

BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

Dari tinjauan struktur pada perancangan gedung 4 lantai ini dapat diambil kesimpulan sebagai berikut :

1. Tugas akhir ini telah berhasil merancang struktur beton bertulang konvensional dengan menggunakan RSNI Tata cara perencanaan struktur beton untuk bangunan gedung (BSN,2002a) dan SNI 03-1726-2002 Tata cara perencanaan ketahanan gempa untuk bangunan gedung (BSN, 2002b), dengan hasil sebagai berikut :

- a. Untuk fondasi telapak adalah :

Fondasi bagian tepi dengan ukuran 2m x 2m, tebal 0,7 m, dan menggunakan tulangan pelat dua arah D25 – 200

Fondasi bagian tengah dengan ukuran 2,2m x 2,2m, tebal 0,7 m, dan menggunakan tulangan pelat dua arah D25 – 150

- b. sloof dengan ukuran 500 mm/ 700mm, dan menggunakan tulangan 6 D25 untuk masing-masing sisi atas dan sisi bawahnya.

- c. Kolom :

Kolom atap , ukuran 400 mm/ 400 mm, dan menggunakan tulangan 8D25 (kolom sudut dan tepi), 12 D25 (kolom tengah),

sengkang 3D13 – 100 (sepanjang l_o), 3D13 – 150 (Di luar daerah l_o).

Kolom lantai 3 , ukuran 400 mm/ 400 mm, dan menggunakan tulangan 8D25 (kolom sudut dan tepi), 12 D25 (kolom tengah), sengkang 3D13 – 100 (sepanjang l_o), 3D13 – 150 (Di luar daerah l_o).

Kolom lantai 2 , ukuran 500 mm/ 500 mm, dan menggunakan tulangan 8D25 (kolom sudut dan tepi), 12 D25 (kolom tengah), sengkang 3D13 – 100 (sepanjang l_o), 3D13 – 150 (Di luar daerah l_o).

Kolom lantai 1 , ukuran 600 mm/ 600 mm, dan menggunakan tulangan 8D25 (kolom sudut dan tepi), 12 D25 (kolom tengah), sengkang 3D13 – 100 (sepanjang l_o), 3D13 – 150 (Di luar daerah l_o).

- d. Balok : untuk semua balok digunakan ukuran 300 mm / 500 mm
 - Balok atap, tulangan tumpuan, bagian atas 3D19
 - tulangan tumpuan, bagian bawah 2D19
 - tulangan lapangan, bagian atas 2D19
 - tulangan lapangan, bagian bawah 3D19
 - tulangan torsi 4D19
 - sengkang pada sendi plastis 2P – 50
 - sengkang pada luar sendi plastis 2P – 100

- Balok lt 3 tulangan tumpuan, bagian atas 4D19
tulangan tumpuan, bagian bawah 2D19
tulangan lapangan, bagian atas 2D19
tulangan lapangan, bagian bawah 3D19
tulangan torsi 4D19
sengkang pada sendi plastis 2P – 25
sengkang pada luar sendi plastis 2P – 50
- Balok lt 2 tulangan tumpuan, bagian atas 5D19
tulangan tumpuan, bagian bawah 3D19
tulangan lapangan, bagian atas 2D19
tulangan lapangan, bagian bawah 3D19
tulangan torsi 4D19
sengkang pada sendi plastis 2P – 25
sengkang pada luar sendi plastis 2P – 50
- Balok lt 1 tulangan tumpuan, bagian atas 5D19
tulangan tumpuan, bagian bawah 3D19
tulangan lapangan, bagian atas 2D19
tulangan lapangan, bagian bawah 3D19
tulangan torsi 4D19
sengkang pada sendi plastis 2P – 25
sengkang pada luar sendi plastis 2P – 50

e. Pelat :

pelat atap , dengan ukuran 5 m x 5 m, dengan tebal 150 mm,
dipakai tulangan P8 – 100.

pelat lantai , dengan ukuran 5 m x 5 m, 2,5 m x 5 m, dengan
tebal 150 mm, dipakai tulangan P8 – 100.

2. Kebutuhan tulangan berdasarkan daftar bengkok tulangan untuk

Pelat atap = 617, 5 batang P8

Balok As–4 (B1, B2, B3), ATAP = 23,88 batang P10 dan 13,34
batang D19

Kolom As–4 (Atap, Lt1, Lt2, Lt3), C5 = 35,75 batang D13 dan
11,47 batang D25

3. Berdasarkan hasil yang didapat dibuat *prototype* dengan skala
perbandingan 1 : 25 dengan menggunakan kawat dan alat
penyambung atau perekat.

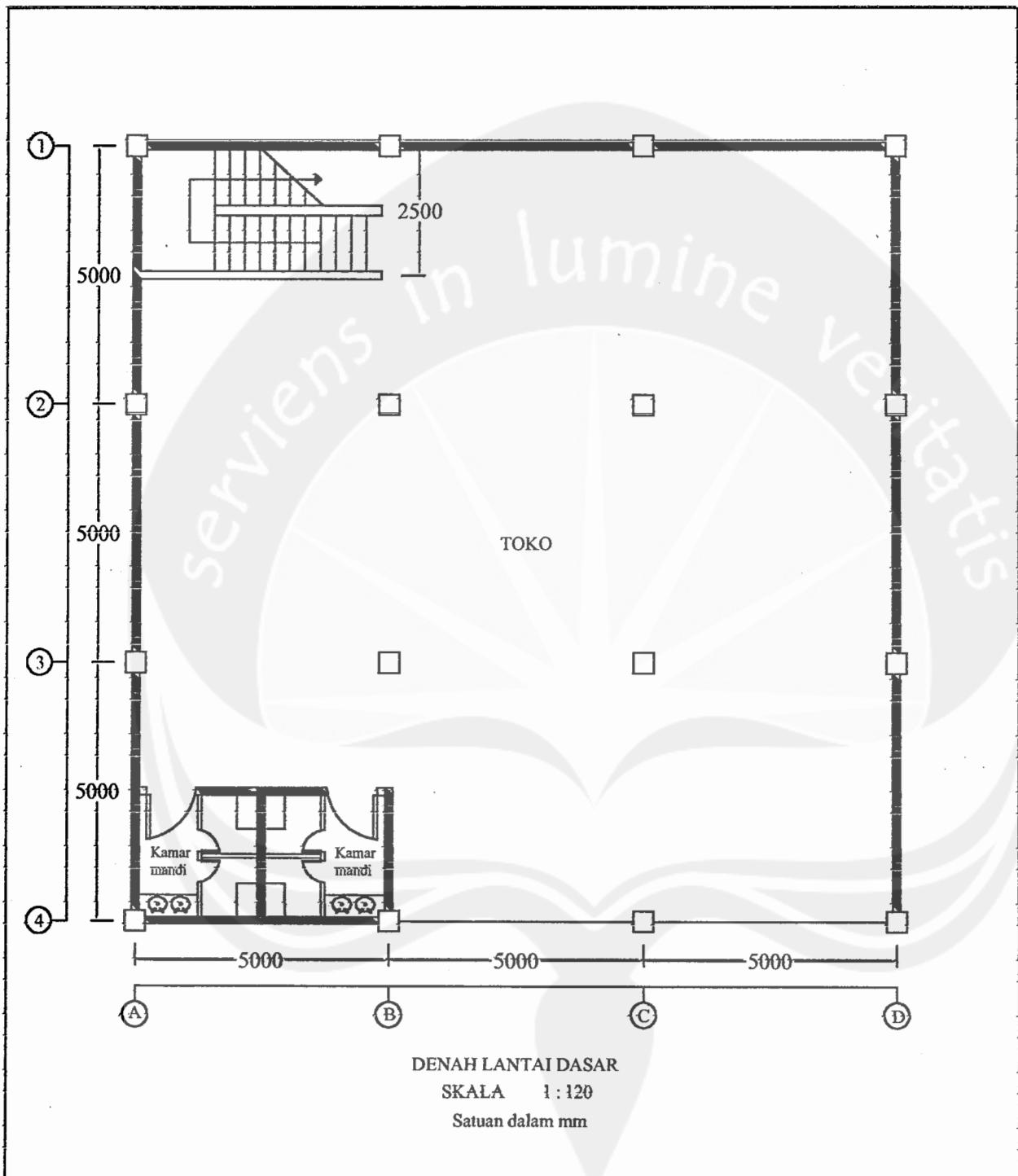
5.2. Saran

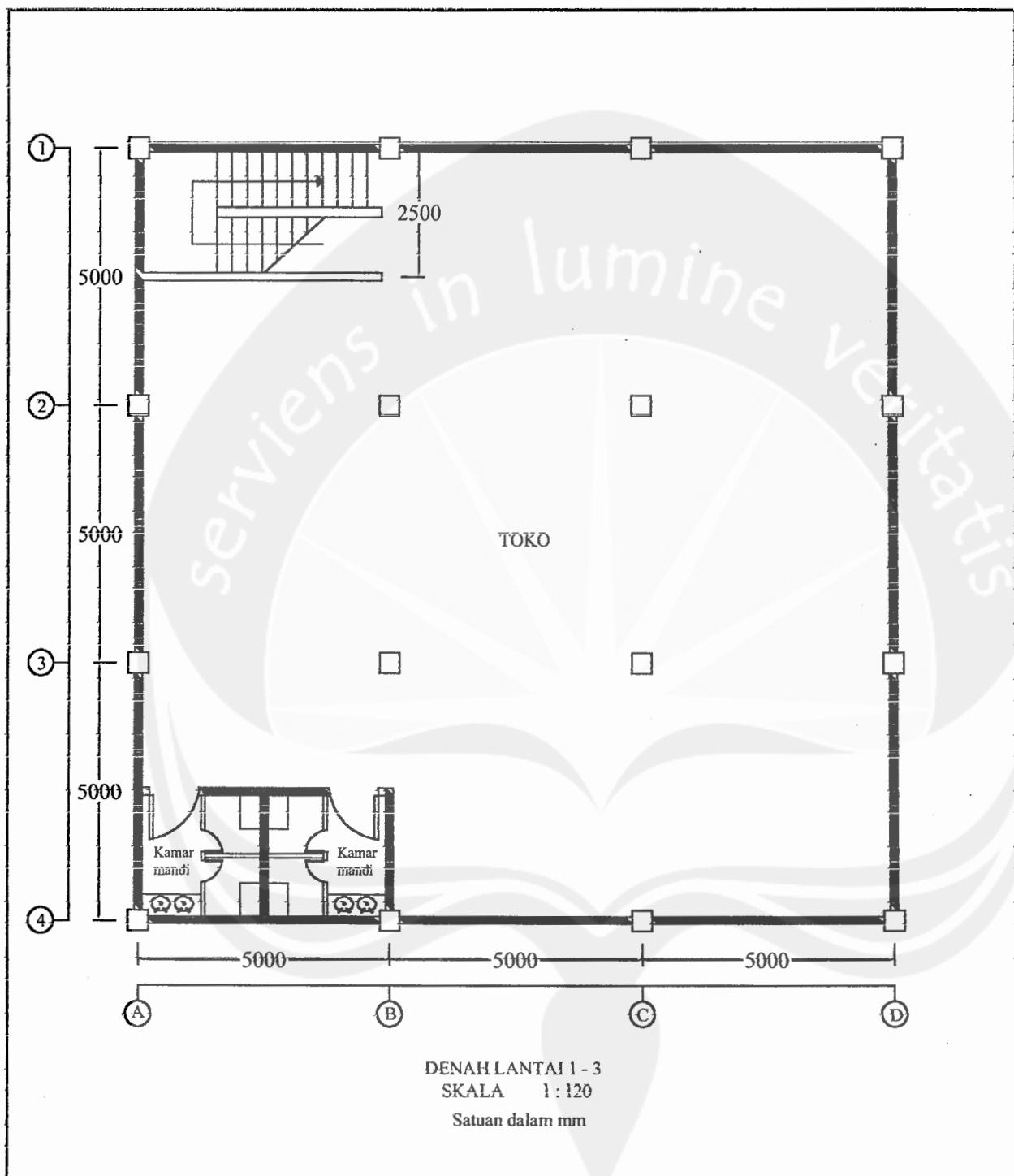
1. Dalam perencanaan suatu struktur hendaknya mempertimbangkan
keadaan pelaksanaan di lapangan dan ketersediaan bahan di pasaran,
sehingga hasil perancangan benar – benar dapat diterapkan
2. Dalam memaukkan data – data untuk dianalisis hendaknya
dilakukan dengan teliti, terutama pembebanannya karena akibatnya
bisa membahayakan pekerja dan pengguna gedung.

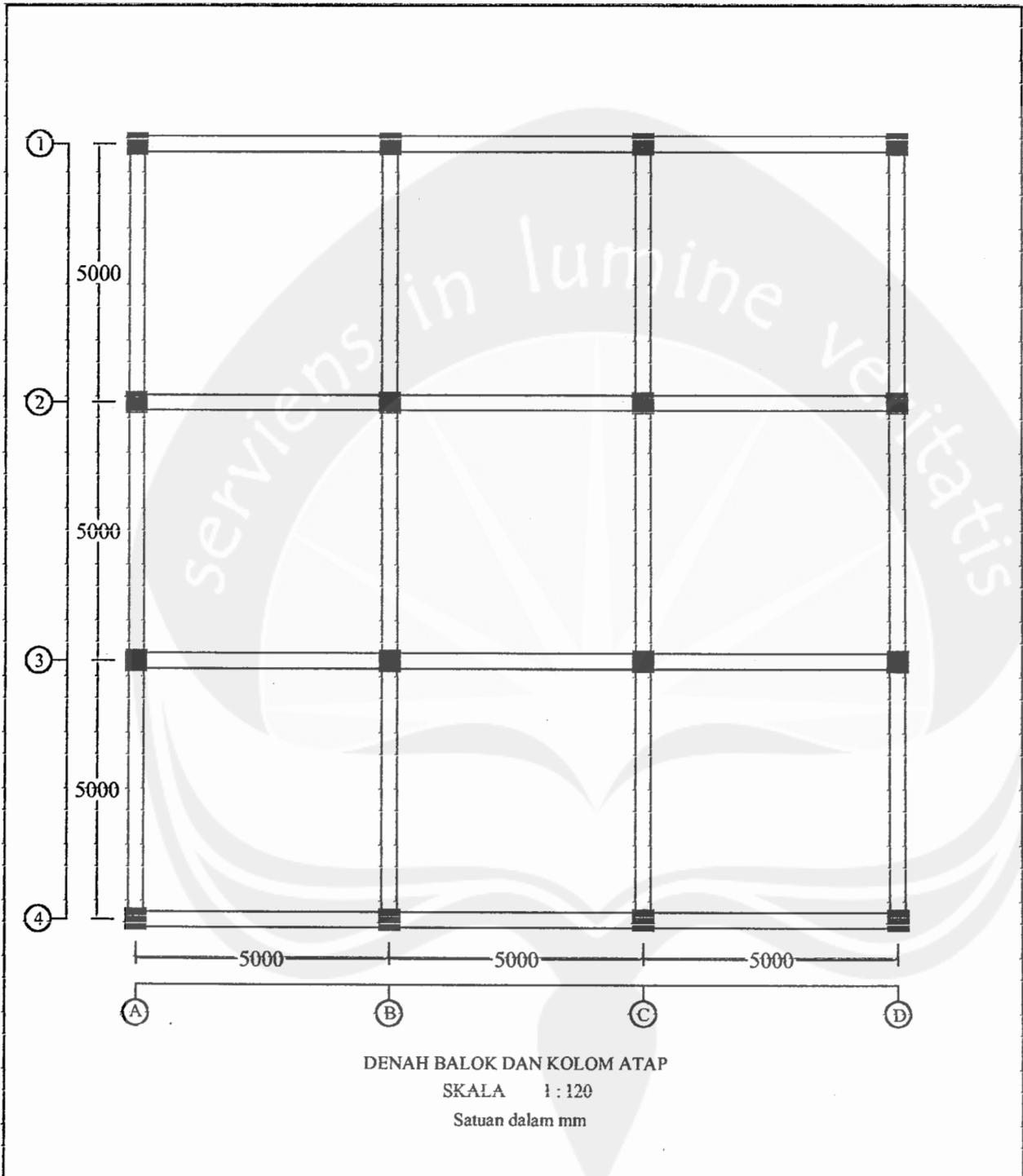
3. Faktor ketelitian dan pembulatan angka pada nilai – nilai hasil analisis struktur harus diperhatikan karena akan mempengaruhi keakuratan proses perancangan selanjutnya.

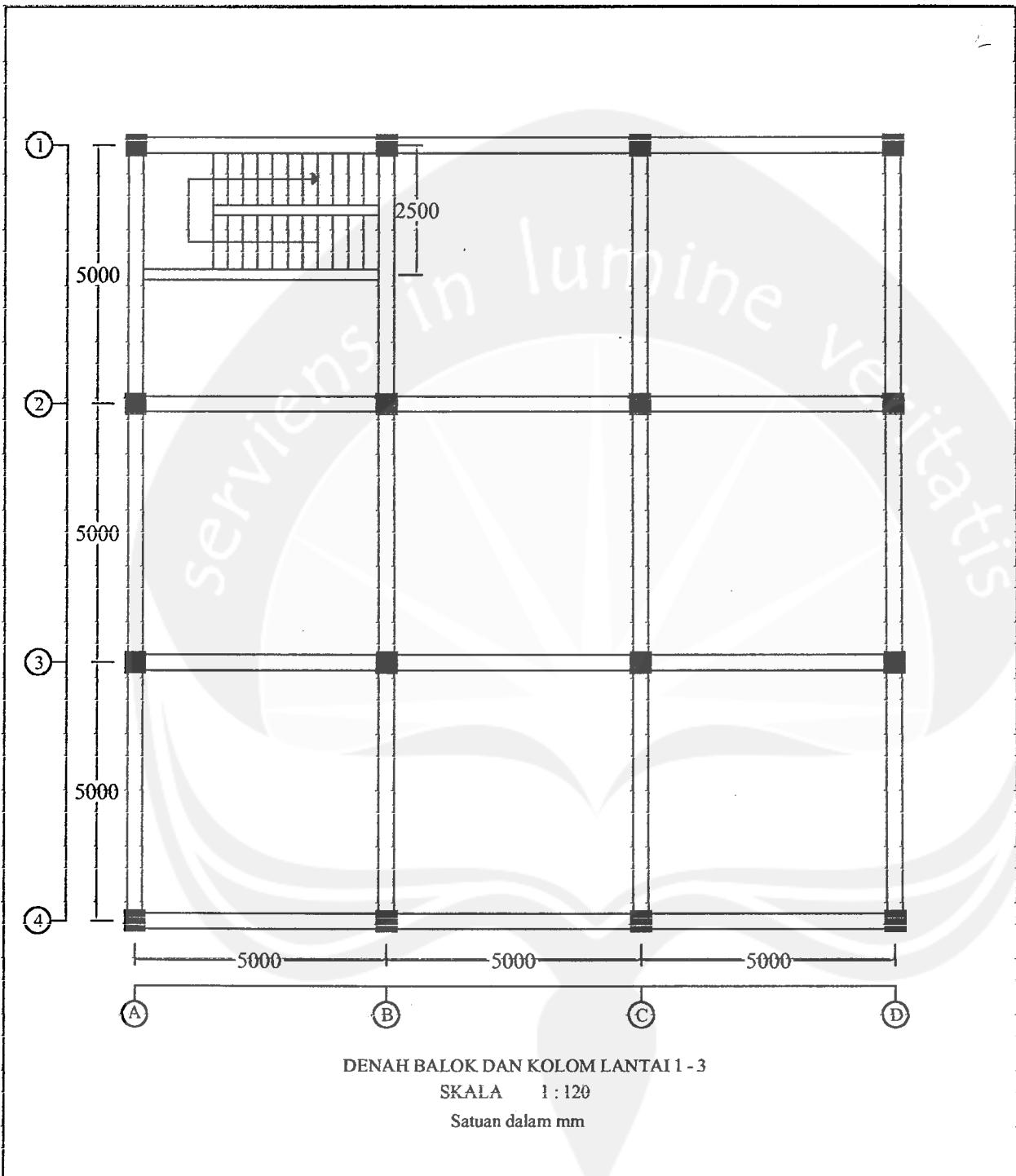
DAFTAR PUSTAKA

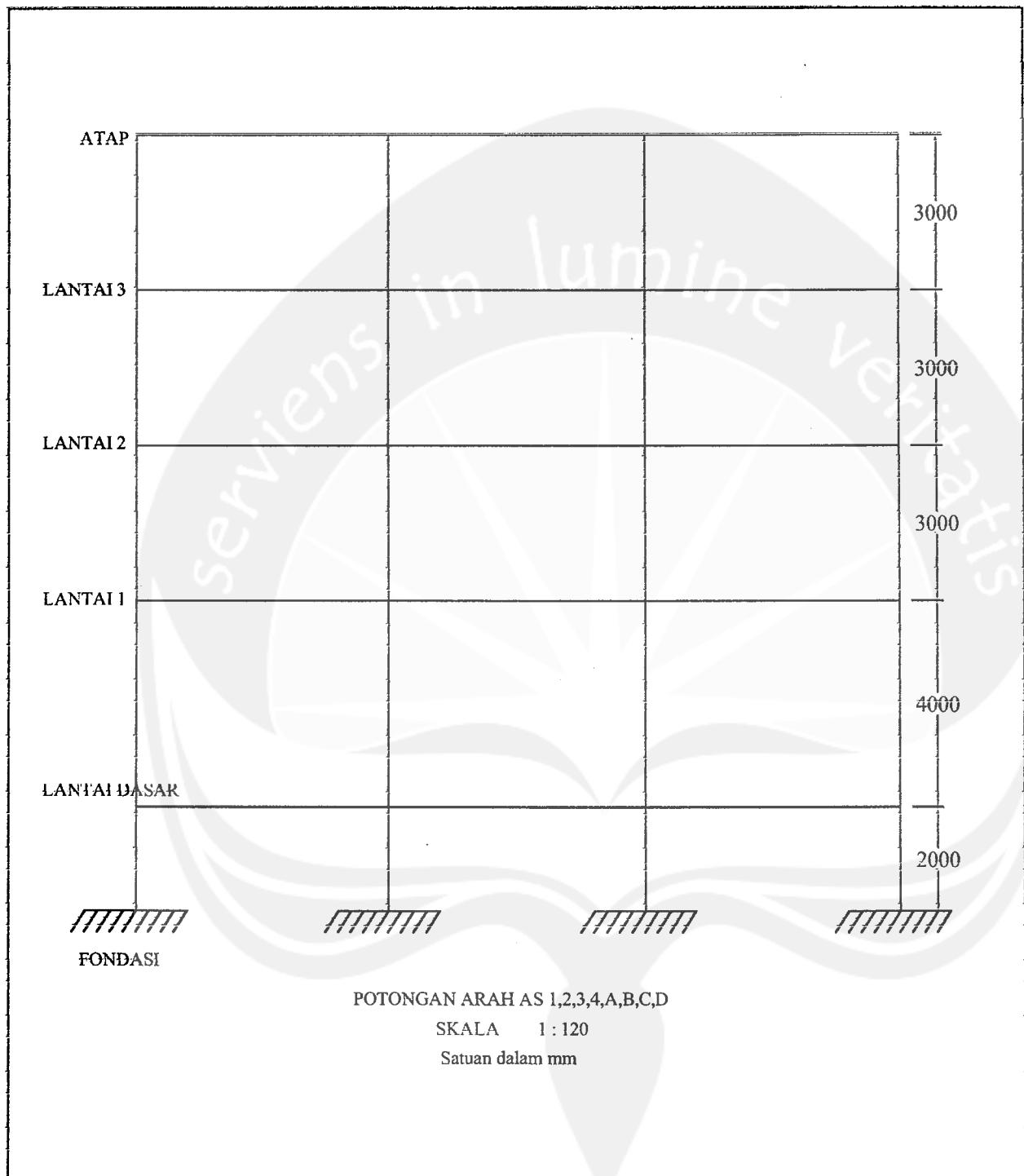
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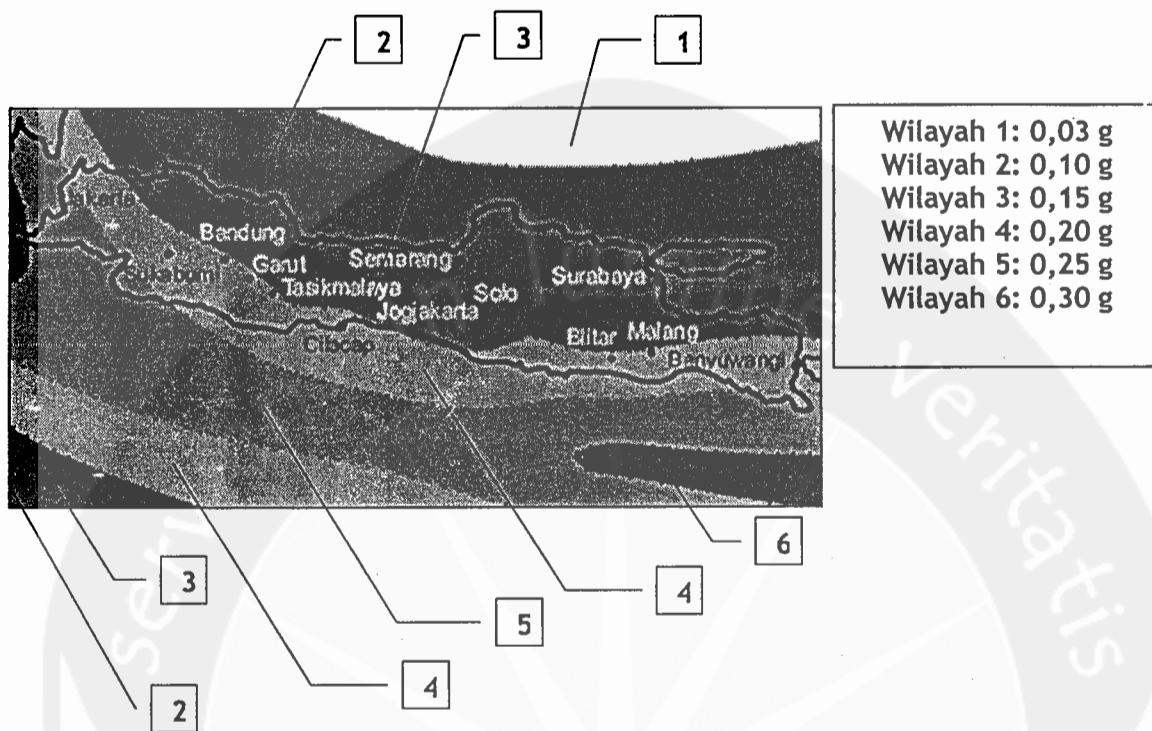












Wilayah gempa: Jawa dan sekitarnya

ESTIMASI UKURAN KOMPONEN STRUKTUR

Estimasi Ukuran Balok

Estimasi perlu dilakukan untuk menentukan ukuran balok sehingga perhitungan dapat menjadi lebih mudah. Dalam peraturan untuk struktur beton Indonesia (RSNI, BSN, 2002, pasal 11.5 butir 2 sub butir 1, hal 62) diberikan cara estimasi untuk menentukan tinggi minimum balok.

Perhitungan tinggi minimum balok induk.

Panjang bentang (l) = 5000 mm. Untuk balok satu arah dengan dua tumpuan sederhana digunakan tinggi minimum

$$h_{\min} = \frac{l}{16} = \frac{5000}{16} = 312,5 \text{ mm, digunakan } 500 \text{ mm}$$

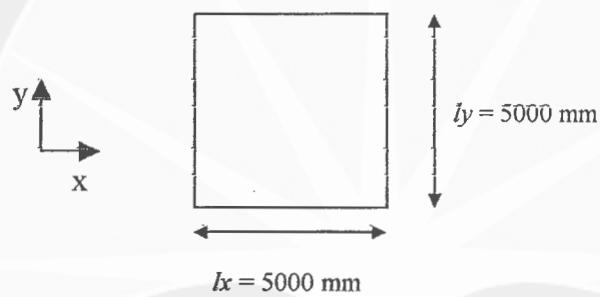
Untuk lebar balok juga harus memperhatikan syarat yang ada pada pasal 23.3 butir 1 sub butir 4 (RSNI, BSN, 2002, hal 208). Pemilihan lebar balok sangat tergantung dari besarnya gaya lintang. Seringkali dengan mengambil $bw = \frac{1}{2}$ sampai $\frac{2}{3}h$ ternyata cukup memadai (Vis, Gideon 1, halaman 104). Untuk kasus ini dicoba $\frac{2}{3}h$ dengan $h = 500 \text{ mm}$

$$bw = \frac{2}{3}h = \frac{2}{3}.500 = 333.3333 \text{ mm, digunakan } 300 \text{ mm}$$

Balok induk yang akan digunakan berukuran 300/500 (mm/mm) atau 30/50 (cm/cm).

3.3 Estimasi Ukuran Tebal Pelat Lantai

Dalam setiap perencanaan biasanya digunakan pelat yang terluas untuk menjadi wakil dari seluruh pelat agar tebal pelat minimum yang dihasilkan tidak menyebabkan lendutan yang parah. Sebelum menentukan tebal pelat minimum, terlebih dahulu diselidiki apakah pelat termasuk konstruksi satu arah atau dua arah.



Gambar. Pelat Lantai

$$\beta = \frac{l_y}{l_x}$$

$$\beta = \frac{5000}{5000} = 1 < 2, \text{ ternyata digunakan pelat dua arah (Dipohusodo, I., hal}$$

208).

Untuk pelat dua arah, tebal pelat minimum yang disyaratkan dalam pasal 11.5 butir 3 sub butir 3 (RSNI, BSN, 2002, hal 65) adalah :

Tebal pelat minimum tidak boleh kurang dari

$$h = \frac{l_n \left(0,8 + \frac{f_y}{1500} \right)}{36 + 9\beta}$$

$$h = \frac{5000 \left(0,8 + \frac{240}{1500} \right)}{36 + 9,1} = 106,6667 \text{ mm}$$

dan tidak boleh kurang dari 90 mm. Untuk keadaan yang aman maka tebal pelat yang digunakan dalam perencanaan adalah 150 mm (dengan anggapan bahwa rasio kekakuan (α_m) lebih besar dari 2).

Perhitungan α_m

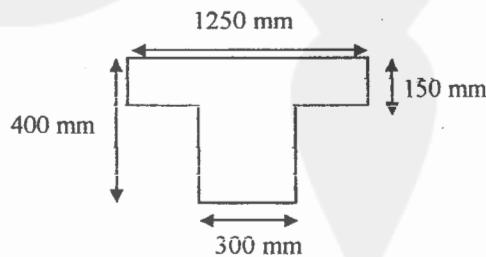
1. Arah memanjang pelat – sumbu Y (balok induk)

tebal pelat (hf) = 150 mm

lebar efektif pelat yang diperhitungkan bekerja sama dengan balok

$$bf \leq \frac{1}{4} \cdot l \longrightarrow bf \leq \frac{1}{4} \cdot 5000 = 1250 \text{ mm}$$

$$bf \leq bw + 16hf \longrightarrow bf \leq 300 + 16 \cdot 150 = 2700 \text{ mm}$$



statis momen terhadap tepi atas balok T

$$\frac{(1250 \cdot 150 \cdot 75) + (300 \cdot 250 \cdot 275)}{(1250 \cdot 150) + (300 \cdot 250)} = 132,1429 \text{ mm}$$

momen inersia

$$\begin{aligned}
 \frac{1}{12} \cdot 1250 \cdot 150^3 &= 351562500 \quad \text{mm}^4 \\
 1250 \cdot 150 \cdot (132,1429 - 75)^2 &= 612245816,3 \quad \text{mm}^4 \\
 \frac{1}{12} \cdot 300 \cdot 250^3 &= 390625000 \quad \text{mm}^4 \\
 300 \cdot 250 \cdot (275 - 132,1429)^2 &= 1530611327 \quad \text{mm}^4 \\
 I_b &= \frac{351562500 + 612245816,3 + 390625000 + 1530611327}{2885044643} \quad \text{mm}^4
 \end{aligned}$$

momen inersia pelat (arah memanjang)

$$I_p = \frac{1}{12} \cdot 5000 \cdot 150^3 = 1406250000 \quad \text{mm}^4$$

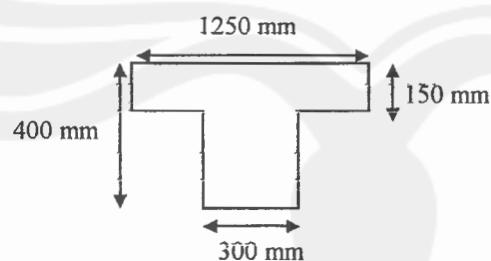
2. Arah melintang pelat – sumbu X (balok induk)

tebal pelat (hf) = 150 mm

lebar efektif pelat yang diperhitungkan bekerja sama dengan balok

$$bf \leq \frac{1}{4} \cdot l \longrightarrow bf \leq \frac{1}{4} \cdot 5000 = 1250 \text{ mm}$$

$$bf \leq bw + 16hf \longrightarrow bf \leq 300 + 16 \cdot 150 = 2700 \text{ mm}$$



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 I_b &= \underline{\underline{2885044643}} \quad \text{mm}^4
 \end{aligned}$$

momen inersia pelat (arah memanjang)

$$I_p = \frac{1}{12} \cdot 5000 \cdot 150^3 = 1406250000 \quad \text{mm}^4$$

Mencari nilai α_m , $\alpha = \frac{E_{cb} \cdot I_b}{E_{cp} \cdot I_p}$ (RSNI, BSN, 2002, pasal 15.3 butir 6, hal 138), karena modulus elastisitas beton balok dan pelat sama sehingga $\alpha_i = \frac{I_{bi}}{I_{pi}}$

$$\text{maka : } \alpha_1 = \frac{I_{b1}}{I_{p1}} = \frac{2885044643}{1406250000} = 2,0516$$

$$\alpha_2 = \frac{I_{b2}}{I_{p2}} = \frac{2885044643}{1406250000} = 2,0516$$

$$\alpha_m = \frac{\sum \alpha_i}{n} = \frac{2,0516 + 2,0516}{2} = 2,0516 > 2$$

ternyata anggapan awal tadi bisa digunakan dan tebal pelat yang digunakan adalah 150 mm.

3.4. Estimasi Ukuran Kolom

Perencanaan dimensi kolom dapat dilakukan dengan cara *tributary area*, kolom direncanakan berbentuk bujur sangkar dengan tulangan sengkang. Pedoman yang digunakan sesuai dengan pasal 12.3 butir 5 sub butir 2 hal 71 (RSNI, BSN, 2002), maka dimensi kolom dengan pengikat sengkang ditentukan dari persamaan :

$$Pu = 0,80 \cdot \phi \cdot \{0,85 \cdot f'_c \cdot (Ag - Ast) + fy \cdot Ast\}$$

dengan :

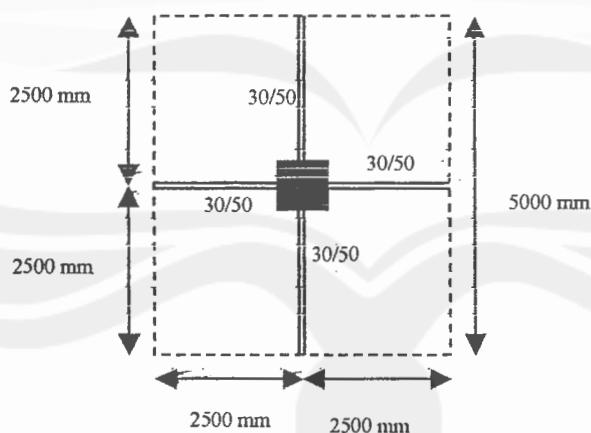
Ast = luas tulangan

Ag = luas bruto kolom ($b \times h$)

ϕ = faktor reduksi untuk sengkang = 0,65

f'_c = kuat desak karakteristik beton

fy = tegangan leleh baja



Gambar *Tributary Area* pada Kolom

$$\text{Luas } \textit{tributary area} = (5 \text{ m} \times 5 \text{ m}) = 25 \text{ m}^2$$

Beban Kerja menurut PPPURG 1987 :

□ Beban mati :

Berat beton bertulang	=	24	KN/m ³
Berat adukan semen per-cm tebal	=	0,21	KN/m ²
Berat penutup lantai per-cm tebal	=	0,24	KN/m ²
Berat plafon dan penggantung	=	0,18	KN/m ²
Mekanika dan elektrikal	=	0,20	KN/m ²
Berat dinding ½ bata	=	2,50	KN/m ²
Berat pasir per-cm tebal	=	0,18	KN/m ²

Beban mati tiap lantai dihitung sebagai berikut :

Pelat atap :

Spesi (2 cm) = 2 . 0,21	=	0,42	kN/m ³
Aspal (2 cm) = 2 . 0,14	=	0,28	kN/m ³
Plafon dan penggantung	=	0,18	kN/m ³
Mekanikal dan elektrikal (ditaksir)	=	0,20	kN/m ³
qd pelat atap = 1,08 kN/m³			

Plat lantai dasar sampai lantai 3

Spesi (2 cm) = 2 . 0,21	=	0,42	kN/m ³
Pasir (2 cm) = 2 . 0,18	=	0,36	kN/m ³
Ubin (2 cm) = 2 . 0,24	=	0,48	kN/m ³
Berat plafon dan penggantung	=	0,18	kN/m ³
Mekanikal dan elektrikal (ditaksir)	=	0,20	kN/m ³
qd lantai dasar sampai lantai 3 = 1,64 kN/m³			

Beban hidup :

Beban hidup tiap lantai dihitung sebagai berikut :

Pelat atap :

$$\begin{array}{lcl} \text{Beban orang} & = & 1 \quad \text{kN/m}^3 \\ q_{\text{l}} \text{ pelat atap} & = & 1 \quad \text{kN/m}^3 \end{array}$$

Plat lantai dasar sampai lantai 3

$$q_{\text{l}} \text{ lantai dasar sampai lantai 3} = 2,50 \quad \text{kN/m}^3$$

Beban-beban yang bekerja pada kolom adalah :

1. Atap

Beban Mati

$$\begin{array}{lll} \text{a. b.s. pelat} & = 0,15 \cdot 5 \cdot 5 \cdot 24 & = 90 \quad \text{kN} \\ \text{b. b.m. pelat} & = 5 \cdot 5 \cdot 1,08 & = 27 \quad \text{kN} \\ \text{c. balok induk} & = 0,3 \cdot 0,5 \cdot (5+5) \cdot 24 = & \underline{\hspace{2cm} 36 \quad \text{kN} +} \\ & & \text{Pd}_{\text{atap}} = 153 \quad \text{kN} \end{array}$$

Beban Hidup

$$\text{b.h. pelat} = 5 \cdot 5 \cdot 1 = 25 \quad \text{kN}$$

Reduksi beban hidup (PPPURG pasal 2.1.2.5(4) tabel 5)

$$\text{Pl}_{\text{atap,R}} = 25 \cdot 0,8 = 20 \quad \text{kN}$$

$$\text{Pl}_{\text{atap,R}} = 20 \quad \text{kN}$$

$$Pu = 1,2 D + 1,6 L_R + 0,5 R$$

dengan :

Pu = beban ultimit

- D = beban mati
 L_R = beban hidup tereduksi
 R = beban hujan (0,5 kN)

Beban *ultimit* atap

$$\begin{aligned}
 P_u &= 1,2 \cdot Pd_{atap} + 1,6 \cdot Pl_{atap,R} + 0,5R \\
 &= 1,2 \cdot 153 + 1,6 \cdot 20 + 0,5 \cdot 0,5 \\
 &= 215,85 \text{ kN}
 \end{aligned}$$

Dimensi kolom

$$\text{Misalkan } Ag = h \times h = h^2$$

$$Ast = 2\% \cdot h^2$$

$$\begin{aligned}
 P_u &= 0,80 \cdot \phi \cdot \{0,85 \cdot f'_c (Ag - Ast) + fy \cdot Ast\} \\
 215,85 \cdot 10^3 &= 0,80 \cdot 0,65 \cdot \{0,85 \cdot 25 \cdot (h^2 - 2\% \cdot h^2) + 400 \cdot 2\% \cdot h^2\} \\
 215,85 \cdot 10^3 &= 14,989 \cdot h^2 \\
 h &= \sqrt{\frac{215,85 \cdot 10^3}{14,989}} = 120,0023 \text{ mm}
 \end{aligned}$$

2. Lantai 3

Beban Mati

a. b.s. pelat	= 0,15 . 5 . 5 . 24	=	90	kN
b. b.m. pelat	= 5 . 5 . 1,64	=	41	kN
c. balok induk	= 0,3 . 0,5 . (5+5) . 24	=	36	kN
d. dinding (ditaksir)	= (5 + 5) . 3 . 2,5	=	75	kN
e. lantai di atas kolom	=	=	153	kN
f. kolom (ditaksir)	=	=	50	kN +
		Pd _{lantai 3} =	445	kN

Beban Hidup

$$\begin{aligned}
 \text{a. b.h. pelat} &= 5 \cdot 5 \cdot 2,5 & = & 62,5 \text{ kN} \\
 \text{b. lantai di atas kolom} &= & = & 25 \text{ kN} \\
 && \hline
 \mathbf{P_{lantai\ 3}} &= & \mathbf{87,5 \text{ kN}}
 \end{aligned}$$

Reduksi beban hidup (PPPURG pasal 2.1.2.5(4) tabel 5)

$$P_{lantai\ 3,R} = 87,5 \cdot 0,8 = 70 \text{ kN}$$

$$\mathbf{P_{lantai\ 3,R} = 70 \text{ kN}}$$

Beban *ultimit* lantai 3

$$\begin{aligned}
 P_u &= 1,2 \cdot P_{d,lantai\ 3} + 1,6 \cdot P_{l,lantai\ 3,R} \\
 &= 1,2 \cdot 445 + 1,6 \cdot 70 \\
 &= 646 \text{ kN}
 \end{aligned}$$

Dimensi kolom

$$\text{Misalkan } Ag = h \times h = h^2$$

$$Ast = 2\% \cdot h^2$$

$$\begin{aligned}
 P_u &= 0,80 \cdot \phi \cdot \{0,85 \cdot f_c (Ag - Ast) + fy \cdot Ast\} \\
 646 \cdot 10^3 &= 0,80 \cdot 0,65 \cdot \{0,85 \cdot 25 \cdot (h^2 - 2\% \cdot h^2) + 400 \cdot 2\% \cdot h^2\} \\
 646 \cdot 10^3 &= 14,989 \cdot h^2 \\
 h &= \sqrt{\frac{646 \cdot 10^3}{14,989}} = 207,6012 \text{ mm}
 \end{aligned}$$

3. Lantai 2

Beban Mati

$$\begin{aligned}
 \text{a. b.s. pelat} &= 0,15 \cdot 5 \cdot 5 \cdot 24 & = & 90 \text{ kN} \\
 \text{b. b.m. pelat} &= 5 \cdot 5 \cdot 1,64 & = & 41 \text{ kN} \\
 \text{c. balok induk} &= 0,3 \cdot 0,5 \cdot (5+5) \cdot 24 = & = & 36 \text{ kN} \\
 \text{d. dinding (ditaksir)} &= (5+5) \cdot 3 \cdot 2,5 & = & 75 \text{ kN}
 \end{aligned}$$

$$\begin{aligned}
 e. \text{ lantai di atas kolom} &= &= 445 \text{ kN} \\
 f. \text{ kolom (ditaksir)} &= &= 50 \text{ kN} + \\
 Pd_{lantai\ 2} &= &= \underline{\underline{737 \text{ kN}}}
 \end{aligned}$$

□ Beban Hidup

$$\begin{aligned}
 a. \text{ b.h. pelat} &= 5 \cdot 5 \cdot 2,5 &= 62,5 \text{ kN} \\
 b. \text{ lantai di atas kolom} &= &= 87,5 \text{ kN} + \\
 Pl_{lantai\ 2} &= &= \underline{\underline{150 \text{ kN}}}
 \end{aligned}$$

Reduksi beban hidup (PPPURG pasal 2.1.2.5(4) tabel 5)

$$Pl_{lantai\ 2,R} = 150 \cdot 0,8 = 120 \text{ kN}$$

$$Pl_{lantai\ 2,R} = 120 \text{ kN}$$

Beban *ultimit* lantai 2

$$\begin{aligned}
 Pu &= 1,2 \cdot Pd_{lantai\ 2} + 1,6 \cdot Pl_{lantai\ 2,R} \\
 &= 1,2 \cdot 737 + 1,6 \cdot 120 \\
 &= 1076,4 \text{ kN}
 \end{aligned}$$

Dimensi kolom

$$\text{Misalkan } Ag = h \times h = h^2$$

$$Ast = 2\% \cdot h^2$$

$$Pu = 0,80 \cdot \phi \cdot \{0,85 \cdot f'_c (Ag - Ast) + fy \cdot Ast\}$$

$$\begin{aligned}
 1076,4 \cdot 10^3 &= 0,80 \cdot 0,65 \cdot \{0,85 \cdot 25 \cdot (h^2 - 2\% \cdot h^2) + 400 \cdot 2\% \cdot h^2\} \\
 1076,4 \cdot 10^3 &= 14,989 \cdot h^2
 \end{aligned}$$

$$h = \sqrt{\frac{1076,4 \cdot 10^3}{14,989}} = 267,9788 \text{ mm}$$

4. Lantai 1

□ Beban Mati

$$\begin{aligned}
 a. \text{ b.s. pelat} &= 0,15 \cdot 5 \cdot 24 &= 90 \text{ kN} \\
 b. \text{ b.m. pelat} &= 5 \cdot 5 \cdot 1,64 &= 41 \text{ kN}
 \end{aligned}$$

$$\begin{array}{lll}
 \text{c. balok induk} & = 0,3 \cdot 0,5 \cdot (5+5) \cdot 24 = & 36 \text{ kN} \\
 \text{d. dinding (ditaksir)} & = (5 + 5) \cdot 3 \cdot 2,5 = & 75 \text{ kN} \\
 \text{e. lantai di atas kolom} & = & 737 \text{ kN} \\
 \text{f. kolom (ditaksir)} & = & 50 \text{ kN} \\
 & & \hline
 \mathbf{Pd_{lantai\ 1}} & = & \mathbf{1029 \text{ kN}}
 \end{array}$$

□ Beban Hidup

$$\begin{array}{lll}
 \text{a. b.h. pelat} & = 5 \cdot 5 \cdot 2,5 = & 62,5 \text{ kN} \\
 \text{b. lantai di atas kolom} & = & 150 \text{ kN} \\
 & & \hline
 \mathbf{Pl_{lantai\ 1}} & = & \mathbf{212,5 \text{ kN}}
 \end{array}$$

Reduksi beban hidup (PPPURG pasal 2.1.2.5(4) tabel 5)

$$\mathbf{Pl_{lantai\ 1,R}} = 212,5 \cdot 0,8 = 170 \text{ kN}$$

$$\mathbf{Pl_{lantai\ 1,R}} = 170 \text{ kN}$$

Beban *ultimit* lantai 1

$$\begin{aligned}
 Pu &= 1,2 \cdot Pd_{lantai\ 1} + 1,6 \cdot Pl_{lantai\ 1,R} \\
 &= 1,2 \cdot 1029 + 1,6 \cdot 170 \\
 &= 1506,8 \text{ kN}
 \end{aligned}$$

