0.469	0.680	0.592
Mu,y/ϕMn,y	0.287	0.274	0.385	0.402	0.294	0.416	0.348	0.226	0.289
Pu/ϕPn	0.27	0.19	0.17	0.10	0.14	0.19	0.17	0.14	0.10
	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn ≥ 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn < 0.2	Pu/ϕPn ≥ 0.2
Persamaan Interaksi	0.93	0.99	0.95	0.99	0.85	0.99	0.90	0.98	0.83
Chek Persamaan Interaksi	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**	**AMAN**

TABEL DESAIN KOLOM TERHADAP GESER (3D)

Kolom K3

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	64.726	363.474	12.954	28.059	4708.442	1059.399	0.06	Aman
2	119.628	359.664	12.319	29.196	4430.701	996.908	0.12	Aman
1	184.367	367.792	14.986	24.542	5511.731	1240.139	0.15	Aman

Kolom K4

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	49.453	363.474	12.954	28.059	4708.442	1059.399	0.05	Aman
2	119.957	359.664	12.319	29.196	4430.701	996.908	0.12	Aman
1	174.177	386.588	21.082	18.337	8150.048	1833.761	0.09	Aman

Kolom K5

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	61.040	363.474	12.954	28.059	4708.442	1059.399	0.06	Aman
2	131.234	359.664	12.319	29.196	4430.701	996.908	0.13	Aman
1	178.913	367.792	14.986	24.542	5511.731	1240.139	0.14	Aman

Kolom K6

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	48.890	363.474	12.954	28.059	4708.442	1059.399	0.05	Aman
2	114.130	359.664	12.319	29.196	4430.701	996.908	0.11	Aman
1	169.303	386.588	21.082	18.337	8150.048	1833.761	0.09	Aman

TABEL DESAIN KOLOM TERHADAP GESER (2D)

Kolom K1

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	86.618	363.474	12.954	28.059	4708.442	1059.399	0.08	Aman
2	136.047	359.664	12.319	29.196	4430.701	996.908	0.14	Aman
1	372.184	367.792	14.986	24.542	5511.731	1240.139	0.30	Aman

Kolom K2

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	94.581	363.474	12.954	28.059	4708.442	1059.399	0.09	Aman
2	149.047	359.664	12.319	29.196	4430.701	996.908	0.15	Aman
1	410.511	386.588	21.082	18.337	8150.048	1833.761	0.22	Aman

Kolom K3

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	120.745	363.474	12.954	28.059	4708.442	1059.399	0.11	Aman
2	277.197	359.664	12.319	29.196	4430.701	996.908	0.28	Aman
1	303.747	367.792	14.986	24.542	5511.731	1240.139	0.24	Aman

Kolom K4

Kolom Lantai	Vu,k (KN)	d (mm)	tw (mm)	d/tw	Aw (mm²)	ϕVn (KN)	Rasio	Chek
3	49.453	363.474	12.954	28.059	4708.442	1059.399	0.05	Aman
2	119.957	359.664	12.319	29.196	4430.701	996.908	0.12	Aman
1	174.177	386.588	21.082	18.337	8150.048	1833.761	0.09	Aman