Dimensi kolom

$$\text{Misalkan } Ag = h \times h = h^2$$

$$Ast = 2\% \cdot h^2$$

$$Pu = 0,80 \cdot \phi \cdot \{0,85 \cdot f'_c (Ag - Ast) + fy \cdot Ast\}$$

$$1506,8 \cdot 10^3 = 0,80 \cdot 0,65 \cdot \{0,85 \cdot 25 \cdot (h^2 - 2\% \cdot h^2) + 400 \cdot 2\% \cdot h^2\}$$

$$1506,8 \cdot 10^3 = 14,989 \cdot h^2$$

$$h = \sqrt{\frac{1506,8 \cdot 10^3}{14,989}} = 317,06 \text{ mm}$$

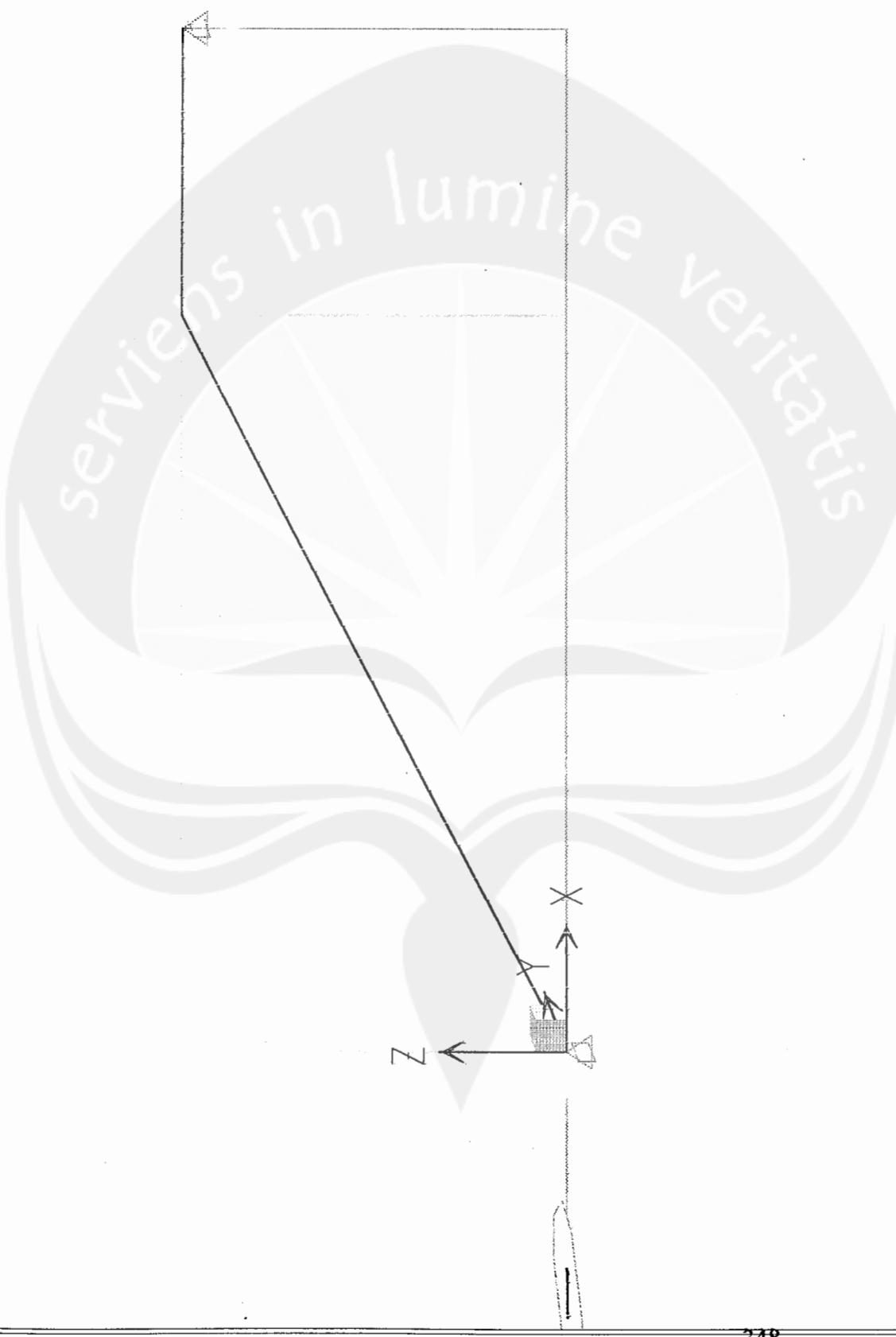
Tabel 3.1 Dimensi Kolom

Lantai	P _D (Kn)	P _{L,R} (kN)	P _u (kN)	h (mm)	h terpakai (mm)
Atap	153	20	215,85	120,0023	400
3	445	70	646	207,6012	400

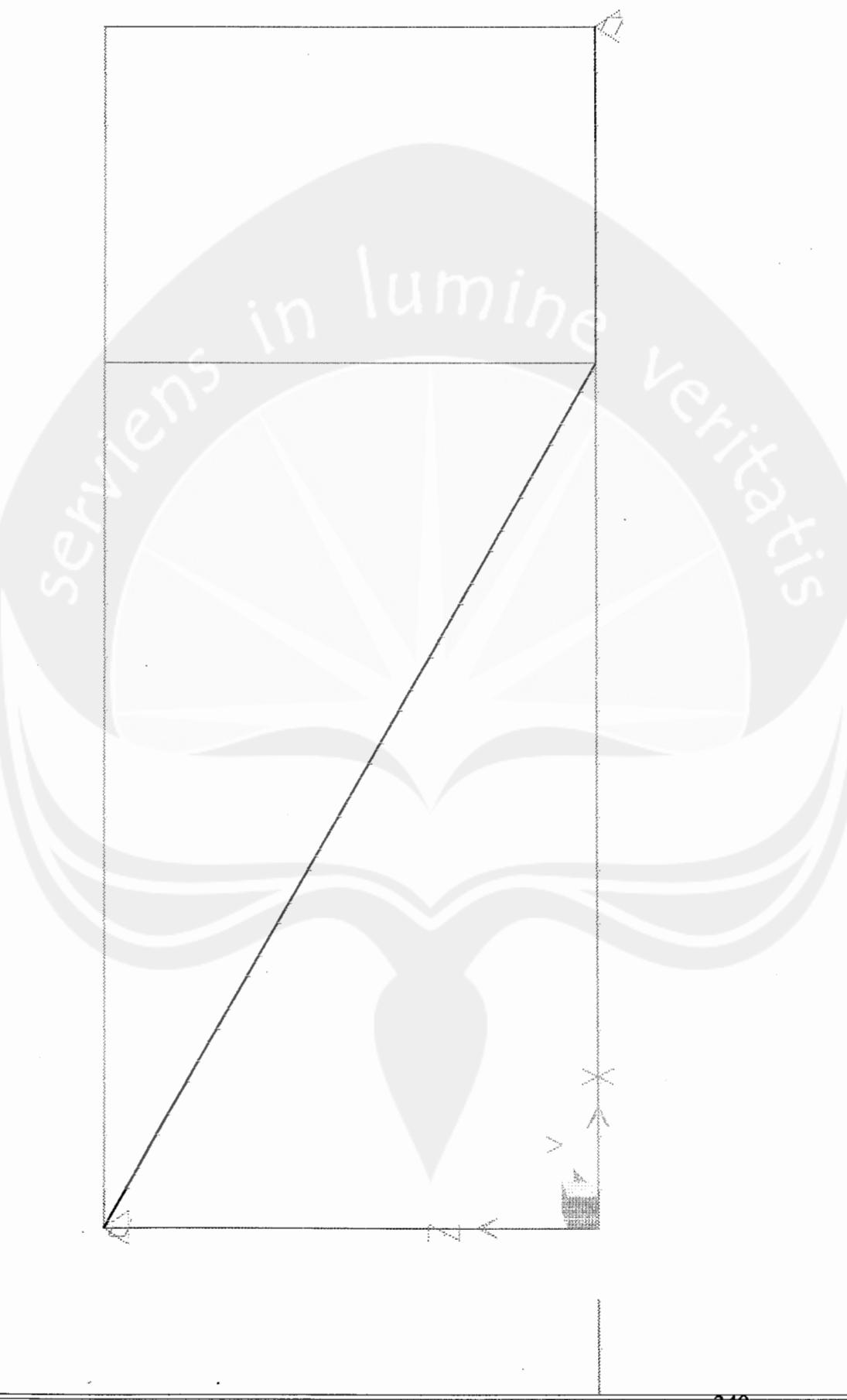
2	737	120	1076,4	267,9788	500
Dasar	1029	170	1506,8	317,06	600

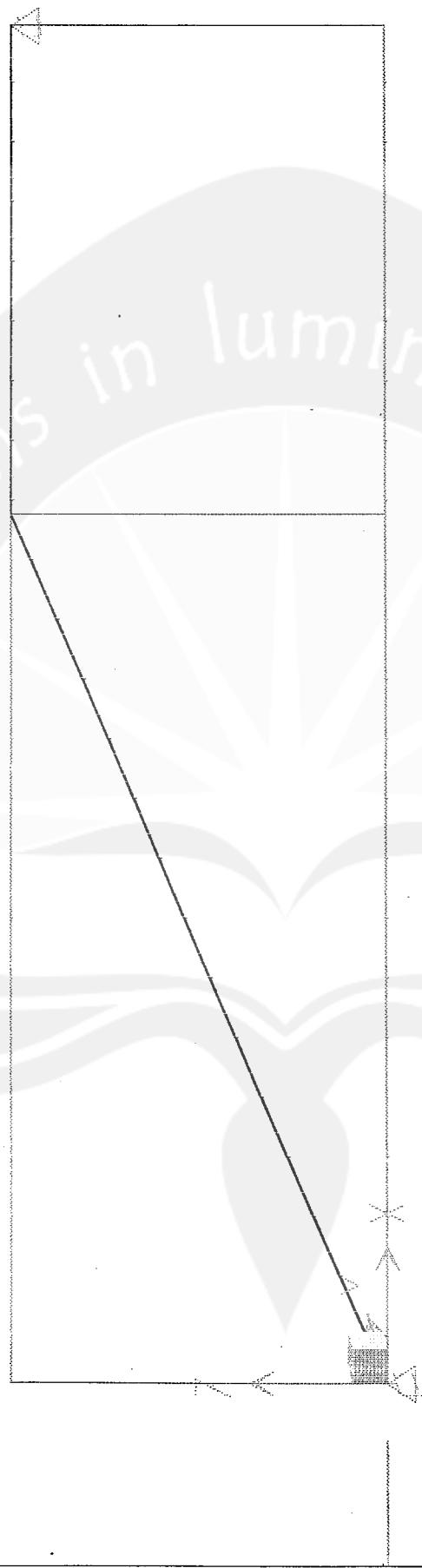
Jika diperiksa, berat kolom yang dipakai adalah :

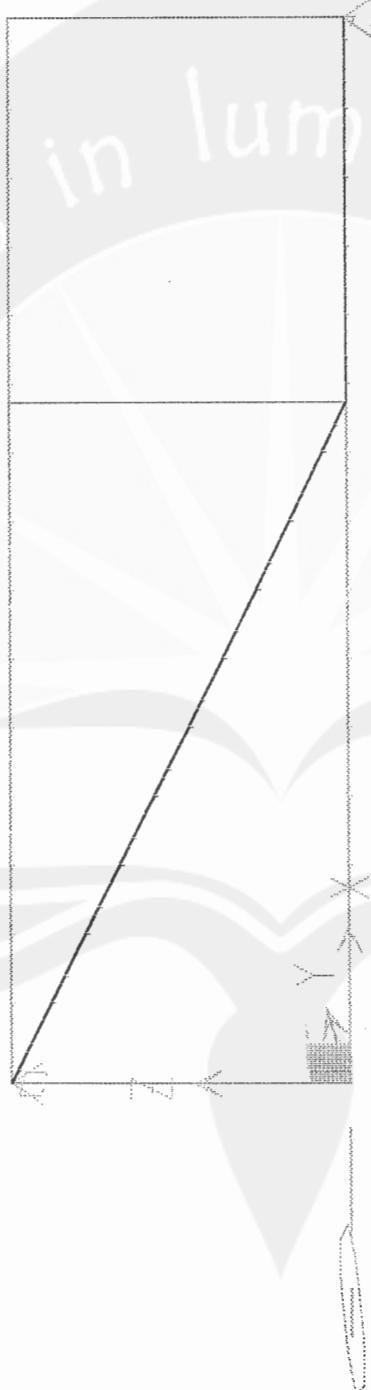
$$0,6 \cdot 0,6 \cdot 3 \cdot 24 = 25,92 \text{ KN} < 50 \text{ KN} \dots \text{ok!}$$



R dina







Input dari tangga Lantai dasar

STORY DATA

STORY	SIMILAR TO	HEIGHT	ELEVATION
Bordes	None	1.920	1.920
Base	None		0.000

MATERIAL LIST BY ELEMENT TYPE

ELEMENT TYPE	MATERIAL	TOTAL MASS tons	NUMBER PIECES	NUMBER STUDS
Beam	BETON	0.62	1	0
Brace	BETON	2.84	1	

MATERIAL LIST BY SECTION

SECTION	ELEMENT TYPE	NUMBER PIECES	TOTAL LENGTH meters	TOTAL MASS tons	NUMBER STUDS
PELAT1	Brace	1	4.080	2.84	
PELAT2	Beam	1	1.400	0.62	0

MATERIAL PROPERTY DATA

MATERIAL NAME	MATERIAL TYPE	DESIGN TYPE	MATERIAL DIR/PLANE	MODULUS OF ELASTICITY	POISSON'S RATIO	THERMAL COEFF	SHEAR MODULUS
BETON	Iso	Concrete	All	200000000	0.2000	1.1700E-05	83333333

MATERIAL PROPERTY MASS AND WEIGHT

MATERIAL NAME	MASS PER UNIT VOL	WEIGHT PER UNIT VOL
BETON	2.4500E+00	2.4000E+01

MATERIAL DESIGN DATA FOR CONCRETE MATERIALS

MATERIAL NAME	LIGHTWEIGHT CONCRETE	CONCRETE FC	REBAR FY	REBAR FYS	LIGHTWT REDUC FACT
BETON	No	25000.000	240000.000	240000.000	N/A

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	MATERIAL NAME	SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE	CONC COL	CONC BEAM
PELAT1	BETON	Rectangular		Yes
PELAT2	BETON	Rectangular		Yes

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	SECTION DEPTH	FLANGE WIDTH TOP	FLANGE THICK TOP	WEB THICK	FLANGE WIDTH BOT	FLANGE THICK BOT
PELAT1	0.2840	1.0000	0.0000	0.0000	0.0000	0.0000
PELAT2	0.1800	1.0000	0.0000	0.0000	0.0000	0.0000

STATIC LOAD CASES

STATIC CASE	CASE TYPE	AUTO LAT LOAD	SELF WT MULTIPLIER
DEAD	DEAD	N/A	0.0000
LIVE	LIVE	N/A	0.0000
BS	DEAD	N/A	1.0000

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	DEAD BS LIVE	Static Static Static	1.2000 1.2000 1.6000

S U P P O R T (R E S T R A I N T) D A T A

STORY	POINT	RESTRAINED DOF'S					
		UX	UY	UZ	RX	RY	RZ
BORDES BASE	3 1	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes	Yes Yes

D I S T R I B U T E D L O A D A S S I G N M E N T S T O L I N E O B J E C T S

LOAD CASE	STORY LEVEL	LINE ID	LOAD TYPE	LOAD DIRECTION	ABSOLUTE DISTANCE A	ABSOLUTE DISTANCE B	LOAD A PER LENGTH	LOAD B PER LENGTH
DEAD	BORDES	B1	Force	Gravity	0.000	1.400	3.960	3.960
LIVE	BORDES	B1	Force	Gravity	0.000	1.400	3.000	3.000
DEAD	BORDES	D1	Force	Gravity	0.000	4.080	3.960	3.960
LIVE	BORDES	D1	Force	Gravity	0.000	4.080	3.000	3.000

Input dari tangga Lantai dasar (bordes ke lantai 2)

S T O R Y D A T A

STORY	SIMILAR TO	HEIGHT	ELEVATION
LANTAI 2 BASE	None None	2.080	2.080 0.000

M A T E R I A L L I S T B Y E L E M E N T T Y P E

ELEMENT TYPE	MATERIAL	TOTAL MASS tons	NUMBER PIECES	NUMBER STUDS
Beam	BETON	0.62	1	0
Brace	BETON	2.89	1	

M A T E R I A L L I S T B Y S E C T I O N

SECTION	ELEMENT TYPE	NUMBER PIECES	TOTAL LENGTH meters	TOTAL MASS tons	NUMBER STUDS
PELAT1	Brace	1	4.158	2.89	
PELAT2	Beam	1	1.400	0.62	0

M A T E R I A L P R O P E R T Y D A T A

MATERIAL NAME	MATERIAL TYPE	DESIGN TYPE	MATERIAL DIR/PLANE	MODULUS OF ELASTICITY	POISSON'S RATIO	THERMAL COEFF	SHEAR MODULUS
BETON	Iso	Concrete	All	20000000	0.2000	1.1700E-05	8333333.333

M A T E R I A L P R O P E R T Y M A S S A N D W E I G H T

MATERIAL NAME	MASS PER UNIT VOL	WEIGHT PER UNIT VOL
BETON	2.4500E+00	2.4000E+01

M A T E R I A L D E S I G N D A T A F O R C O N C R E T E M A T E R I A L S

MATERIAL NAME	LIGHTWEIGHT CONCRETE	CONCRETE FC	REBAR FY	REBAR FYS	LIGHTWT REDUC FACT
BETON	No	25000.000	240000.000	240000.000	N/A

F R A M E S E C T I O N P R O P E R T Y D A T A

FRAME SECTION NAME	MATERIAL NAME	SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE	CONC COL	CONC BEAM
PELAT1	BETON	Rectangular		Yes
PELAT2	BETON	Rectangular		Yes

F R A M E S E C T I O N P R O P E R T Y D A T A

FRAME SECTION NAME	SECTION DEPTH	FLANGE WIDTH TOP	FLANGE THICK TOP	WEB THICK	FLANGE WIDTH BOT	FLANGE THICK BOT
PELAT1	0.2840	1.0000	0.0000	0.0000	0.0000	0.0000
PELAT2	0.1800	1.0000	0.0000	0.0000	0.0000	0.0000

STATIC LOAD CASES

STATIC CASE	CASE TYPE	AUTO LAT LOAD	SELF WT MULTIPLIER
MATI	DEAD	N/A	0.0000
HIDUP	LIVE	N/A	0.0000
BS	DEAD	N/A	1.0000

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	MATI HIDUP BS	Static Static Static	1.2000 1.6000 1.2000

SUPPORT (RESTRAINT) DATA

STORY	POINT	RESTRAINED DOF's						
		UX	UY	UZ	RX	RY	RZ	
LANTAI 2	3	Yes	Yes	Yes	Yes	Yes	Yes	
BASE	1	Yes	Yes	Yes	Yes	Yes	Yes	

DISTRIBUTED LOAD ASSIGNMENTS TO LINE OBJECTS

LOAD CASE	STORY LEVEL	LINE ID	LOAD TYPE	LOAD DIRECTION	ABSOLUTE DISTANCE A	ABSOLUTE DISTANCE B	LOAD A PER LENGTH	LOAD B PER LENGTH
MATI	BASE	B1	Force	Gravity	0.000	1.400	3.960	3.960
HIDUP	BASE	B1	Force	Gravity	0.000	1.400	3.000	3.000
MATI	LANTAI 2	D1	Force	Gravity	0.000	4.158	3.960	3.960
HIDUP	LANTAI 2	D1	Force	Gravity	0.000	4.158	3.000	3.000

Input dari tangga Lantai 2 dan 3

STORY DATA

STORY	SIMILAR TO	HEIGHT	ELEVATION
STORY1	None	1.400	1.400
BASE	None		0.000

MATERIAL LIST BY ELEMENT TYPE

ELEMENT TYPE	MATERIAL	TOTAL MASS tons	NUMBER PIECES	NUMBER STUDS
Beam	BETON	0.79	1	0
Brace	BETON	2.28	1	

MATERIAL LIST BY SECTION

SECTION	ELEMENT TYPE	NUMBER PIECES	TOTAL LENGTH meters	TOTAL MASS tons	NUMBER STUDS
PELAT1	Brace	1	3.493	2.28	
PELAT2	Beam	1	1.800	0.79	0

MATERIAL PROPERTY DATA

MATERIAL NAME	MATERIAL TYPE	DESIGN TYPE	MATERIAL DIR/PLANE	MODULUS OF ELASTICITY	POISSON'S RATIO	THERMAL COEFF	SHEAR MODULUS
BETON	Iso	Concrete	All	200000000	0.2000	6.3000E-06	83333333

MATERIAL PROPERTY MASS AND WEIGHT

MATERIAL NAME	MASS PER UNIT VOL	WEIGHT PER UNIT VOL
BETON	2.4500E+00	2.4000E+01

MATERIAL DESIGN DATA FOR CONCRETE MATERIALS

MATERIAL NAME	LIGHTWEIGHT CONCRETE	CONCRETE FC	REBAR FY	REBAR FYS	LIGHTWT REDUC FACT
BETON	No	25000.000	240000.000	240000.000	N/A

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	MATERIAL NAME	SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE	CONC CUL	CONC BEAM
PELAT1	BETON	Rectangular	Yes	
PELAT2	BETON	Rectangular	Yes	

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	SECTION DEPTH	FLANGE WIDTH TOP	FLANGE THICK TOP	WEB THICK	FLANGE WIDTH BOT	FLANGE THICK BOT
PELAT1	0.2665	1.0000	0.0000	0.0000	0.0000	0.0000
PELAT2	0.1800	1.0000	0.0000	0.0000	0.0000	0.0000

STATIC LOAD CASES

STATIC CASE	CASE TYPE	AUTO LAT	SELF WT
		TOP	MULTIPLIER
DEAD	DEAD	N/A	0.0000
LIVE	LIVE	N/A	0.0000
BS	DEAD	N/A	1.0000

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	DEAD	Static	1.2000
		LIVE	Static	1.6000
		BS	Static	1.2000

SUPPORT (RESTRAINT) DATA

STORY	POINT	RESTRAINED DOF's					
		UX	UY	UZ	RX	RY	RZ
STORY1	3	Yes	Yes	Yes	Yes	Yes	
BASE	1	Yes	Yes	Yes	Yes	Yes	

DISTRIBUTED LOAD ASSIGNMENTS TO LINE OBJECTS

LOAD CASE	STORY LEVEL	LINE ID	LOAD TYPE	LOAD DIRECTION	ABSOLUTE DISTANCE A	ABSOLUTE DISTANCE B	LOAD A PER LENGTH	LOAD B PER LENGTH
DEAD	STORY1	B1	Force	Gravity	0.000	1.800	3.960	3.960
LIVE	STORY1	B1	Force	Gravity	0.000	1.800	3.000	3.000
DEAD	STORY1	D1	Force	Gravity	0.000	3.493	3.960	3.960
LIVE	STORY1	D1	Force	Gravity	0.000	3.493	3.000	3.000

Input dari tangga Lantai 2 dan 3 (bordes ke atas)

STORY DATA

STORY	SIMILAR TO	HEIGHT	ELEVATION
STORY1	None	1.600	1.600
BASE	None		0.000

MATERIAL LIST BY ELEMENT TYPE

ELEMENT TYPE	MATERIAL	TOTAL MASS tons	NUMBER PIECES	NUMBER STUDS
Beam	BETON	0.79	1	0
Brace	BETON	2.33	1	

MATERIAL LIST BY SECTION

SECTION	ELEMENT TYPE	NUMBER PIECES	TOTAL LENGTH meters	TOTAL MASS tons	NUMBER STUDS
PELAT1	Brace	1	3.578	2.33	
PELAT2	Beam	1	1.800	0.79	0

MATERIAL PROPERTY DATA

MATERIAL NAME	MATERIAL TYPE	DESIGN TYPE	MATERIAL DIR/PLANE	MODULUS OF ELASTICITY	POISSON'S RATIO	THERMAL COEFF	SHEAR MODULUS
BETON	Iso	Concrete	All	200000000	0.2000	6.5000E-06	83333333

MATERIAL PROPERTY MASS AND WEIGHT

MATERIAL NAME	MASS PER UNIT VOL	WEIGHT PER UNIT VOL
BETON	2.4500E+00	2.4000E+01

MATERIAL DESIGN DATA FOR CONCRETE MATERIALS

MATERIAL NAME	LIGHTWEIGHT CONCRETE	CONCRETE FC	REBAR FY	REBAR FYS	LIGHTWT REDUC FACT
BETON	No	25000.000	240000.000	240000.000	N/A

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	MATERIAL NAME	SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE	CONC COL	CONC BEAM
PELAT1	BETON	Rectangular		Yes
PELAT2	BETON	Rectangular		Yes

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	SECTION DEPTH	FLANGE WIDTH TOP	FLANGE THICK TOP	WEB THICK	FLANGE WIDTH BOT	FLANGE THICK BOT
PELAT1	0.2665 0.1800	1.0000 1.0000	0.0000 0.0000	0.0000 0.0000	0.0000 0.0000	0.0000 0.0000
PELAT2						

STATIC LOAD CASES

STATIC CASE	CASE TYPE	AUTO LAT LOAD	SELF WT MULTIPLIER
DEAD	DEAD	N/A	0.0000
LIVE	LIVE	N/A	0.0000
BS	DEAD	N/A	1.0000

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	DEAD	Static	1.2000
		BS	Static	1.2000
		LIVE	Static	1.6000

SUPPORT (RESTRAINT) DATA

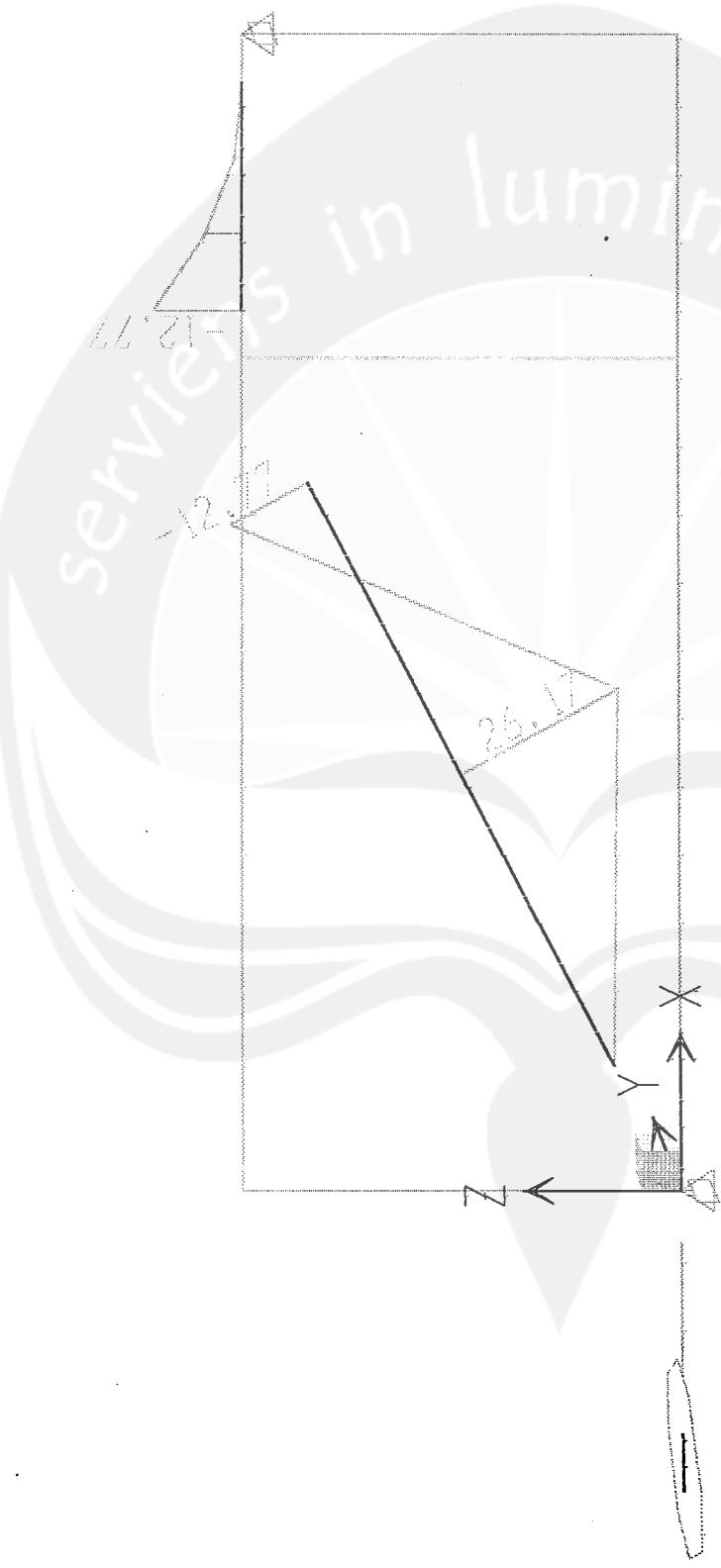
-----/-----RESTRAINED DOF's-----/-----							
STORY	POINT	UX	UY	UZ	RX	RY	RZ
STORY1	3	Yes	Yes	Yes	Yes	Yes	Yes
BASE	1	Yes	Yes	Yes	Yes	Yes	Yes

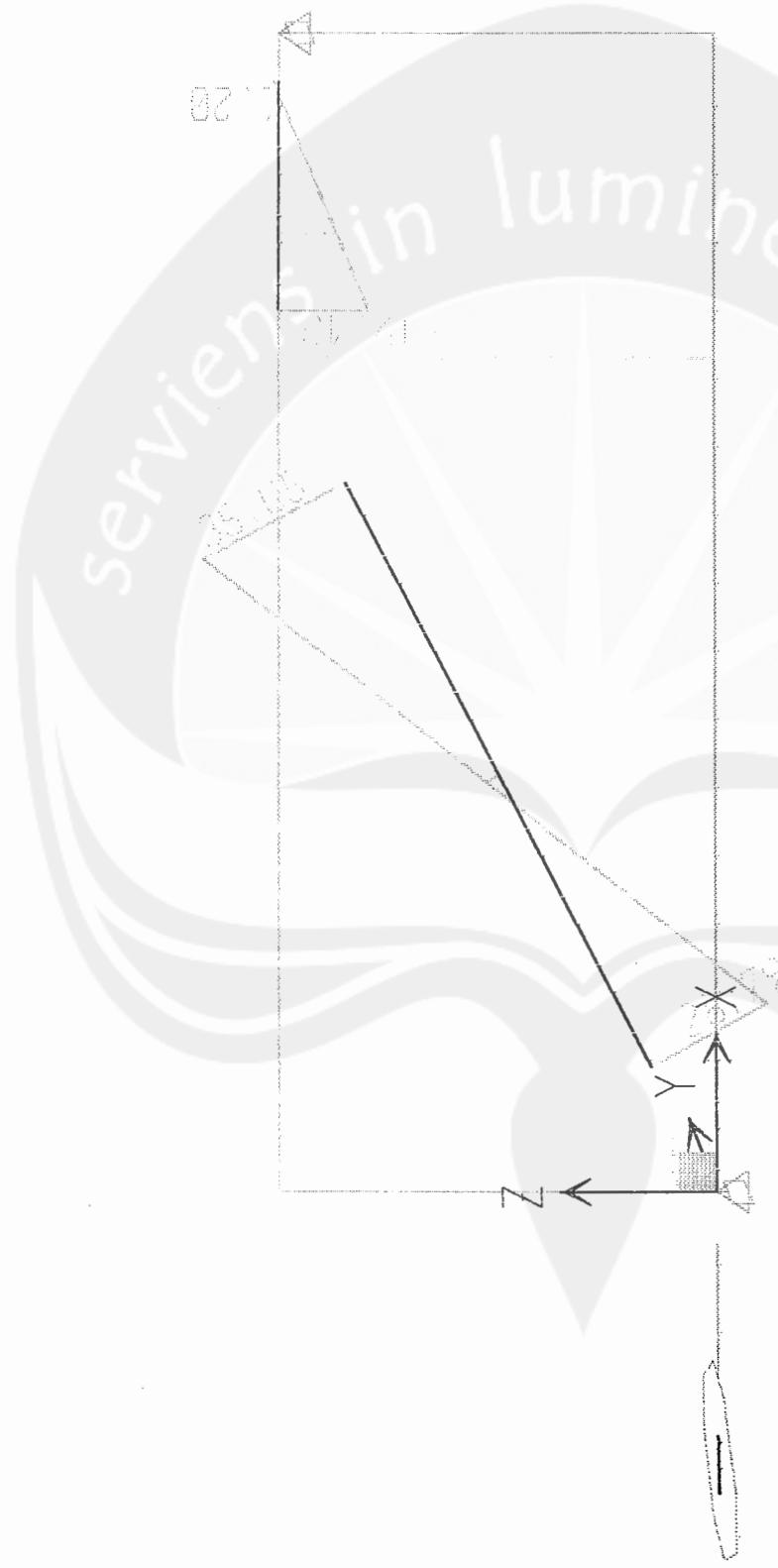
FRAME SECTION ASSIGNMENTS TO LINE OBJECTS

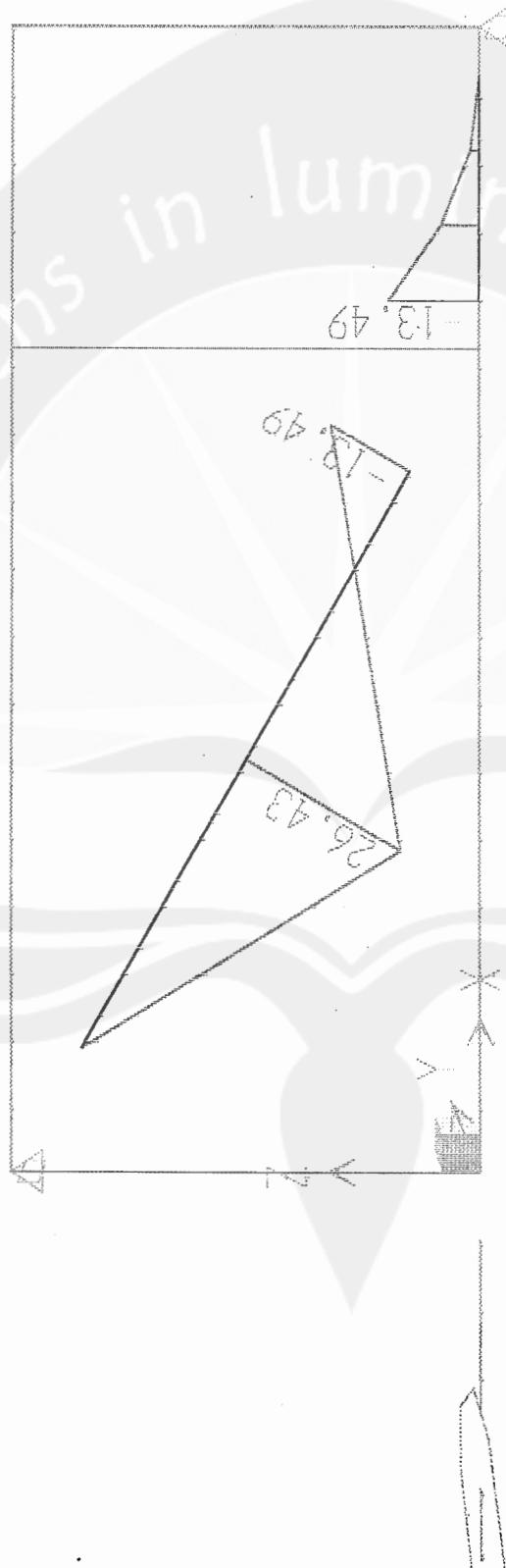
STORY LEVEL	LINE ID	LINE TYPE	SECTION TYPE	AUTO SELECT SECTION	ANALYSIS SECTION	DESIGN PROCEDURE	DESIGN SECTION
BASE	B1	Beam	Rectangular	None	PELAT2	Conc Frame	N/A
STORY1	D1	Brace	Rectangular	None	PELAT1	Conc Frame	N/A

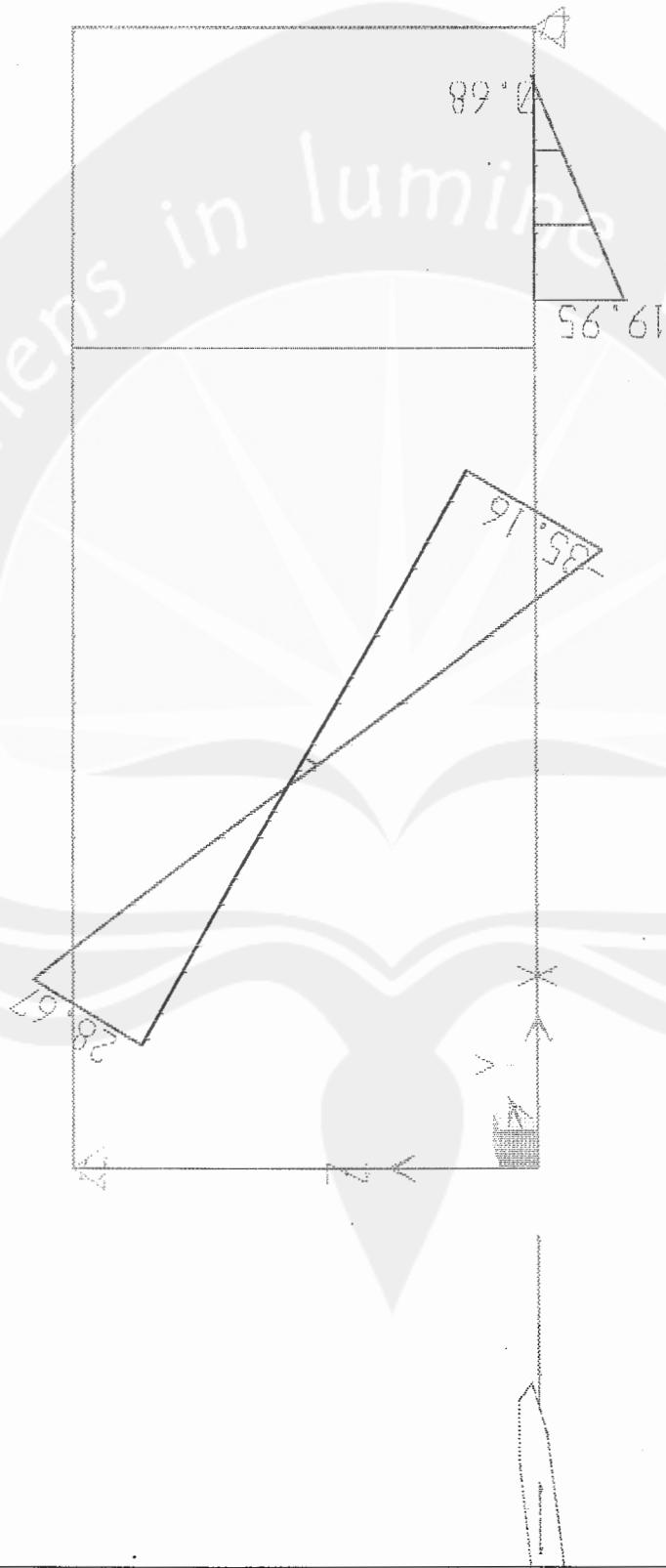
DISTRIBUTED LOAD ASSIGNMENTS TO LINE OBJECTS

LOAD CASE	STORY LEVEL	LINE ID	LOAD TYPE	LOAD DIRECTION	ABSOLUTE DISTANCE A	ABSOLUTE DISTANCE B	LOAD A PER LENGTH	LOAD B PER LENGTH
DEAD	BASE	B1	Force	Gravity	0.000	1.800	3.960	3.960
LIVE	BASE	B1	Force	Gravity	0.000	1.800	3.000	3.000
DEAD	STORY1	D1	Force	Gravity	0.000	3.578	3.960	3.960
LIVE	STORY1	D1	Force	Gravity	0.000	3.578	3.000	3.000

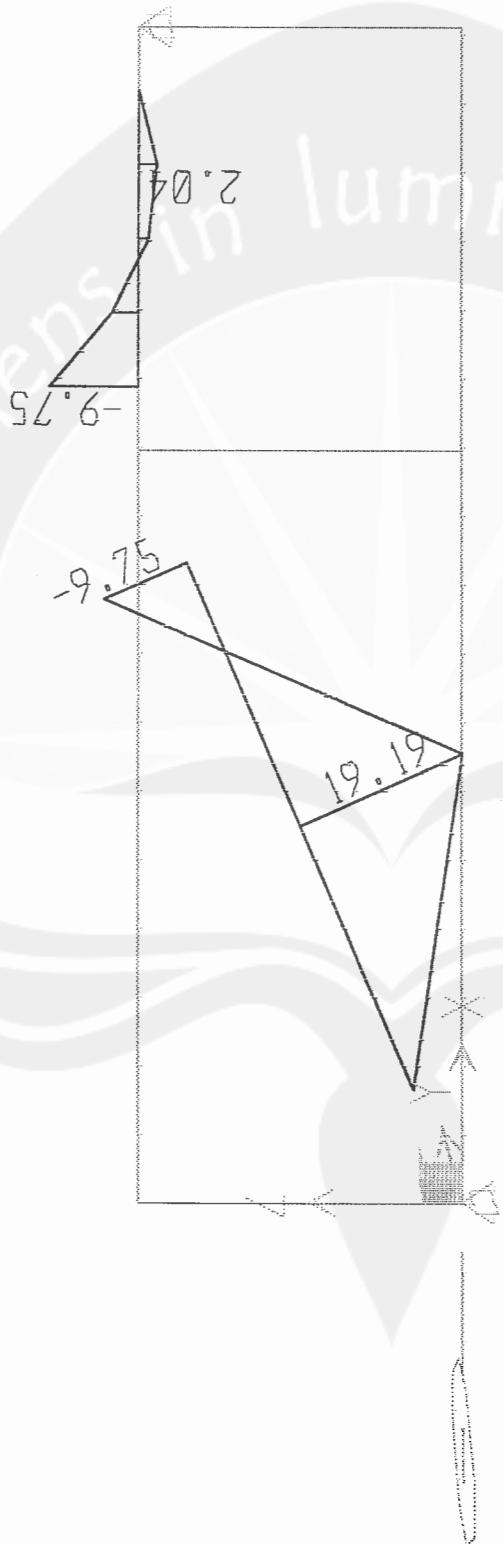


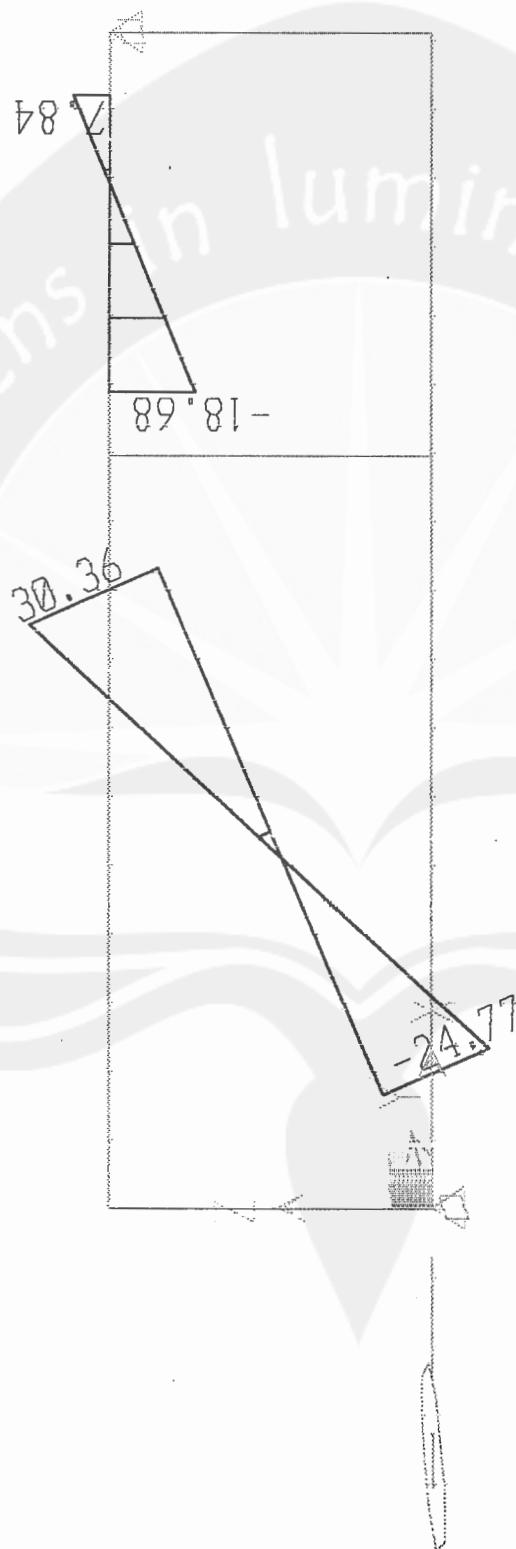


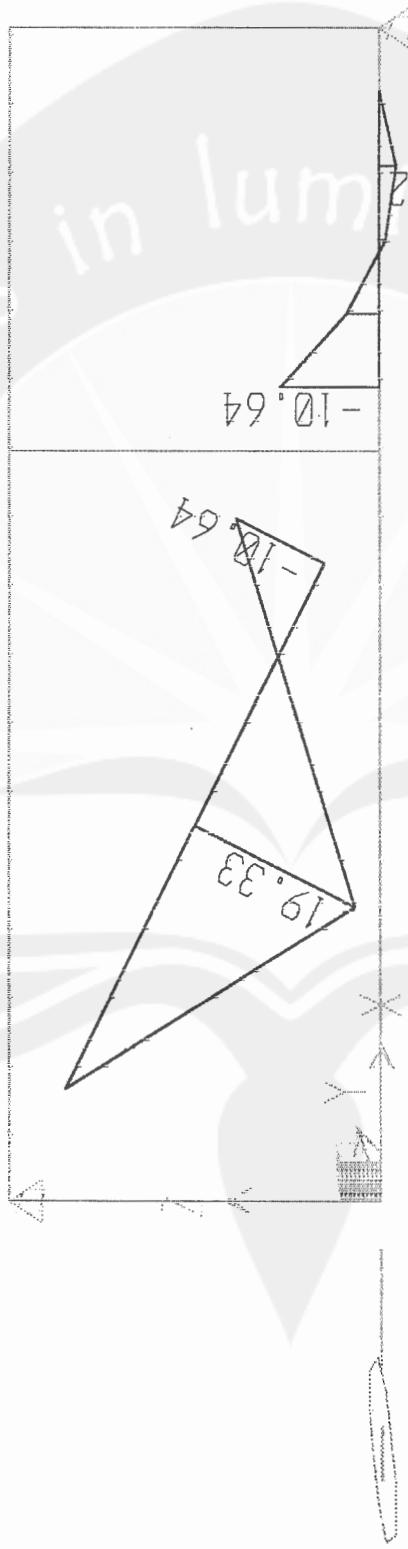




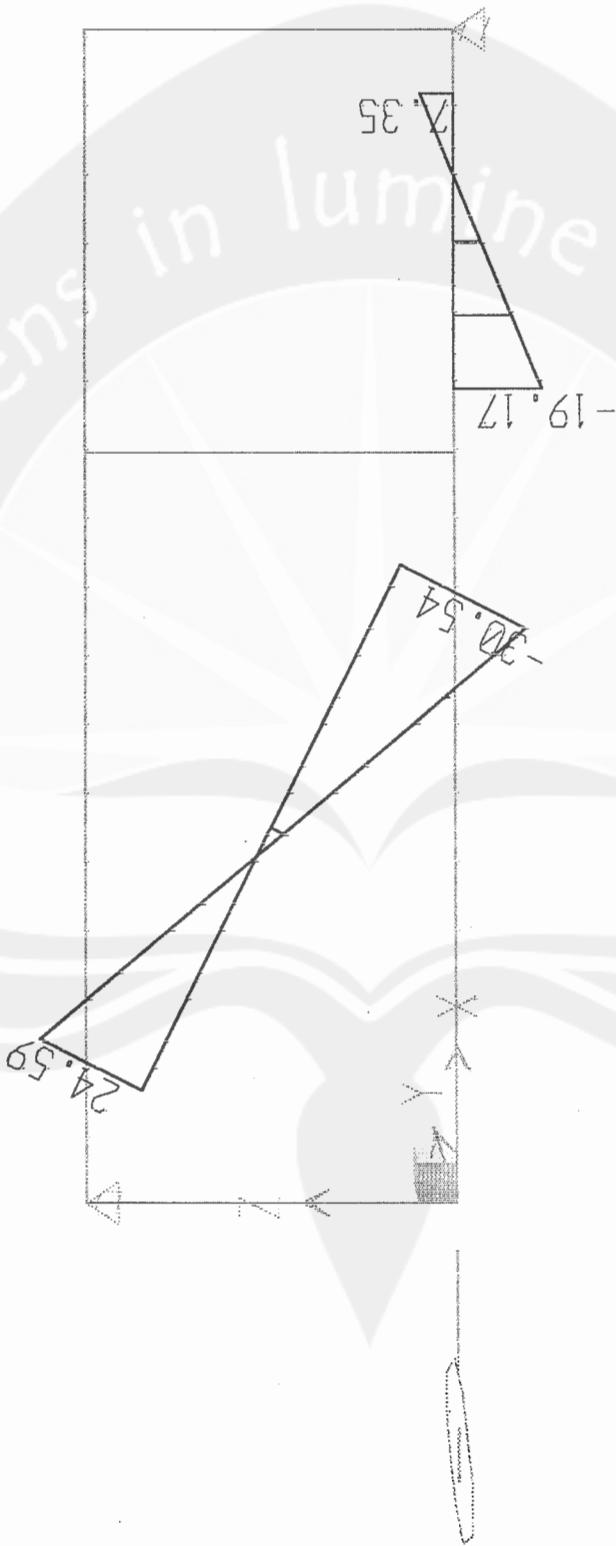
ETABS v8.08 - File: tangga-lantai dasar (bordes ke lantai 2) - November 23, 2004 4:51
3-D View Shear Force 2-2 Diagram (CQMB1) - KN-m Units







ETABS v8.08 - File: tangga lantai atas (bordes ke lantai 3) ~ November 23, 2004 4:53
3-D View Moment 3-3 Diagram (COMB1) - KN-m Units



Output tangga lantai dasar

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	DEAD	Static	1.2000
		BS	Static	1.2000
		LIVE	Static	1.6000

SUPPORT REACTION ENVELOPES

STORY	POINT	ITEM	FX	FY	FZ	MX	MY	MZ
BORDES	3	Min Value	-110.91	0.00	1.20	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-110.91	0.00	1.20	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
BASE	1	Min Value	110.91	0.00	91.78	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	110.91	0.00	91.78	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

BEAM FORCE ENVELOPES

STORY	BEAM	ITEM	P	V2	V3	T	M2	M3
BORDES	B1	Min Value	-110.91	-19.43	0.00	0.000	0.000	-12.767
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-110.91	1.20	0.00	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

BRACE FORCE ENVELOPES

STORY	BRACE	ITEM	P	V2	V3	T	M2	M3
BORDES	D1	Min Value	-141.05	-28.79	0.00	0.000	0.000	-12.767
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-107.01	35.05	0.00	0.000	0.000	26.171
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

Output tangga lantai dasar (bordes ke lantai 2)

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	MATI	Static	1.2000
		HIDUP	Static	1.6000
		BS	Static	1.2000

SUPPORT REACTION ENVELOPES

STORY	POINT	ITEM	FX	FY	FZ	MX	MY	MZ
LANTAI 2	3	Min Value	-104.81	0.00	93.67	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-104.81	0.00	93.67	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
BASE	1	Min Value	104.81	0.00	0.68	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	104.81	0.00	0.68	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

BEAM FORCE ENVELOPES

STORY	BEAM	ITEM	P	V2	V3	T	M2	M3
BASE	B1	Min Value	104.81	-19.95	0.00	0.000	0.000	-13.490
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	104.81	0.68	0.00	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

B R A C E F O R C E E N V E L O P E S

STORY	BRACE	ITEM	P	V2	V3	T	M2	M3
LANTAI 2	D1	Min Value	100.74	-35.16	0.00	0.000	0.000	-13.490
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	137.62	28.67	0.00	0.000	0.000	26.429
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

Output tangga lantai 2 - 3

L O A D I N G C O M B I N A T I O N S

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	DEAD	Static	1.2000
		LIVE	Static	1.6000
		BS	Static	1.2000

S U P P O R T R E A C T I O N E N V E L O P E S

STORY	POINT	ITEM	FX	FY	FZ	MX	MY	MZ
STORY1	3	Min Value	-118.44	0.00	7.84	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-118.44	0.00	7.84	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
BASE	1	Min Value	118.44	0.00	78.85	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	118.44	0.00	78.85	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

B E A M F O R C E E N V E L O P E S

STORY	BEAM	ITEM	P	V2	V3	T	M2	M3
STORY1	B1	Min Value	-118.44	-18.68	0.00	0.000	0.000	-9.755
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-118.44	7.84	0.00	0.000	0.000	2.037
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

B R A C E F O R C E E N V E L O P E S

STORY	BRACE	ITEM	P	V2	V3	T	M2	M3
STORY1	D1	Min Value	-140.11	-24.77	0.00	0.000	0.000	-9.755
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-115.99	30.36	0.00	0.000	0.000	19.191
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

Output tangga lantai 2 – 3 (bordes ke atas)

L O A D I N G C O M B I N A T I O N S

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	DEAD	Static	1.2000
		BS	Static	1.2000
		LIVE	Static	1.6000

S U P P O R T R E A C T I O N E N V E L O P E S

STORY	POINT	ITEM	FX	FY	FZ	MX	MY	MZ
STORY1	3	Min Value	-106.63	0.00	80.81	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-106.63	0.00	80.81	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
BASE	1	Min Value	106.63	0.00	7.35	0.000	0.000	0.000
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	106.63	0.00	7.35	0.000	0.000	0.000
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

B E A M F O R C E E N V E L O P E S

STORY	BEAM	ITEM	P	V2	V3	T	M2	M3
BASE	B1	Min Value	106.63	-19.17	0.00	0.000	0.000	-10.641
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	106.63	7.35	0.00	0.000	0.000	1.816
		Max Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1

B R A C E F O R C E E N V E L O P E S

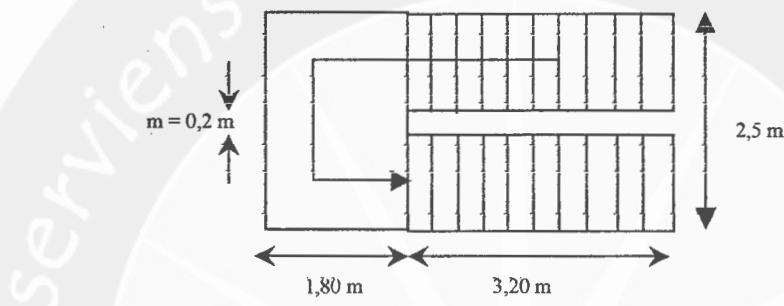
STORY	BRACE	ITEM	P	V2	V3	T	M2	M3
STORY1	D1	Min Value	103.95	-30.54	0.00	0.000	0.000	-10.641
		Min Case	COMBI	COMBI	COMBI	COMBI	COMBI	COMBI
		Max Value	131.51	24.59	0.00	0.000	0.000	19.333
		Max Case	COMBI	COMBI	COMBI	COMBI	COMBI	COMBI



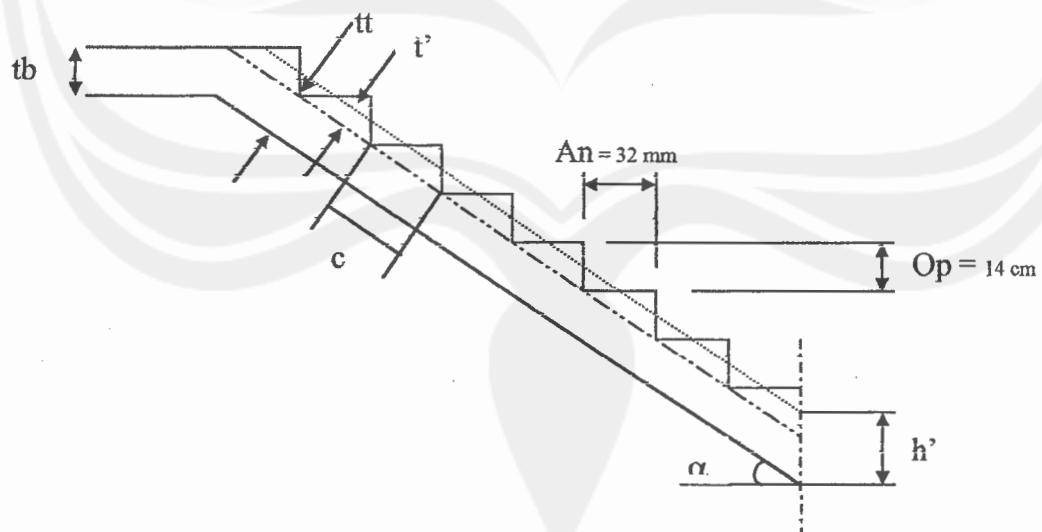
Perhitungan Tangga Lantai 2 – 3

Data-data untuk perhitungan tangga :

- Selisih tinggi lantai (H) = 3 m
- Lebar tangga = 1,15 m
- Panjang ruas tangga = 5 m



Denah Ruang Tangga Lantai 2-3



Penampang Tangga Lantai 2-3

d. Rencana *Optrade* (Op) dan *Antrade* (An)

Untuk kenyamanan pengguna tangga, tinggi anak tangga/*Optrade* untuk bangunan yang sifatnya umum, diambil tingginya tidak lebih dari 19 cm dan lebar anak tangga/*Antrade* diambil tidak kurang dari 22,5 cm. Biasanya dibuat $An = 30$ cm, dan $Op = 14-15$ cm (Subarkah, 1980, hal 129). Pengalaman menunjukkan bahwa perbandingan yang baik adalah :

$$An + 2Op = 60 - 62 \text{ cm} \quad (\text{Subarkah, 1980, hal 129})$$

$$32 + 2(14) = 60 \text{ cm} \Rightarrow \text{sesuai !}$$

Pada tugas akhir ini dipakai $Op = 16$ cm dan $An = 30$ cm

e. Jumlah anak tangga = $\frac{H}{Op} - 1 = \frac{300 \text{ cm}}{14 \text{ cm}} - 1 = 20$ buah anak tangga

f. Lebar bordes = Panjang tangga - ($0,5 \cdot \text{jumlah anak tangga} \cdot Antrade$)
 $= 500 \text{ cm} - (0,5 \cdot 20 \cdot 32)$
 $= 180 \text{ cm}$

g. Kemiringan tangga = $\tan \alpha = \frac{Op}{An} = \frac{14}{32} = 0,4375$

$$\alpha = 23,6294^\circ$$

h. tt = tebal pelat tangga = 18 cm

i. tb = tebal pelat bordes = 18 cm

$$c = \sqrt{(Op^2 + An^2)} = \sqrt{(14^2 + 32^2)} = \sqrt{1220} = 34,9285 \text{ cm}$$

$$t' = \frac{(0,5 \cdot Op \cdot An)}{c} = \frac{0,5 \cdot 14 \cdot 32}{34,9285} = 6,4131 \text{ cm}$$

$$h' = \frac{tt + t'}{\cos \alpha} = \frac{18 + 6,4131}{\cos 23,6294^\circ} = 26,6473 \text{ cm}$$

Hitungan beban per-meter lebar pelat tangga

□ Beban Mati

a. pasir (2 cm)	= 0,02 . 18	= 0,36	kN/m
b. spesi (2 cm)	= 2 . 0,21	= 0,42	kN/m
c. ubin (2 cm)	= 2 . 0,24	= 0,48	kN/m
d. railing (asumsi = 90 cm)	= 2 . 0,9 . 1,5	= 2,7	kN/m +
		<hr/>	
	qd _{tangga}	= 3,96	kN/m

□ Beban Hidup

b.h. tangga

$$ql_{tangga} = 3 \quad \text{kN/m}$$

Hitungan beban per-meter lebar pelat bordes

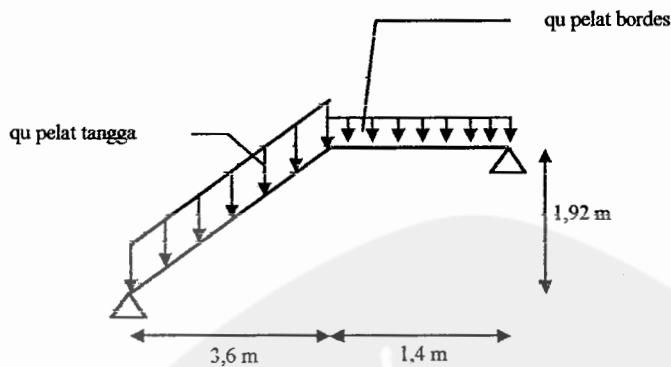
□ Beban Mati

a. pasir (2 cm)	= 0,02 . 18	= 0,36	kN/m
b. spesi (2 cm)	= 2 . 0,21	= 0,42	kN/m
c. ubin (2 cm)	= 2 . 0,24	= 0,48	kN/m
d. railing (asumsi = 90 cm)	= 2 . 0,9 . 1,5	= 2,7	kN/m +
		<hr/>	
	qd _{bordes}	= 3,96	kN/m

□ Beban Hidup

b.h. tangga

$$ql_{bordes} = 3 \quad \text{kN/m}$$



Pembebanan Tangga Lantai 2-3

Dengan bantuan *software* ETABS dapat dihasilkan reaksi tumpuan, gaya geser, dan momen yang bekerja pada tangga. Dari hasil analisis didapatkan momen dan gaya geser yang terjadi di tumpuan dan lapangan pada pelat tangga sebagai berikut :

$$Mu \text{ lapangan} = 19,19 \text{ kNm}$$

$$Mu \text{ tumpuan} = 9,75 \text{ kNm}$$

$$Vu = 30,36 \text{ kN}$$

Penulangan pelat tangga

1) tulangan pokok

a. lapangan

$$M_U = M_{\max} = 19,19 \text{ kNm}$$

$$M_n = \frac{M_U}{\phi} = \frac{19,19}{0,8} = 23,9875 \text{ kNm}$$

Direncanakan tulangan pokok P12

$$b = 1 \text{ m} = 1000 \text{ mm}$$

tebal selimut beton = 20 mm

$d = \text{tebal pelat} - \text{tebal selimut beton} - 0,5 \cdot \text{Diameter tulangan pokok}$

$$= h - 20 - 0,5 \cdot D$$

$$= 180 - 20 - 0,5 \cdot 12 = 154 \text{ mm}$$

$$Rn = \frac{Mn}{b \cdot d^2} = \frac{23,9875 \cdot 10^6}{1000 \cdot 154^2} = 1,0114$$

$$\begin{aligned} \rho_b &= \left(\frac{0,85 \cdot f'_c \cdot \beta_1}{f_y} \cdot \left(\frac{600}{600 + f_y} \right) \right) \\ &= \left(\frac{0,85 \cdot 25 \cdot 0,85}{240} \cdot \left(\frac{600}{600 + 240} \right) \right) = 0,0538 \end{aligned}$$

$$\rho_{\text{maks}} = 0,75 \cdot \rho_b = 0,75 \cdot 0,0538 = 0,0404$$

$$\rho_{\text{min}} = 0,0018 \cdot \frac{400}{f_y} = 0,0018 \cdot \frac{400}{240} = 0,003$$

$$\begin{aligned} \rho &= \frac{0,85 \cdot f'_c}{f_y} \cdot \left\{ 1 - \sqrt{\left(1 - \frac{2 \cdot Rn}{0,85 \cdot f'_c} \right)} \right\} \\ &= \frac{0,85 \cdot 25}{240} \cdot \left\{ 1 - \sqrt{\left(1 - \frac{2 \cdot 1,0114}{0,85 \cdot 25} \right)} \right\} = 0,0043 \end{aligned}$$

Kontrol

$$\rho_{\text{min}} < \rho < \rho_{\text{maks}}$$

$$0,003 < 0,0043 < 0,0404$$

$$As = \rho \cdot b \cdot d = 0,0043 \cdot 1000 \cdot 154 = 662,2 \text{ mm}^2$$

Jarak antar tulangan

$$s = \frac{\frac{\pi}{4} \cdot 12^2 \cdot 1000}{662,2} = 170,7903 \approx 100 \text{ mm}$$

Syarat s_{max}

$$s_{max1} < (3h = 3 \cdot 180 = 540 \text{ mm})$$

$$s_{max2} < 500 \text{ mm} \implies \text{menentukan}$$

$$s = 150 \text{ mm} < (s_{max2} = 500 \text{ mm}) \dots \dots \text{sesuai!}$$

Maka digunakan tulangan P12-100 ($As = 1130,9734 \text{ mm}^2$)

Check kapasitas lentur

$$d \text{ aktual} = d \text{ asumsi} = 154 \text{ mm}$$

$$a = \frac{As \cdot f_y}{0,85 \cdot f'_c \cdot b} = \frac{1130,9734 \cdot 240}{0,85 \cdot 25 \cdot 1000} = 12,7733 \text{ mm}$$

$$\begin{aligned} Mn &= As \cdot f_y \left(d - \frac{a}{2} \right) \\ &= 1130,9734 \cdot 240 \left(154 - \frac{12,7733}{2} \right) \\ &= 40067225,36 \text{ Nmm} = 40,0672 \text{ kNm} \end{aligned}$$

$$Mu = \phi \cdot Mn$$

$$= 0,8 \cdot 40,0672 \text{ kNm}$$

$$= 32,0538 > (M_u \text{ lapangan} = 19,19 \text{ kNm}) \dots \dots \text{ok!}$$

b. tumpuan

$$M_u = M_{\max} = 9,75 \text{ kNm}$$

$$Mn = \frac{M_u}{\phi} = \frac{9,75}{0,8} = 12,1875 \text{ kNm}$$

Direncanakan tulangan pokok D12

$$b = 1 \text{ m} = 1000 \text{ mm}$$

$$\text{tebal selimut beton} = 20 \text{ mm}$$

$$d = \text{tebal pelat} - \text{tebal selimut beton} - 0,5 \text{ Diameter tulangan pokok}$$

$$= h - 20 - 0,5 \cdot D$$

$$= 180 - 20 - 0,5 \cdot 12 = 154 \text{ mm}$$

$$Rn = \frac{Mn}{b \cdot d^2} = \frac{12,1875 \cdot 10^6}{1000 \cdot 154^2} = 0,5139$$

$$\begin{aligned} \rho_b &= \left(\frac{0,85 \cdot f'_c \cdot \beta_1}{f_y} \cdot \left(\frac{600}{600 + f_y} \right) \right) \\ &= \left(\frac{0,85 \cdot 25 \cdot 0,85}{240} \cdot \left(\frac{600}{600 + 240} \right) \right) = 0,0538 \end{aligned}$$

$$\rho_{\max} = 0,75, \rho_b = 0,0404$$

$$\rho_{\min} = 0,0018 \cdot \frac{400}{f_y} = 0,0018 \cdot \frac{400}{240} = 0,003$$

$$\begin{aligned} \rho &= \frac{0,85 \cdot f'_c}{f_y} \cdot \left\{ 1 - \sqrt{\left(1 - \frac{2 \cdot Rn}{0,85 \cdot f'_c} \right)} \right\} \\ &= \frac{0,85 \cdot 25}{240} \cdot \left\{ 1 - \sqrt{\left(1 - \frac{2 \cdot 0,5139}{0,85 \cdot 25} \right)} \right\} = 0,0022 \end{aligned}$$

Kontrol

$$\rho_{\min} < \rho < \rho_{\max}$$

$$0,003 > 0,0022 < 0,0404$$

Rasio penulangan yang dihitung ternyata lebih kecil dari rasio penulangan minimumnya. Rasio penulangan yang dipakai adalah rasio penulangan minimumnya saja.

$$As = \rho_{\min} \cdot b \cdot d = 0,003 \cdot 1000 \cdot 154 = 462 \text{ mm}^2$$

Jarak antar tulangan

$$s = \frac{\frac{\pi}{4} \cdot 12^2 \cdot 1000}{462} = 244,7994 \approx 100 \text{ mm}$$

Syarat s_{\max}

$$s_{\max 1} < (3h = 3 \cdot 180 = 540 \text{ mm}) \implies \text{menentukan}$$

$$s_{\max 2} < 500 \text{ mm}$$

$$s = 100 \text{ mm} < (s_{\max 2} = 500 \text{ mm}) \dots \dots \dots \text{sesuai !}$$

Maka digunakan tulangan P12-100 ($As = 1130,9734 \text{ mm}^2$)

Check kapasitas lentur

$$d \text{ aktual} = d \text{ asumsi} = 154 \text{ mm}$$

$$a = \frac{As \cdot f_y}{0,85 \cdot f'_c \cdot b} = \frac{1130,9734 \cdot 240}{0,85 \cdot 25 \cdot 1000} = 12,7733 \text{ mm}$$

$$\begin{aligned}
 Mn &= As.fy \left(d - \frac{a}{2} \right) \\
 &= 1130,9734.240 \left(154 - \frac{12,7733}{2} \right) \\
 &= 40067225,36 \text{ Nmm} = 40,0672 \text{ kNm}
 \end{aligned}$$

$$\begin{aligned}
 Mu &= \phi \cdot Mn \\
 &= 0,8 \cdot 40,0672 \text{ kNm} \\
 &= 32,0538 > (M_u \text{ lapangan} = 12,77 \text{ kNm}) \dots \dots \text{ok!}
 \end{aligned}$$

2) tulangan susut dan suhu pelat tangga

Luas tulangan

$$\begin{aligned}
 As_{min} &= 0,003 \cdot b \cdot h \\
 &= 0,003 \cdot 1000 \cdot 180 \\
 &= 540 \text{ mm}^2
 \end{aligned}$$

Dipakai diameter tulangan susut dan suhu 10 mm ($f_y = 240 \text{ MPa}$)

Jarak antar tulangan

$$s = \frac{\frac{\pi}{4} \cdot 10^2 \cdot 1000}{540} = 145,4441 \approx 100 \text{ mm}$$

Syarat s_{max}

$$s_{max1} < (5h = 5 \cdot 180 = 900 \text{ mm})$$

$$s_{max2} < 450 \text{ mm} \quad \rightarrow \text{menentukan}$$

$$s = 100 \text{ mm} < (s_{max2} = 450 \text{ mm}) \dots \dots \text{sesuai!}$$

Maka digunakan tulangan P10 -100 ($As = 785,3982 \text{ mm}^2$)

3) tulangan geser

$V_U = 30,36 \text{ kN}$ (hasil analisis sebelumnya)

$$V_C = \frac{1}{6} \cdot \sqrt{f_c} \cdot b \cdot d = \frac{1}{6} \cdot \sqrt{25} \cdot 1000 \cdot 154 = 128333,3333 \text{ N} = 128,3333 \text{ kN}$$

$$V_U = 30,36 < \phi V_C = 0,75 \cdot 128,3333 = 96,25 \text{ kN}$$

Setelah diperiksa ternyata tulangan geser tidak diperlukan karena dari penampang beton sendiri sudah bisa mengatasi geser yang terjadi.

Penulangan pelat bordes

1) tulangan pokok

a. lapangan

$$M_U = M_{\max} = 2,04 \text{ kNm} \text{ (momen positif)}$$

$$Mn = \frac{M_U}{\phi} = \frac{2,04}{0,8} = 2,55 \text{ kNm}$$

Direncanakan tulangan pokok D12

$$b = 1 \text{ m} = 1000 \text{ mm}$$

$$\text{tebal selimut beton} = 20 \text{ mm}$$

$$d = \text{tebal pelat} - \text{tebal selimut beton} - 0,5 \cdot \text{Diameter tulangan pokok}$$

$$= h - 20 - 0,5 \cdot D$$

$$= 180 - 20 - 0,5 \cdot 12 = 154 \text{ mm}$$

$$Rn = \frac{Mn}{b \cdot d^2} = \frac{2,55 \cdot 10^6}{1000 \cdot 154^2} = 0,1075$$

$$\rho_b = \left(\frac{0,85 \cdot f'_c \cdot \beta_1}{f_y} \cdot \left(\frac{600}{600 + f_y} \right) \right)$$

$$= \left(\frac{0,85 \cdot 25 \cdot 0,85}{240} \cdot \left(\frac{600}{600 + 240} \right) \right) = 0,0538$$

$$\rho_{\text{maks}} = 0,75 \cdot \rho_b = 0,75 \cdot 0,0538 = 0,0404$$

$$\rho_{\text{min}} = 0,0018 \cdot \frac{400}{f_y} = 0,0018 \cdot \frac{400}{240} = 0,003$$

$$\rho = \frac{0,85 \cdot f'_c}{f_y} \cdot \left\{ 1 - \sqrt{\left(1 - \frac{2 \cdot Rn}{0,85 \cdot f'_c} \right)} \right\}$$

$$= \frac{0,85 \cdot 25}{240} \cdot \left\{ 1 - \sqrt{\left(1 - \frac{2,0,1075}{0,85 \cdot 25} \right)} \right\} = 0,0004$$

Kontrol

$$\rho_{\text{min}} < \rho < \rho_{\text{maks}}$$

$$0,003 > 0,0004 < 0,0404$$

Rasio penulangan yang dihasilkan lebih kecil dari rasio penulangan minimumnya, jadi yang digunakan untuk menghitung luas tulangannya digunakan rasio yang minimum saja.

$$As = \rho_{\text{min}} \cdot b \cdot d = 0,003 \cdot 1000 \cdot 154 = 462 \text{ mm}^2$$

Jarak antar tulangan

$$s = \frac{\frac{\pi}{4} \cdot 12^2 \cdot 1000}{462} = 244,7994 \approx 200 \text{ mm}$$

Syarat s_{max}

$$s_{max1} < (3h = 3 \cdot 180 = 540 \text{ mm})$$

$$s_{max2} < 500 \text{ mm} \implies \text{menentukan}$$

$$s = 200 \text{ mm} < (s_{max2} = 540 \text{ mm}) \dots \dots \dots \text{sesuai!}$$

Maka digunakan tulangan P12-200 ($A_s = 565,4867 \text{ mm}^2$)

Check kapasitas lentur

$$d \text{ aktual} = d \text{ asumsi} = 154 \text{ mm}$$

$$a_c = \frac{A_s \cdot f_y}{0,85 \cdot f'_c \cdot b} = \frac{565,4867 \cdot 240}{0,85 \cdot 25 \cdot 1000} = 6,3867 \text{ mm}$$

$$\begin{aligned} Mn &= A_s \cdot f_y \left(d - \frac{a_c}{2} \right) \\ &= 565,4867 \cdot 240 \left(154 - \frac{6,3867}{2} \right) \\ &= 20466997,16 \text{ Nmm} = 20,467 \text{ kNm} \end{aligned}$$

$$Mu = \phi \cdot Mn$$

$$= 0,8 \cdot 20,467 \text{ kNm}$$

$$= 16,3736 > (M_u \text{ tumpuan} = 5,302 \text{ kNm}) \dots \dots \dots \text{ok!}$$

b. tumpuan

$$M_u = M_{\max} = 9,75 \text{ kNm}$$

Momen pada tumpuan pelat bordes sama dengan momen pada tumpuan pelat tangga, dengan demikian penulangannya sama dengan penulangan pelat tangga di daerah tumpuan.

2) tulangan susut dan suhu pelat bordes

Luas tulangan

$$\begin{aligned} As_{min} &= 0,003 \cdot b \cdot h \\ &= 0,003 \cdot 1000 \cdot 180 \\ &= 540 \text{ mm}^2 \end{aligned}$$

Dipakai diameter tulangan susut dan suhu 10 mm ($f_y = 240 \text{ MPa}$)

Jarak antar tulangan

$$s = \frac{\frac{\pi}{4} \cdot 10^2 \cdot 1000}{540} = 145,4441 \approx 100 \text{ mm}$$

Syarat s_{max}

$$s_{max1} < (5h = 5 \cdot 180 = 900 \text{ mm})$$

$$s_{max2} < 450 \text{ mm} \quad \Longrightarrow \text{menentukan}$$

$$s = 100 \text{ mm} < (s_{max2} = 450 \text{ mm}) \dots \dots \text{sesuai !}$$

Maka digunakan tulangan P10 - 100 ($As = 785,3982 \text{ mm}^2$)

Momen – momen yang terjadi pada tangga dari bordes ke lantai atas

Pelat tangga

Momen lapangan = $M_U = M_{max} = 19,33 \text{ kNm}$, Momen yang mampu ditahan oleh penampang adalah $32,0538 \text{ kNm}$.

Momen tumpuan = $M_U = M_{\max} = 10,64 \text{ kNm}$, Momen yang mampu ditahan oleh penampang adalah 32,0538 kNm.

Kuat geser yang terjadi $V_U = 30,54 \text{ kN}$, Kuat geser yang mampu ditahan oleh pelat beton 96,25 kN.

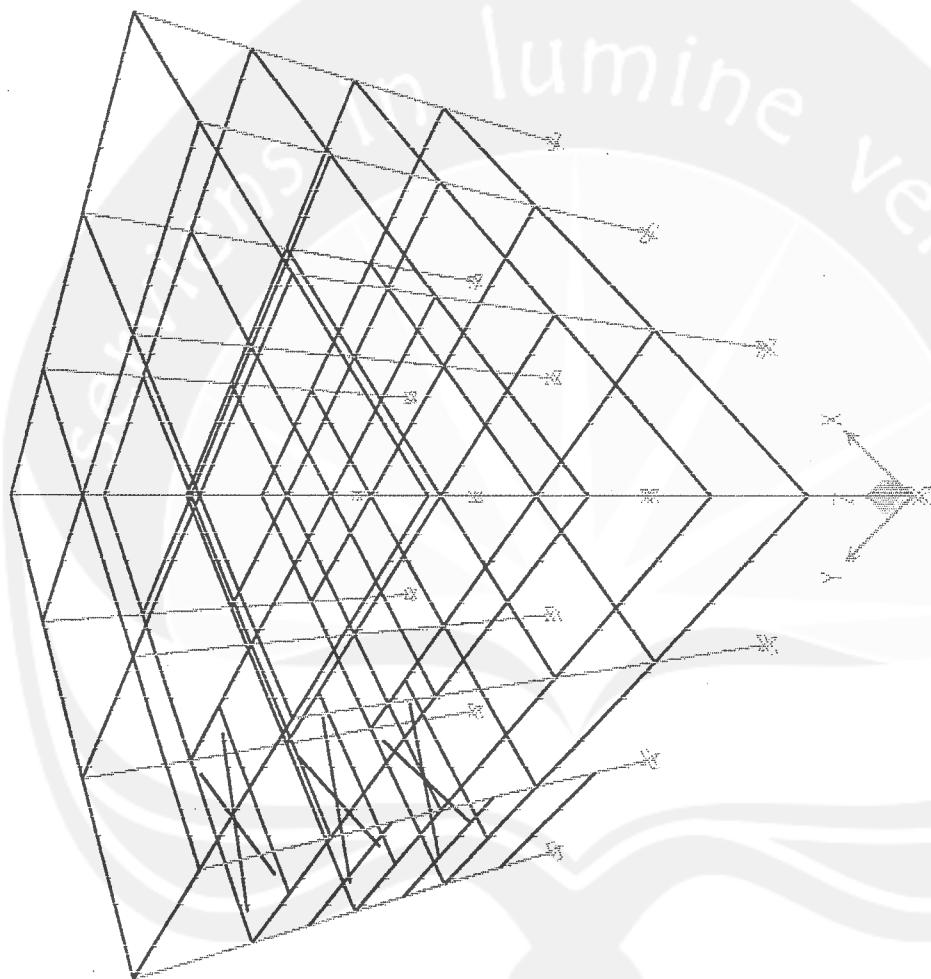
Pelat bordes

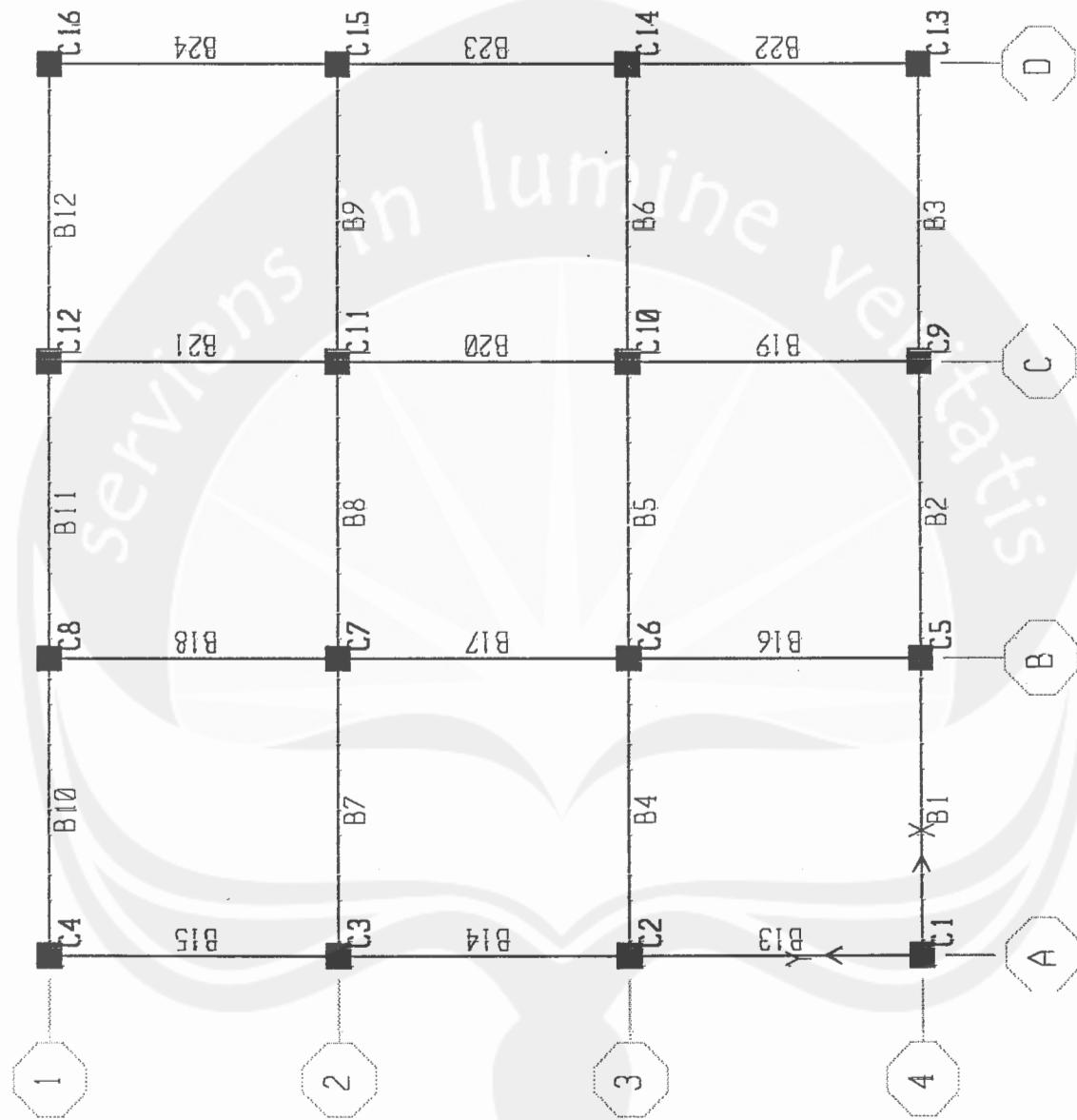
Momen lapangan = $M_U = M_{\max} = 1,82 \text{ kNm}$, Momen yang mampu ditahan oleh penampang adalah 16,3736 kNm.

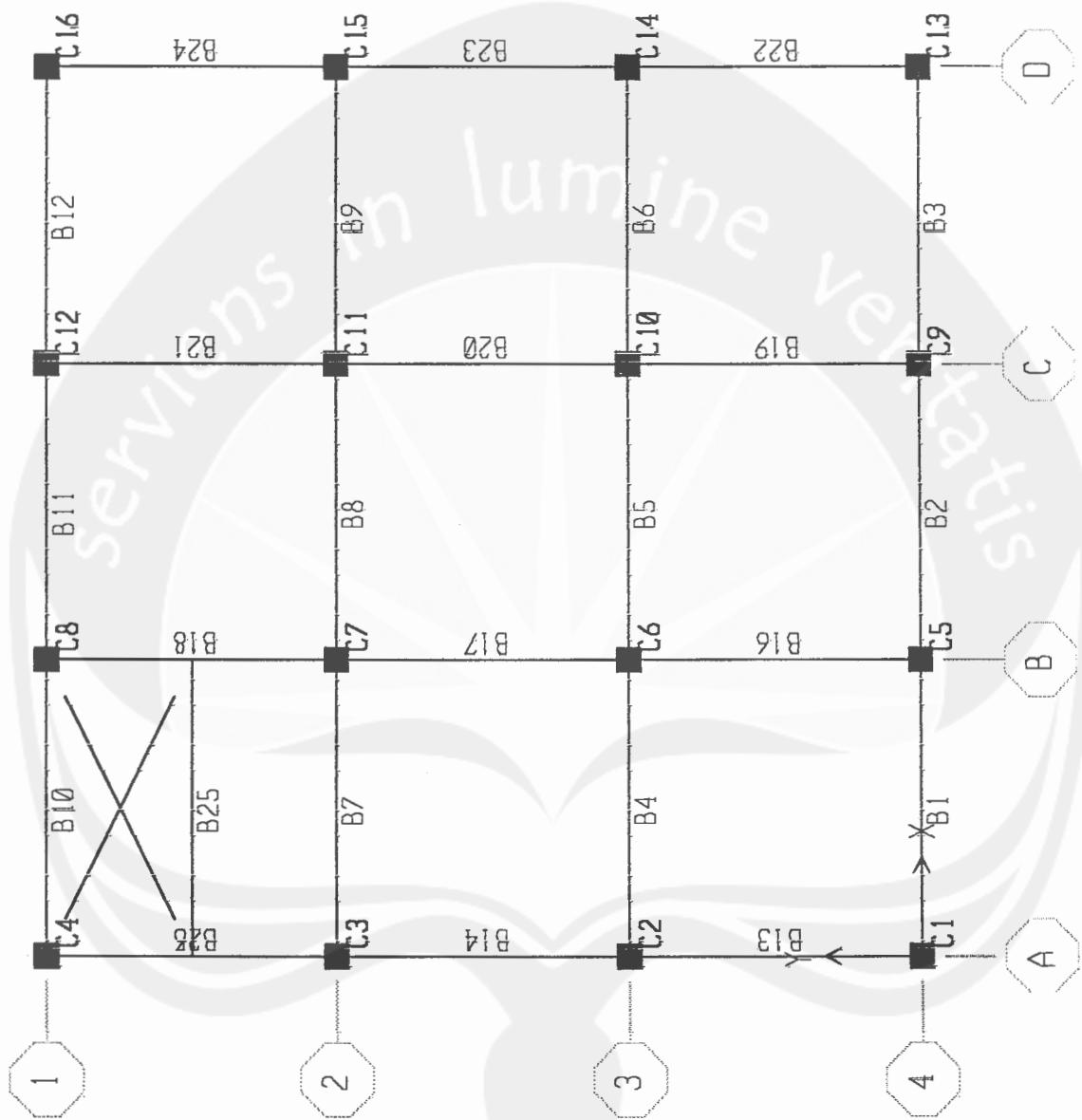
Momen tumpuan = $M_U = M_{\max} = 10,64 \text{ kNm}$, Momen yang mampu ditahan oleh penampang adalah 32,0538 kNm.

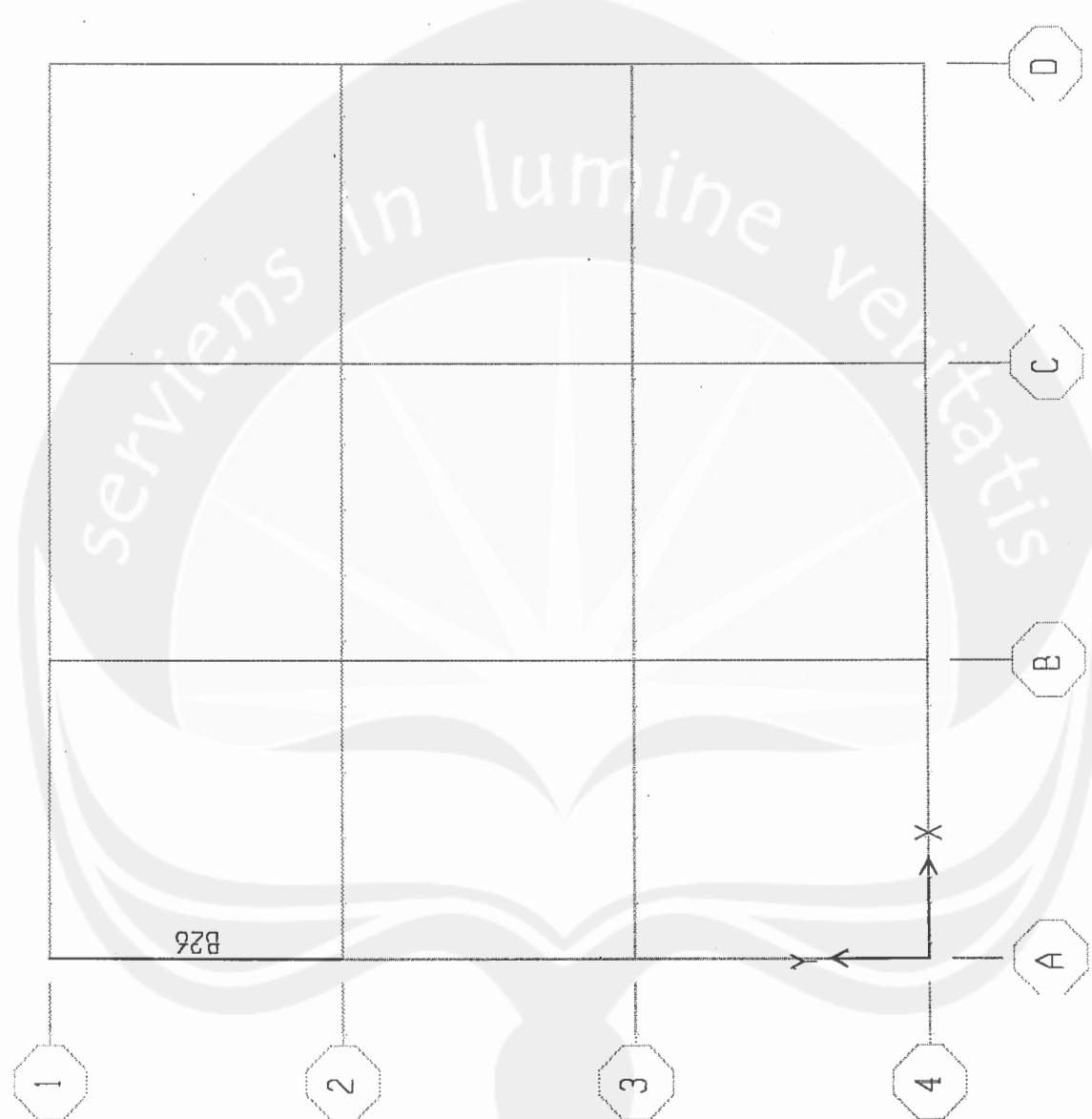
Kuat geser yang terjadi $V_U = 19,17 \text{ kN}$, Kuat geser yang mampu ditahan oleh pelat beton 96,25 kN. Penulangan susutnya juga dibuat sama dengan penulangan sebelumnya.

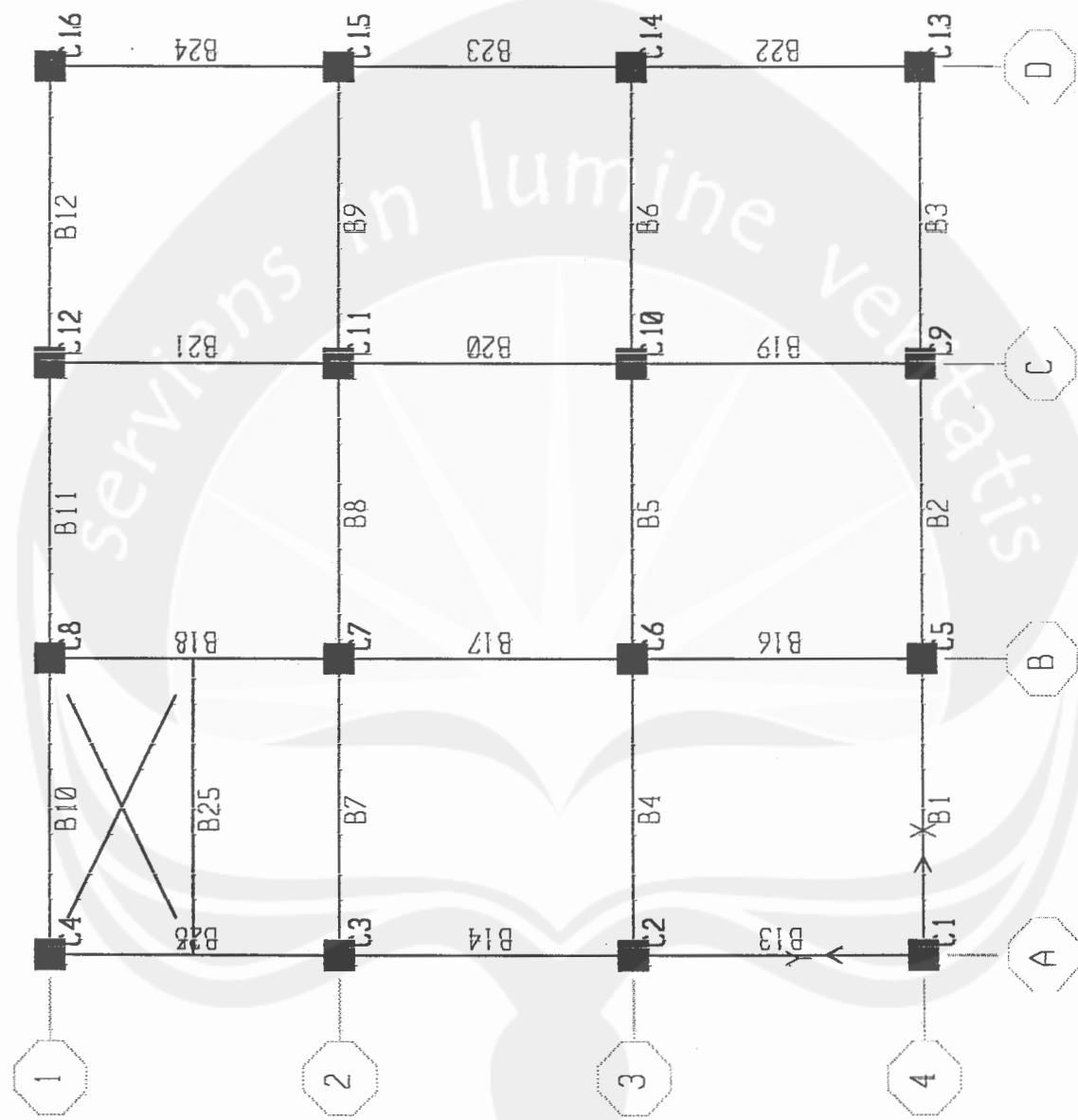
Lamp 11

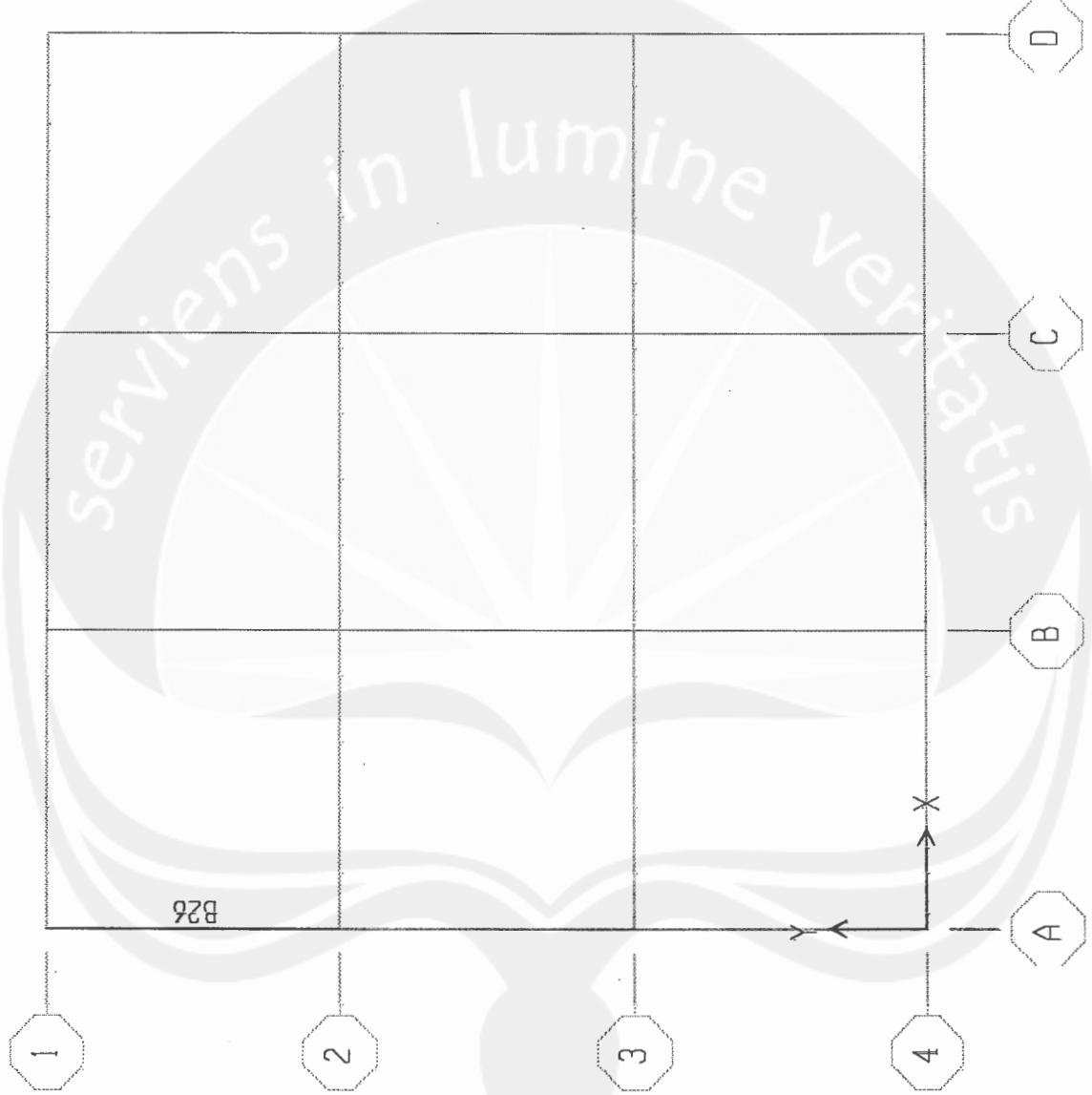


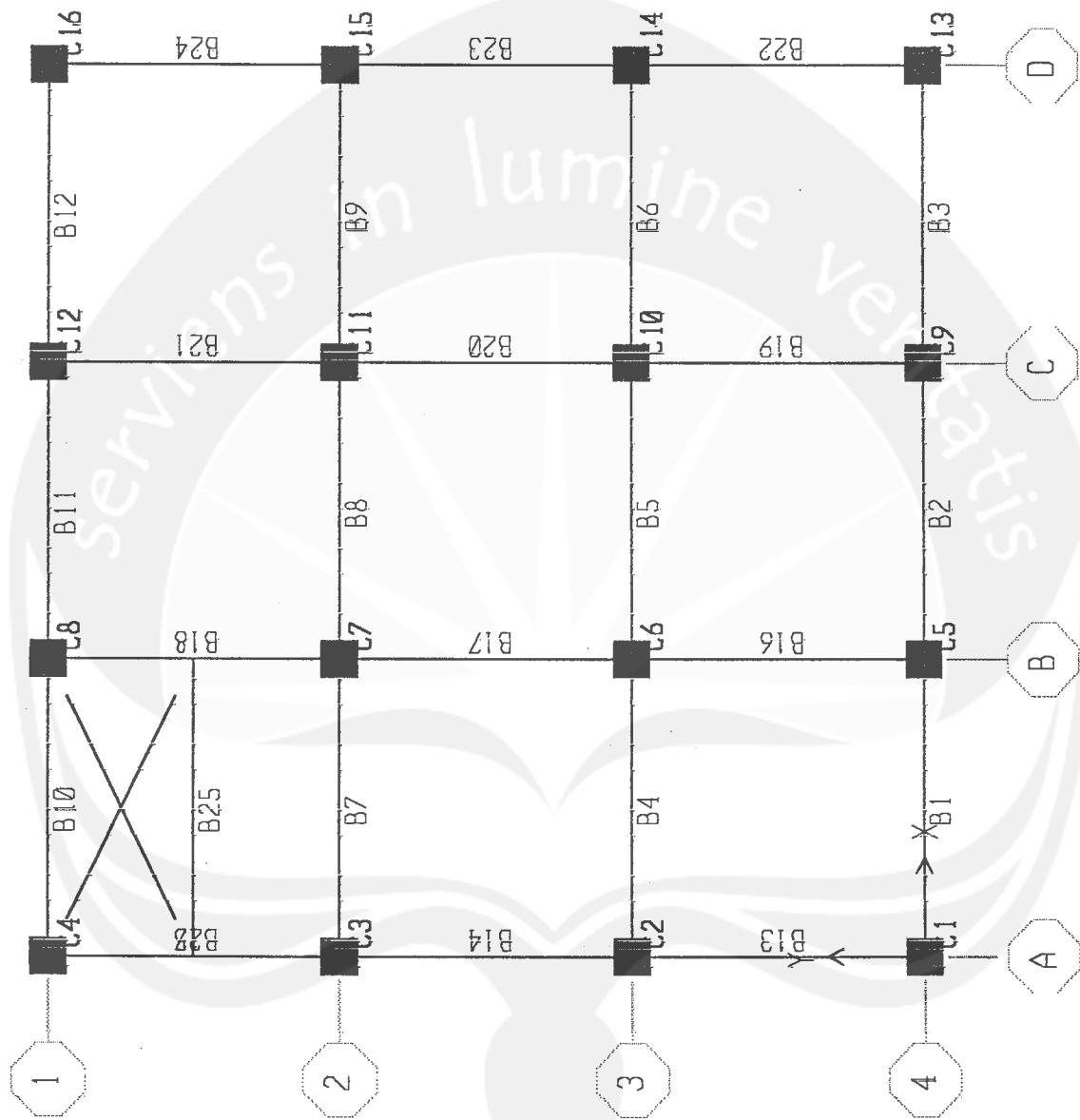


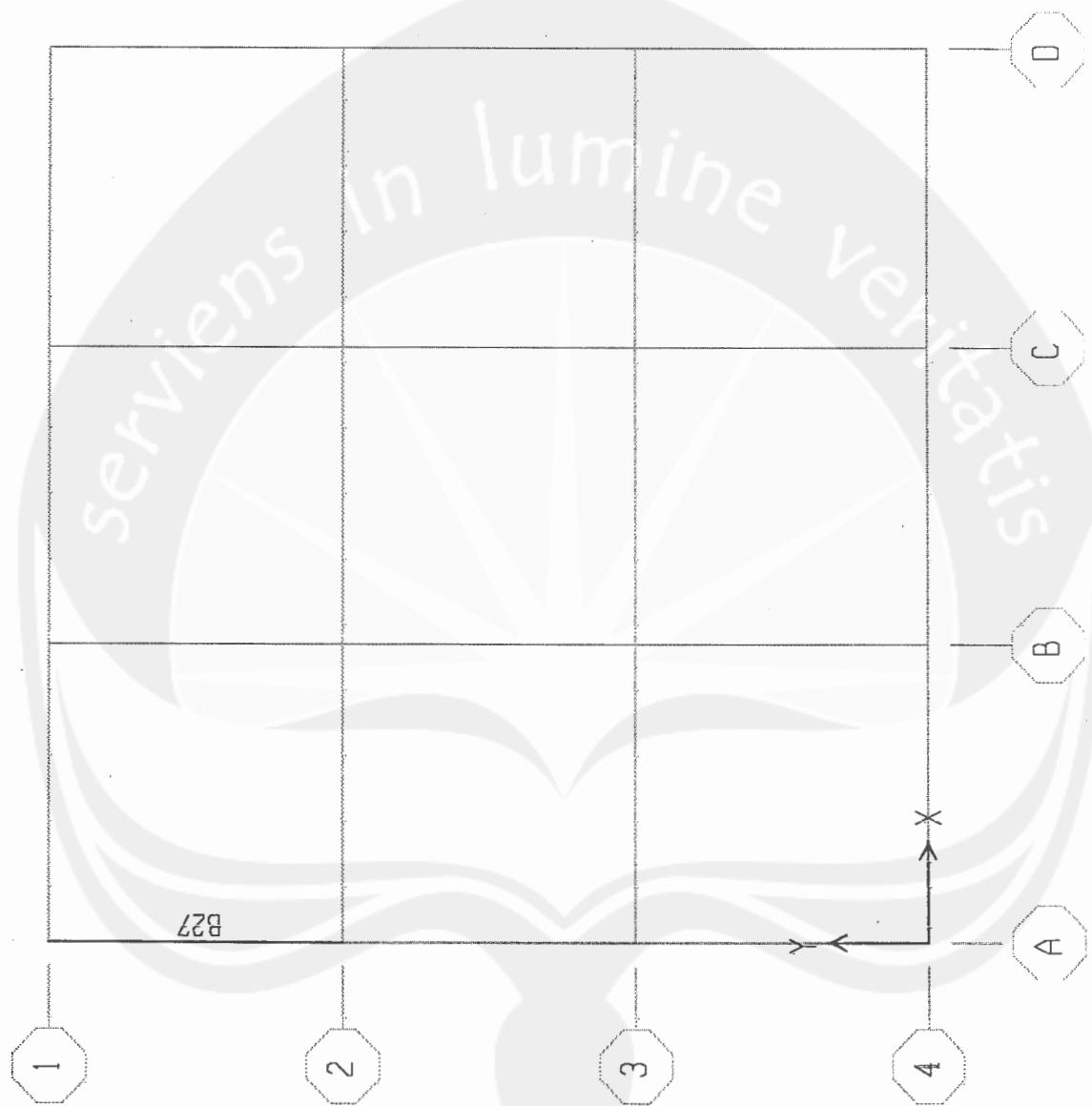


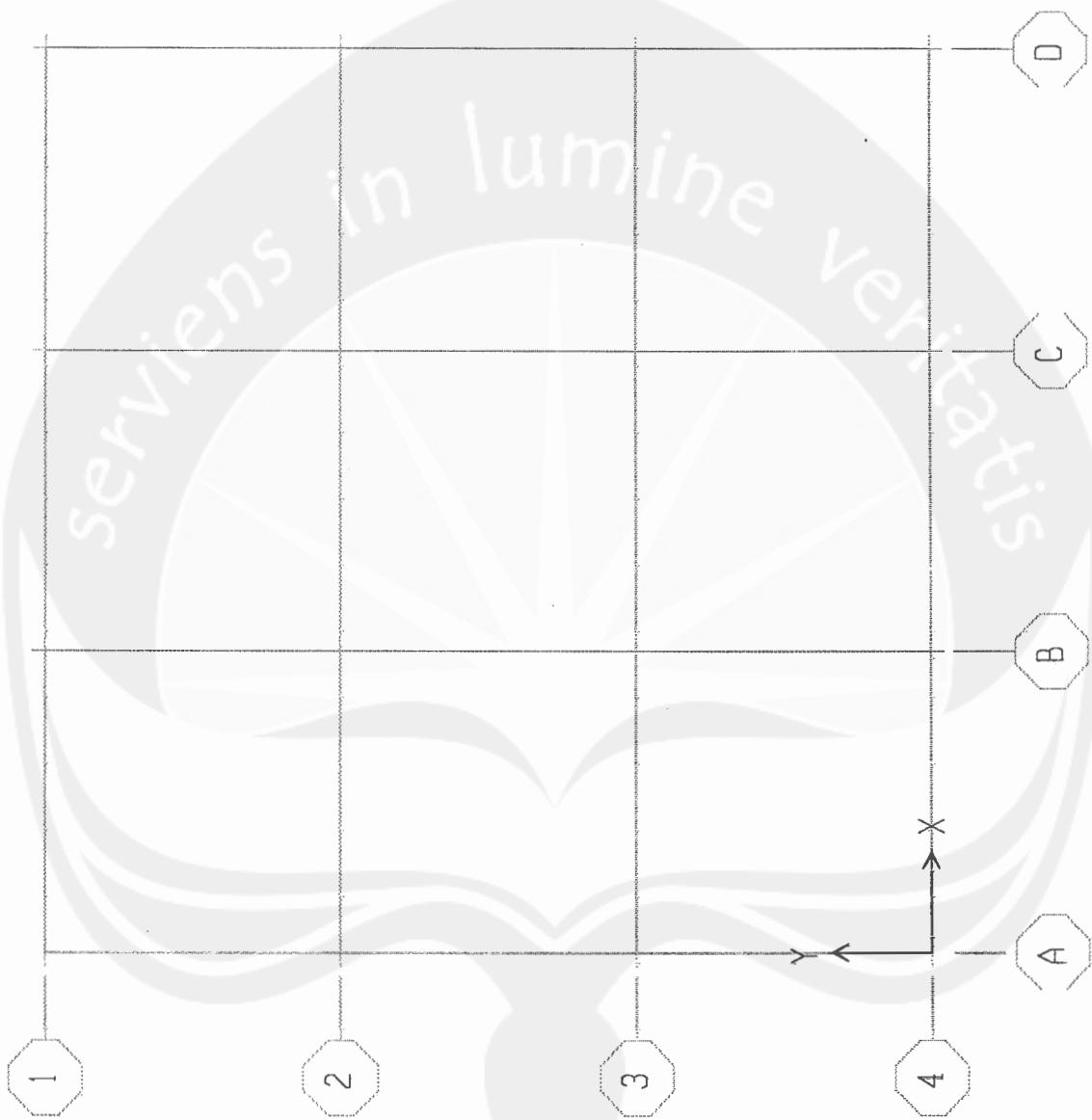












Input untuk mencari gaya geser gempa

S T O R Y D A T A

STORY	SIMILAR TO	HEIGHT	ELEVATION
ATAP	None	3.000	13.000
LANTAI 3	None	3.000	10.000
LANTAI 2	LANTAI 3	3.000	7.000
LANTAI 1	LANTAI 3	4.000	4.000
BASE	None		0.000

C O O R D I N A T E S Y S T E M L O C A T I O N D A T A

NAME	TYPE	X	Y	ROTATION	BUBBLESIZE
GLOBAL	Cartesian	0.000	0.000	0.0000	1.2500

P O I N T C O O R D I N A T E S

POINT	X	Y	DZ-BELOW
1	0.000	0.000	0.000
2	0.000	5.000	0.000
3	0.000	10.000	0.000
4	0.000	15.000	0.000
5	5.000	0.000	0.000
6	5.000	5.000	0.000
7	5.000	10.000	0.000
8	5.000	15.000	0.000
9	10.000	0.000	0.000
10	10.000	5.000	0.000
11	10.000	10.000	0.000
12	10.000	15.000	0.000
13	15.000	0.000	0.000
14	15.000	5.000	0.000
15	15.000	10.000	0.000
16	15.000	15.000	0.000
17	0.000	12.500	0.000
18	5.000	12.500	0.000
4-1	0.000	15.000	1.600
3-1	0.000	10.000	1.600
4-2	0.000	15.000	2.080
3-2	0.000	10.000	2.080

M A S S S O U R C E D A T A

MASS	LATERAL	LUMP MASS
FROM	MASS ONLY	AT STORIES

Mass & Loads Yes Yes

M A S S S O U R C E L O A D S

LOAD	MULTIPLIER
BEBAN	1.0000
LIVE	1.0000
RAIN	1.0000

G R O U P M A S S D A T A

GROUP	SELF MASS	SELF WEIGHT	TOTAL MASS-X	TOTAL MASS-Y	TOTAL MASS-Z
ALL	637.9800	6249.600	1136.0334	1136.0334	0.0000

M A T E R I A L L I S T B Y E L E M E N T T Y P E

ELEMENT TYPE	MATERIAL	TOTAL MASS tons	NUMBER PIECES	NUMBER STUDS
Column	CONC	123.34	64	
Beam	CONC	183.55	102	0
Floor	CONC	330.39		

MATERIAL LIST BY SECTION

SECTION	ELEMENT TYPE	NUMBER PIECES	TOTAL LENGTH meters	TOTAL MASS tons	NUMBER STUDS
K50	Column	16	48.000	29.37	
K40	Column	32	96.000	37.59	
B30X50	Beam	96	480.000	176.21	0
B25X40	Beam	6	30.000	7.34	0
K60	Column	16	64.000	56.39	
SLAB1	Floor			330.39	

MATERIAL LIST BY STORY

STORY	ELEMENT TYPE	MATERIAL	TOTAL WEIGHT tons	FLOOR AREA m ²	UNIT WEIGHT kg/m ²	NUMBER PIECES	NUMBER STUDS
ATAP	Column	CONC	18.80	225.000	83.5352	16	
ATAP	Beam	CONC	44.05	225.000	195.7855	24	0
ATAP	Floor	CONC	82.60	225.000	367.0978		
LANTAI 3	Column	CONC	18.80	225.000	83.5352	16	
LANTAI 3	Beam	CONC	46.50	225.000	206.6625	26	0
LANTAI 3	Floor	CONC	82.60	225.000	367.0978		
LANTAI 2	Column	CONC	29.37	225.000	130.5237	16	
LANTAI 2	Beam	CONC	46.50	225.000	206.6625	26	0
LANTAI 2	Floor	CONC	82.60	225.000	367.0978		
LANTAI 1	Column	CONC	56.39	225.000	250.6055	16	
LANTAI 1	Beam	CONC	46.50	225.000	206.6625	26	0
LANTAI 1	Floor	CONC	82.60	225.000	367.0978		
SUM	Column	CONC	123.34	900.000	137.0499	64	
SUM	Beam	CONC	183.55	900.000	203.9432	102	0
SUM	Floor	CONC	330.39	900.000	367.0978		
TOTAL	All	All	637.28	900.000	708.0909	166	0

MATERIAL PROPERTY DATA

MATERIAL NAME	MATERIAL TYPE	DESIGN TYPE	MATERIAL DIR/PLANE	MODULUS OF ELASTICITY	POISSON'S RATIO	THERMAL COEFF	SHEAR MODULUS
STEEL	Iso	Steel	All	199947979	0.3000	1.1700E-05	76903069
CONC	Iso	Concrete	All	235000000	0.2000	9.9000E-06	9791666.667
OTHER	Iso	None	All	199947979	0.3000	1.1700E-05	76903069

MATERIAL PROPERTY MASS AND WEIGHT

MATERIAL NAME	MASS PER UNIT VOL	WEIGHT PER UNIT VOL
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STEEL	7.8271E+00	7.6820E+01
CONC	2.4500E+00	2.4000E+01
OTHER	7.8271E+00	7.6820E+01

MATERIAL DESIGN DATA FOR CONCRETE MATERIALS

MATERIAL NAME	LIGHTWEIGHT CONCRETE	CONCRETE FC	REBAR FY	REBAR FYS	LIGHTWT REDUC FACT
CONC	No	25000.000	400000.000	240000.000	N/A

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	MATERIAL NAME	SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE	CONC COL	CONC BEAM
Conctol	CONC	Rectangular	Yes	
ConeBm	CONC	Rectangular		Yes
K50	CONC	Rectangular	Yes	
K40	CONC	Rectangular	Yes	
B30X50	CONC	Rectangular		Yes
B25X40	CONC	Rectangular		Yes
K60	CONC	Rectangular	Yes	
B40X60	CONC	Rectangular		Yes
B30X40	CONC	Rectangular		Yes

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	SECTION DEPTH	FLANGE WIDTH TOP	FLANGE THICK TOP	WEB THICK	FLANGE WIDTH BOT	FLANGE THICK BOT
K50	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000
K40	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000
B30X50	0.5000	0.3000	0.0000	0.0000	0.0000	0.0000
B25X40	0.4000	0.2500	0.0000	0.0000	0.0000	0.0000
K60	0.6000	0.6000	0.0000	0.0000	0.0000	0.0000
B40X60	0.6000	0.4000	0.0000	0.0000	0.0000	0.0000
B30X40	0.4000	0.3000	0.0000	0.0000	0.0000	0.0000

FRAME SECTION WEIGHTS AND MASSES

FRAME SECTION NAME	TOTAL WEIGHT	TOTAL MASS
ConcCol	0.0000	0.0000
ConcBm	0.0000	0.0000
K50	286.0000	29.4000
K40	368.6400	37.6320
B30X50	1728.0000	176.4000
B25X40	72.0000	7.3500
K60	552.9600	56.4480
B40X60	0.0000	0.0000
B30X40	0.0000	0.0000

CONCRETE COLUMN DATA

FRAME SECTION NAME	REINF CONFIGURATION LONGIT	REINF LATERAL	REINF SIZE/TYPE	NUM BARS 3DIR/2DIR	NUM BARS CIRCULAR	BAR COVER
ConcCol	Rectangular Ties	#9/Design		3/3	N/A	0.0457
K50	Rectangular Ties	202/Design		3/3	N/A	0.0400
K40	Rectangular Ties	200/Design		3/3	N/A	0.0400
K60	Rectangular Ties	#9/Design		3/3	N/A	0.0600

CONCRETE BEAM DATA

FRAME SECTION NAME	TOP COVER	BOT COVER	TOP LEFT AREA	TOP RIGHT AREA	BOT LEFT AREA	BOT RIGHT AREA
ConcBm	0.0457	0.0457	0.000	0.000	0.000	0.000
B30X50	0.0400	0.0400	0.000	0.000	0.000	0.000
B25X40	0.0400	0.0400	0.000	0.000	0.000	0.000
B40X60	0.0500	0.0500	0.000	0.000	0.000	0.000
B30X40	0.0400	0.0400	0.000	0.000	0.000	0.000

SHELL SECTION PROPERTY DATA

SHELL SECTION	MATERIAL NAME	SHELL TYPE	LOAD DIST ONE WAY	MEMBRANE THICK	BENDING THICK	TOTAL WEIGHT	TOTAL MASS
WALL1	CONC	Shell-Thin	No	0.2500	0.2500	0.0000	0.0000
SLAB1	CONC	Membrane	No	0.1500	0.1500	3240.0000	330.7500
DECK1	CONC	Membrane	No	0.0009	0.0089	0.0000	0.0000
PLANK1	CONC	Membrane	Yes	0.2500	0.2500	0.0000	0.0000

STATIC LOAD CASES

STATIC CASE	CASE TYPE	AUTO LAT LOAD	SELF WT MULTIPLIER
BEBAN	DEAD	N/A	0.0000
LIVE	LIVE	N/A	0.0000
RAIN	LIVE	N/A	0.0000
QUAKEX	QUAKE	USER_LOADS	0.0000
QUKEY	QUAKE	USER_LOADS	0.0000
DEAD	DEAD	N/A	1.0000 ✓

RESPONSE SPECTRUM CASES

RESP SPEC CASE: SPEC1

BASIC RESPONSE SPECTRUM DATA

MODAL COMBO	DIRECTION COMBO	MODAL DAMPING	SPECTRUM ANGLE
CQC	SRSS	0.0500	0.0000

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

DIRECTION	FUNCTION	SCALE FACT
U1	SPEKTRUM	9.8100
U2	----	N/A
UZ	----	N/A

RESP SPEC CASE: SPEC2

BASIC RESPONSE SPECTRUM DATA

MODAL COMBO	DIRECTION COMBO	MODAL DAMPING	SPECTRUM ANGLE
CQC	SRSS	0.0500	0.0000

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

DIRECTION	FUNCTION	SCALE FACT
U1	----	N/A
U2	SPEKTRUM	9.8100
UZ	----	N/A

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	BEBAN	Static	1.4000
COMB2	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.6000
		RAIN	Static	0.5000
COMB3	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	1.0000
		QUAKEX	Static	0.3000
COMB4	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	1.0000
		QUAKEX	Static	-0.3000
COMB5	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	-1.0000
		QUAKEX	Static	0.3000
COMB6	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	-1.0000
		QUAKEX	Static	-0.3000
COMB7	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEY	Static	1.0000
		QUAKEY	Static	0.3000
COMB8	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEY	Static	1.0000
		QUAKEX	Static	-0.3000
COMB9	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEY	Static	-1.0000
		QUAKEX	Static	0.3000
COMB10	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEY	Static	-1.0000
		QUAKEX	Static	-0.3000
COMB11	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	1.0000
		QUAKEY	Static	0.3000
COMB12	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	1.0000
		QUAKEY	Static	-0.3000
COMB13	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	-1.0000
		QUAKEY	Static	0.3000

COMB14	ADD	BEBAN QUAKEX QUAKEY	Static Static Static	0.9000 -1.0000 -0.3000
COMB15	ADD	BEBAN QUAKEY QUAKEX	Static Static Static	0.9000 1.0000 0.3000
COMB16	ADD	BEBAN QUAKEY QUAKEX	Static Static Static	0.9000 1.0000 -0.3000
COMB17	ADD	BEBAN QUAKEY QUAKEX	Static Static Static	0.9000 -1.0000 0.3000
COMB18	ADD	BEBAN QUAKEY QUAKEX	Static Static Static	0.9000 -1.0000 -0.3000

A U T O S E I S M I C U S E R L O A D S
Case: QUAKEY

AUTO SEISMIC INPUT DATA

Additional Eccentricity = 0%

SPECIFIED AUTO SEISMIC LOADS AT DIAPHRAGM CENTER OF MASS

STORY	DIAPHRAGM	FX	FY	MZ
ATAP	D1	0.00	0.00	0.000
LANTAI 3	D1	0.00	0.00	0.000
LANTAI 2	D1	0.00	0.00	0.000
LANTAI 1	D1	0.00	0.00	0.000

AUTO SEISMIC CALCULATION RESULTS

Auto seismic calculation results are not currently available

A U T O S E I S M I C U S E R L O A D S
Case: QUAKEY

SPECIFIED AUTO SEISMIC LOADS

STORY	DIAPHRAGM	FX	FY	MZ	X	Y
ATAP	D1	0.00	0.00	0.000	0.000	0.000
LANTAI 3	D1	0.00	0.00	0.000	0.000	0.000
LANTAI 2	D1	0.00	0.00	0.000	0.000	0.000
LANTAI 1	D1	0.00	0.00	0.000	0.000	0.000

AUTO SEISMIC CALCULATION RESULTS

Auto seismic calculation results are not currently available

RESPONSE SPECTRUM FUNCTION - USER

FUNCTION NAME: SPEKTRUM

PERIOD	AUCEL
0.0000	0.0353
0.2000	0.0882
1.0000	0.0882
2.0000	0.0443
3.0000	0.0294

S U P P O R T (R E S T R A I N T) D A T A

STORY	POINT	-----/ RESTRAINED DOF'S -----/					
		UX	UY	UZ	RX	RY	RZ
BASE	1	Yes	Yes	Yes	Yes	Yes	Yes
BASE	2	Yes	Yes	Yes	Yes	Yes	Yes
BASE	3	Yes	Yes	Yes	Yes	Yes	Yes
BASE	4	Yes	Yes	Yes	Yes	Yes	Yes
BASE	5	Yes	Yes	Yes	Yes	Yes	Yes
BASE	6	Yes	Yes	Yes	Yes	Yes	Yes
BASE	7	Yes	Yes	Yes	Yes	Yes	Yes
BASE	8	Yes	Yes	Yes	Yes	Yes	Yes
BASE	9	Yes	Yes	Yes	Yes	Yes	Yes
BASE	10	Yes	Yes	Yes	Yes	Yes	Yes
BASE	11	Yes	Yes	Yes	Yes	Yes	Yes
BASE	12	Yes	Yes	Yes	Yes	Yes	Yes

BASE	13	Yes	Yes	Yes	Yes	Yes	Yes
BASE	14	Yes	Yes	Yes	Yes	Yes	Yes
BASE	15	Yes	Yes	Yes	Yes	Yes	Yes
BASE	16	Yes	Yes	Yes	Yes	Yes	Yes

FRAME SECTION ASSIGNMENTS TO LINE OBJECTS

D I S T R I B U T E D L O A D A S S I G N M E N T S T O L I N E O B J E C T S

LOAD CASE	STORY LEVEL	LINE ID	LOAD TYPE	LOAD DIRECTION	ABSOLUTE DISTANCE A	ABSOLUTE DISTANCE B	LOAD A PER LENGTH	LOAD B PER LENGTH
BEBAN	LANTAI 3	B1	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B2	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B3	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B4	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B5	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B6	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B7	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	R8	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B9	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B10	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B11	Force	Gravity	0.000	5.000	7.500	7.500
REBAN	LANTAI 3	R12	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B13	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B14	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B15	Force	Gravity	0.000	5.000	7.500	7.500
REBAN	LANTAI 3	R16	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B17	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B18	Force	Gravity	2.500	3.750	19.160	19.160
BEBAN	LANTAI 3	B19	Force	Gravity	0.000	5.000	0.570	0.570
REBAN	LANTAI 3	R20	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B21	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B22	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B23	Force	Gravity	0.000	5.000	7.500	7.500
REBAN	LANTAI 3	R24	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B25	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B26	Force	Gravity	0.000	2.500	2.260	2.260
BEBAN	LANTAI 2	B1	Force	Gravity	0.000	5.000	7.500	7.500
REBAN	LANTAI 2	R2	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B3	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B4	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B5	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B6	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B7	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B8	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B9	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B10	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B11	Force	Gravity	0.000	5.000	7.500	7.500
REBAN	LANTAI 2	B12	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B13	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B14	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B15	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B16	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B17	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B18	Force	Gravity	2.500	3.750	19.160	19.160
BEBAN	LANTAI 2	B19	Force	Gravity	3.750	5.000	19.160	19.160
BESAN	LANTAI 2	S20	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B21	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B22	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B23	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B24	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B25	Force	Gravity	0.000	5.000	0.570	0.570
REBAN	LANTAI 2	B26	Force	Gravity	0.000	2.500	2.260	2.260
BEBAN	LANTAI 1	B1	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B2	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B3	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B4	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B5	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B6	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B7	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B8	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B9	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B10	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B11	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B12	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B13	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B14	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B15	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B16	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B17	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B18	Force	Gravity	2.500	3.750	21.440	21.440
BEBAN	LANTAI 1	B19	Force	Gravity	3.750	5.000	21.440	21.440
BEBAN	LANTAI 1	B20	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B21	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B22	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B23	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B24	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B25	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B27	Force	Gravity	0.000	2.500	2.260	2.260
LIVE	LANTAI 3	B18	Force	Gravity	2.500	3.750	11.608	11.608
LIVE	LANTAI 3	B26	Force	Gravity	0.000	2.500	1.710	1.710
LIVE	LANTAI 2	B18	Force	Gravity	2.500	3.750	11.608	11.608
LIVE	LANTAI 2	B18	Force	Gravity	3.750	5.000	11.608	11.608
LIVE	LANTAI 2	B26	Force	Gravity	0.000	2.500	1.710	1.710
LIVE	LANTAI 1	B18	Force	Gravity	2.500	3.750	12.992	12.992
LIVE	LANTAI 1	B18	Force	Gravity	3.750	5.000	12.992	12.992
LIVE	LANTAI 1	B27	Force	Gravity	0.000	2.500	1.710	1.710

WALL, SLAB, DECK & OPENING ASSIGNMENTS TO AREA OBJECTS

STORY LEVEL	AREA ID	AREA TYPE	SECTION TYPE	SECTION LABEL
ATAP	F1	Floor	Slab	SLAB1
LANTAI 3	F1	Floor	Slab	SLAB1
LANTAI 2	F1	Floor	Slab	SLAB1
LANTAI 1	F1	Floor	Slab	SLAB1
LANTAI 3	A1	Null	Opening	N/A
LANTAI 2	A1	Null	Opening	N/A
LANTAI 1	A1	Null	Opening	N/A

RIGID DIAPHRAGM ASSIGNMENTS TO AREA OBJECTS

STORY	AREA	DIAPHRAGM
ATAP	F1	D1
LANTAI 3	F1	D1
LANTAI 2	F1	D1
LANTAI 1	F1	D1

LOCAL AXES ASSIGNMENTS TO AREA OBJECTS

STORY	AREA	AREA TYPE	ANGLE
ATAP	F1	Floor	0.0000
LANTAI 3	F1	Floor	0.0000
LANTAI 2	F1	Floor	0.0000
LANTAI 1	F1	Floor	0.0000
LANTAI 3	A1	Null	0.0000
LANTAI 2	A1	Null	0.0000
LANTAI 1	A1	Null	0.0000

FLOOR MESH OPTION ASSIGNMENTS TO AREA OBJECTS

STORY	AREA	MESH OPTION
ATAP	F1	Auto Mesh
LANTAI 3	F1	Auto Mesh
LANTAI 2	F1	Auto Mesh
LANTAI 1	F1	Auto Mesh

UNIFORM LOAD ASSIGNMENTS TO AREA OBJECTS

CASE	STORY	AREA	AREATYPE	DIRECTION	LOAD
BEBAN	ATAP	F1	Floor	Gravity	1.0800
BEBAN	LANTAI 3	F1	Floor	Gravity	1.6400
BEBAN	LANTAI 2	F1	Floor	Gravity	1.6400
BEBAN	LANTAI 1	F1	Floor	Gravity	1.6400
LIVE	ATAP	F1	Floor	Gravity	0.8000
LIVE	LANTAI 3	F1	Floor	Gravity	2.0000
LIVE	LANTAI 2	F1	Floor	Gravity	2.0000
LIVE	LANTAI 1	F1	Floor	Gravity	2.0000
RAIN	ATAP	F1	Floor	Gravity	0.5000

AREA OBJECT ASSIGNMENTS SUMMARY TABLE 1 OF 2

STORY LEVEL	AREA ID	NUMBER OF CORNERS	OBJECT AREA	OBJECT PERIMETER	OBJECT CENTROID X	OBJECT CENTROID Y	OBJECT CENTROID Z	POLAR INERTIA
ATAP	F1	4	225.0000	60.000	7.500	7.500	13.000	8.4375E+03
LANTAI 3	F1	4	225.0000	60.000	7.500	7.500	10.000	8.4375E+03
LANTAI 2	F1	4	225.0000	60.000	7.500	7.500	7.000	8.4375E+03
LANTAI 1	F1	4	225.0000	60.000	7.500	7.500	4.000	8.4375E+03
LANTAI 3	A1	4	12.5000	15.000	2.500	13.750	10.000	3.2552E+01
LANTAI 2	A1	4	12.5000	15.000	2.500	13.750	7.000	3.2552E+01
LANTAI 1	A1	4	12.5000	15.000	2.500	13.750	4.000	3.2552E+01

AREA OBJECT ASSIGNMENTS SUMMARY TABLE 2 OF 2

STORY LEVEL	AREA ID	SECTION TYPE	SECTION LABEL	DIAPHRAGM LABEL	FLOOR MESH OPTION	UNIFORM LOAD	TEMPERATURE LOAD	AXIS ANGLE
ATAP	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 3	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 2	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 1	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 3	A1	Opening	N/A	N/A	N/A	None	N/A	0.0000
LANTAI 2	A1	Opening	N/A	N/A	N/A	None	N/A	0.0000
LANTAI 1	A1	Opening	N/A	N/A	N/A	None	N/A	0.0000

Input untuk analisis struktur

STORY DATA

STORY	SIMILAR TO	HEIGHT	ELEVATION
ATAP	None	3.000	13.000
LANTAI 3	None	3.000	10.000
LANTAI 2	LANTAI 3	3.000	7.000
LANTAI 1	LANTAI 3	4.000	4.000
BASE	None		0.000

COORDINATE SYSTEM LOCATION DATA

NAME	TYPE	X	Y	ROTATION	BUBBLESIZE
GLOBAL	Cartesian	0.000	0.000	0.0000	1.2500

POINT COORDINATES

POINT	X	Y	DZ-BELOW
1	0.000	0.000	0.000
2	0.000	5.000	0.000
3	0.000	10.000	0.000
4	0.000	15.000	0.000
5	5.000	0.000	0.000
6	5.000	5.000	0.000
7	5.000	10.000	0.000
8	5.000	15.000	0.000
9	10.000	0.000	0.000
10	10.000	5.000	0.000
11	10.000	10.000	0.000
12	10.000	15.000	0.000
13	15.000	0.000	0.000
14	15.000	5.000	0.000
15	15.000	10.000	0.000
16	15.000	15.000	0.000
17	0.000	12.500	0.000
18	5.000	12.500	0.000
4-1	0.000	15.000	1.600
3-1	0.000	10.000	1.600
4-2	0.000	15.000	2.080
3-2	0.000	10.000	2.080

RIGID DIAPHRAGM POINT CONNECTIVITY DATA

STORY	DIAPHRAGM	POINT	POINT	POINT	POINT	POINT
ATAP	D1	1	2	3	4	5
		6	7	8	9	10
		11	12	13	14	15
		16				
LANTAI 3	D1	1	2	3	4	5
		6	7	8	9	10
		11	12	13	14	15
		16	17	18		
LANTAI 2	D1	1	2	3	4	5
		6	7	8	9	10
		11	12	13	14	15
		16	17	18		
LANTAI 1	D1	1	2	3	4	5
		6	7	8	9	10
		11	12	13	14	15
		16	17	18		

MASS SOURCE DATA

MASS FROM	LATERAL MASS ONLY	LUMP MASS AT STORIES
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Mass & Loads Yes Yes

MASS SOURCE LOADS

LOAD	MULTIPLIER
BEBAN	1.0000
LIVE	1.0000
RAIN	1.0000

DIAPHRAGM MASS DATA

STORY	DIAPHRAGM	MASS-X	MASS-Y	MMI	X-M	Y-M
ATAP	D1	190.8013	190.8013	8196.7558	7.500	7.500
LANTAI 3	D1	282.5169	282.5169	13597.1587	7.483	7.322
LANTAI 2	D1	292.9238	292.9238	14265.8235	7.420	7.443
LANTAI 1	D1	312.7037	312.7037	15491.6005	7.416	7.466

ASSEMBLED POINT MASSES

STORY	POINT	UX	UY	UZ	RX	RY	RZ
ATAP	391	190.801302	190.801302	0.000000	0.000000	0.000000	8196.755757
LANTAI 3	392	282.516982	282.516982	0.000000	0.000000	0.000000	13597
LANTAI 2	393	292.923814	292.923814	0.000000	0.000000	0.000000	14266
LANTAI 1	394	312.703702	312.703702	0.000000	0.000000	0.000000	15492
BASE	1	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	2	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	3	2.214069	2.214069	0.000000	0.000000	0.000000	0.000000
BASE	4	2.477207	2.477207	0.000000	0.000000	0.000000	0.000000
BASE	5	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	6	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	7	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	8	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	9	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	10	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	11	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	12	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	13	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	14	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	15	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
BASE	16	1.764000	1.764000	0.000000	0.000000	0.000000	0.000000
ATAP	All	190.801302	190.801302	0.000000	0.000000	0.000000	8196.755757
LANTAI 3	All	282.516982	282.516982	0.000000	0.000000	0.000000	13597
LANTAI 2	All	292.923814	292.923814	0.000000	0.000000	0.000000	14266
LANTAI 1	All	312.703702	312.703702	0.000000	0.000000	0.000000	15492
BASE	All	29.387276	29.387276	0.000000	0.000000	0.000000	0.000000
Totals	All	1108.332976	1108.332976	0.000000	0.000000	0.000000	51551

GROUP MASS DATA

GROUP NAME	SELF MASS	SELF WEIGHT	TOTAL MASS-X	TOTAL MASS-Y	TOTAL MASS-Z
ALL	637.9800	6249.600	1136.0334	1136.0334	0.0000

MATERIAL LIST BY ELEMENT TYPE

ELEMENT TYPE	MATERIAL	TOTAL MASS tons	NUMBER PIECES	NUMBER STUDS
Column	CONC	123.34	64	
Beam	CONC	183.55	102	0
Floor	CONC	330.39		

MATERIAL LIST BY SECTION

SECTION	ELEMENT TYPE	NUMBER PIECES	TOTAL LENGTH meters	TOTAL MASS tons	NUMBER STUDS
K50	Column	16	48.000	29.37	
K40	Column	32	96.000	37.59	
B30X50	Beam	96	480.000	176.21	0
B25X40	Beam	6	30.000	7.34	0
K60	Column	16	64.000	56.39	
SLAB1	Floor			330.39	

MATERIAL LIST BY STORY

STORY	ELEMENT TYPE	MATERIAL	TOTAL WEIGHT tons	FLOOR AREA m ²	UNIT WEIGHT kg/m ²	NUMBER PIECES	NUMBER STUDS
ATAP	Column	CONC	18.80	225.000	83.5352	16	
ATAP	Beam	CONC	44.05	225.000	195.7855	24	0
ATAP	Floor	CONC	82.60	225.000	367.0978		
LANTAI 3	Column	CONC	18.80	225.000	83.5352	16	
LANTAI 3	Beam	CONC	46.50	225.000	206.6625	26	0
LANTAI 3	Floor	CONC	82.60	225.000	367.0978		
LANTAI 2	Column	CONC	29.37	225.000	130.5237	16	
LANTAI 2	Beam	CONC	46.50	225.000	206.6625	26	0
LANTAI 2	Floor	CONC	82.60	225.000	367.0978		
LANTAI 1	Column	CONC	56.39	225.000	250.6055	16	

LANTAI 1	Beam	CONC	46.50	225.000	206.6625	26	0
LANTAI 1	Floor	CONC	82.60	225.000	367.0978		
SUM	Column	CONC	123.34	900.000	137.0499	64	
SUM	Beam	CONC	183.55	900.000	203.9432	102	0
SUM	Floor	CONC	330.39	900.000	367.0978		
TOTAL	All	All	637.28	900.000	708.0909	166	0

MATERIAL PROPERTY DATA

MATERIAL NAME	MATERIAL TYPE	DESIGN TYPE	MATERIAL DIR/PLANE	MODULUS OF ELASTICITY	POISSON'S RATIO	THERMAL COEFF	SHEAR MODULUS
STEEL	Iso	Steel	All	199947979	0.3000	1.1700E-05	76903069
CONC	Iso	Concrete	All	23500000	0.2000	9.9000E-06	9791666.667
OTHER	Iso	None	All	199947979	0.3000	1.1700E-05	76903069

MATERIAL PROPERTY MASS AND WEIGHT

MATERIAL NAME	MASS PER UNIT VOL	WEIGHT PER UNIT VOL
STEEL	7.6271E+00	7.6820E+01
CONC	2.4500E+00	2.4000E+01
OTHER	7.6271E+00	7.6820E+01

MATERIAL DESIGN DATA FOR CONCRETE MATERIALS

MATERIAL NAME	LIGHTWEIGHT CONCRETE	CONCRETE FC	REBAR FY	REBAR FYS	LIGHTWT REDUC FACT
CONC	No	25000.000	400000.000	240000.000	N/A

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	MATERIAL NAME	SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE	CONC COL	CONC BEAM
ConcCol	CONC	Rectangular	Yes	
ConcEm	CONC	Rectangular		Yes
K50	CONC	Rectangular	Yes	
K40	CONC	Rectangular	Yes	
B30X50	CONC	Rectangular		Yes
B25X40	CONC	Rectangular		Yes
K60	CONC	Rectangular	Yes	
B40X60	CONC	Rectangular		Yes
B30X40	CONC	Rectangular		Yes

FRAME SECTION PROPERTY DATA

FRAME SECTION NAME	SECTION DEPTH	FLANGE WIDTH TOP	FLANGE THICK TOP	WEB THICK	FLANGE WIDTH BOT	FLANGE THICK BOT
K50	0.5000	0.5000	0.0000	0.0000	0.0000	0.0000
K40	0.4000	0.4000	0.0000	0.0000	0.0000	0.0000
B30X50	0.5000	0.3000	0.0000	0.0000	0.0000	0.0000
B25X40	0.4000	0.2500	0.0000	0.0000	0.0000	0.0000
K60	0.6000	0.6000	0.0000	0.0000	0.0000	0.0000
B40X60	0.6000	0.4000	0.0000	0.0000	0.0000	0.0000
B30X40	0.4000	0.3000	0.0000	0.0000	0.0000	0.0000

FRAME SECTION WEIGHTS AND MASSES

FRAME SECTION NAME	TOTAL WEIGHT	TOTAL MASS
K50	288.0000	29.4000
K40	368.6400	37.6320
B30X50	1728.0000	176.4000
B25X40	72.0000	7.3500
K60	552.9600	56.4480
B40X60	0.0000	0.0000
B30X40	0.0000	0.0000

CONCRETE COLUMN DATA

FRAME SECTION NAME	REINF CONFIGURATION LONGIT	REINF LATERAL	REINF SIZE/TYPE	NUM BARS 3DIR/2DIR	NUM BARS CIRCULAR	BAR COVER
K50	Rectangular	Ties	200/Design	3/3	N/A	0.0400
K40	Rectangular	Ties	200/Design	3/3	N/A	0.0400
K60	Rectangular	Ties	#9/Design	3/3	N/A	0.0600

CONCRETE BEAM DATA

FRAME SECTION NAME	TOP COVER	BOT COVER	TOP LEFT AREA	TOP RIGHT AREA	BOT LEFT AREA	BOT RIGHT AREA
B30X50	0.0400	0.0400	0.000	0.000	0.000	0.000
B25X40	0.0400	0.0400	0.000	0.000	0.000	0.000
B40X60	0.0500	0.0500	0.000	0.000	0.000	0.000
B30X40	0.0400	0.0400	0.000	0.000	0.000	0.000

SHELL SECTION PROPERTY DATA

SHELL SECTION	MATERIAL NAME	SHELL TYPE	LOAD DIST ONE WAY	MEMBRANE THICK	BENDING THICK	TOTAL WEIGHT	TOTAL MASS
WALL1	CONC	Shell-Thin	No	0.2500	0.2500	0.0000	0.0000
SLAB1	CONC	Membrane	No	0.1500	0.1500	3240.0000	330.7500
DECK1	CONC	Membrane	No	0.0889	0.0889	0.0000	0.0000
PLANK1	CONC	Membrane	Yes	0.2500	0.2500	0.0000	0.0000

STATIC LOAD CASES

STATIC CASE	CASE TYPE	AUTO LAT LOAD	SELF WT MULTIPLIER
BEBAN	DEAD	N/A	0.0000
LIVE	LIVE	N/A	0.0000
RAIN	LIVE	N/A	0.0000
QUAKEX	QUAKE	USER_LOADS	0.0000
QUAKKEY	QUAKE	USER_LOADS	0.0000
DEAD	DEAD	N/A	1.0000

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	BEBAN	Static	1.4000
		DEAD	Static	1.4000
COMB2	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.6000
		RAIN	Static	0.5000
		DEAD	Static	1.2000
COMB3	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	1.0000
		QUAKKEY	Static	0.3000
		DEAD	Static	1.2000
COMB4	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	1.0000
		QUAKKEY	Static	-0.3000
		DEAD	Static	1.2000
COMB5	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	-1.0000
		QUAKKEY	Static	0.3000
		DEAD	Static	1.2000
COMB6	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKEX	Static	-1.0000
		QUAKKEY	Static	-0.3000
		DEAD	Static	1.2000
COMB7	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKKEY	Static	1.0000
		QUAKEX	Static	0.3000
		DEAD	Static	1.2000
COMB8	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKKEY	Static	1.0000
		QUAKEX	Static	-0.3000
		DEAD	Static	1.2000
COMB9	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKKEY	Static	-1.0000
		QUAKEX	Static	0.3000
		DEAD	Static	1.2000
COMB10	ADD	BEBAN	Static	1.2000
		LIVE	Static	1.0000
		QUAKKEY	Static	-1.0000
		QUAKEX	Static	-0.3000

		DEAD	Static	1.2000		
COMB11	ADD	BEBAN	Static	0.9000		
		QUAKEX	Static	1.0000		
		QUAKEY	Static	0.3000		
		DEAD	Static	0.9000		
COMB12	ADD	BEBAN	Static	0.9000		
		QUAKEX	Static	1.0000		
		QUAKEY	Static	-0.3000		
		DEAD	Static	0.9000		
COMB13	ADD	BEBAN	Static	0.9000		
		QUAKEX	Static	-1.0000		
		QUAKEY	Static	0.3000		
		DEAD	Static	0.9000		
COMB14	ADD	BEBAN	Static	0.9000		
		QUAKEX	Static	-1.0000		
		QUAKEY	Static	-0.3000		
		DEAD	Static	0.9000		
COMB15	ADD	BEBAN	Static	0.9000		
		QUAKEY	Static	1.0000		
		QUAKEX	Static	0.3000		
		DEAD	Static	0.9000		
COMB16	ADD	BEBAN	Static	0.9000		
		QUAKEY	Static	1.0000		
		QUAKEX	Static	-0.3000		
		DEAD	Static	0.9000		
COMB17	ADD	BEBAN	Static	0.9000		
		QUAKEY	Static	-1.0000		
		QUAKEX	Static	0.3000		
		DEAD	Static	0.9000		
COMB18	ADD	BEBAN	Static	0.9000		
		QUAKEY	Static	-1.0000		
		QUAKEX	Static	-0.3000		
		DEAD	Static	0.9000		
COMB19	ENVE	COMB1	Combo	1.0000		
		COMB2	Combo	1.0000		
		COMB3	Combo	1.0000		
		COMB4	Combo	1.0000		
		COMB5	Combo	1.0000		
		COMB6	Combo	1.0000		
		COMB7	Combo	1.0000		
		COMB8	Combo	1.0000		
		COMB9	Combo	1.0000		
		COMB10	Combo	1.0000		
		COMB11	Combo	1.0000		
		COMB12	Combo	1.0000		
		COMB13	Combo	1.0000		
		COMB14	Combo	1.0000		
		COMB15	Combo	1.0000		
		COMB16	Combo	1.0000		
		COMB17	Combo	1.0000		
		COMB18	Combo	1.0000		
		BEBAN	Static	1.0000		
		LIVE	Static	1.0000		
		RAIN	Static	1.0000		
		QUAKEX	Static	1.0000		
		QUAKEY	Static	1.0000		

A U T O S E I S M I C U S E R L O A D S
Case: QUAKEY

SPECIFIED AUTO SEISMIC LOADS

STORY	DIAPHRAGM	FX	FY	MZ	X	Y
ATAP	D1	222.85	0.00	0.000	8.304	8.636
LANTAI 3	D1	253.82	0.00	0.000	8.559	8.548
LANTAI 2	D1	184.22	0.00	0.000	8.308	8.421
LANTAI 1	D1	112.38	0.00	0.000	8.247	8.311

AUTO SEISMIC CALCULATION RESULTS

AUTO SEISMIC STORY FORCES

STORY	FX	FY	FZ	MX	MY	MZ
ATAP	(Forces reported at X = 7.5000, Y = 7.5000, Z = 13.0000) 222.85	0.00	0.00	0.000	0.000	-253.045
LANTAI 3	(Forces reported at X = 7.4829, Y = 7.3223, Z = 10.0000) 253.82	0.00	0.00	0.000	0.000	-310.993

LANTAI 2	(Forces reported at X = 7.4195, Y = 7.4433, Z = 7.0000)					
	184.22	0.00	0.00	0.000	0.000	-180.114
LANTAI 1	(Forces reported at X = 7.4164, Y = 7.4661, Z = 4.0000)					
	132.38	0.00	0.00	0.000	0.000	-94.894

A U T O S E I S M I C U S E R L O A D S
Case: QUAKEY

S P E C I F I E D A U T O S E I S M I C L O A D S

STORY	DIAPHRAGM	FX	FY	MZ	X	Y
ATAP	D1	0.00	222.18	0.000	8.304	8.636
LANTAI 3	D1	0.00	253.06	0.000	8.559	8.548
LANTAI 2	D1	0.00	183.67	0.000	8.308	8.421
LANTAI 1	D1	0.00	112.04	0.000	8.247	8.311

A U T O S E I S M I C C A L C U L A T I O N R E S U L T S

A U T O S E I S M I C S T O R Y F O R C E S

STORY	FX	FY	FZ	MX	MY	MZ
ATAP	(Forces reported at X = 7.5000, Y = 7.5000, Z = 13.0000)					
	0.00	222.18	0.00	0.000	0.000	178.633
LANTAI 3	(Forces reported at X = 7.4829, Y = 7.3223, Z = 10.0000)					
	0.00	253.06	0.00	0.000	0.000	272.181
LANTAI 2	(Forces reported at X = 7.4195, Y = 7.4433, Z = 7.0000)					
	0.00	183.67	0.00	0.000	0.000	163.183
LANTAI 1	(Forces reported at X = 7.4164, Y = 7.4661, Z = 4.0000)					
	0.00	112.04	0.00	0.000	0.000	93.056

S U P P O R T (R E S T R A I N T) D A T A

STORY	POINT	-----/REstrained DOF's-----/					
		UX	UY	UZ	RX	RY	RZ
BASE	1	Yes	Yes	Yes	Yes	Yes	Yes
BASE	2	Yes	Yes	Yes	Yes	Yes	Yes
BASE	3	Yes	Yes	Yes	Yes	Yes	Yes
BASE	4	Yes	Yes	Yes	Yes	Yes	Yes
BASE	5	Yes	Yes	Yes	Yes	Yes	Yes
BASE	6	Yes	Yes	Yes	Yes	Yes	Yes
BASE	7	Yes	Yes	Yes	Yes	Yes	Yes
BASE	8	Yes	Yes	Yes	Yes	Yes	Yes
BASE	9	Yes	Yes	Yes	Yes	Yes	Yes
BASE	10	Yes	Yes	Yes	Yes	Yes	Yes
BASE	11	Yes	Yes	Yes	Yes	Yes	Yes
BASE	12	Yes	Yes	Yes	Yes	Yes	Yes
BASE	13	Yes	Yes	Yes	Yes	Yes	Yes
BASE	14	Yes	Yes	Yes	Yes	Yes	Yes
BASE	15	Yes	Yes	Yes	Yes	Yes	Yes
BASE	16	Yes	Yes	Yes	Yes	Yes	Yes

F R A M E S E C T I O N A S S I G N M E N T S T O L I N E O B J E C T S

STORY	LINE	LINE	SECTION	AUTO SELECT	ANALYSIS	DESIGN	DESIGN
LEVEL	ID	TYPE	TYPE	SECTION	SECTION	PROCEDURE	SECTION
ATAP	C1	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C2	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C3	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C4	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C5	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C6	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C7	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C8	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C9	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C10	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C11	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C12	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C13	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C14	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C15	Column	Rectangular	None	K40	Conc Frame	N/A
ATAP	C16	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C1	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C2	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C3	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C4	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C5	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C6	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C7	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C8	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C9	Column	Rectangular	None	K40	Conc Frame	N/A
LANTAI 3	C10	Column	Rectangular	None	K40	Conc Frame	N/A

DISTRIBUTED LOAD ASSIGNMENTS TO LINE OBJECTS

LOAD CASE	STORY LEVEL	LINE ID	LOAD TYPE	LOAD DIRECTION	ABSOLUTE DISTANCE A	ABSOLUTE DISTANCE B	LOAD A PER LENGTH	LOAD B PER LENGTH
BEBAN	LANTAI 3	B1	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B2	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B3	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B4	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B5	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B6	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B7	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B8	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B9	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B10	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B11	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B12	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B13	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B14	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B15	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B16	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B17	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B18	Force	Gravity	2.500	3.750	19.160	19.160
BEBAN	LANTAI 3	B19	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B20	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B21	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B22	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B23	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B24	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 3	B25	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 3	B26	Force	Gravity	0.000	2.500	2.260	2.260
BEBAN	LANTAI 2	B1	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B2	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B3	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B4	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B5	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B6	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B7	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B8	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B9	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B10	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B11	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B12	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B13	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B14	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B15	Force	Gravity	0.000	5.000	7.500	7.500

BEBAN	LANTAI 2	B16	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B17	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B18	Force	Gravity	2.500	3.750	19.160	19.160
BEBAN	LANTAI 2	B19	Force	Gravity	3.750	5.000	19.160	19.160
PERAN	LANTAI 2	B19	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B20	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B21	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B22	Force	Gravity	0.000	5.000	7.500	7.500
PERAN	LANTAI 2	B23	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B24	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 2	B25	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 2	B26	Force	Gravity	0.000	2.500	2.260	2.260
PERAN	LANTAI 3	B1	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B2	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B3	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B4	Force	Gravity	0.000	5.000	7.500	7.500
PERAN	LANTAI 1	B5	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B6	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B7	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B8	Force	Gravity	0.000	5.000	0.570	0.570
PERAN	LANTAI 1	B9	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B10	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B11	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B12	Force	Gravity	0.000	5.000	7.500	7.500
PERAN	LANTAI 1	B13	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B14	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B15	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B16	Force	Gravity	0.000	5.000	7.500	7.500
PERAN	LANTAI 1	B17	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B18	Force	Gravity	2.500	3.750	21.440	21.440
BEBAN	LANTAI 1	B18	Force	Gravity	3.750	5.000	21.440	21.440
BEBAN	LANTAI 1	B19	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B20	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B21	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B22	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B23	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B24	Force	Gravity	0.000	5.000	7.500	7.500
BEBAN	LANTAI 1	B25	Force	Gravity	0.000	5.000	0.570	0.570
BEBAN	LANTAI 1	B27	Force	Gravity	0.000	2.500	2.260	2.260
LIVE	LANTAI 3	B18	Force	Gravity	2.500	3.750	11.608	11.608
LIVE	LANTAI 3	B26	Force	Gravity	0.000	2.500	1.710	1.710
LIVE	LANTAI 2	B18	Force	Gravity	2.500	3.750	11.608	11.608
LIVE	LANTAI 2	B18	Force	Gravity	3.750	5.000	11.608	11.608
LIVE	LANTAI 2	B26	Force	Gravity	0.000	2.500	1.710	1.710
LIVE	LANTAI 1	B18	Force	Gravity	2.500	12.992	12.992	12.992
LIVE	LANTAI 1	B18	Force	Gravity	3.750	5.000	12.992	12.992
LIVE	LANTAI 1	B27	Force	Gravity	0.000	2.500	1.710	1.710

W A L L , S L A B , D E C K & O P E N I N G A S S I G N M E N T S T O A R E A O B J E C T S

STORY LEVEL	AREA ID	AREA TYPE	SECTION TYPE	SECTION LABEL
ATAP	F1	Floor	Slab	SLAB1
LANTAI 3	F1	Floor	Slab	SLAB1
LANTAI 2	F1	Floor	Slab	SLAB1
LANTAI 1	F1	Floor	Slab	SLAB1
LANTAI 3	A1	Null	Opening	N/A
LANTAI 2	A1	Null	Opening	N/A
LANTAI 1	A1	Null	Opening	N/A

R I G I D D I A P H R A G M A S S I G N M E N T S T O A R E A O B J E C T S

STORY	AREA	DIAPHRAGM
ATAP	F1	D1
LANTAI 3	F1	D1
LANTAI 2	F1	D1
LANTAI 1	F1	D1

L O C A L A X E S A S S I G N M E N T S T O A R E A O B J E C T S

STORY	AREA	AREA TYPE	ANGLE
ATAP	F1	Floor	0.0000
LANTAI 3	F1	Floor	0.0000
LANTAI 2	F1	Floor	0.0000
LANTAI 1	F1	Floor	0.0000
LANTAI 3	A1	Null	0.0000
LANTAI 2	A1	Null	0.0000
LANTAI 1	A1	Null	0.0000

F L O O R M E S H O P T I O N A S S I G N M E N T S T O A R E A O B J E C T S

STORY	AREA	MESH OPTION
ATAP	F1	Auto Mesh
LANTAI 3	F1	Auto Mesh
LANTAI 2	F1	Auto Mesh
LANTAI 1	F1	Auto Mesh

UNIFORM LOAD ASSIGNMENTS TO AREA OBJECTS

CASE	STORY	AREA	AREATYPE	DIRECTION	LOAD
BEBAN	ATAP	F1	Floor	Gravity	1.0800
BEBAN	LANTAI 3	F1	Floor	Gravity	1.6400
BEBAN	LANTAI 2	F1	Floor	Gravity	1.6400
BEBAN	LANTAI 1	F1	Floor	Gravity	1.6400
LIVE	ATAP	F1	Floor	Gravity	0.8000
LIVE	LANTAI 3	F1	Floor	Gravity	2.0000
LIVE	LANTAI 2	F1	Floor	Gravity	2.0000
LIVE	LANTAI 1	F1	Floor	Gravity	2.0000
RAIN	ATAP	F1	Floor	Gravity	0.5000

AREA OBJECT ASSIGNMENTS SUMMARY TABLE 1 OF 2

STORY	AREA	NUMBER OF CORNERS	OBJECT AREA	OBJECT PERIMETER	OBJECT CENTROID X	OBJECT CENTROID Y	OBJECT CENTROID Z	POLAR INERTIA
ATAP	F1	4	225.0000	60.000	7.500	7.500	13.000	8.4375E+03
LANTAI 3	F1	4	225.0000	60.000	7.500	7.500	10.000	8.4375E+03
LANTAI 2	F1	4	225.0000	60.000	7.500	7.500	7.000	8.4375E+03
LANTAI 1	F1	4	225.0000	60.000	7.500	7.500	4.000	8.4375E+03
LANTAI 3	A1	4	12.5000	15.000	2.500	13.750	10.000	3.2552E+01
LANTAI 2	A1	4	12.5000	15.000	2.500	13.750	7.000	3.2552E+01
LANTAI 1	A1	4	12.5000	15.000	2.500	13.750	4.000	3.2552E+01

AREA OBJECT ASSIGNMENTS SUMMARY TABLE 2 OF 2

STORY	AREA	SECTION TYPE	SECTION LABEL	DIAPHRAGM LABEL	FLOOR MESH OPTION	UNIFORM LOAD	TEMPERATURE LOAD	AXIS ANGLE
ATAP	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 3	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 2	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 1	F1	Slab	SLAB1	D1	StructMesh	Yes	None	0.0000
LANTAI 3	A1	Opening	N/A	N/A	N/A	None	N/A	0.0000
LANTAI 2	A1	Opening	N/A	N/A	N/A	None	N/A	0.0000
LANTAI 1	A1	Opening	N/A	N/A	N/A	None	N/A	0.0000

Output untuk mencari gaya geser gempa

M O D E S H A P E S

STORY	DIAPHRAGM	MODE	UX	UY	UZ	RX	RY	RZ
ATAP	D1	Mode 1	-0.04500	-0.00238	0.00000	0.00000	0.00000	-0.00027
ATAP	D1	Mode 2	-0.00258	0.04492	0.00000	0.00000	0.00000	0.00057
ATAP	D1	Mode 3	0.00225	0.00386	0.00000	0.00000	0.00000	-0.00656
ATAP	D1	Mode 4	-0.04308	-0.00086	0.00000	0.00000	0.00000	-0.00015
ATAP	D1	Mode 5	-0.00091	0.04361	0.00000	0.00000	0.00000	0.00018
ATAP	D1	Mode 6	-0.00095	-0.00242	0.00000	0.00000	0.00000	0.00659
LANTAI 3	D1	Mode 1	-0.03789	-0.00200	0.00000	0.00000	0.00000	-0.00023
LANTAI 3	D1	Mode 2	-0.00208	0.03763	0.00000	0.00000	0.00000	0.00050
LANTAI 3	D1	Mode 3	0.00083	0.00318	0.00000	0.00000	0.00000	-0.00555
LANTAI 3	D1	Mode 4	0.00140	0.00003	0.00000	0.00000	0.00000	-0.00003
LANTAI 3	D1	Mode 5	0.00004	-0.00194	0.00000	0.00000	0.00000	0.00002
LANTAI 3	D1	Mode 6	0.00025	0.00059	0.00000	0.00000	0.00000	0.00017
LANTAI 2	D1	Mode 1	-0.02393	-0.00125	0.00000	0.00000	0.00000	-0.00015
LANTAI 2	D1	Mode 2	-0.00135	0.02393	0.00000	0.00000	0.00000	0.00029
LANTAI 2	D1	Mode 3	0.00095	0.00251	0.00000	0.00000	0.00000	-0.00355
LANTAI 2	D1	Mode 4	0.03775	0.0076	0.00000	0.00000	0.00000	0.00009
LANTAI 2	D1	Mode 5	0.00078	-0.03742	0.00000	0.00000	0.00000	-0.00028
LANTAI 2	D1	Mode 6	0.00057	0.00125	0.00000	0.00000	0.00000	-0.00532
LANTAI 1	D1	Mode 1	-0.01074	-0.00056	0.00000	0.00000	0.00000	-0.00006
LANTAI 1	D1	Mode 2	-0.00061	0.01081	0.00000	0.00000	0.00000	0.00012
LANTAI 1	D1	Mode 3	0.00048	0.00124	0.00000	0.00000	0.00000	-0.00161
LANTAI 1	D1	Mode 4	0.02695	0.00054	0.00000	0.00000	0.00000	0.00007
LANTAI 1	D1	Mode 5	0.00056	-0.02674	0.00000	0.00000	0.00000	-0.00019
LANTAI 1	D1	Mode 6	0.00047	0.00098	0.00000	0.00000	0.00000	-0.00392

M O D A L P E R I O D S A N D F R E Q U E N C I E S

MODE NUMBER	PERIOD (TIME)	FREQUENCY (CYCLES/TIME)	CIRCULAR FREQ (RADIAN/TIME)
Mode 1	0.71925	1.39034	8.73574
Mode 2	0.70900	1.41044	8.86206
Mode 3	0.58919	1.69725	10.66415
Mode 4	0.24464	4.08763	25.68336
Mode 5	0.24263	4.12154	25.89643
Mode 6	0.20514	4.87476	30.62899

M O D A L P A R T I C I P A T I O N F A C T O R S

MODE	UX	UY	UZ	RX	RY	RZ
Mode 1	29.6547	1.5618	0.0000	-14.8260	281.1288	9.0395
Mode 2	1.6575	-29.5902	0.0000	280.3098	15.8143	-19.2593
Mode 3	-1.0921	-2.7582	0.0000	25.2540	-10.4801	204.6822
Mode 4	-11.6618	-0.2356	0.0000	0.1796	-8.2170	-1.0303
Mode 5	-0.2431	11.5480	0.0000	-7.4689	-0.1712	4.1692
Mode 6	-0.2051	-0.3781	0.0000	-0.5408	-0.1165	80.3909

M O D A L P A R T I C I P A T I N G M A S S R A T I O S

MODE NUMBER	X-TRANS %MASS <SUM>	Y-TRANS %MASS <SUM>	Z-TRANS %MASS <SUM>	RX-ROTN %MASS <SUM>	RY-ROTN %MASS <SUM>	RZ-ROTN %MASS <SUM>
Mode 1	81.51 < 82>	0.23 < 0>	0.00 < 0>	0.28 < 0>	98.97 < 99>	0.16 < 0>
Mode 2	0.26 < 82>	81.15 < 81>	0.00 < 0>	98.40 < 99>	0.31 < 99>	0.65 < 1>
Mode 3	0.11 < 82>	0.71 < 82>	0.00 < 0>	0.80 < 99>	0.14 < 99>	81.26 < 82>
Mode 4	12.60 < 94>	0.01 < 82>	0.00 < 0>	0.00 < 99>	0.08 <100>	0.00 < 82>
Mode 5	0.01 < 94>	12.36 < 94>	0.00 < 0>	0.07 <100>	0.00 <100>	0.03 < 82>
Mode 6	0.00 < 94>	0.01 < 94>	0.00 < 0>	0.00 <100>	0.00 <100>	12.51 < 95>

M O D A L L O A D P A R T I C I P A T I O N R A T I O S (STATIC AND DYNAMIC RATIOS ARE IN PERCENT)

TYPE	LOAD	ACCEL	STORY	LINK	DOF	STATIC	DYNAMIC
Load	BEBAN					0.0000	0.0000
Load	LIVE					0.0000	0.0000
Load	RAIN					0.0000	0.0000
Load	QUAKEX					0.0000	0.0000
Load	QUAKEKEY					0.0000	0.0000
Load	DEAD					0.0000	0.0000
Accel		UX				99.8166	94.4880
Accel		UY				99.8114	94.4606
Accel		UZ				0.0000	0.0000
Accel		RX				99.9831	99.5412
Accel		RY				99.9821	99.5082
Accel		RZ				97.9303	94.6061

R E S P O N S E S P E C T R U M A C C E L E R A T I O N S
(IN RESPONSE SPECTRUM LOCAL COORDINATES)

SPEC	MODE	PERIOD	DAMP-RATIO	SPEC-FACTOR	U1	U2	U3
SPEC1	Mode 1	0.719251	0.050000	1.000000	0.865242	0.000000	0.600000
SPEC1	Mode 2	0.708998	0.050000	1.000000	0.865242	0.000000	0.000000
SPEC1	Mode 3	0.589188	0.050000	1.000000	0.865242	0.000000	0.000000
SPEC1	Mode 4	0.244640	0.050000	1.000000	0.865242	0.000000	0.000000
SPEC1	Mode 5	0.242628	0.050000	1.000000	0.865242	0.000000	0.000000
SPEC1	Mode 6	0.205139	0.050000	1.000000	0.865242	0.000000	0.000000
SPEC2	Mode 1	0.719251	0.050000	1.000000	0.000000	0.865242	0.000000
SPEC2	Mode 2	0.708998	0.050000	1.000000	0.000000	0.865242	0.000000
SPEC2	Mode 3	0.589188	0.050000	1.000000	0.000000	0.865242	0.000000
SPEC2	Mode 4	0.244640	0.050000	1.000000	0.000000	0.865242	0.000000
SPEC2	Mode 5	0.242628	0.050000	1.000000	0.000000	0.865242	0.000000
SPEC2	Mode 6	0.205139	0.050000	1.000000	0.000000	0.865242	0.000000

R E S P O N S E S P E C T R U M M O D A L A M P L I T U D E S
(IN RESPONSE SPECTRUM LOCAL COORDINATES)

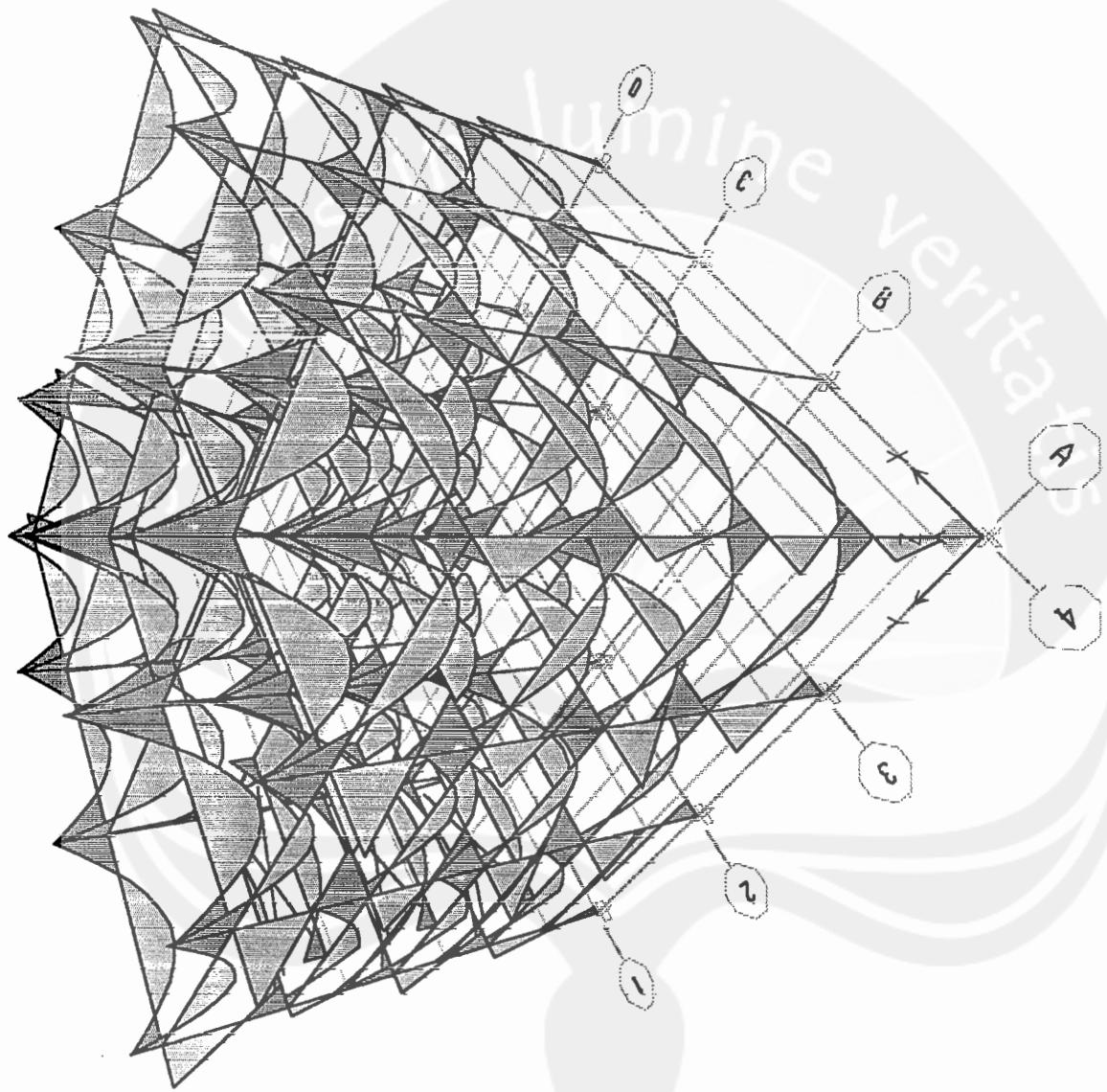
SPEC	MODE	PERIOD	U1	U2	U3
SPEC1	Mode 1	0.719251	-0.336227	0.000000	0.000000
SPEC1	Mode 2	0.708998	-0.018371	0.000000	0.000000
SPEC1	Mode 3	0.589188	0.008309	0.000000	0.000000
SPEC1	Mode 4	0.244640	0.015297	0.000000	0.000000
SPEC1	Mode 5	0.242628	0.000314	0.000000	0.000000
SPEC1	Mode 6	0.205139	0.000189	0.000000	0.000000
SPEC2	Mode 1	0.719251	0.000000	-0.017707	0.000000
SPEC2	Mode 2	0.708998	0.000000	0.325999	0.000000
SPEC2	Mode 3	0.589188	0.000000	0.020985	0.000000
SPEC2	Mode 4	0.244640	0.000000	0.000309	0.000000
SPEC2	Mode 5	0.242628	0.000000	-0.014899	0.000000
SPEC2	Mode 6	0.205139	0.000000	0.000349	0.000000

R E S P O N S E S P E C T R U M B A S E R E A C T I O N S
(IN RESPONSE SPECTRUM LOCAL COORDINATES)

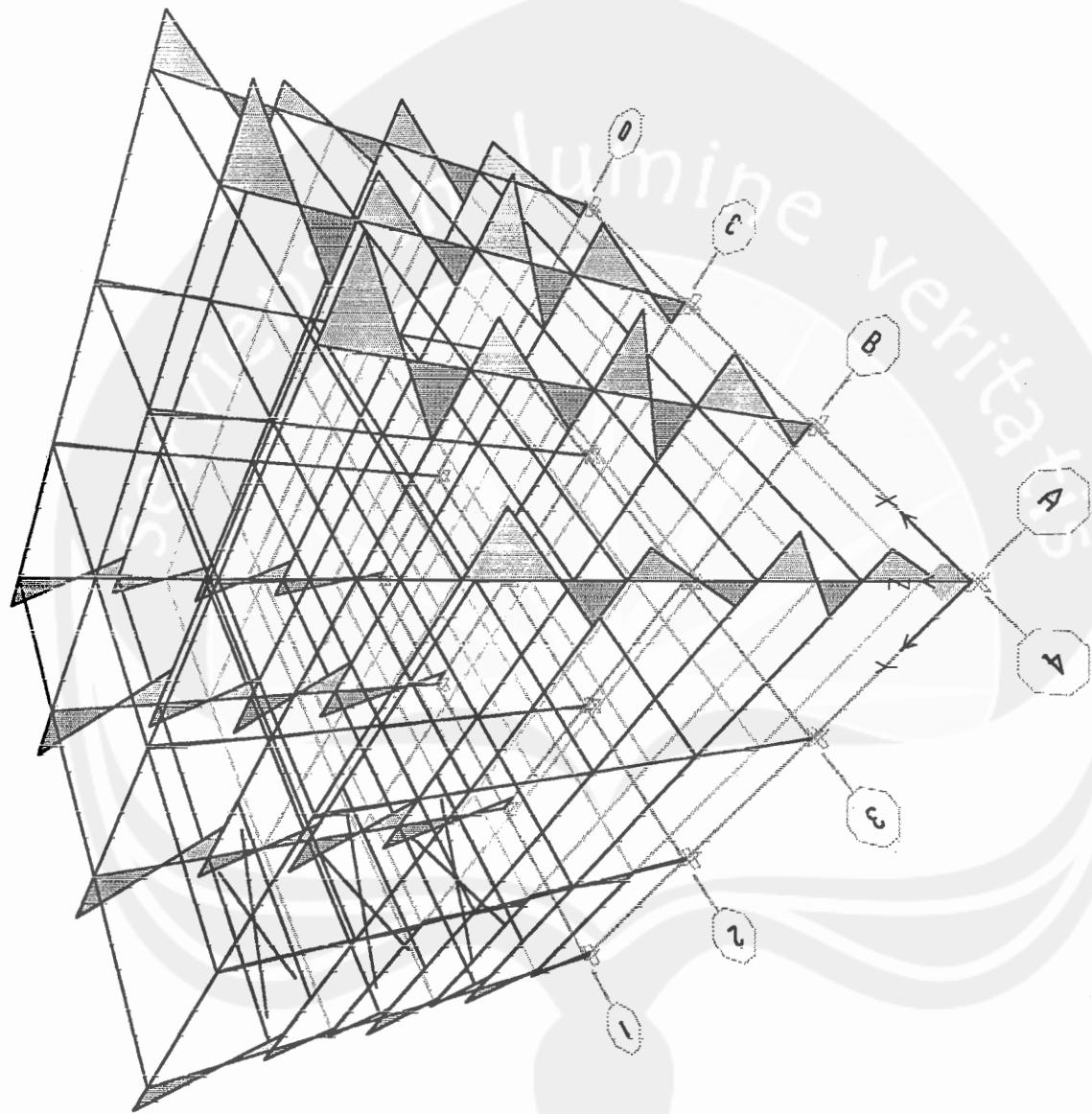
SPEC	MODE	DIR	F1	F2	F3	M1	M2	M3
SPEC1	Mode 1	U1	760.90	40.07	0.00	-380.412	7213.344	-5345.618
SPEC1	Mode 2	U1	2.41	-42.69	0.00	404.432	22.817	-336.565
SPEC1	Mode 3	U1	1.03	2.61	0.00	-23.862	9.903	11.765
SPEC1	Mode 4	U1	117.67	2.38	0.00	-1.812	82.912	-855.110
SPEC1	Mode 5	U1	0.05	-2.43	0.00	1.571	0.036	-18.259
SPEC1	Mode 6	U1	0.04	0.07	0.00	0.096	0.021	0.225
SPEC1	All	All	773.27	8.64	0.00	81.579	7238.719	5746.045
SPEC2	Mode 1	U2	40.07	2.11	0.00	-20.034	379.892	-281.528
SPEC2	Mode 2	U2	-42.69	757.59	0.00	-7176.674	-404.889	5972.369
SPEC2	Mode 3	U2	2.61	6.58	0.00	-60.268	25.010	29.715
SPEC2	Mode 4	U2	2.38	0.05	0.00	-0.037	1.675	-17.276
SPEC2	Mode 5	U2	-2.43	115.39	0.00	-74.627	-1.710	867.506
SPEC2	Mode 6	U2	0.07	0.12	0.00	0.177	0.938	0.414
SPEC2	All	All	8.64	770.66	0.00	7210.969	81.932	5772.434

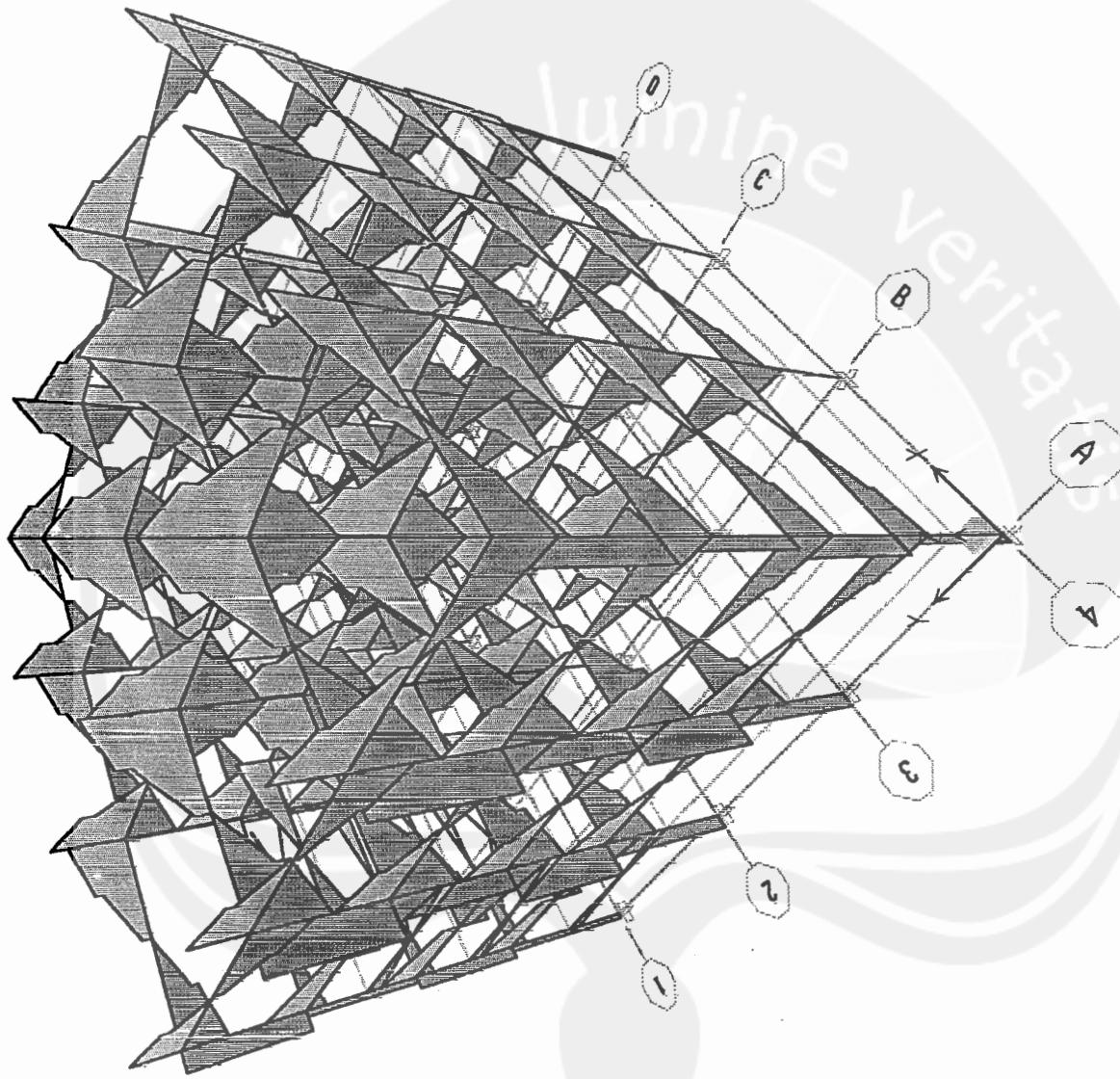
C E N T E R S O F C U M U L A T I V E M A S S & C E N T E R S O F R I G I D I T Y

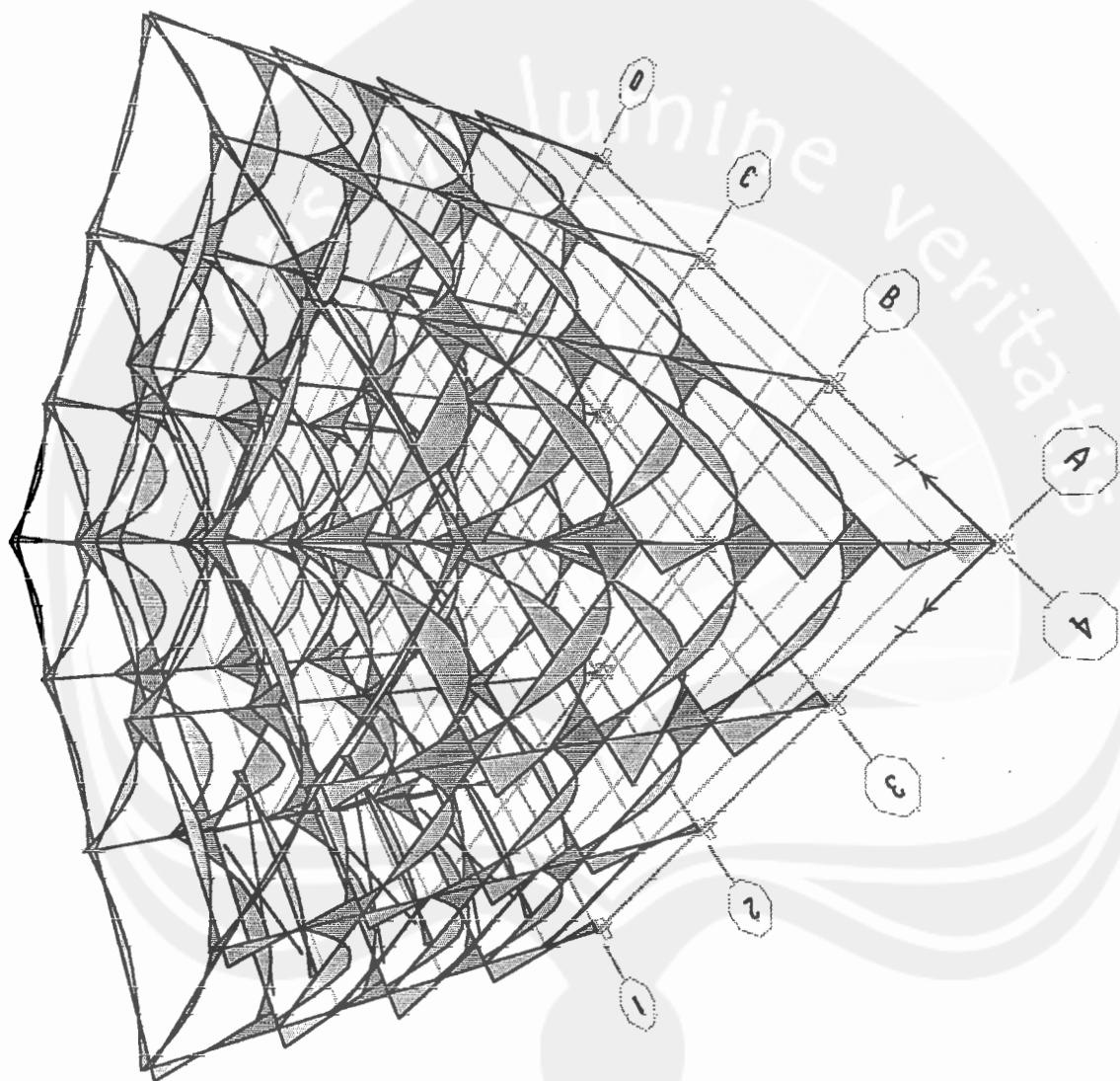
STORY LEVEL	DIAPHRAGM NAME	/-----CENTER OF MASS-----/	MASS	ORDINATE-X	ORDINATE-Y	---/--CENTER OF RIGIDITY--/	ORDINATE-X	ORDINATE-Y
ATAP	D1	190.8013	7.500	7.500	7.243	7.536		
LANTAI 3	D1	473.3182	7.490	7.394	7.166	7.539		
LANTAI 2	D1	766.2420	7.463	7.413	7.268	7.535		
LANTAI 1	D1	1078.9457	7.449	7.428	7.353	7.520		

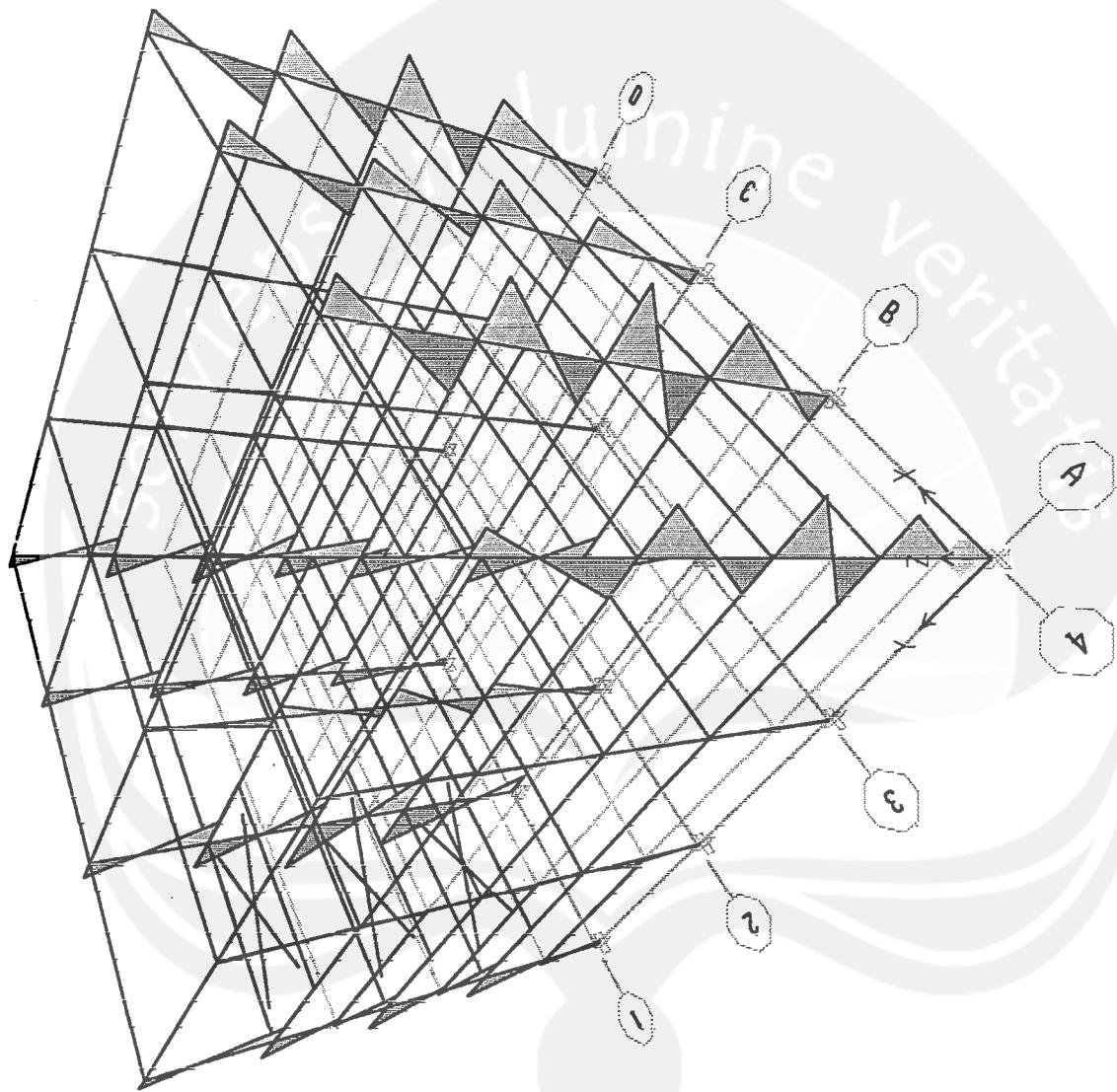


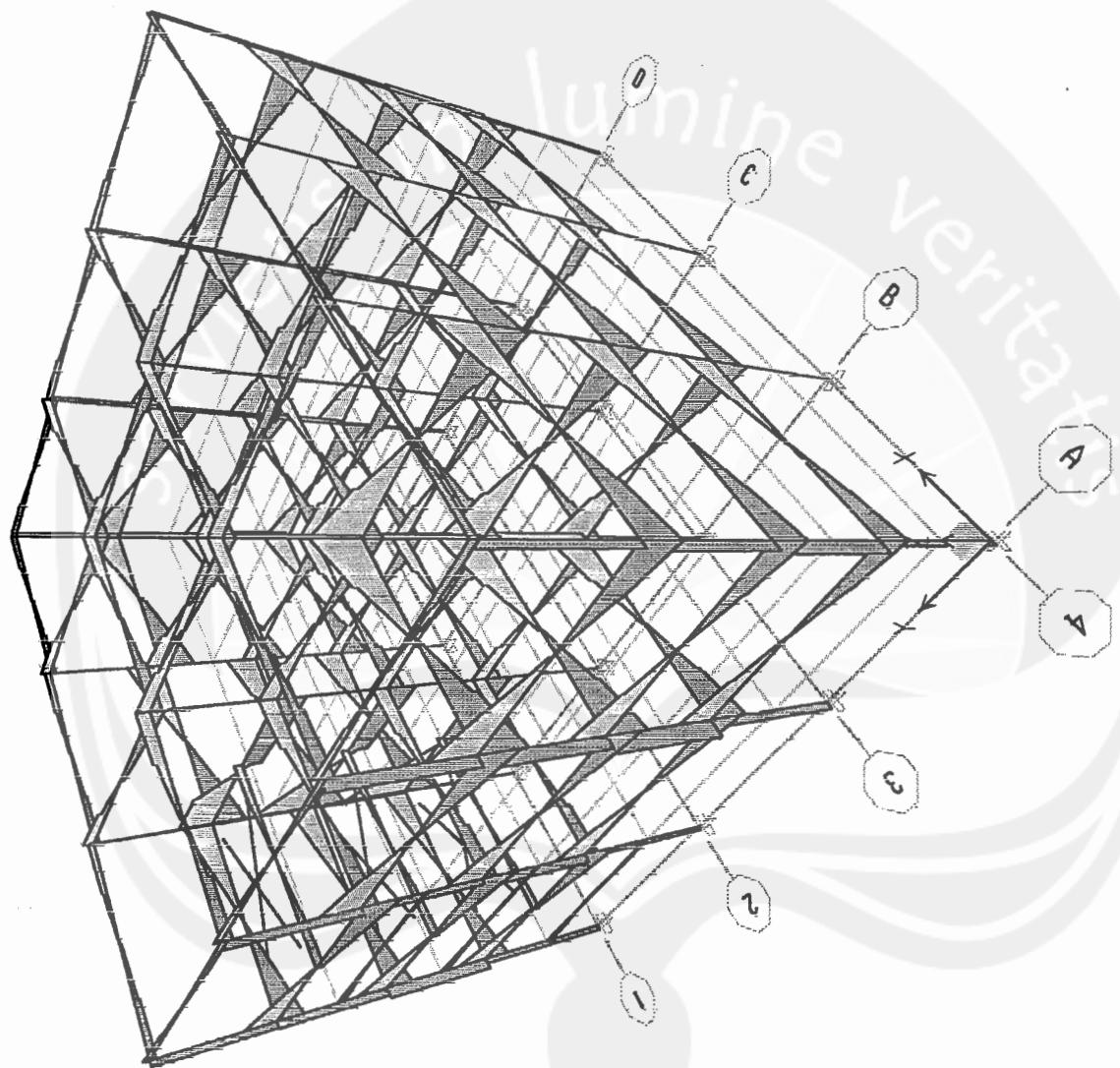
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3-D View Moment 3-3 Diagram (DEAD) - KN-m Units

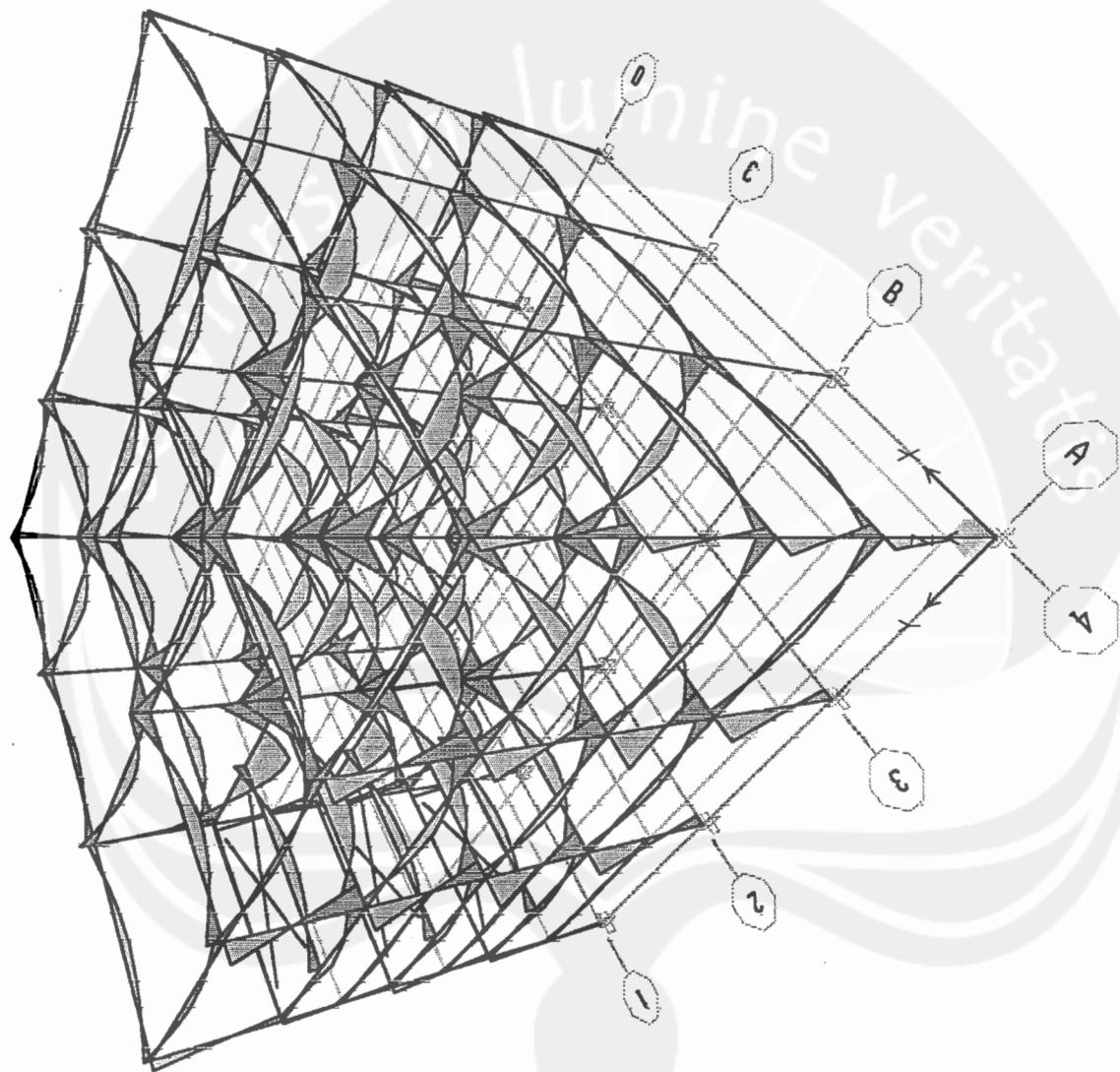


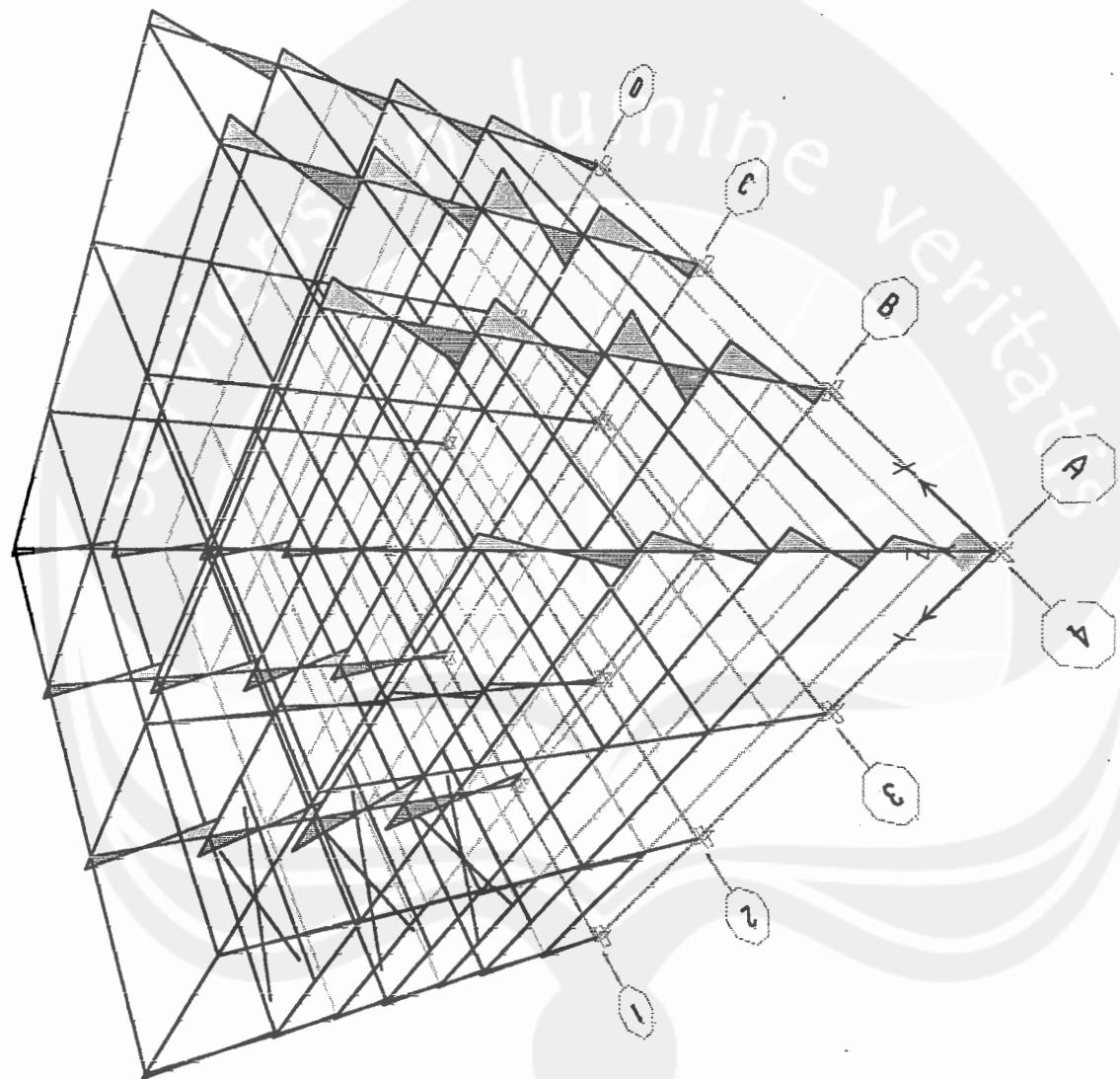


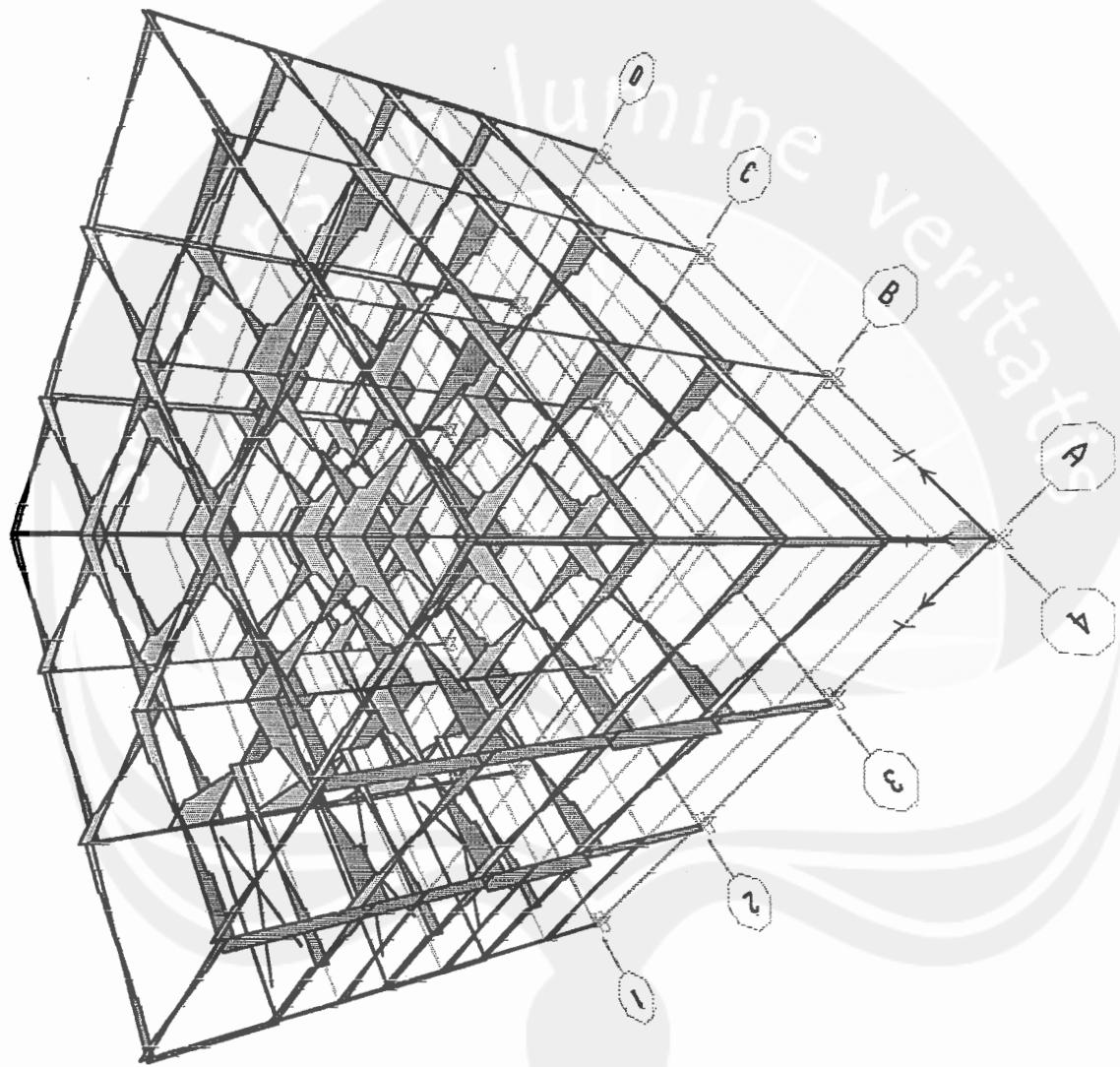


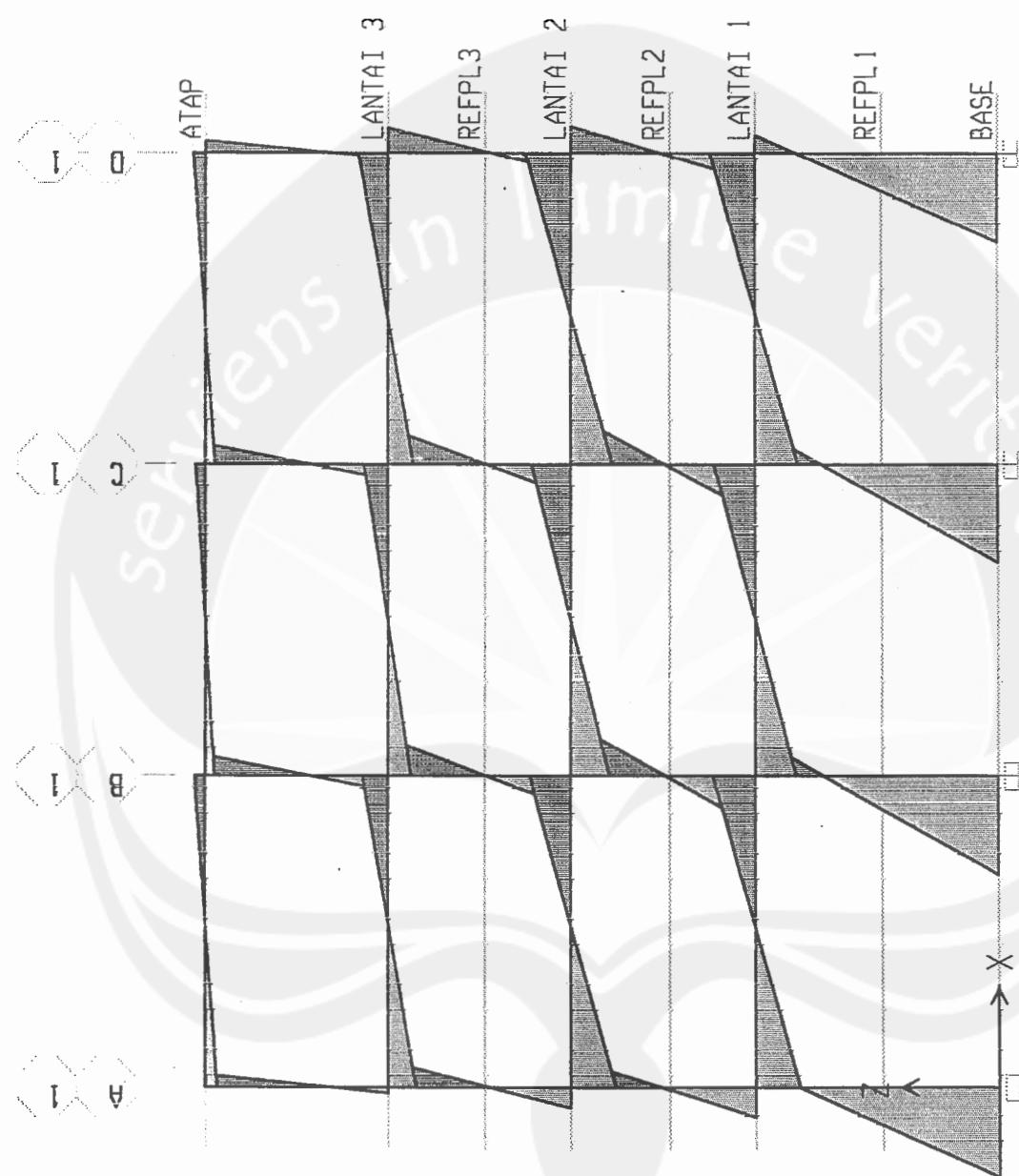


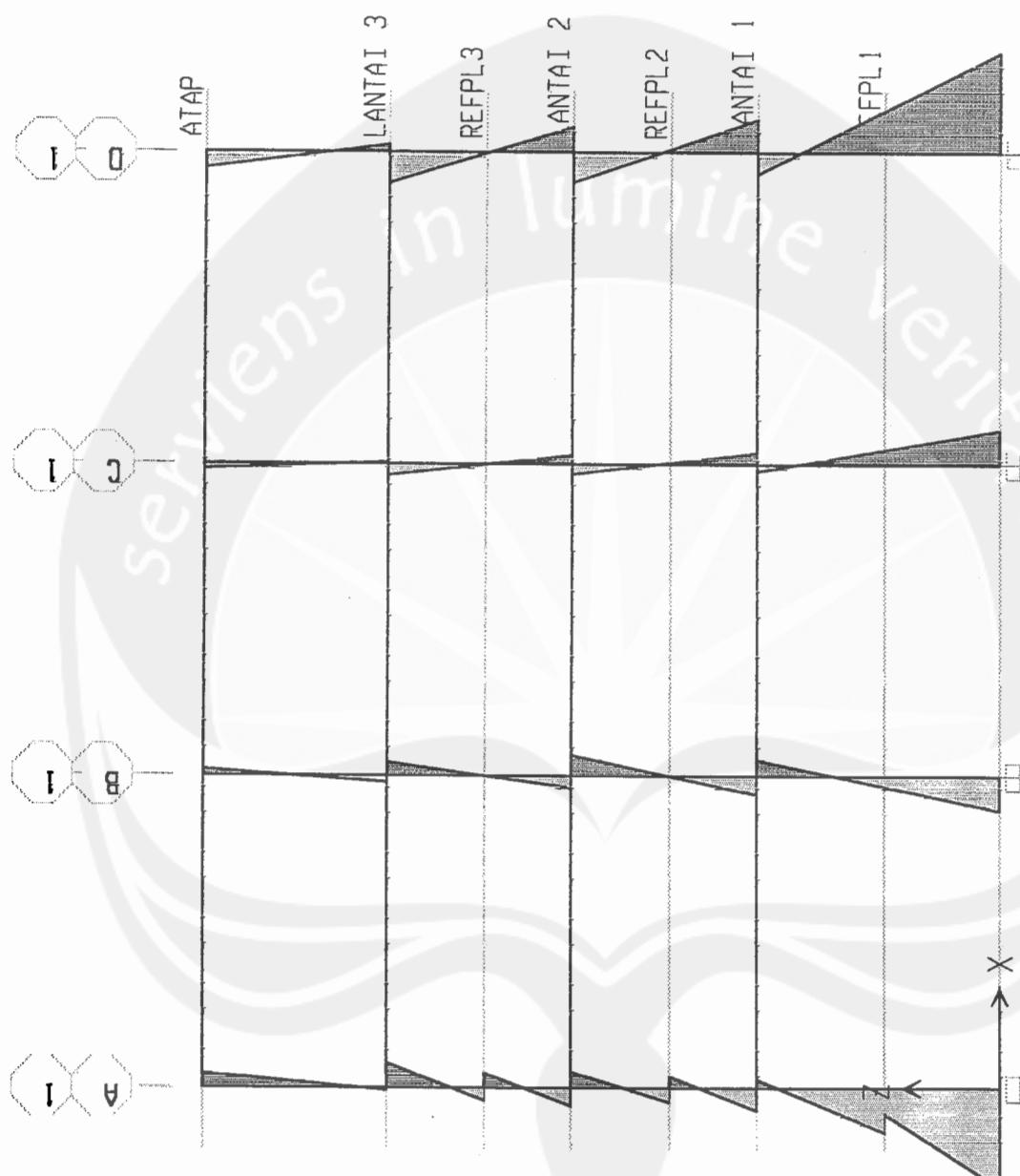


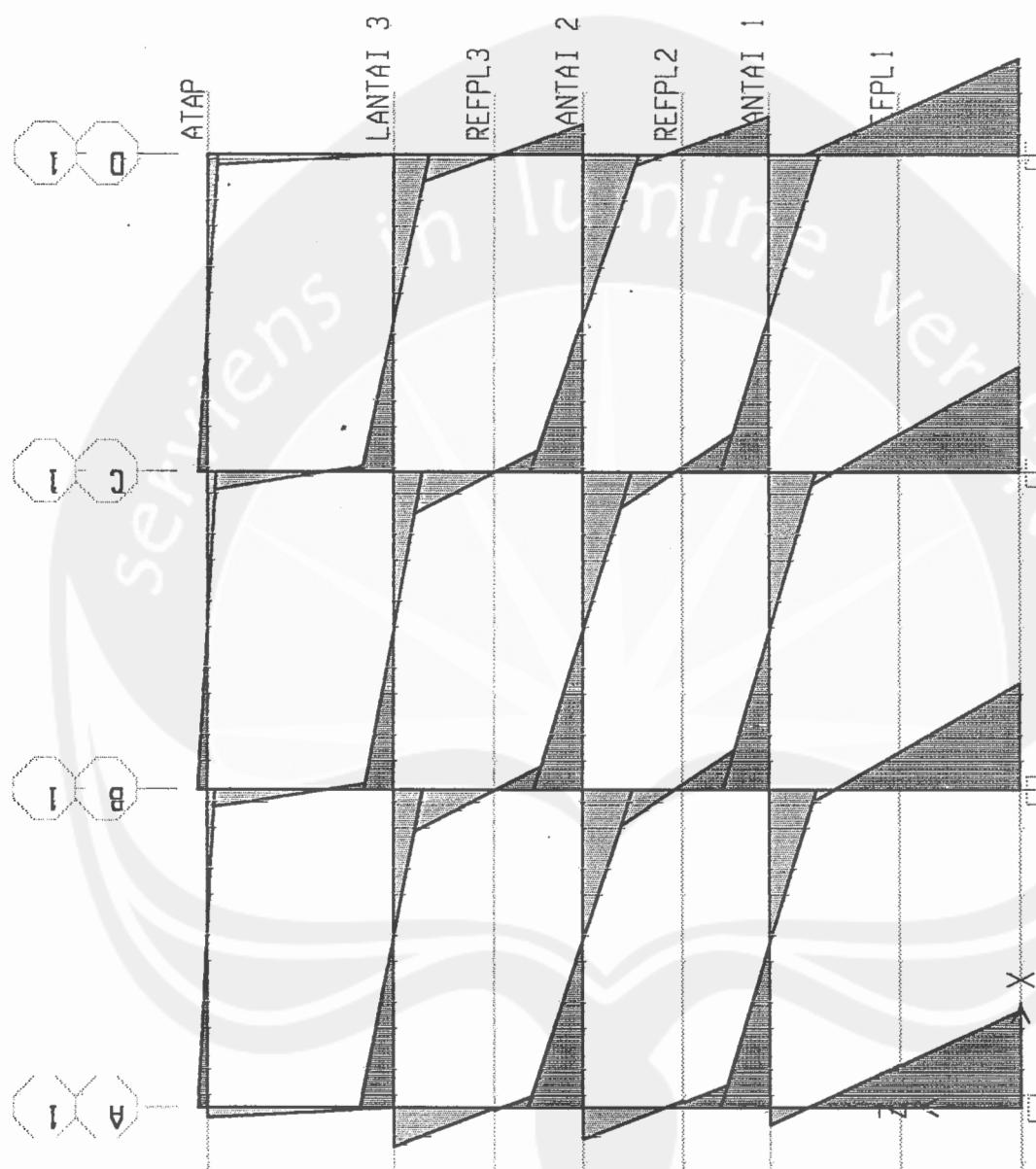


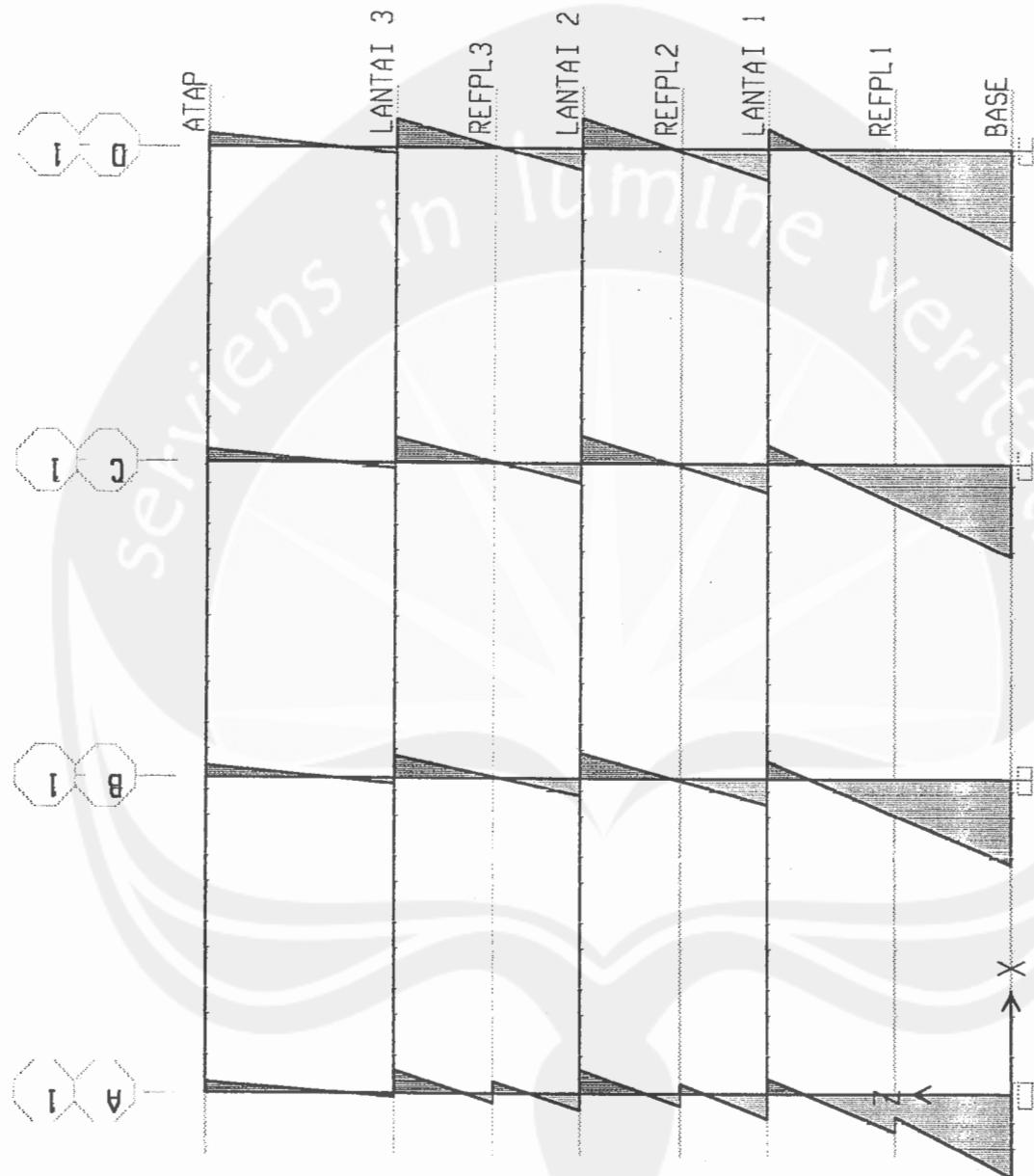












Jurnal 12
Gaya - Gaya Aksial, Geser, Momen dan Torsi yang Terjadi

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B1	COMB19 MAX	0	0	6.4558	0.0000	0.1603	0.0000	17.4656
ATAP	B1	COMB19 MAX	2.5	0	6.4558	0.0000	0.1603	0.0000	23.2043
ATAP	B1	COMB19 MAX	5	0	39.9789	0.0000	3.7945	0.0000	-1.6393
ATAP	B1	COMB19 MIN	0	0	-35.5545	0.0000	-6.6706	0.0000	-38.3447
ATAP	B1	COMB19 MIN	5	0	0.7041	0.0000	-0.1212	0.0000	-46.6809
LANTAI 3	B1	COMB19 MAX	0	0	16.2065	0.0000	0.3489	0.0000	42.9604
LANTAI 3	B1	COMB19 MAX	1.3	0	16.2065	0.0000	0.3489	0.0000	38.7403
LANTAI 3	B1	COMB19 MAX	5	0	79.2102	0.0000	5.7315	0.0000	1.9934
LANTAI 3	B1	COMB19 MIN	0	0	-73.7118	0.0000	-8.1635	0.0000	-88.5164
LANTAI 3	B1	COMB19 MIN	5	0	-0.0655	0.0000	-0.4012	0.0000	-97.1538
LANTAI 2	B1	COMB19 MAX	0	0	25.3084	0.0000	0.4862	0.0000	65.8206
LANTAI 2	B1	COMB19 MAX	3.8	0	61.4449	0.0000	2.8006	0.0000	38.1167
LANTAI 2	B1	COMB19 MAX	5	0	87.6495	0.0000	6.1469	0.0000	26.3205
LANTAI 2	B1	COMB19 MIN	0	0	-84.3658	0.0000	-7.7481	0.0000	-117.1111
LANTAI 2	B1	COMB19 MIN	5	0	-0.0079	0.0000	-0.6161	0.0000	-119.9826
LANTAI 1	B1	COMB19 MAX	0	0	25.7729	0.0000	0.4722	0.0000	66.0486
LANTAI 1	B1	COMB19 MAX	1.3	0	25.7729	0.0000	0.4722	0.0000	45.4838
LANTAI 1	B1	COMB19 MAX	5	0	87.5474	0.0000	6.4266	0.0000	28.3354
LANTAI 1	B1	COMB19 MIN	0	0	-85.1897	0.0000	-7.4684	0.0000	-119.1424
LANTAI 1	B1	COMB19 MIN	5	0	-0.0079	0.0000	-0.5416	0.0000	-121.6750
ATAP	B2	COMB19 MAX	0	0	5.4804	0.0000	0.1662	0.0000	13.7010
ATAP	B2	COMB19 MAX	2.5	0	8.8232	0.0000	2.2318	0.0000	18.1490
ATAP	B2	COMB19 MAX	5	0	37.0447	0.0000	5.1040	0.0000	-1.6051
ATAP	B2	COMB19 MIN	0	0	-36.5006	0.0000	-5.3611	0.0000	-44.0046
ATAP	B2	COMB19 MIN	5	0	0.6420	0.0000	-0.1286	0.0000	-45.3649
LANTAI 3	B2	COMB19 MAX	0	0	13.8799	0.0000	0.3628	0.0000	34.6993
LANTAI 3	B2	COMB19 MAX	2.5	0	18.5249	0.0000	3.9341	0.0000	32.1478
LANTAI 3	B2	COMB19 MAX	5	0	74.3295	0.0000	7.6152	0.0000	0.0383
LANTAI 3	B2	COMB19 MIN	0	0	-73.7262	0.0000	-6.2798	0.0000	-90.9183
LANTAI 3	B2	COMB19 MIN	5	0	0.0004	0.0000	-0.4187	0.0000	-92.4273
LANTAI 2	B2	COMB19 MAX	0	0	22.7234	0.0000	0.4968	0.0000	56.8080
LANTAI 2	B2	COMB19 MAX	1.3	0	22.7234	0.0000	0.4968	0.0000	37.0935
LANTAI 2	B2	COMB19 MAX	5	0	83.6215	0.0000	7.2582	0.0000	22.5038
LANTAI 2	B2	COMB19 MIN	0	0	-82.9788	0.0000	-6.6367	0.0000	-113.7354
LANTAI 2	B2	COMB19 MIN	5	0	0.0004	0.0000	-0.6317	0.0000	-115.3431
LANTAI 1	B2	COMB19 MAX	0	0	24.1099	0.0000	0.4785	0.0000	60.2750
LANTAI 1	B2	COMB19 MAX	1.3	0	24.1099	0.0000	0.4785	0.0000	38.6827
LANTAI 1	B2	COMB19 MAX	5	0	84.8535	0.0000	7.1593	0.0000	26.0879
LANTAI 1	B2	COMB19 MIN	0	0	-84.4261	0.0000	-6.7356	0.0000	-117.3059
LANTAI 1	B2	COMB19 MIN	5	0	0.0002	0.0000	-0.5472	0.0000	-118.3740

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B3	COMB19 MAX	0	0	6.4551	0.0000	0.1573	0.0000	14.8119
ATAP	B3	COMB19 MAX	2.5	0	6.4551	0.0000	0.1573	0.0000	23.0874
ATAP	B3	COMB19 MAX	5	0	35.2482	0.0000	6.8279	0.0000	4.7719
ATAP	B3	COMB19 MIN	0	0	-40.2835	0.0000	-3.6373	0.0000	-47.5594
ATAP	B3	COMB19 MIN	5	0	0.7035	0.0000	-0.1207	0.0000	-37.6954
LANTAI 3	B3	COMB19 MAX	0	0	16.2075	0.0000	0.3503	0.0000	38.0745
LANTAI 3	B3	COMB19 MAX	3.8	0	47.3534	0.0000	3.6740	0.0000	38.7326
LANTAI 3	B3	COMB19 MAX	5	0	73.5580	0.0000	7.4875	0.0000	16.0430
LANTAI 3	B3	COMB19 MIN	0	0	-79.3655	0.0000	-6.4074	0.0000	-97.7441
LANTAI 3	B3	COMB19 MIN	5	0	0.0665	0.0000	-0.4053	0.0000	-88.3339
LANTAI 2	B3	COMB19 MAX	0	0	25.3090	0.0000	0.4862	0.0000	60.7232
LANTAI 2	B3	COMB19 MAX	3.8	0	58.1597	0.0000	3.8272	0.0000	47.4673
LANTAI 2	B3	COMB19 MAX	5	0	84.3643	0.0000	7.3666	0.0000	36.9948
LANTAI 2	B3	COMB19 MIN	0	0	-87.6519	0.0000	-6.5284	0.0000	-120.0832
LANTAI 2	B3	COMB19 MIN	5	0	0.0088	0.0000	-0.6187	0.0000	-117.2012
LANTAI 1	B3	COMB19 MAX	0	0	25.7726	0.0000	0.4723	0.0000	62.8149
LANTAI 1	B3	COMB19 MAX	3.8	0	59.0118	0.0000	3.6155	0.0000	45.4150
LANTAI 1	B3	COMB19 MAX	5	0	85.2164	0.0000	7.2046	0.0000	35.4975
LANTAI 1	B3	COMB19 MIN	0	0	-87.5200	0.0000	-6.6903	0.0000	-121.6409
LANTAI 1	B3	COMB19 MIN	5	0	0.0083	0.0000	-0.5399	0.0000	-119.2442
ATAP	B4	COMB19 MAX	0	0	7.0616	0.0000	0.1558	0.0000	19.1060
ATAP	B4	COMB19 MAX	2.5	0	17.1273	0.0000	0.1558	0.0000	40.3961
ATAP	B4	COMB19 MAX	5	0	62.7702	0.0000	0.1558	0.0000	-0.5276
ATAP	B4	COMB19 MIN	0	0	-54.2882	0.0000	-0.0867	0.0000	-52.8355
ATAP	B4	COMB19 MIN	5	0	0.2276	0.0000	-0.0867	0.0000	-71.1118
LANTAI 3	B4	COMB19 MAX	0	0	17.5884	0.0000	0.9647	0.0000	46.6143
LANTAI 3	B4	COMB19 MAX	2.5	0	17.5884	0.0000	0.9647	0.0000	59.5410
LANTAI 3	B4	COMB19 MAX	5	0	106.8042	0.0000	0.9647	0.0000	0.1909
LANTAI 3	B4	COMB19 MIN	0	0	-100.3532	0.0000	-0.3126	0.0000	-113.8639
LANTAI 3	B4	COMB19 MIN	5	0	-0.1239	0.0000	-0.3126	0.0000	-124.6284
LANTAI 2	B4	COMB19 MAX	0	0	27.3415	0.0000	0.9458	0.0000	71.1031
LANTAI 2	B4	COMB19 MAX	2.5	0	37.1581	0.0000	0.9458	0.0000	56.3373
LANTAI 2	B4	COMB19 MAX	5	0	115.4672	0.0000	0.9458	0.0000	14.7136
LANTAI 2	B4	COMB19 MIN	0	0	-111.4999	0.0000	-0.5124	0.0000	-144.7840
LANTAI 2	B4	COMB19 MIN	5	0	-0.0192	0.0000	-0.5124	0.0000	-149.1215
LANTAI 1	B4	COMB19 MAX	0	0	27.8382	0.0000	0.8166	0.0000	71.3403
LANTAI 1	B4	COMB19 MAX	2.5	0	37.0567	0.0000	0.8166	0.0000	54.5779
LANTAI 1	B4	COMB19 MAX	5	0	115.3658	0.0000	0.8166	0.0000	16.7145
LANTAI 1	B4	COMB19 MIN	0	0	-112.5231	0.0000	-0.4781	0.0000	-147.9342
LANTAI 1	B4	COMB19 MIN	5	0	-0.0164	0.0000	-0.4781	0.0000	-151.5076

(Lanjutan)

Story	Beam	Load	Loc	P.	V2	V3	T	M2	M3
ATAP	B5	COMB19 MAX	0	0	5.9847	0.0000	0.2420	0.0000	14.9632
ATAP	B5	COMB19 MAX	2.5	0	12.4815	0.0000	0.2420	0.0000	31.8576
ATAP	B5	COMB19 MAX	5	0	58.1244	0.0000	0.2420	0.0000	-0.5331
ATAP	B5	COMB19 MIN	0	0	-56.7723	0.0000	-0.0896	0.0000	-65.3999
ATAP	B5	COMB19 MIN	5	0	0.2143	0.0000	-0.0896	0.0000	-68.7759
LANTAI 3	B5	COMB19 MAX	0	0	15.0766	0.0000	0.2513	0.0000	37.6864
LANTAI 3	B5	COMB19 MAX	2.5	0	22.1363	0.0000	0.2513	0.0000	41.1548
LANTAI 3	B5	COMB19 MAX	5	0	79.6554	0.0000	0.2513	0.0000	0.0670
LANTAI 3	B5	COMB19 MIN	0	0	-80.8294	0.0000	-0.9573	0.0000	-106.0394
LANTAI 3	B5	COMB19 MIN	5	0	0.0004	0.0000	-0.9573	0.0000	-103.1136
LANTAI 2	B5	COMB19 MAX	0	0	24.5584	0.0000	0.3908	0.0000	61.3916
LANTAI 2	B5	COMB19 MAX	2.5	0	32.1460	0.0000	0.3908	0.0000	41.8933
LANTAI 2	B5	COMB19 MAX	5	0	89.6651	0.0000	0.3908	0.0000	23.3076
LANTAI 2	B5	COMB19 MIN	0	0	-90.0754	0.0000	-0.9515	0.0000	-128.4469
LANTAI 2	B5	COMB19 MIN	5	0	0.0003	0.0000	-0.9515	0.0000	-127.4295
LANTAI 1	B5	COMB19 MAX	0	0	26.0441	0.0000	0.4277	0.0000	65.1090
LANTAI 1	B5	COMB19 MAX	2.5	0	33.6325	0.0000	0.4277	0.0000	42.1528
LANTAI 1	B5	COMB19 MAX	5	0	91.1516	0.0000	0.4277	0.0000	27.1458
LANTAI 1	B5	COMB19 MIN	0	0	-91.5269	0.0000	-0.8338	0.0000	-131.8199
LANTAI 1	B5	COMB19 MIN	5	0	0.0001	0.0000	-0.8338	0.0000	-130.8839
ATAP	B6	COMB19 MAX	0	0	7.0512	0.0000	0.0978	0.0000	16.1812
ATAP	B6	COMB19 MAX	2.5	0	8.0586	0.0000	0.0978	0.0000	40.6269
ATAP	B6	COMB19 MAX	5	0	53.7015	0.0000	0.0978	0.0000	-0.6222
ATAP	B6	COMB19 MIN	0	0	-63.3392	0.0000	-0.2738	0.0000	-72.3046
ATAP	B6	COMB19 MIN	5	0	0.2325	0.0000	-0.2738	0.0000	-51.1287
LANTAI 3	B6	COMB19 MAX	0	0	17.6056	0.0000	0.3678	0.0000	41.3649
LANTAI 3	B6	COMB19 MAX	2.5	0	22.0971	0.0000	0.3678	0.0000	48.4192
LANTAI 3	B6	COMB19 MAX	5	0	79.6162	0.0000	0.3678	0.0000	15.9979
LANTAI 3	B6	COMB19 MIN	0	0	-85.9992	0.0000	-0.3634	0.0000	-109.7258
LANTAI 3	B6	COMB19 MIN	5	0	0.1249	0.0000	-0.3634	0.0000	-99.1427
LANTAI 2	B6	COMB19 MAX	0	0	27.3515	0.0000	0.5825	0.0000	65.6286
LANTAI 2	B6	COMB19 MAX	3.8	0	65.2090	0.0000	0.5825	0.0000	51.9703
LANTAI 2	B6	COMB19 MAX	5	0	90.5732	0.0000	0.5825	0.0000	38.6219
LANTAI 2	B6	COMB19 MIN	0	0	-94.8371	0.0000	-0.6391	0.0000	-133.5087
LANTAI 2	B6	COMB19 MIN	5	0	0.0198	0.0000	-0.6391	0.0000	-128.4311
LANTAI 1	B6	COMB19 MAX	0	0	27.8405	0.0000	0.5807	0.0000	67.8559
LANTAI 1	B6	COMB19 MAX	3.8	0	66.2959	0.0000	0.5807	0.0000	49.5265
LANTAI 1	B6	COMB19 MAX	5	0	91.6601	0.0000	0.5807	0.0000	37.0074
LANTAI 1	B6	COMB19 MIN	0	0	-94.6557	0.0000	-0.6117	0.0000	-135.2723
LANTAI 1	B6	COMB19 MIN	5	0	0.0167	0.0000	-0.6117	0.0000	-131.3175

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B7	COMB19 MAX	0	0	7.6986	0.0000	0.1475	0.0000	20.8785
ATAP	B7	COMB19 MAX	2.5	0	18.1776	0.0000	0.1475	0.0000	41.1232
ATAP	B7	COMB19 MAX	5	0	63.8206	0.0000	0.1475	0.0000	0.7621
ATAP	B7	COMB19 MIN	0	0	-54.5672	0.0000	-0.1786	0.0000	-53.0378
ATAP	B7	COMB19 MIN	5	0	-0.3198	0.0000	-0.1786	0.0000	-72.8847
LANTAI 3	B7	COMB19 MAX	0	0	18.3772	0.0000	6.0913	0.0000	48.6757
LANTAI 3	B7	COMB19 MAX	1.3	0	18.3772	0.0000	2.2777	0.0000	41.4971
LANTAI 3	B7	COMB19 MAX	5	0	79.6509	0.0000	0.1410	0.0000	7.6878
LANTAI 3	B7	COMB19 MIN	0	0	-73.9306	0.0000	-0.0762	0.0000	-95.1615
LANTAI 3	B7	COMB19 MIN	5	0	-0.8532	0.0000	-7.8037	0.0000	-103.9358
LANTAI 2	B7	COMB19 MAX	0	0	28.7805	0.0000	6.3194	0.0000	74.8337
LANTAI 2	B7	COMB19 MAX	2.5	0	34.7887	0.0000	0.2959	0.0000	39.5084
LANTAI 2	B7	COMB19 MAX	5	0	89.2282	0.0000	0.2959	0.0000	34.3880
LANTAI 2	B7	COMB19 MIN	0	0	-85.4430	0.0000	-0.1968	0.0000	-125.4509
LANTAI 2	B7	COMB19 MIN	5	0	-1.3254	0.0000	-7.5756	0.0000	-129.0788
LANTAI 1	B7	COMB19 MAX	0	0	29.4869	0.0000	6.4606	0.0000	75.5650
LANTAI 1	B7	COMB19 MAX	2.5	0	34.9274	0.0000	0.3470	0.0000	38.2780
LANTAI 1	B7	COMB19 MAX	5	0	89.3669	0.0000	0.3470	0.0000	37.2840
LANTAI 1	B7	COMB19 MIN	0	0	-86.6449	0.0000	-0.3004	0.0000	-128.5149
LANTAI 1	B7	COMB19 MIN	5	0	-1.2050	0.0000	-7.4344	0.0000	-131.5840
ATAP	B8	COMB19 MAX	0	0	6.5314	0.0000	0.0965	0.0000	16.3676
ATAP	B8	COMB19 MAX	2.5	0	12.3594	0.0000	0.0965	0.0000	31.4424
ATAP	B8	COMB19 MAX	5	0	58.0024	0.0000	0.0965	0.0000	0.4944
ATAP	B8	COMB19 MIN	0	0	-57.9726	0.0000	-0.2579	0.0000	-68.8333
ATAP	B8	COMB19 MIN	5	0	-0.1893	0.0000	-0.2579	0.0000	-68.8422
LANTAI 3	B8	COMB19 MAX	0	0	16.1350	0.0000	0.7290	0.0000	40.1532
LANTAI 3	B8	COMB19 MAX	2.5	0	24.0842	0.0000	0.7290	0.0000	42.7330
LANTAI 3	B8	COMB19 MAX	5	0	81.6034	0.0000	0.7290	0.0000	1.8992
LANTAI 3	B8	COMB19 MIN	0	0	-80.9688	0.0000	-0.2951	0.0000	-104.7069
LANTAI 3	B8	COMB19 MIN	5	0	-0.6533	0.0000	-0.2951	0.0000	-106.6805
LANTAI 2	B8	COMB19 MAX	0	0	26.2160	0.0000	0.8820	0.0000	65.3282
LANTAI 2	B8	COMB19 MAX	2.5	0	34.1389	0.0000	0.8820	0.0000	42.6953
LANTAI 2	B8	COMB19 MAX	5	0	91.6580	0.0000	0.8820	0.0000	27.6101
LANTAI 2	B8	COMB19 MIN	0	0	-91.3563	0.0000	-0.5128	0.0000	-130.6742
LANTAI 2	B8	COMB19 MIN	5	0	-1.1203	0.0000	-0.5128	0.0000	-131.8690
LANTAI 1	B8	COMB19 MAX	0	0	27.8319	0.0000	0.8197	0.0000	69.4240
LANTAI 1	B8	COMB19 MAX	2.5	0	35.6958	0.0000	0.8197	0.0000	42.7175
LANTAI 1	B8	COMB19 MAX	5	0	93.2149	0.0000	0.8197	0.0000	31.6512
LANTAI 1	B8	COMB19 MIN	0	0	-93.0086	0.0000	-0.5100	0.0000	-134.8290
LANTAI 1	B8	COMB19 MIN	5	0	-1.0827	0.0000	-0.5100	0.0000	-135.6649

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B9	COMB19 MAX	0	0	7.6306	0.0000	0.2708	0.0000	17.4910
ATAP	B9	COMB19 MAX	2.5	0	8.7740	0.0000	0.2708	0.0000	40.8241
ATAP	B9	COMB19 MAX	5	0	54.4169	0.0000	0.2708	0.0000	0.5991
ATAP	B9	COMB19 MIN	0	0	-63.7778	0.0000	-0.0806	0.0000	-73.0663
ATAP	B9	COMB19 MIN	5	0	-0.2246	0.0000	-0.0806	0.0000	-52.8578
LANTAI 3	B9	COMB19 MAX	0	0	19.0211	0.0000	0.3363	0.0000	44.7080
LANTAI 3	B9	COMB19 MAX	2.5	0	23.3565	0.0000	0.3363	0.0000	48.3017
LANTAI 3	B9	COMB19 MAX	5	0	80.8756	0.0000	0.3363	0.0000	19.8703
LANTAI 3	B9	COMB19 MIN	0	0	-87.5561	0.0000	-0.3890	0.0000	-113.5294
LANTAI 3	B9	COMB19 MIN	5	0	-0.7989	0.0000	-0.3890	0.0000	-102.5901
LANTAI 2	B9	COMB19 MAX	0	0	29.4156	0.0000	0.6028	0.0000	70.5947
LANTAI 2	B9	COMB19 MAX	2.5	0	34.9906	0.0000	0.6028	0.0000	46.3668
LANTAI 2	B9	COMB19 MAX	5	0	92.5097	0.0000	0.6028	0.0000	44.0995
LANTAI 2	B9	COMB19 MIN	0	0	-97.0005	0.0000	-0.6084	0.0000	-138.7183
LANTAI 2	B9	COMB19 MIN	5	0	-1.2817	0.0000	-0.6084	0.0000	-133.4575
LANTAI 1	B9	COMB19 MAX	0	0	29.9174	0.0000	0.5862	0.0000	72.9241
LANTAI 1	B9	COMB19 MAX	2.5	0	36.1238	0.0000	0.5862	0.0000	45.0162
LANTAI 1	B9	COMB19 MAX	5	0	93.6429	0.0000	0.5862	0.0000	42.4017
LANTAI 1	B9	COMB19 MIN	0	0	-96.8034	0.0000	-0.6003	0.0000	-140.5259
LANTAI 1	B9	COMB19 MIN	5	0	-1.1690	0.0000	-0.6003	0.0000	-136.4058
ATAP	B10	COMB19 MAX	0	0	8.3299	0.0000	6.4371	0.0000	22.5759
ATAP	B10	COMB19 MAX	2.5	0	13.7747	0.0000	0.1150	0.0000	24.3602
ATAP	B10	COMB19 MAX	5	0	41.9962	0.0000	0.1150	0.0000	1.3831
ATAP	B10	COMB19 MIN	0	0	-37.2265	0.0000	-0.1383	0.0000	-41.9685
ATAP	B10	COMB19 MIN	5	0	-0.6061	0.0000	-4.0280	0.0000	-50.3112
LANTAI 3	B10	COMB19 MAX	0	0	19.8110	0.0000	2.1066	0.0000	52.4686
LANTAI 3	B10	COMB19 MAX	5	0	55.6314	0.0000	2.1066	0.0000	24.8478
LANTAI 3	B10	COMB19 MIN	0	0	-51.9416	0.0000	-0.1346	0.0000	-76.6779
LANTAI 3	B10	COMB19 MIN	5	0	-2.2518	0.0000	-0.1346	0.0000	-79.8020
LANTAI 2	B10	COMB19 MAX	0	0	30.8610	0.0000	2.1345	0.0000	80.2439
LANTAI 2	B10	COMB19 MAX	5	0	66.2982	0.0000	2.1345	0.0000	54.6872
LANTAI 2	B10	COMB19 MIN	0	0	-64.2569	0.0000	-0.3671	0.0000	-107.5253
LANTAI 2	B10	COMB19 MIN	5	0	-6.2246	0.0000	-0.3671	0.0000	-106.2088
LANTAI 1	B10	COMB19 MAX	0	0	31.5677	0.0000	1.6880	0.0000	80.8965
LANTAI 1	B10	COMB19 MAX	5	0	66.6499	0.0000	1.6880	0.0000	57.6324
LANTAI 1	B10	COMB19 MIN	0	0	-65.1484	0.0000	-0.4626	0.0000	-108.9806
LANTAI 1	B10	COMB19 MIN	5	0	-7.0591	0.0000	-0.4626	0.0000	-108.6522
ATAP	B11	COMB19 MAX	0	0	7.0343	0.0000	5.3898	0.0000	17.6198
ATAP	B11	COMB19 MAX	2.5	0	9.9223	0.0000	0.1839	0.0000	17.6417
ATAP	B11	COMB19 MAX	5	0	38.1438	0.0000	0.1839	0.0000	1.6164

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B11	COMB19 MIN	0	0	-38.5192	0.0000	-0.1321	0.0000	-49.5486
ATAP	B11	COMB19 MIN	5	0	-0.6585	0.0000	-5.0754	0.0000	-48.5241
LANTAI 3	B11	COMB19 MAX	0	0	17.3355	0.0000	6.3037	0.0000	43.1443
LANTAI 3	B11	COMB19 MAX	2.5	0	23.3342	0.0000	0.2891	0.0000	34.2680
LANTAI 3	B11	COMB19 MAX	5	0	79.1388	0.0000	0.2891	0.0000	7.3321
LANTAI 3	B11	COMB19 MIN	0	0	-75.8159	0.0000	-0.4033	0.0000	-94.1307
LANTAI 3	B11	COMB19 MIN	5	0	-2.0642	0.0000	-7.5913	0.0000	-102.8258
LANTAI 2	B11	COMB19 MAX	0	0	28.0554	0.0000	6.1078	0.0000	69.9192
LANTAI 2	B11	COMB19 MAX	2.5	0	33.7271	0.0000	0.4285	0.0000	33.5286
LANTAI 2	B11	COMB19 MAX	5	0	89.5316	0.0000	0.4285	0.0000	35.8946
LANTAI 2	B11	COMB19 MIN	0	0	-87.7025	0.0000	-0.6210	0.0000	-124.4294
LANTAI 2	B11	COMB19 MIN	5	0	-3.4639	0.0000	-7.8014	0.0000	-129.4448
LANTAI 1	B11	COMB19 MAX	0	0	29.7604	0.0000	6.2943	0.0000	74.2429
LANTAI 1	B11	COMB19 MAX	2.5	0	35.1325	0.0000	0.4336	0.0000	33.2545
LANTAI 1	B11	COMB19 MAX	5	0	90.9370	0.0000	0.4336	0.0000	40.1885
LANTAI 1	B11	COMB19 MIN	0	0	-89.6167	0.0000	-0.5439	0.0000	-129.5023
LANTAI 1	B11	COMB19 MIN	5	0	-3.3131	0.0000	-7.6007	0.0000	-133.1237
ATAP	B12	COMB19 MAX	0	0	8.2304	0.0000	3.6370	0.0000	18.8712
ATAP	B12	COMB19 MAX	2.5	0	8.8957	0.0000	0.1592	0.0000	23.2621
ATAP	B12	COMB19 MAX	5	0	37.1172	0.0000	0.1592	0.0000	9.5313
ATAP	B12	COMB19 MIN	0	0	-41.9578	0.0000	-0.1212	0.0000	-51.1965
ATAP	B12	COMB19 MIN	5	0	-0.6913	0.0000	-6.8282	0.0000	-42.5789
LANTAI 3	B12	COMB19 MAX	0	0	20.4267	0.0000	6.3772	0.0000	48.0190
LANTAI 3	B12	COMB19 MAX	2.5	0	21.6219	0.0000	0.3471	0.0000	37.5038
LANTAI 3	B12	COMB19 MAX	5	0	77.4265	0.0000	0.3471	0.0000	27.5573
LANTAI 3	B12	COMB19 MIN	0	0	-83.9201	0.0000	-0.4048	0.0000	-108.7029
LANTAI 3	B12	COMB19 MIN	5	0	-2.4134	0.0000	-7.5178	0.0000	-98.7820
LANTAI 2	B12	COMB19 MAX	0	0	31.4641	0.0000	6.4586	0.0000	75.5170
LANTAI 2	B12	COMB19 MAX	2.5	0	34.3413	0.0000	0.4849	0.0000	36.0379
LANTAI 2	B12	COMB19 MAX	5	0	90.1459	0.0000	0.4849	0.0000	53.4329
LANTAI 2	B12	COMB19 MIN	0	0	-94.1520	0.0000	-0.6185	0.0000	-135.7486
LANTAI 2	B12	COMB19 MIN	5	0	-3.8745	0.0000	-7.4364	0.0000	-132.2548
LANTAI 1	B12	COMB19 MAX	0	0	31.9794	0.0000	6.6473	0.0000	77.9518
LANTAI 1	B12	COMB19 MAX	2.5	0	35.3649	0.0000	0.4718	0.0000	34.3657
LANTAI 1	B12	COMB19 MAX	5	0	91.1695	0.0000	0.4718	0.0000	51.6812
LANTAI 1	B12	COMB19 MIN	0	0	-93.9572	0.0000	-0.5398	0.0000	-137.3703
LANTAI 1	B12	COMB19 MIN	5	0	-3.5381	0.0000	-7.2477	0.0000	-134.5216
ATAP	B13	COMB19 MAX	0	0	6.6484	0.0000	6.6914	0.0000	18.0406
ATAP	B13	COMB19 MAX	2.5	0	11.9473	0.0000	0.1605	0.0000	23.2698
ATAP	B13	COMB19 MAX	5	0	40.1688	0.0000	0.1605	0.0000	-1.9076

(Lanjutan)

Story	Beam	Load	Loc	P.	V2	V3	T	M2	M3
ATAP	B13	COMB19 MIN	0	0	-35.8543	0.0000	-0.1189	0.0000	-39.1588
ATAP	B13	COMB19 MIN	5	0	0.8784	0.0000	-3.7737	0.0000	-46.9863
LANTAI 3	B13	COMB19 MAX	0	0	15.2412	0.0000	8.1030	0.0000	40.4642
LANTAI 3	B13	COMB19 MAX	2.5	0	22.1227	0.0000	0.3442	0.0000	37.2947
LANTAI 3	B13	COMB19 MAX	5	0	77.9273	0.0000	0.3442	0.0000	0.0992
LANTAI 3	B13	COMB19 MIN	0	0	-72.8091	0.0000	-0.4034	0.0000	-86.2823
LANTAI 3	B13	COMB19 MIN	5	0	-0.0671	0.0000	-5.7920	0.0000	-94.1801
LANTAI 2	B13	COMB19 MAX	0	0	23.4388	0.0000	7.6872	0.0000	61.0046
LANTAI 2	B13	COMB19 MAX	2.5	0	29.1478	0.0000	0.4832	0.0000	35.3646
LANTAI 2	B13	COMB19 MAX	5	0	84.9523	0.0000	0.4832	0.0000	21.7041
LANTAI 2	B13	COMB19 MIN	0	0	-82.7212	0.0000	-0.6175	0.0000	-112.9047
LANTAI 2	B13	COMB19 MIN	5	0	-0.0085	0.0000	-6.2078	0.0000	-113.4949
LANTAI 1	B13	COMB19 MAX	0	0	24.6369	0.0000	7.4278	0.0000	63.1683
LANTAI 1	B13	COMB19 MAX	2.5	0	30.0185	0.0000	0.4723	0.0000	34.3766
LANTAI 1	B13	COMB19 MAX	5	0	85.8230	0.0000	0.4723	0.0000	25.6005
LANTAI 1	B13	COMB19 MIN	0	0	-84.2951	0.0000	-0.5405	0.0000	-116.8961
LANTAI 1	B13	COMB19 MIN	5	0	-0.0085	0.0000	-6.4671	0.0000	-117.4515
ATAP	B14	COMB19 MAX	0	0	5.6568	0.0000	5.4667	0.0000	14.1519
ATAP	B14	COMB19 MAX	2.5	0	9.1606	0.0000	0.2089	0.0000	17.9665
ATAP	B14	COMB19 MAX	5	0	37.3821	0.0000	0.2089	0.0000	-1.7385
ATAP	B14	COMB19 MIN	0	0	-36.6141	0.0000	-0.1195	0.0000	-44.4390
ATAP	B14	COMB19 MIN	5	0	0.8055	0.0000	-4.9985	0.0000	-46.3595
LANTAI 3	B14	COMB19 MAX	0	0	13.6723	0.0000	5.9865	0.0000	33.7086
LANTAI 3	B14	COMB19 MAX	2.5	0	17.2516	0.0000	0.2180	0.0000	33.1192
LANTAI 3	B14	COMB19 MAX	5	0	73.0562	0.0000	0.2180	0.0000	0.4538
LANTAI 3	B14	COMB19 MIN	0	0	-74.3469	0.0000	-0.3956	0.0000	-91.2059
LANTAI 3	B14	COMB19 MIN	5	0	0.0055	0.0000	-7.9085	0.0000	-88.8730
LANTAI 2	B14	COMB19 MAX	0	0	21.8523	0.0000	6.4731	0.0000	53.9999
LANTAI 2	B14	COMB19 MAX	2.5	0	25.7444	0.0000	0.3620	0.0000	33.0164
LANTAI 2	B14	COMB19 MAX	5	0	81.5489	0.0000	0.3620	0.0000	21.7342
LANTAI 2	B14	COMB19 MIN	0	0	-82.7673	0.0000	-0.6119	0.0000	-112.1425
LANTAI 2	B14	COMB19 MIN	5	0	-0.0044	0.0000	-7.4218	0.0000	-110.3279
LANTAI 1	B14	COMB19 MAX	0	0	23.4897	0.0000	6.6244	0.0000	58.3732
LANTAI 1	B14	COMB19 MAX	2.5	0	27.4909	0.0000	0.3903	0.0000	32.9371
LANTAI 1	B14	COMB19 MAX	5	0	83.2955	0.0000	0.3903	0.0000	25.6670
LANTAI 1	B14	COMB19 MIN	0	0	-84.4024	0.0000	-0.5386	0.0000	-116.5563
LANTAI 1	B14	COMB19 MIN	5	0	0.0005	0.0000	-7.2706	0.0000	-114.4691
ATAP	B15	COMB19 MAX	0	0	6.2575	0.0000	3.9254	0.0000	14.2563
ATAP	B15	COMB19 MAX	2.5	0	6.8312	0.0000	0.1551	0.0000	23.6894
ATAP	B15	COMB19 MAX	5	0	35.0527	0.0000	0.1551	0.0000	4.7084

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B15	COMB19 MIN	0	0	-40.1512	0.0000	-0.1507	0.0000	-46.6544
ATAP	B15	COMB19 MIN	5	0	0.8157	0.0000	-6.5397	0.0000	-36.7517
LANTAI 3	B15	COMB19 MAX	0	0	15.9650	0.0000	12.3648	0.0000	37.6678
LANTAI 3	B15	COMB19 MAX	2.5	0	30.3088	0.0000	5.1457	0.0000	39.4667
LANTAI 3	B15	COMB19 MAX	5	0	63.6088	0.0000	5.1457	0.0000	16.0663
LANTAI 3	B15	COMB19 MIN	0	0	-77.2369	0.0000	-4.4490	0.0000	-96.4019
LANTAI 3	B15	COMB19 MIN	5	0	0.0694	0.0000	-15.6472	0.0000	-84.5317
LANTAI 2	B15	COMB19 MAX	0	0	24.2582	0.0000	15.5648	0.0000	58.6782
LANTAI 2	B15	COMB19 MAX	2.5	0	39.5033	0.0000	7.8008	0.0000	39.9064
LANTAI 2	B15	COMB19 MAX	5	0	72.8033	0.0000	7.8008	0.0000	35.4454
LANTAI 2	B15	COMB19 MIN	0	0	-85.5795	0.0000	-6.8250	0.0000	-117.9469
LANTAI 2	B15	COMB19 MIN	5	0	0.0103	0.0000	-18.3681	0.0000	-108.2655
LANTAI 1	B15	COMB19 MAX	0	0	24.8414	0.0000	16.0617	0.0000	61.0222
LANTAI 1	B15	COMB19 MAX	2.5	0	40.4714	0.0000	7.8065	0.0000	38.9165
LANTAI 1	B15	COMB19 MAX	5	0	73.7714	0.0000	7.8065	0.0000	34.6232
LANTAI 1	B15	COMB19 MIN	0	0	-85.8191	0.0000	-6.8639	0.0000	-120.0840
LANTAI 1	B15	COMB19 MIN	5	0	0.0083	0.0000	-18.2948	0.0000	-110.3686
ATAP	B16	COMB19 MAX	0	0	7.1236	0.0000	0.0975	0.0000	19.2976
ATAP	B16	COMB19 MAX	2.5	0	17.2361	0.0000	0.0975	0.0000	40.2981
ATAP	B16	COMB19 MAX	5	0	62.8790	0.0000	0.0975	0.0000	-0.7072
ATAP	B16	COMB19 MIN	0	0	-54.3486	0.0000	-0.2033	0.0000	-53.1072
ATAP	B16	COMB19 MIN	5	0	0.3027	0.0000	-0.2033	0.0000	-71.4265
LANTAI 3	B16	COMB19 MAX	0	0	16.9032	0.0000	0.2444	0.0000	44.7961
LANTAI 3	B16	COMB19 MAX	2.5	0	27.5601	0.0000	0.2444	0.0000	59.6340
LANTAI 3	B16	COMB19 MAX	5	0	105.8692	0.0000	0.2444	0.0000	0.1929
LANTAI 3	B16	COMB19 MIN	0	0	-99.7884	0.0000	-0.8819	0.0000	-112.2613
LANTAI 3	B16	COMB19 MIN	5	0	-0.1248	0.0000	-0.8819	0.0000	-122.3252
LANTAI 2	B16	COMB19 MAX	0	0	26.0765	0.0000	0.3832	0.0000	67.8060
LANTAI 2	B16	COMB19 MAX	2.5	0	35.3895	0.0000	0.3832	0.0000	56.3320
LANTAI 2	B16	COMB19 MAX	5	0	113.6986	0.0000	0.3832	0.0000	11.8057
LANTAI 2	B16	COMB19 MIN	0	0	-110.4653	0.0000	-0.9337	0.0000	-142.0537
LANTAI 2	B16	COMB19 MIN	5	0	-0.0199	0.0000	-0.9337	0.0000	-144.8522
LANTAI 1	B16	COMB19 MAX	0	0	27.0234	0.0000	0.4239	0.0000	69.2615
LANTAI 1	B16	COMB19 MAX	2.5	0	35.8588	0.0000	0.4239	0.0000	54.5812
LANTAI 1	B16	COMB19 MAX	5	0	114.1680	0.0000	0.4239	0.0000	14.8780
LANTAI 1	B16	COMB19 MIN	0	0	-111.9279	0.0000	-0.8210	0.0000	-146.3978
LANTAI 1	B16	COMB19 MIN	5	0	-0.0168	0.0000	-0.8210	0.0000	-148.5550
ATAP	B17	COMB19 MAX	0	0	5.9987	0.0000	0.1187	0.0000	14.9943
ATAP	B17	COMB19 MAX	2.5	0	12.2928	0.0000	0.1187	0.0000	32.0626
ATAP	B17	COMB19 MAX	5	0	57.9358	0.0000	0.1187	0.0000	-0.4560

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
ATAP	B17	COMB19 MIN	0	0	-56.9776	0.0000	-0.2658	0.0000	-65.7426
ATAP	B17	COMB19 MIN	5	0	0.1953	0.0000	-0.2658	0.0000	-68.1241
LANTAI 3	B17	COMB19 MAX	0	0	14.4990	0.0000	1.0203	0.0000	36.2473
LANTAI 3	B17	COMB19 MAX	2.5	0	21.9900	0.0000	1.0203	0.0000	40.3005
LANTAI 3	B17	COMB19 MAX	5	0	79.5091	0.0000	1.0203	0.0000	0.0702
LANTAI 3	B17	COMB19 MIN	0	0	-79.7791	0.0000	-0.2805	0.0000	-104.0912
LANTAI 3	B17	COMB19 MIN	5	0	-0.0007	0.0000	-0.2805	0.0000	-103.5019
LANTAI 2	B17	COMB19 MAX	0	0	23.4385	0.0000	0.9297	0.0000	58.5955
LANTAI 2	B17	COMB19 MAX	2.5	0	31.1706	0.0000	0.9297	0.0000	41.1956
LANTAI 2	B17	COMB19 MAX	5	0	88.6897	0.0000	0.9297	0.0000	19.7262
LANTAI 2	B17	COMB19 MIN	0	0	-88.6393	0.0000	-0.4847	0.0000	-125.4035
LANTAI 2	B17	COMB19 MIN	5	0	-0.0005	0.0000	-0.4847	0.0000	-125.6113
LANTAI 1	B17	COMB19 MAX	0	0	25.2680	0.0000	0.8183	0.0000	63.1739
LANTAI 1	B17	COMB19 MAX	2.5	0	32.9802	0.0000	0.8183	0.0000	41.6027
LANTAI 1	B17	COMB19 MAX	5	0	90.4993	0.0000	0.8183	0.0000	24.6103
LANTAI 1	B17	COMB19 MIN	0	0	-90.5191	0.0000	-0.4684	0.0000	-129.7388
LANTAI 1	B17	COMB19 MIN	5	0	-0.0002	0.0000	-0.4684	0.0000	-129.7348
ATAP	B18	COMB19 MAX	0	0	7.1092	0.0000	0.1888	0.0000	16.2952
ATAP	B18	COMB19 MAX	2.5	0	8.2640	0.0000	0.1888	0.0000	40.1665
ATAP	B18	COMB19 MAX	3	0	33.9070	0.0000	0.1888	0.0000	-0.8991
ATAP	B18	COMB19 MIN	0	0	-63.2968	0.0000	-0.1033	0.0000	-72.5250
ATAP	B18	COMB19 MIN	5	0	0.3111	0.0000	-0.1033	0.0000	-52.0790
LANTAI 3	B18	COMB19 MAX	0	0	17.0936	0.0000	0.9147	0.0000	39.9559
LANTAI 3	B18	COMB19 MAX	2.5	0	20.9030	0.0000	12.7304	0.0000	72.3121
LANTAI 3	B18	COMB19 MAX	5	0	96.6237	0.0000	9.3991	0.0000	4.1696
LANTAI 3	B18	COMB19 MIN	0	0	-97.4649	0.0000	-7.4769	0.0000	-124.5815
LANTAI 3	B18	COMB19 MIN	5	0	0.1188	0.0000	-0.9221	0.0000	-117.3675
LANTAI 2	B18	COMB19 MAX	0	0	26.3502	0.0000	3.2416	0.0000	62.9119
LANTAI 2	B18	COMB19 MAX	2.5	0	26.3502	0.0000	1.3461	0.0000	73.4420
LANTAI 2	B18	COMB19 MAX	5	0	147.0600	0.0000	11.6497	0.0000	17.2840
LANTAI 2	B18	COMB19 MIN	0	0	-108.9908	0.0000	-9.9006	0.0000	-152.2072
LANTAI 2	B18	COMB19 MIN	5	0	0.0180	0.0000	-3.9138	0.0000	-161.6467
LANTAI 1	B18	COMB19 MAX	0	0	27.2601	0.0000	3.4946	0.0000	66.1288
LANTAI 1	B18	COMB19 MAX	2.5	0	27.2601	0.0000	1.5991	0.0000	74.0789
LANTAI 1	B18	COMB19 MAX	5	0	157.3207	0.0000	11.9014	0.0000	13.5656
LANTAI 1	B18	COMB19 MIN	0	0	-110.8471	0.0000	-10.3360	0.0000	-157.3409
LANTAI 1	B18	COMB19 MIN	5	0	0.0156	0.0000	-4.3248	0.0000	-173.0390
ATAP	B19	COMB19 MAX	0	0	7.5814	0.0000	0.2330	0.0000	20.5197
ATAP	B19	COMB19 MAX	2.5	0	18.0816	0.0000	0.2330	0.0000	40.7700
ATAP	B19	COMB19 MAX	5	0	63.7246	0.0000	0.2330	0.0000	0.6870

(Lanjutan)

Story	Beam	Load	Loc	P.	V2	V3	T	M2	M3
ATAP	B19	COMB19 MIN	0	0	-54.4163	0.0000	-0.0804	0.0000	-52.8951
ATAP	B19	COMB19 MIN	5	0	-0.2990	0.0000	-0.0804	0.0000	-72.9971
LANTAI 3	B19	COMB19 MAX	0	0	18.5263	0.0000	0.3583	0.0000	49.1000
LANTAI 3	B19	COMB19 MAX	2.5	0	29.3903	0.0000	0.3583	0.0000	48.4549
LANTAI 3	B19	COMB19 MAX	5	0	86.9094	0.0000	0.3583	0.0000	3.5547
LANTAI 3	B19	COMB19 MIN	0	0	-80.5294	0.0000	-0.3660	0.0000	-101.5215
LANTAI 3	B19	COMB19 MIN	5	0	-0.7936	0.0000	-0.3660	0.0000	-111.8316
LANTAI 2	B19	COMB19 MAX	0	0	28.6876	0.0000	0.6032	0.0000	74.5996
LANTAI 2	B19	COMB19 MAX	2.5	0	38.4043	0.0000	0.6032	0.0000	46.3677
LANTAI 2	B19	COMB19 MAX	5	0	95.9234	0.0000	0.6032	0.0000	29.8011
LANTAI 2	B19	COMB19 MIN	0	0	-92.0703	0.0000	-0.6068	0.0000	-132.2882
LANTAI 2	B19	COMB19 MIN	5	0	-1.1805	0.0000	-0.6068	0.0000	-136.0886
LANTAI 1	B19	COMB19 MAX	0	0	29.3988	0.0000	0.5890	0.0000	75.3438
LANTAI 1	B19	COMB19 MAX	2.5	0	38.4955	0.0000	0.5890	0.0000	45.0188
LANTAI 1	B19	COMB19 MAX	5	0	96.0146	0.0000	0.5890	0.0000	32.8226
LANTAI 1	B19	COMB19 MIN	0	0	-93.3762	0.0000	-0.5986	0.0000	-135.7123
LANTAI 1	B19	COMB19 MIN	5	0	-1.1383	0.0000	-0.5986	0.0000	-138.5728
ATAP	B20	COMB19 MAX	0	0	6.4098	0.0000	0.2048	0.0000	16.0244
ATAP	B20	COMB19 MAX	2.5	0	12.2389	0.0000	0.2048	0.0000	31.5613
ATAP	B20	COMB19 MAX	5	0	57.8818	0.0000	0.2048	0.0000	0.6463
ATAP	B20	COMB19 MIN	0	0	-57.8908	0.0000	-0.0894	0.0000	-68.4944
ATAP	B20	COMB19 MIN	5	0	-0.2572	0.0000	-0.0894	0.0000	-68.4742
LANTAI 3	B20	COMB19 MAX	0	0	15.8778	0.0000	0.3387	0.0000	39.6947
LANTAI 3	B20	COMB19 MAX	2.5	0	23.4340	0.0000	0.3387	0.0000	42.2411
LANTAI 3	B20	COMB19 MAX	5	0	80.9531	0.0000	0.3387	0.0000	1.6717
LANTAI 3	B20	COMB19 MIN	0	0	-81.1151	0.0000	-0.4334	0.0000	-105.6646
LANTAI 3	B20	COMB19 MIN	5	0	-0.6709	0.0000	-0.4334	0.0000	-105.2559
LANTAI 2	B20	COMB19 MAX	0	0	25.7713	0.0000	0.6065	0.0000	64.4282
LANTAI 2	B20	COMB19 MAX	2.5	0	33.3330	0.0000	0.6065	0.0000	42.4702
LANTAI 2	B20	COMB19 MAX	5	0	90.8521	0.0000	0.6065	0.0000	26.5028
LANTAI 2	B20	COMB19 MIN	0	0	-91.2338	0.0000	-0.6416	0.0000	-130.7680
LANTAI 2	B20	COMB19 MIN	5	0	-1.0554	0.0000	-0.6416	0.0000	-129.8123
LANTAI 1	B20	COMB19 MAX	0	0	27.4988	0.0000	0.5895	0.0000	68.7471
LANTAI 1	B20	COMB19 MAX	2.5	0	35.0681	0.0000	0.5895	0.0000	42.5712
LANTAI 1	B20	COMB19 MAX	5	0	92.5873	0.0000	0.5895	0.0000	30.8985
LANTAI 1	B20	COMB19 MIN	0	0	-92.9592	0.0000	-0.6207	0.0000	-134.9824
LANTAI 1	B20	COMB19 MIN	5	0	-1.0646	0.0000	-0.6207	0.0000	-134.0517
ATAP	B21	COMB19 MAX	0	0	7.5814	0.0000	0.0981	0.0000	17.3883
ATAP	B21	COMB19 MAX	5	0	54.4023	0.0000	0.0981	0.0000	0.7971
ATAP	B21	COMB19 MIN	0	0	-63.7377	0.0000	-0.2520	0.0000	-73.0311
ATAP	B21	COMB19 MIN	5	0	-0.2976	0.0000	-0.2520	0.0000	-52.8546

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
LANTAI 3	B21	COMB19 MAX	0	0	18.5281	0.0000	0.3392	0.0000	43.5346
LANTAI 3	B21	COMB19 MAX	2.5	0	22.8704	0.0000	0.3392	0.0000	48.4610
LANTAI 3	B21	COMB19 MAX	5	0	80.3895	0.0000	0.3392	0.0000	18.5995
LANTAI 3	B21	COMB19 MIN	0	0	-87.0537	0.0000	-0.4195	0.0000	-112.1996
LANTAI 3	B21	COMB19 MIN	5	0	-0.7949	0.0000	-0.4195	0.0000	-101.1891
LANTAI 2	B21	COMB19 MAX	0	0	28.6885	0.0000	0.5729	0.0000	68.8402
LANTAI 2	B21	COMB19 MAX	2.5	0	34.1002	0.0000	0.5729	0.0000	46.4520
LANTAI 2	B21	COMB19 MAX	5	0	91.6193	0.0000	0.5729	0.0000	42.2958
LANTAI 2	B21	COMB19 MIN	0	0	-96.3761	0.0000	-0.6573	0.0000	-137.1531
LANTAI 2	B21	COMB19 MIN	5	0	-1.1807	0.0000	-0.6573	0.0000	-131.0975
LANTAI 1	B21	COMB19 MAX	0	0	29.3990	0.0000	0.5761	0.0000	71.6508
LANTAI 1	B21	COMB19 MAX	2.5	0	35.4540	0.0000	0.5761	0.0000	45.0582
LANTAI 1	B21	COMB19 MAX	5	0	92.9731	0.0000	0.5761	0.0000	41.2203
LANTAI 1	B21	COMB19 MIN	0	0	-96.4181	0.0000	-0.6222	0.0000	-139.5506
LANTAI 1	B21	COMB19 MIN	5	0	-1.1384	0.0000	-0.6222	0.0000	-134.6748
ATAP	B22	COMB19 MAX	0	0	8.0536	0.0000	0.1574	0.0000	21.7803
ATAP	B22	COMB19 MAX	2.5	0	13.6662	0.0000	0.8604	0.0000	23.1691
ATAP	B22	COMB19 MAX	5	0	41.8877	0.0000	3.6289	0.0000	2.0645
ATAP	B22	COMB19 MIN	0	0	-36.9574	0.0000	-6.8362	0.0000	-42.2237
ATAP	B22	COMB19 MIN	5	0	-0.8975	0.0000	-0.1205	0.0000	-51.1495
LANTAI 3	B22	COMB19 MAX	0	0	20.1454	0.0000	0.3495	0.0000	53.3879
LANTAI 3	B22	COMB19 MAX	2.5	0	27.4551	0.0000	2.8525	0.0000	37.6906
LANTAI 3	B22	COMB19 MAX	5	0	83.2596	0.0000	6.3946	0.0000	10.5669
LANTAI 3	B22	COMB19 MIN	0	0	-77.3925	0.0000	-7.5003	0.0000	-98.4413
LANTAI 3	B22	COMB19 MIN	5	0	-2.1937	0.0000	-0.4048	0.0000	-106.8651
LANTAI 2	B22	COMB19 MAX	0	0	31.2840	0.0000	0.4858	0.0000	81.3506
LANTAI 2	B22	COMB19 MAX	2.5	0	37.6057	0.0000	3.1307	0.0000	36.0464
LANTAI 2	B22	COMB19 MAX	5	0	93.4102	0.0000	6.4751	0.0000	39.9662
LANTAI 2	B22	COMB19 MIN	0	0	-90.1378	0.0000	-7.4199	0.0000	-132.1780
LANTAI 2	B22	COMB19 MIN	5	0	-3.2251	0.0000	-0.6183	0.0000	-133.8858
LANTAI 1	B22	COMB19 MAX	0	0	31.7649	0.0000	0.4731	0.0000	81.4003
LANTAI 1	B22	COMB19 MAX	2.5	0	37.5513	0.0000	3.1931	0.0000	34.3885
LANTAI 1	B22	COMB19 MAX	5	0	93.3559	0.0000	6.6542	0.0000	42.6254
LANTAI 1	B22	COMB19 MIN	0	0	-91.1409	0.0000	-7.2408	0.0000	-134.4179
LANTAI 1	B22	COMB19 MIN	5	0	-3.2031	0.0000	-0.5407	0.0000	-135.8602
ATAP	B23	COMB19 MAX	0	0	6.8419	0.0000	0.1692	0.0000	17.1047
ATAP	B23	COMB19 MAX	2.5	0	9.9514	0.0000	2.3394	0.0000	18.0634
ATAP	B23	COMB19 MAX	5	0	38.1729	0.0000	5.2117	0.0000	1.9106
ATAP	B23	COMB19 MIN	0	0	-38.1688	0.0000	-5.2535	0.0000	-48.2609
ATAP	B23	COMB19 MIN	5	0	-0.7641	0.0000	-0.1286	0.0000	-48.2714

(Lanjutan)

Story	Beam	Load	Loc	P.	V2	V3	T	M2	M3
LANTAI 3	B23	COMB19 MAX	0	0	17.2668	0.0000	0.3611	0.0000	43.1669
LANTAI 3	B23	COMB19 MAX	2.5	0	21.5409	0.0000	3.2577	0.0000	32.1552
LANTAI 3	B23	COMB19 MAX	5	0	77.3455	0.0000	6.9394	0.0000	7.9919
LANTAI 3	B23	COMB19 MIN	0	0	-77.3624	0.0000	-6.9556	0.0000	-100.0015
LANTAI 3	B23	COMB19 MIN	5	0	-1.8822	0.0000	-0.4187	0.0000	-99.9590
LANTAI 2	B23	COMB19 MAX	0	0	28.1014	0.0000	0.4963	0.0000	70.2536
LANTAI 2	B23	COMB19 MAX	2.5	0	32.5963	0.0000	3.4909	0.0000	32.4678
LANTAI 2	B23	COMB19 MAX	5	0	88.4009	0.0000	6.9165	0.0000	36.1094
LANTAI 2	B23	COMB19 MIN	0	0	-88.5888	0.0000	-6.9785	0.0000	-127.7743
LANTAI 2	B23	COMB19 MIN	5	0	-2.9028	0.0000	-0.6316	0.0000	-127.3045
LANTAI 1	B23	COMB19 MAX	0	0	29.7214	0.0000	0.4783	0.0000	74.3034
LANTAI 1	B23	COMB19 MAX	5	0	90.0292	0.0000	6.9283	0.0000	40.3161
LANTAI 1	B23	COMB19 MIN	0	0	-90.2589	0.0000	-6.9667	0.0000	-131.8898
LANTAI 1	B23	COMB19 MIN	5	0	-3.0006	0.0000	-0.5474	0.0000	-131.3155
ATAP	B24	COMB19 MAX	0	0	8.0535	0.0000	0.1579	0.0000	18.4877
ATAP	B24	COMB19 MAX	2.5	0	8.7461	0.0000	3.9583	0.0000	23.1689
ATAP	B24	COMB19 MAX	5	0	36.9676	0.0000	6.8306	0.0000	9.1852
ATAP	B24	COMB19 MIN	0	0	-41.8772	0.0000	-3.6346	0.0000	-51.1246
ATAP	B24	COMB19 MIN	5	0	-0.8974	0.0000	-0.1209	0.0000	-42.2499
LANTAI 3	B24	COMB19 MAX	0	0	20.1454	0.0000	0.3505	0.0000	47.3393
LANTAI 3	B24	COMB19 MAX	2.5	0	21.5764	0.0000	3.6580	0.0000	37.6896
LANTAI 3	B24	COMB19 MAX	5	0	77.3810	0.0000	7.4716	0.0000	26.3164
LANTAI 3	B24	COMB19 MIN	0	0	-83.2713	0.0000	-6.4234	0.0000	-106.8952
LANTAI 3	B24	COMB19 MIN	5	0	-2.1938	0.0000	-0.4048	0.0000	-98.4140
LANTAI 2	B24	COMB19 MAX	0	0	31.2839	0.0000	0.4866	0.0000	75.0692
LANTAI 2	B24	COMB19 MAX	2.5	0	34.1201	0.0000	3.8222	0.0000	36.0706
LANTAI 2	B24	COMB19 MAX	5	0	89.9246	0.0000	7.3620	0.0000	52.2245
LANTAI 2	B24	COMB19 MIN	0	0	-93.6234	0.0000	-6.5330	0.0000	-134.3945
LANTAI 2	B24	COMB19 MIN	5	0	-3.2252	0.0000	-0.6183	0.0000	-131.6208
LANTAI 1	B24	COMB19 MAX	0	0	31.7649	0.0000	0.4715	0.0000	77.4241
LANTAI 1	B24	COMB19 MAX	2.5	0	35.0901	0.0000	3.6137	0.0000	34.4083
LANTAI 1	B24	COMB19 MAX	5	0	90.8947	0.0000	7.2023	0.0000	50.7965
LANTAI 1	B24	COMB19 MIN	0	0	-93.6020	0.0000	-6.6927	0.0000	-136.4600
LANTAI 1	B24	COMB19 MIN	5	0	-3.2031	0.0000	-0.5406	0.0000	-133.7868
LANTAI 3	B25	COMB19 MAX	0	0	3.4983	0.0000	0.0649	0.0000	9.5947
LANTAI 3	B25	COMB19 MAX	2.5	0	4.1363	0.0000	0.0649	0.0000	24.1998
LANTAI 3	B25	COMB19 MAX	5	0	32.4713	0.0000	0.0649	0.0000	0.6345
LANTAI 3	B25	COMB19 MIN	0	0	-31.3644	0.0000	-0.3062	0.0000	-27.9857
LANTAI 3	B25	COMB19 MIN	5	0	-0.2817	0.0000	-0.3062	0.0000	-29.0136

(Lanjutan)

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
LANTAI 2	B25	COMB19 MAX	0	0	5.4928	0.0000	0.0943	0.0000	14.6259
LANTAI 2	B25	COMB19 MAX	2.5	0	5.9498	0.0000	0.0943	0.0000	24.0078
LANTAI 2	B25	COMB19 MAX	5	0	34.2848	0.0000	0.0943	0.0000	1.0475
LANTAI 2	B25	COMB19 MIN	0	0	-33.6406	0.0000	-0.4650	0.0000	-33.9109
LANTAI 2	B25	COMB19 MIN	5	0	-0.4496	0.0000	-0.4650	0.0000	-33.6879
LANTAI 1	B25	COMB19 MAX	0	0	5.6392	0.0000	0.1000	0.0000	14.6704
LANTAI 1	B25	COMB19 MAX	2.5	0	6.0220	0.0000	0.1000	0.0000	23.7655
LANTAI 1	B25	COMB19 MAX	5	0	34.3369	0.0000	0.1000	0.0000	0.9907
LANTAI 1	B25	COMB19 MIN	0	0	-33.8595	0.0000	-0.4836	0.0000	-34.3511
LANTAI 1	B25	COMB19 MIN	5	0	-0.4130	0.0000	-0.4836	0.0000	-34.3750
LANTAI 3	B26	COMB19 MAX	0	1.5	4.1879	0.0251	0.6862	0.0621	26.5022
LANTAI 3	B26	COMB19 MAX	5	1.5	22.7460	0.0251	0.6862	0.0195	34.7873
LANTAI 3	B26	COMB19 MIN	0	-0.2	-31.2846	-0.0080	-0.4428	-0.0195	-49.4499
LANTAI 3	B26	COMB19 MIN	5	-0.2	-13.7443	-0.0080	-0.4428	-0.0621	-42.8381
LANTAI 2	B26	COMB19 MAX	0	6.4	4.5026	0.0156	0.5211	0.0396	27.3258
LANTAI 2	B26	COMB19 MAX	5	6.4	23.1729	0.0156	0.5211	0.0042	35.0138
LANTAI 2	B26	COMB19 MIN	0	-3.9	-31.0639	-0.0015	-0.3754	-0.0042	-49.1624
LANTAI 2	B26	COMB19 MIN	5	-3.9	-13.8773	-0.0015	-0.3754	-0.0396	-43.9403
LANTAI 1	B27	COMB19 MAX	0	16	0.2254	0.0869	0.3019	0.2174	16.8771
LANTAI 1	B27	COMB19 MAX	5	16	18.9938	0.0869	0.3019	0.0890	23.9659
LANTAI 1	B27	COMB19 MIN	0	-9.6	-26.2343	-0.0355	-0.2371	-0.0890	-37.2555
LANTAI 1	B27	COMB19 MIN	5	-9.6	-9.5350	-0.0355	-0.2371	-0.2174	-33.2478

Gaya – gaya kolom yang terjadi

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	BEBAN DEAD	Static Static	1.4000 1.4000
COMB2	ADD	BEBAN LIVE RAIN DEAD	Static Static Static Static	1.2000 1.6000 0.5000 1.2000
COMB3	ADD	BEBAN LIVE QUAKEK QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 0.3000 1.2000
COMB4	ADD	BEBAN LIVE QUAKEK QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 -0.3000 1.2000
COMB5	ADD	BEBAN LIVE QUAKEK QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 0.3000 1.2000
COMB6	ADD	BEBAN LIVE QUAKEK QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 -0.3000 1.2000
COMB7	ADD	BEBAN LIVE QUAKEY QUAKEK DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 0.3000 1.2000
COMB8	ADD	BEBAN LIVE QUAKEY QUAKEK DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 -0.3000 1.2000
COMB9	ADD	BEBAN LIVE QUAKEY QUAKEK DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 0.3000 1.2000
COMB10	ADD	BEBAN LIVE QUAKEY QUAKEK DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 -0.3000 1.2000
COMB11	ADD	BEBAN QUAKEK QUAKEY DEAD	Static Static Static Static	0.9000 1.0000 0.3000 0.9000
COMB12	ADD	BEBAN QUAKEY QUAKEY DEAD	Static Static Static Static	0.9000 1.0000 -0.3000 0.9000
COMB13	ADD	BEBAN QUAKEK QUAKEY DEAD	Static Static Static Static	0.9000 -1.0000 0.3000 0.9000
COMB14	ADD	BEBAN QUAKEK QUAKEY DEAD	Static Static Static Static	0.9000 -1.0000 -0.3000 0.9000
COMB15	ADD	BEBAN QUAKEY QUAKEK DEAD	Static Static Static Static	0.9000 1.0000 0.3000 0.9000

COMB16	ADD	BEBAN	Static	0.0000
		QUAKEY	Static	1.0000
		QUAKEX	Static	-0.3000
		DEAD	Static	0.9000
COMB17	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	-1.0000
		QUAKEX	Static	0.3000
		DEAD	Static	0.9000
COMB18	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	-1.0000
		QUAKEX	Static	-0.3000
		DEAD	Static	0.9000

C O L U M N F O R C E E N V E L O P E S

STORY	COLUMN	ITEM	P	V2	V3	T	M2	M3
ATAP	C1	Min Value	-80.71	-26.15	-27.12	-0.570	-36.023	-33.962
		Min Case	COMB10	COMB6	COMB10	COMB12	COMB10	COMB6
		Max Value	7.35	7.94	8.79	0.586	45.472	44.623
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB5	COMB10	COMB6
ATAP	C2	Min Value	-133.14	-37.02	-17.03	-0.570	-32.009	-49.451
		Min Case	COMB1	COMB6	COMB18	COMB12	COMB7	COMB5
		Max Value	6.99	8.79	18.73	0.586	29.349	61.889
		Max Case	QUAKEX	QUAKEX	QUAKEX	COMB7	COMB18	COMB6
ATAP	C3	Min Value	-133.81	-35.28	-16.63	-0.570	-29.316	-44.236
		Min Case	COMB1	COMB5	COMB18	COMB12	COMB7	COMB5
		Max Value	7.71	10.02	17.32	0.586	29.905	61.865
		Max Case	QUAKEX	QUAKEX	QUAKEX	COMB7	COMB18	COMB5
ATAP	C4	Min Value	-80.16	-25.98	0.55	-0.570	-42.861	-29.677
		Min Case	COMB5	COMB5	RAIN	COMB12	COMB7	COMB6
		Max Value	7.51	10.96	23.73	0.586	28.458	48.461
		Max Case	QUAKEX	QUAKEX	QUAKEX	COMB7	COMB7	COMB5
ATAP	C5	Min Value	-133.21	-15.91	-37.50	-0.570	-50.621	-31.050
		Min Case	COMB1	COMB14	COMB10	COMB12	COMB10	COMB3
		Max Value	7.06	17.77	9.24	0.586	62.133	28.201
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB5	COMB10	COMB14
ATAP	C6	Min Value	-243.76	-15.14	-15.48	-0.570	-36.062	-35.982
		Min Case	COMB2	COMB14	COMB18	COMB12	COMB7	COMB3
		Max Value	-1.14	21.52	21.92	0.586	30.152	29.055
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB7	COMB7	COMB3
ATAP	C7	Min Value	-246.07	-18.71	-20.64	-0.570	-31.299	-36.914
		Min Case	COMB2	COMB13	COMB10	COMB12	QUAKEY	COMB4
		Max Value	1.24	20.83	17.98	0.586	34.807	39.314
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB5	COMB10	COMB13
ATAP	C8	Min Value	-133.49	-23.52	0.67	-0.570	-61.313	-37.741
		Min Case	COMB1	COMB5	QUAKEX	COMB12	COMB7	COMB12
		Max Value	-1.61	21.19	36.81	0.586	49.360	38.304
		Max Case	QUAKEX	QUAKEX	QUAKEX	COND7	COMB7	COMB5
ATAP	C9	Min Value	-133.73	-17.48	-35.43	-0.570	-45.030	-28.532
		Min Case	COMB1	COMB6	COMB9	COMB12	COMB9	COMB11
		Max Value	7.64	16.16	9.62	0.586	61.527	30.599
		Max Case	QUAKEY	QUAKEX	QUAKEY	COMB5	COMB9	COMB8
ATAP	C10	Min Value	-246.51	-19.20	-18.08	-0.570	-36.692	-31.139
		Min Case	COMB2	COMB6	COMB17	COMB12	COMB8	QUAKEX
		Max Value	1.11	17.68	20.95	0.586	31.632	33.735
		Max Case	QUAKEX	QUAKEX	QUAKEX	COMB5	COMB17	COMB6
ATAP	C11	Min Value	-245.77	-20.84	-20.93	-0.570	-33.421	-33.782
		Min Case	COMB2	COMB9	COMB9	QUAKEY	QUAKEX	QUAKEX
		Max Value	1.14	19.18	19.07	0.586	36.717	36.896
		Max Case	QUAKEY	QUAKEX	QUAKEY	COMB5	COMB9	COMB5
ATAP	C12	Min Value	-133.09	-22.09	-0.36	-0.570	-61.488	-36.521
		Min Case	COMB1	COMB5	QUAKEX	COMB12	COMB8	QUAKEX
		Max Value	1.49	20.84	35.44	0.586	45.087	38.998
		Max Case	QUAKEX	QUAKEX	QUAKEX	COMB5	COMB8	COMB5
ATAP	C13	Min Value	-80.10	0.54	-28.15	-0.570	-35.669	-44.123
		Min Case	COMB4	RAIN	COMB9	COMB12	COMB9	COMB3
		Max Value	7.35	25.74	10.14	0.586	48.932	33.213
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB5	COMB9	QUAKEY
ATAP	C14	Min Value	-133.17	0.19	-20.27	-0.570	-38.506	-59.880
		Min Case	COMB1	QUAKEY	COMB17	COMB12	COMB8	COMB3
		Max Value	-1.44	34.44	22.07	0.586	35.678	43.724
		Max Case	QUAKEY	COMB3	COMB8	COMB5	COMB17	COMB4

ATAP	C15	Min Value	-133.32	-0.19	-22.04	-0.570	-35.744	-61.596
		Min Case	COMB1	QUAKEY	COMB9	COMB12	COMB16	COMB4
		Max Value	1.44	35.27	20.32	0.586	38.469	44.516
		Max Case	QUAKEY	COMB4	QUAKEY	COMB5	COMB9	COMB3
ATAP	C16	Min Value	-80.21	-0.66	-1.24	-0.570	-48.963	-49.317
		Min Case	COMB7	QUAKEY	QUAKEY	COMB12	COMB8	COMB4
		Max Value	-2.64	28.33	28.17	0.586	35.719	35.835
		Max Case	RAIN	COMB4	COMB8	COMB5	COMB8	COMB4
LANTAI 3	C1	Min Value	-231.14	-36.71	-34.13	-1.272	-45.483	-48.957
		Min Case	COMB6	COMB6	COMB10	COMB17	COMB10	COMB6
		Max Value	25.56	20.82	18.16	1.346	57.603	61.918
		Max Case	QUAKEK	QUAKEK	QUAKEY	COMB8	COMB10	COMB6
LANTAI 3	C2	Min Value	-365.97	-45.13	-29.62	-1.272	-49.076	-60.934
		Min Case	COMB5	COMB6	COMB10	COMB17	COMB15	COMB6
		Max Value	24.25	22.54	29.64	1.346	48.992	75.814
		Max Case	QUAKEK	QUAKEK	COMB15	COMB8	COMB10	COMB6
LANTAI 3	C3	Min Value	-355.41	-42.39	-46.54	-1.292	-54.930	-57.698
		Min Case	COMB6	COMB5	COMB10	COMB17	COMB7	COMB5
		Max Value	30.13	25.41	43.99	1.353	54.903	71.104
		Max Case	QUAKEK	QUAKEK	COMB15	COMB8	COMB18	COMB5
LANTAI 3	C4	Min Value	-226.74	-37.49	-22.29	-1.292	-57.624	-50.322
		Min Case	COMB8	COMB5	COMB18	COMB17	COMB7	COMB5
		Max Value	26.90	27.81	50.56	1.353	43.089	62.683
		Max Case	QUAKEK	QUAKEK	COMB7	COMB8	COMB7	COMB5
LANTAI 3	C5	Min Value	-365.16	-32.67	-43.46	-1.272	-58.583	-56.638
		Min Case	COMB9	COMB10	COMB10	COMB17	COMB10	COMB3
		Max Value	23.61	34.19	20.71	1.346	73.069	53.989
		Max Case	QUAKEY	COMB3	QUAKEY	COMB8	COMB10	COMB4
LANTAI 3	C6	Min Value	-594.04	-31.48	-29.00	-1.272	-60.296	-64.819
		Min Case	COMB2	COMB14	COMB18	COMB17	COMB7	COMB3
		Max Value	-3.66	38.98	36.24	1.346	50.369	54.227
		Max Case	QUAKEY	COMB3	COMB7	COMB8	COMB7	COMB3
LANTAI 3	C7	Min Value	-560.39	-38.70	-35.55	-1.272	-52.893	-62.908
		Min Case	COMB2	COMB5	COMB10	COMB17	QUAKEY	COMB12
		Max Value	4.04	38.01	31.79	1.346	58.921	64.097
		Max Case	QUAKEY	COMB12	QUAKEY	COMB8	COMB10	COMB5
LANTAI 3	C8	Min Value	-335.31	-47.43	-8.21	-1.272	-72.188	-66.844
		Min Case	COMB7	COMB5	COMB18	COMB17	QUAKEY	COMB7
		Max Value	-6.11	40.65	43.85	1.346	60.487	71.976
		Max Case	RAIN	QUAKEK	COMB7	COMB8	COMB7	COMB5
LANTAI 3	C9	Min Value	-348.30	-33.59	-41.57	-1.272	-56.070	-54.685
		Min Case	COMB10	COMB6	COMB9	COMB17	COMB9	COMB11
		Max Value	26.52	33.12	23.32	1.346	69.960	55.591
		Max Case	QUAKEY	COMB11	QUAKEY	COMB8	COMB9	COMB6
LANTAI 3	C10	Min Value	-554.21	-35.28	-35.66	-1.272	-60.488	-57.068
		Min Case	COMB2	COMB6	COMB17	COMB17	COMB8	COMB11
		Max Value	3.76	34.35	36.41	1.346	59.402	58.651
		Max Case	QUAKEK	COMB11	COMB8	COMB17	COMB6	
LANTAI 3	C11	Min Value	-554.58	-37.82	-36.77	-1.272	-59.078	-61.410
		Min Case	COMB2	COMB5	COMB9	COMB17	COMB16	COMB12
		Max Value	3.82	36.96	35.54	1.346	61.149	62.770
		Max Case	QUAKEK	COMB12	COMB16	COMB8	COMB9	COMB5
LANTAI 3	C12	Min Value	-350.20	-41.78	-13.34	-1.272	-69.378	-67.813
		Min Case	COMB8	COMB5	COMB17	COMB17	COMB8	COMB12
		Max Value	5.38	41.13	41.32	1.346	55.681	68.866
		Max Case	QUAKEK	COMB12	COMB8	COMB8	COMB8	COMB5
LANTAI 3	C13	Min Value	-230.20	-12.59	-41.60	-1.272	-55.455	-61.871
		Min Case	COMB4	COMB14	COMB9	COMB17	COMB9	COMB3
		Max Value	25.06	36.69	26.20	1.346	70.252	48.959
		Max Case	QUAKEY	COMB3	QUAKEY	COMB8	COMB9	COMB3
LANTAI 3	C14	Min Value	-346.11	-12.63	-40.39	-1.272	-68.378	-68.213
		Min Case	COMB3	COMB14	COMB17	COMB17	COMB8	COMB3
		Max Value	-5.15	40.62	41.42	1.346	66.634	54.894
		Max Case	QUAKEY	COMB3	COMB8	COMB8	COMB17	COMB3
LANTAI 3	C15	Min Value	-348.96	-14.50	-41.43	-1.272	-66.682	-70.905
		Min Case	COMB4	COMB13	COMB9	COMB17	COMB16	COMB4
		Max Value	5.11	42.21	40.45	1.346	68.481	57.074
		Max Case	QUAKEY	COMB4	COMB16	COMB8	COMB9	COMB4
LANTAI 3	C16	Min Value	-229.78	-18.40	-17.71	-1.272	-70.195	-70.370
		Min Case	COMB3	COMB13	COMB17	COMB17	COMB8	COMB4
		Max Value	-2.77	41.76	41.63	1.346	55.622	55.819
		Max Case	RAIN	COMB4	COMB8	COMB8	COMB8	COMB4

LANTAI 2	C1	Min Value	-404.81	-48.67	-47.45	-2.727	-69.268	-72.152
		Min Case	COMB6	COMB6	COMB10	COMB17	COMB10	COMB6
		Max Value	53.78	25.66	24.07	2.855	74.234	75.096
		Max Case	QUAKEX	QUAKEX	QUAKEY	COMB8	COMB10	COMB6
LANTAI 2	C2	Min Value	-617.92	-61.45	-46.77	-2.727	-72.849	-90.473
		Min Case	COMB5	COMB6	COMB10	COMB17	COMB15	COMB6
		Max Value	51.29	27.58	46.23	2.855	73.448	96.036
		Max Case	QUAKEX	QUAKEX	COMB15	COMB8	COMB10	COMB6
LANTAI 2	C3	Min Value	-598.10	-58.36	-62.18	-2.729	-76.505	-86.593
		Min Case	COMB6	COMB5	COMB10	COMB17	COMB7	COMB5
		Max Value	63.85	31.83	58.64	2.873	74.290	90.879
		Max Case	QUAKEX	QUAKEX	COMB15	COMB8	COMB18	COMB5
LANTAI 2	C4	Min Value	-396.23	-49.68	-26.63	-2.729	-66.373	-74.516
		Min Case	COMB8	COMB5	COMB18	COMB17	COMB7	COMB5
		Max Value	55.61	34.58	59.93	2.873	62.278	75.572
		Max Case	QUAKEX	QUAKEX	COMB7	COMB8	COMB7	COMB5
LANTAI 2	C5	Min Value	-616.15	-48.82	-60.75	-2.727	-88.730	-77.994
		Min Case	COMB9	COMB14	COMB10	COMB17	COMB10	COMB3
		Max Value	49.28	50.20	26.54	2.855	95.612	75.807
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB8	COMB10	COMB14
LANTAI 2	C6	Min Value	-948.56	-46.91	-44.96	-2.727	-86.907	-90.414
		Min Case	COMB2	COMB14	COMB18	COMB17	COMB7	COMB3
		Max Value	-6.41	57.61	54.98	2.855	81.052	85.611
		Max Case	QUAKEX	QUAKEX	COMB7	COMB8	COMB7	COMB3
LANTAI 2	C7	Min Value	-884.20	-57.86	-55.62	-2.727	-82.282	-89.143
		Min Case	COMB2	COMB5	COMB10	COMB17	COMB10	COMB12
		Max Value	7.15	57.01	48.92	2.855	87.366	90.330
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB8	COMB10	COMB5
LANTAI 2	C8	Min Value	-596.84	-70.10	-4.54	-2.727	-105.343	-103.652
		Min Case	COMB7	COMB5	COMB18	COMB17	COMB7	COMB5
		Max Value	-6.12	60.66	66.98	2.855	97.506	109.006
		Max Case	RAIN	QUAKEX	COMB7	COMB8	COMB7	COMB5
LANTAI 2	C9	Min Value	-582.16	-49.60	-57.31	-2.727	-84.635	-76.405
		Min Case	COMB10	COMB6	COMB9	COMB17	COMB9	COMB11
		Max Value	55.62	49.27	29.09	2.855	89.391	77.006
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB8	COMB9	COMB6
LANTAI 2	C10	Min Value	-867.53	-52.18	-53.91	-2.727	-85.344	-79.823
		Min Case	COMB2	COMB6	COMB9	COMB17	COMB16	COMB11
		Max Value	6.68	51.14	54.45	2.855	84.292	81.531
		Max Case	QUAKEX	QUAKEX	COMB16	COMB8	COMB9	COMB6
LANTAI 2	C11	Min Value	-868.52	-55.87	-55.45	-2.727	-83.848	-85.331
		Min Case	COMB2	COMB5	COMB9	COMB17	QUAKEY	COMB12
		Max Value	6.90	54.68	53.54	2.855	86.877	87.260
		Max Case	QUAKEX	QUAKEX	QUAKEY	COMB8	COMB9	COMB5
LANTAI 2	C12	Min Value	-585.53	-61.19	-13.12	-2.727	-88.695	-93.879
		Min Case	COMB8	COMB5	COMB17	COMB8	COMB12	COMB12
		Max Value	9.97	60.51	56.79	2.855	83.736	94.831
		Max Case	QUAKEX	QUAKEX	COMB8	COMB8	COMB5	COMB5
LANTAI 2	C13	Min Value	-403.66	-12.74	-51.96	-2.727	-81.976	-74.896
		Min Case	COMB4	COMB14	COMB9	COMB17	COMB9	COMB3
		Max Value	52.42	48.66	32.08	2.855	84.396	72.299
		Max Case	QUAKEY	QUAKEY	QUAKEY	COMB8	COMB9	COMB3
LANTAI 2	C14	Min Value	-578.40	-11.65	-60.24	-2.727	-94.278	-86.354
		Min Case	COMB3	COMB14	COMB9	COMB17	COMB16	COMB3
		Max Value	-6.12	55.48	60.72	2.855	93.461	82.053
		Max Case	RAIN	COMB3	COMB16	COMB8	COMB9	COMB3
LANTAI 2	C15	Min Value	-583.86	-13.68	-61.33	-2.727	-93.023	-89.217
		Min Case	COMB4	COMB13	COMB9	COMB17	COMB16	COMB4
		Max Value	9.58	57.37	59.97	2.855	95.260	84.987
		Max Case	QUAKEY	QUAKEY	COMB16	COMB8	COMB9	COMB4
LANTAI 2	C16	Min Value	-402.38	-19.27	-19.09	-1.717	-83.731	-84.012
		Min Case	COMB3	COMB13	COMB17	COMB17	COMB8	COMB4
		Max Value	-2.78	54.71	54.54	2.855	81.361	81.599
		Max Case	RAIN	COMB4	COMB8	COMB8	COMB8	COMB4
LANTAI 1	C1	Min Value	-599.98	-49.49	-48.95	-3.301	-142.953	-145.745
		Min Case	COMB6	COMB6	COMB10	COMB17	COMB10	COMB6
		Max Value	82.55	38.00	37.15	3.410	123.919	127.822
		Max Case	QUAKEX	QUAKEX	QUAKEY	COMB8	QUAKEY	QUAKEX
LANTAI 1	C2	Min Value	-890.40	-56.86	-48.64	-3.301	-142.751	-159.984
		Min Case	COMB5	COMB6	COMB10	COMB17	COMB10	COMB6
		Max Value	78.91	40.92	48.30	3.410	140.970	138.164
		Max Case	QUAKEX	QUAKEX	COMB15	COMB8	COMB15	QUAKEX
LANTAI 1	C3	Min Value	-859.68	-57.55	-64.11	-3.343	-136.661	-167.317
		Min Case	COMB6	COMB5	COMB10	COMB17	COMB18	COMB5
		Max Value	97.62	45.10	57.60	3.514	140.485	149.938
		Max Case	QUAKEX	QUAKEX	QUAKEY	COMB8	COMB7	QUAKEX

LANTAI 1	C4	Min Value	-582.30	-56.44	-46.37	-3.343	-132.096	-174.251
		Min Case	COMB8	COMB5	COMB18	COMB17	COMB18	COMB5
		Max Value	85.20	46.70	59.82	3.514	144.369	160.685
		Max Case	QUAKEK	QUAKEK	COMB7	COMB8	COMB7	QUAKEK
LANTAI 1	C5	Min Value	-887.99	-49.38	-56.35	-3.301	-157.742	-145.910
		Min Case	COMB9	COMB14	COMB10	COMB17	COMB10	COMB14
		Max Value	76.08	49.97	40.19	3.410	135.086	147.015
		Max Case	QUAKEY	COMB3	QUAKEY	COMB8	QUAKEY	COMB3
LANTAI 1	C6	Min Value	-1321.82	-49.86	-48.92	-3.301	-147.912	-151.118
		Min Case	COMB2	COMB14	COMB18	COMB17	COMB18	COMB14
		Max Value	-8.18	54.93	53.63	3.410	153.011	157.777
		Max Case	QUAKEK	COMB3	COMB7	COMB8	COMB7	COMB3
LANTAI 1	C7	Min Value	-1228.53	-57.32	-54.28	-3.301	-155.196	-167.273
		Min Case	COMB2	COMB5	COMB10	COMB17	COMB10	COMB5
		Max Value	9.27	56.80	50.54	3.410	148.727	166.334
		Max Case	QUAKEY	COMB12	QUAKEY	COMB8	QUAKEY	COMB12
LANTAI 1	C8	Min Value	-888.31	-65.94	-30.19	-3.301	-123.239	-186.945
		Min Case	COMB7	COMB5	COMB18	COMB17	COMB18	COMB5
		Max Value	-6.12	60.50	59.70	3.410	160.654	179.267
		Max Case	RAIN	QUAKEK	COMB7	COMB8	COMB7	COMB12
LANTAI 1	C9	Min Value	-836.16	-49.74	-56.76	-3.301	-165.212	-146.325
		Min Case	COMB10	COMB6	COMB9	COMB17	COMB9	COMB14
		Max Value	85.24	49.59	43.45	3.410	146.316	146.465
		Max Case	QUAKEY	COMB11	QUAKEY	COMB8	QUAKEY	COMB3
LANTAI 1	C10	Min Value	-1199.37	-52.39	-55.17	-3.301	-163.353	-154.304
		Min Case	COMB2	COMB6	COMB9	COMB17	COMB9	COMB6
		Max Value	8.55	51.94	55.29	3.410	162.752	153.768
		Max Case	QUAKEK	COMB11	COMB16	COMB8	COMB16	COMB11
LANTAI 1	C11	Min Value	-1200.82	-56.23	-55.77	-3.301	-164.137	-165.837
		Min Case	COMB2	COMB5	COMB9	COMB17	COMB9	COMB5
		Max Value	8.91	55.76	54.92	3.410	162.273	164.971
		Max Case	QUAKEK	COMB12	COMB16	COMB8	COMB16	COMB12
LANTAI 1	C12	Min Value	-840.67	-61.60	-36.53	-3.301	-138.559	-181.262
		Min Case	COMB8	COMB5	COMB17	COMB17	COMB17	COMB5
		Max Value	13.33	61.28	56.43	3.410	163.748	180.306
		Max Case	QUAKEK	COMB12	COMB8	COMB8	COMB8	COMB12
LANTAI 1	C13	Min Value	-598.71	-32.94	-58.55	-3.301	-176.096	-124.299
		Min Case	COMB4	COMB14	COMB9	COMB17	COMB9	COMB14
		Max Value	80.61	49.56	46.98	3.410	157.757	146.284
		Max Case	QUAKEY	COMB3	QUAKEY	COMB8	QUAKEY	COMB3
LANTAI 1	C14	Min Value	-830.92	-33.99	-60.76	-3.301	-179.173	-130.147
		Min Case	COMB3	COMB14	COMB9	COMB17	COMB9	COMB14
		Max Value	-6.13	54.07	60.91	3.410	178.903	156.358
		Max Case	RAIN	COMB3	COMB16	COMB8	COMB16	COMB3
LANTAI 1	C15	Min Value	-838.78	-37.11	-81.22	-3.301	-179.769	-140.626
		Min Case	COMB4	COMB13	COMB9	COMB17	COMB9	COMB13
		Max Value	12.79	57.08	60.61	3.410	178.507	166.412
		Max Case	QUAKEY	COMB4	COMB16	COMB8	COMB16	COMB4
LANTAI 1	C16	Min Value	-596.75	-42.50	-41.98	-3.301	-154.310	-156.037
		Min Case	COMB3	COMB13	COMB17	COMB17	COMB17	COMB13
		Max Value	-2.80	58.82	58.32	3.410	175.136	176.750
		Max Case	RAIN	COMB4	COMB8	COMB8	COMB8	COMB4

Gaya – gaya kolom untuk perancangan pondasi

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	BEBAN DEAD	Static Static	1.4000 1.4000
		BEBAN LIVE MAIN DEAD	Static Static Static	1.2000 1.6000 0.5000 1.2000
COMB2	ADD	BEBAN LIVE MAIN DEAD	Static Static Static	1.2000 1.6000 0.5000 1.2000

COLUMN FORCE ENVELOPES

STORY	COLUMN	ITEM	P	V2	V3	T	M2	M3
LANTAI 1	C1	Min Value	-527.63	-10.81	-11.28	0.059	-15.780	-13.812
		Min Case	COMB1	COMB2	COMB1	COMB2	COMB2	COMB2
		Max Value	-477.77	-10.14	-10.43	0.084	29.351	29.411
		Max Case	COMB2	COMB1	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C2	Min Value	-864.78	-17.04	-0.35	0.059	-1.344	-22.174
		Min Case	COMB2	COMB2	COMB2	COMB1	COMB2	COMB2
		Max Value	-799.06	-14.95	-0.13	0.084	-0.122	45.989
		Max Case	COMB1	COMB1	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C3	Min Value	-799.62	-13.41	-4.74	0.025	-9.417	-17.605
		Min Case	COMB2	COMB2	COMB1	COMB1	COMB2	COMB2
		Max Value	-726.50	-11.09	1.56	0.134	2.581	35.927
		Max Case	COMB1	COMB1	COMB1	COMB2	COMB1	COMB2
LANTAI 1	C4	Min Value	-483.05	-6.82	8.11	0.025	-25.858	-9.189
		Min Case	COMB1	COMB1	COMB1	COMB1	COMB1	COMB1
		Max Value	-393.01	-6.42	14.42	0.134	7.730	18.079
		Max Case	COMB2	COMB2	COMB1	COMB2	COMB2	COMB1
LANTAI 1	C5	Min Value	-864.25	0.35	-17.38	0.059	-23.520	-0.825
		Min Case	COMB2	COMB1	COMB2	COMB1	COMB2	COMB2
		Max Value	-798.49	0.40	-15.14	0.084	46.007	0.790
		Max Case	COMB1	COMB2	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C6	Min Value	-1321.82	2.95	2.64	0.059	-9.055	-8.998
		Min Case	COMB2	COMB2	COMB1	COMB1	COMB1	COMB1
		Max Value	-1163.65	3.34	3.17	0.084	3.614	4.379
		Max Case	COMB1	COMB1	COMB2	COMB1	COMB1	COMB1
LANTAI 1	C7	Min Value	-1228.53	-0.56	-3.99	0.059	-6.079	-0.912
		Min Case	COMB2	COMB2	COMB1	COMB1	COMB2	COMB2
		Max Value	-1038.24	-0.19	-2.67	0.084	9.930	1.337
		Max Case	COMB1	COMB1	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C8	Min Value	-876.92	-4.18	16.47	0.059	-59.599	-5.854
		Min Case	COMB2	COMB1	COMB1	COMB1	COMB2	COMB2
		Max Value	-762.08	-2.97	21.79	0.084	27.540	10.079
		Max Case	COMB1	COMB1	COMB2	COMB2	COMB2	COMB2
LANTAI 1	C9	Min Value	-803.43	-0.11	-14.45	0.059	-19.477	0.034
		Min Case	COMB2	COMB1	COMB2	COMB1	COMB2	COMB1
		Max Value	-727.70	-0.07	-11.77	0.084	38.336	0.456
		Max Case	COMB1	COMB2	COMB1	COMB2	COMB2	COMB1
LANTAI 1	C10	Min Value	-1199.37	-0.29	0.01	0.059	-0.661	-0.337
		Min Case	COMB2	COMB2	COMB1	COMB1	COMB1	COMB1
		Max Value	-1020.00	-0.27	0.11	0.084	-0.219	0.813
		Max Case	COMB1	COMB1	COMB2	COMB1	COMB2	COMB2
LANTAI 1	C11	Min Value	-1200.82	-0.31	-0.64	0.059	-1.484	-0.588
		Min Case	COMB2	COMB2	COMB1	COMB1	COMB2	COMB2
		Max Value	-1020.96	-0.28	-0.46	0.084	1.115	0.656
		Max Case	COMB1	COMB1	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C12	Min Value	-805.68	-0.21	11.53	0.059	-38.527	-0.645
		Min Case	COMB2	COMB1	COMB2	COMB1	COMB2	COMB2
		Max Value	-728.86	-0.18	14.06	0.084	17.678	0.268
		Max Case	COMB1	COMB2	COMB2	COMB2	COMB2	COMB1
LANTAI 1	C13	Min Value	-525.35	10.16	-10.97	0.059	-14.705	-29.180
		Min Case	COMB1	COMB1	COMB2	COMB1	COMB2	COMB2
		Max Value	-475.77	10.91	-10.18	0.084	29.169	14.484
		Max Case	COMB2	COMB2	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C14	Min Value	-801.79	11.61	0.03	0.059	-0.554	-38.275
		Min Case	COMB2	COMB1	COMB2	COMB1	COMB2	COMB2
		Max Value	-726.16	14.21	0.13	0.084	-0.039	18.565
		Max Case	COMB1	COMB2	COMB1	COMB2	COMB2	COMB2

LANTAI 1	C15	Min Value	-801.58	11.55	-0.45	0.059	-1.004	-31.278
		Min Case	COMB2	COMB1	COMB2	COMB1	COMB2	COMB2
		Max Value	-726.03	14.13	-0.34	0.084	0.801	18.237
		Max Case	COMB1	COMB2	COMB1	COMB2	COMB2	COMB2
LANTAI 1	C16	Min Value	-524.46	10.00	10.03	0.059	-29.201	-29.187
		Min Case	COMB1	COMB1	COMB1	COMB2	COMB2	COMB2
		Max Value	-474.13	10.67	10.67	0.084	13.484	13.500
		Max Case	COMB2	COMB2	COMB2	COMB2	COMB2	COMB2

**Gaya – gaya kolom untuk perancangan fondasi akibat beban gravitasi dan
beban gempa**

LOADING COMBINATIONS

COMBO	COMBO TYPE	CASE	CASE TYPE	SCALE FACTOR
COMB1	ADD	BEBAN DEAD	Static Static	1.4000 1.4000
COMB2	ADD	BEBAN LIVE RAIM DEAD	Static Static Static Static	1.2000 1.6000 0.5000 1.2000
COMB3	ADD	BEBAN LIVE QUAKEX QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 0.3000 1.2000
COMB4	ADD	BEBAN LIVE QUAKEX QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 -0.3000 1.2000
COMB5	ADD	BEBAN LIVE QUAKEX QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 0.3000 1.2000
COMB6	ADD	BEBAN LIVE QUAKEX QUAKEY DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 -0.3000 1.2000
COMB7	ADD	BEBAN LIVE QUAKEY QUAKEX DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 0.3000 1.2000
COMB8	ADD	BEBAN LIVE QUAKEY QUAKEX DEAD	Static Static Static Static Static	1.2000 1.0000 1.0000 -0.3000 1.2000
COMB9	ADD	BEBAN LIVE QUAKEY QUAKEX DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 0.3000 1.2000
COMB10	ADD	BEBAN LIVE QUAKEY QUAKEX DEAD	Static Static Static Static Static	1.2000 1.0000 -1.0000 -0.3000 1.2000
COMB11	ADD	BEBAN QUAKEX QUAKEY DEAD	Static Static Static Static	0.9000 1.0000 0.3000 0.9000
COMB12	ADD	BEBAN QUAKEX QUAKEY DEAD	Static Static Static Static	0.9000 1.0000 -0.3000 0.9000
COMB13	ADD	BEBAN QUAKEX QUAKEY DEAD	Static Static Static Static	0.9000 -1.0000 0.3000 0.9000
COMB14	ADD	BEBAN QUAKEX QUAKEY DEAD	Static Static Static Static	0.9000 -1.0000 -0.3000 0.9000

COMB15	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	1.0000
		QUAKEX	Static	0.3000
		DEAD	Static	0.9000
COMB16	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	1.0000
		QUAKEX	Static	-0.3000
		DEAD	Static	0.9000
COMB17	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	-1.0000
		QUAKEX	Static	0.3000
		DEAD	Static	0.9000
COMB18	ADD	BEBAN	Static	0.9000
		QUAKEY	Static	-1.0000
		QUAKEX	Static	-0.3000
		DEAD	Static	0.9000

C O L U M N F O R C E E N V E L O P E S

STORY	COLUMN	ITEM	P	V2	V3	T	M2	M3
LANTAI 1	C1	Min Value	-599.98	-49.49	-48.95	-3.301	-142.953	-145.745
		Min Case	COMB6	COMB6	COMB10	COMB17	COMB10	COMB6
		Max Value	-201.35	32.95	31.84	3.410	119.333	124.536
		Max Case	COMB11	COMB11	COMB15	COMB8	COMB15	COMB11
LANTAI 1	C2	Min Value	-890.40	-56.86	-48.64	-3.301	-142.751	-159.984
		Min Case	COMB6	COMB6	COMB10	COMB17	COMB10	COMB6
		Max Value	-434.25	31.79	48.30	3.410	140.970	127.345
		Max Case	COMB12	COMB11	COMB15	COMB8	COMB15	COMB11
LANTAI 1	C3	Min Value	-859.68	-57.55	-64.11	-3.343	-136.661	-167.317
		Min Case	COMB6	COMB5	COMB10	COMB17	COMB18	COMB5
		Max Value	-361.42	38.45	56.99	3.514	140.485	142.243
		Max Case	COMB11	COMB12	COMB15	COMB8	COMB7	COMB12
LANTAI 1	C4	Min Value	-582.30	-56.44	-46.37	-3.343	-132.096	-174.251
		Min Case	COMB8	COMB8	COMB18	COMB17	COMB18	COMB8
		Max Value	-134.10	45.82	59.82	3.514	144.389	159.869
		Max Case	COMB17	COMB12	COMB7	COMB8	COMB7	COMB12
LANTAI 1	C5	Min Value	-887.99	-49.38	-56.35	-3.301	-157.742	-145.910
		Min Case	COMB9	COMB14	COMB10	COMB17	COMB10	COMB14
		Max Value	-435.78	49.97	30.89	3.410	123.497	147.015
		Max Case	COMB16	COMB3	COMB15	COMB8	COMB15	COMB3
LANTAI 1	C6	Min Value	-1321.82	-49.86	-48.92	-3.301	-147.912	-151.118
		Min Case	COMB2	COMB14	COMB18	COMB17	COMB19	COMB14
		Max Value	-737.35	54.93	53.63	3.410	153.011	157.777
		Max Case	COMB18	COMB3	COMB7	COMB8	COMB7	COMB3
LANTAI 1	C7	Min Value	-1220.53	-57.32	-54.28	-3.301	-155.196	-167.273
		Min Case	COMB2	COMB5	COMB10	COMB17	COMB10	COMB5
		Max Value	-649.65	56.80	49.20	3.410	147.522	166.334
		Max Case	COMB13	COMB12	COMB15	COMB8	COMB15	COMB12
LANTAI 1	C8	Min Value	-888.31	-65.94	-30.19	-3.301	-123.239	-186.945
		Min Case	COMB7	COMB5	COMB18	COMB17	COMB18	COMB5
		Max Value	-408.26	60.46	59.70	3.410	160.654	179.267
		Max Case	COMB18	COMB12	COMB7	COMB8	COMB7	COMB12
LANTAI 1	C9	Min Value	-836.16	-49.74	-56.76	-3.301	-165.212	-146.325
		Min Case	COMB10	COMB6	COMB9	COMB17	COMB9	COMB14
		Max Value	-381.33	49.59	36.38	3.410	137.891	146.465
		Max Case	COMB15	COMB11	COMB16	COMB8	COMB16	COMB3
LANTAI 1	C10	Min Value	-1199.37	-52.39	-55.17	-3.301	-163.353	-154.304
		Min Case	COMB2	COMB6	COMB9	COMB17	COMB9	COMB6
		Max Value	-644.68	51.94	55.29	3.410	162.752	153.768
		Max Case	COMB12	COMB11	COMB16	COMB8	COMB16	COMB11
LANTAI 1	C11	Min Value	-1200.82	-56.23	-55.77	-3.301	-164.137	-165.837
		Min Case	COMB2	COMB5	COMB17	COMB17	COMB9	COMB5
		Max Value	-644.89	55.76	54.92	3.410	162.273	164.971
		Max Case	COMB11	COMB12	COMB16	COMB8	COMB15	COMB12
LANTAI 1	C12	Min Value	-840.67	-61.60	-36.53	-3.301	-138.559	-181.262
		Min Case	COMB8	COMB5	COMB17	COMB17	COMB5	COMB5
		Max Value	-379.34	61.28	56.43	3.410	163.748	180.306
		Max Case	COMB17	COMB12	COMB8	COMB8	COMB8	COMB12
LANTAI 1	C13	Min Value	-598.71	-32.94	-58.55	-3.301	-176.096	-124.299
		Min Case	COMB4	COMB14	COMB9	COMB17	COMB9	COMB14
		Max Value	-199.18	49.56	41.88	3.410	153.915	146.284
		Max Case	COMB13	COMB3	COMB16	COMB8	COMB16	COMB3

LANTAI 1	C14	Min Value	-830.92	-33.99	-60.76	-3.301	-174.173	-130.147
		Min Case	COMB3	COMB14	COMB9	COMB17	COMB9	COMB14
		Max Value	-384.07	54.07	60.91	3.410	178.903	166.358
		Max Case	COMB14	COMB3	COMB16	COMB8	COMB16	COMB3
LANTAI 1	C15	Min Value	-838.78	-37.11	-61.22	-3.301	-179.769	-140.626
		Min Case	COMB4	COMB13	COMB9	COMB17	COMB9	COMB13
		Max Value	-375.94	57.08	60.61	3.410	178.507	166.412
		Max Case	COMB13	COMB4	COMB16	COMB8	COMB16	COMB4
LANTAI 1	C16	Min Value	-596.75	-42.50	-41.96	-3.301	-154.310	-156.037
		Min Case	COMB14	COMB13	COMB17	COMB17	COMB13	COMB13
		Max Value	-199.25	58.82	58.32	3.410	175.136	176.750
		Max Case	COMB14	COMB4	COMB8	COMB8	COMB8	COMB4

PERHITUNGAN DAFTAR BENGKOK TULANGAN

Balok

Untuk contoh perhitungan ditinjau balok B1, B2, B3, pada lantai 3. ketiga balok mempunyai jumlah tulangan terpasang yang sama.

Data- data yang diperlukan :

Diameter tulangan balok = 19 mm

Lebar balok (b) = 300 mm

Tinggi balok (h) = 500 mm

Panjang penyaluran kait :

$$\lambda_{dh} = \frac{fy \cdot db}{5,4 \cdot \sqrt{f'c}} = \frac{400,19}{5,4 \cdot \sqrt{25}} = 281,4815 \text{ mm}$$

Nilai di atas tidak boleh lebih kecil dari $8 \cdot db = 8 \cdot 19 = 152 \text{ mm}$ dan 150 mm .

λ_{dh} yang digunakan sebesar 400 mm.

Menghitung bengkokan kait digunakan syarat yang sesuai dengan RSNI (BSN, 2002a, hal 37) dimana untuk bengkokan 90° , maka panjang kait sebesar $12 \cdot db = 12 \cdot 19 = 228 \text{ mm}$. RSNI (BSN, 2002a, hal 38) juga mensyaratkan panjang bengkokan minimum untuk diameter tulangan 19 adalah $6 \cdot db = 6 \cdot 19 = 114 \text{ mm}$.

Sambungan lewatan direncanakan dipasang pada balok 2, dimana :

As perlu lapangan tulangan atas = $462,525 \text{ mm}^2$

As perlu lapangan tulangan bawah = $231,2625 \text{ mm}^2$

As terpasang lapangan atas = $850,5862 \text{ mm}^2$

As terpasang lapangan bawah = $567,0575 \text{ mm}^2$

a. Tulangan atas

Sambungan diletakkan di daerah tengah bentang, sehingga termasuk dalam daerah tulangan lapangan.

$$\frac{As_{terpasang}}{As_{perlu}} = \frac{567,0575}{231,2625} = 2,452 < 2 \text{ maka termasuk sambungan kelas A}$$

berdasarkan RSNI, pasal 14.3 butir 2 (BSN, 2002a, hal 119), panjang penyaluran untuk daerah bagian desak dihitung sebagai berikut :

$$\frac{db \cdot fy}{4 \cdot \sqrt{f'_c}} = \frac{19 \cdot 400}{4 \cdot \sqrt{25}} = 380$$

dan tidak boleh kurang dari

$$0,04 \cdot db \cdot fy = 0,04 \cdot 19 \cdot 400 = 304 \dots \dots \text{OK}$$

Digunakan sambungan lewatan 600 mm

b. Tulangan bawah

$$\frac{As_{terpasang}}{As_{perlu}} = \frac{850,5862}{462,525} = 1,8272 < 2 \text{ maka termasuk sambungan kelas B}$$

Faktor-faktor yang digunakan dalam persamaan-persamaan panjang penyaluran tercantum dalam RSNI pasal 14.2 ayat 4 (BSN, 2002a, hal 118), yaitu

$$\alpha = 1$$

$$\beta = 1$$

$$\gamma = 0,8$$

$$\lambda = 1$$

c diambil nilai yangterkecil dari :

$$1. d' = 40 + 10 + 0,5 \cdot 19 = 59,5 \text{ mm}$$

$$2. 0,5 \cdot \text{spasi} = 0,5 \left(\frac{300 - 2(40+10)-19}{1} \right) = 181 \text{ mm}$$

sehingga nilai c yang digunakan 59,5 mm

$$Ktr = \frac{A_{tr} \cdot f_y t}{10 \cdot s_n} = \frac{2 \cdot \frac{1}{4} \pi \cdot 10^2 \cdot 240}{10 \cdot 100 \cdot 2} = 18,8496 \text{ mm}$$

$$\left(\frac{c + Ktr}{db} \right) = \frac{59,5 + 18,8446}{19} = 4,1237 > 2,5 \text{ maka yangdigunakan } 2,5$$

$$\lambda d = \frac{9 \cdot f_y}{10 \cdot \sqrt{f'_c}} \cdot \frac{\alpha \cdot \beta \cdot \gamma \cdot \lambda}{\left(\frac{c + Ktr}{db} \right)} \cdot db$$

$$\lambda d = \frac{9 \cdot 400}{10 \cdot \sqrt{25}} \cdot \frac{1 \cdot 1 \cdot 0,8 \cdot 1}{2,5} \cdot 19 = 437,76 \text{ mm}$$

panjang sambungan lewatan kelas B adalah $1,3 \cdot 437,76 = 569,088 \text{ mm}$

Digunakan sambungan lewatan 1000 mm

RSNI (BSN, 2002a, halaman 124) juga menentukan syarat untuk meneruskan tulangan melampaui titik dimana tulangan tersebut tidak diperlukan lagi untuk menahan lentur untuk jarak sepanjang nilai terbesar dari :

$$1. \text{ Tinggi efektif } d = 500 - (40+10+0,5 \cdot 8) = 440,5 \text{ mm}$$

$$2. 12 \cdot db = 12 \cdot 19 = 228 \text{ mm}$$

Nilai yang digunakan adalah 440,5mm

Kolom

Sebagai contoh perhitungan diambil kolom sudut C16.

Diameter tulangan kolom yang digunakan tiap lantainya sama yaitu diameter 25 mm.

$$\lambda_{dh} = \frac{f_y \cdot db}{5,4 \cdot \sqrt{f'c}} = \frac{400,25}{5,4 \cdot \sqrt{25}} = 370,37 \text{ mm}$$

Nilai di atas tidak boleh lebih dari

1. $8 \cdot db = 8 \cdot 25 = 200 \text{ mm}$
2. 150 mm

sehingga panjang λ_{dh} yang digunakan 375 mm

Menghitung bengkokan kait digunakan syarat RSNI (BSN, 2002a, hal 37, dimana untuk bengkokan 90° , digunakan panjang kait sebesar $12 \cdot db = 12 \cdot 25 = 300 \text{ mm}$.

Dalam RSNI (BSN, 2002a, hal 38) juga mensyaratkan panjang bengkokan minimum untuk diameter tulangan 25 mm adalah $6 \cdot db = 6 \cdot 25 = 150 \text{ mm}$.

Sambungan direncanakan dipasang di tengah bentang kolom lantai 2, dan juga termasuk jenis sambungan kelas B

Data-data yang digunakan dalam perhitungan:

$$b = h = 500 \text{ mm}$$

$$d' = 40 + 13 + 0,5 \cdot 25 = 65,5 \text{ mm}$$

$$As = 3926,9908 \text{ mm}^2$$

Faktor –faktor yang digunakan dalam persamaan – persamaan panjang penyaluran tercantum dalam RSNI 2002 pasal 14.2 ayat 4 (BSN, 2002a, hal 118), yaitu

$$\alpha = 1$$

$$\beta = 1$$

$$\gamma = 1$$

$$\lambda = 1$$

c diambil nilai yangterkecil dari :

$$1. \quad d^r = 40 + 10 + 0,5.25 = 65,5 \text{ mm}$$

$$2. \quad 0,5.\text{spasi} = 0,5 \left(\frac{300 - 2.(40 + 10) - 25}{4} \right) = 52,375 \text{ mm}$$

sehingga nilai c yang digunakan 52,375 mm

$$Ktr = \frac{Atr.fyt}{10.sn} = \frac{\frac{3}{4}\pi \cdot 13^2 \cdot 400}{10.125,5} = 25,485 \text{ mm}$$

$$\left(\frac{c + Ktr}{db} \right) = \frac{59,5 + 25,485}{25} = 3,1144 > 2,5 \text{ maka yangdigunakan } 2,5$$

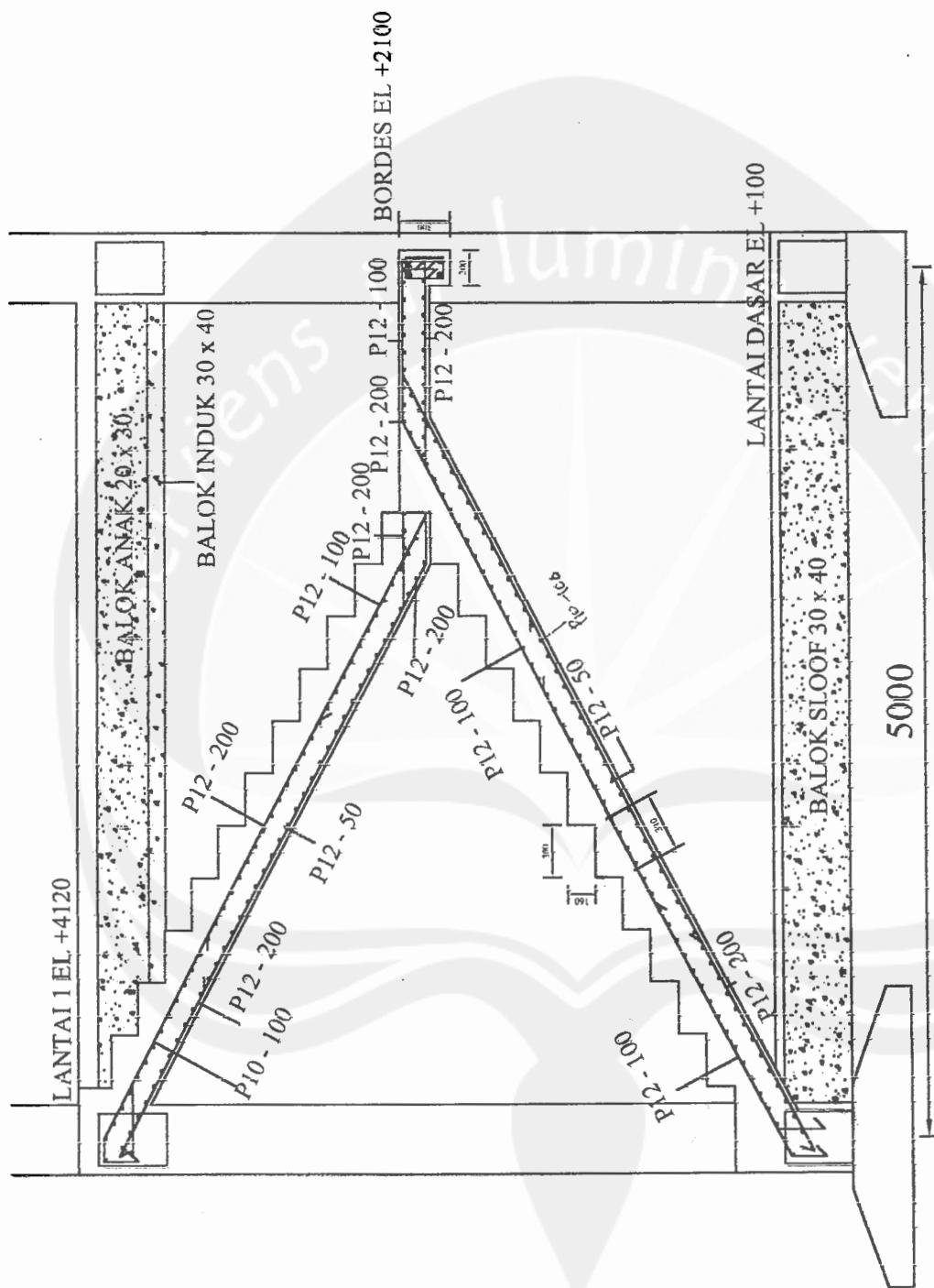
$$\lambda d = \frac{9.fy}{10.\sqrt{f'c}} \cdot \frac{\alpha \cdot \beta \cdot \gamma \cdot \lambda}{\left(\frac{c + Ktr}{db} \right)} \cdot db$$

$$\lambda d = \frac{9.400}{10.\sqrt{25}} \cdot \frac{1.1.1.1}{2,5} \cdot 25 = 720 \text{ mm}$$

Panjang sambungan lewatan yang digunakan adalah $1,3 \cdot \lambda d = 1,3 \cdot 720 = 936$ mm.

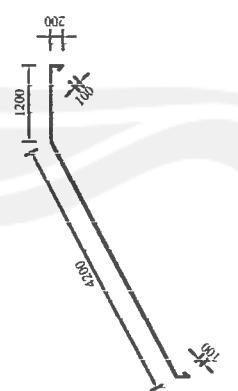
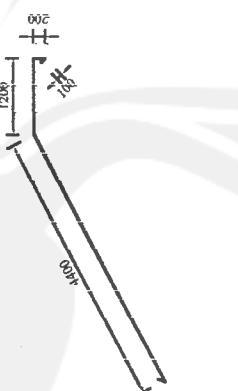
Digunakan sambungan lewatan 1000 mm

1 :40

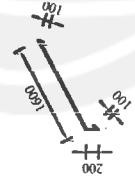
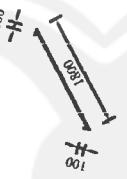


Gambar Penulangan Tangga Lantai 1

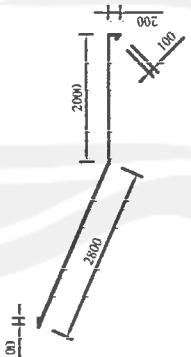
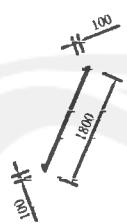
Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8				
				P8	P10	P12	D13	D19
	P12	6000	6				3	
	P12	6000	6				3	

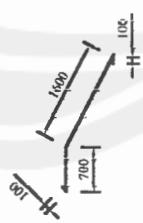
Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi				
				P8	P10	P12	D13	P8
	P12	2000	6				1	
	P12	2000	17				2,83	
	P12	3400	6				1,7	

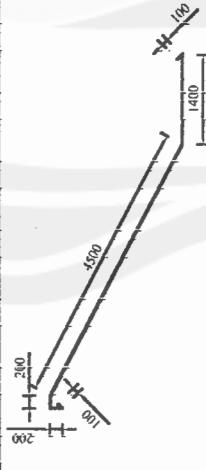
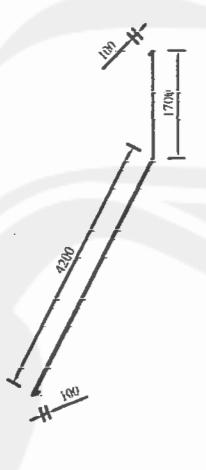
Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8					
				P8	P10	P12	D13	D19	D25
	P12	5200	6			2,6			
	P12	2000	7			1,7			

Daftar Bengkok Tulangan

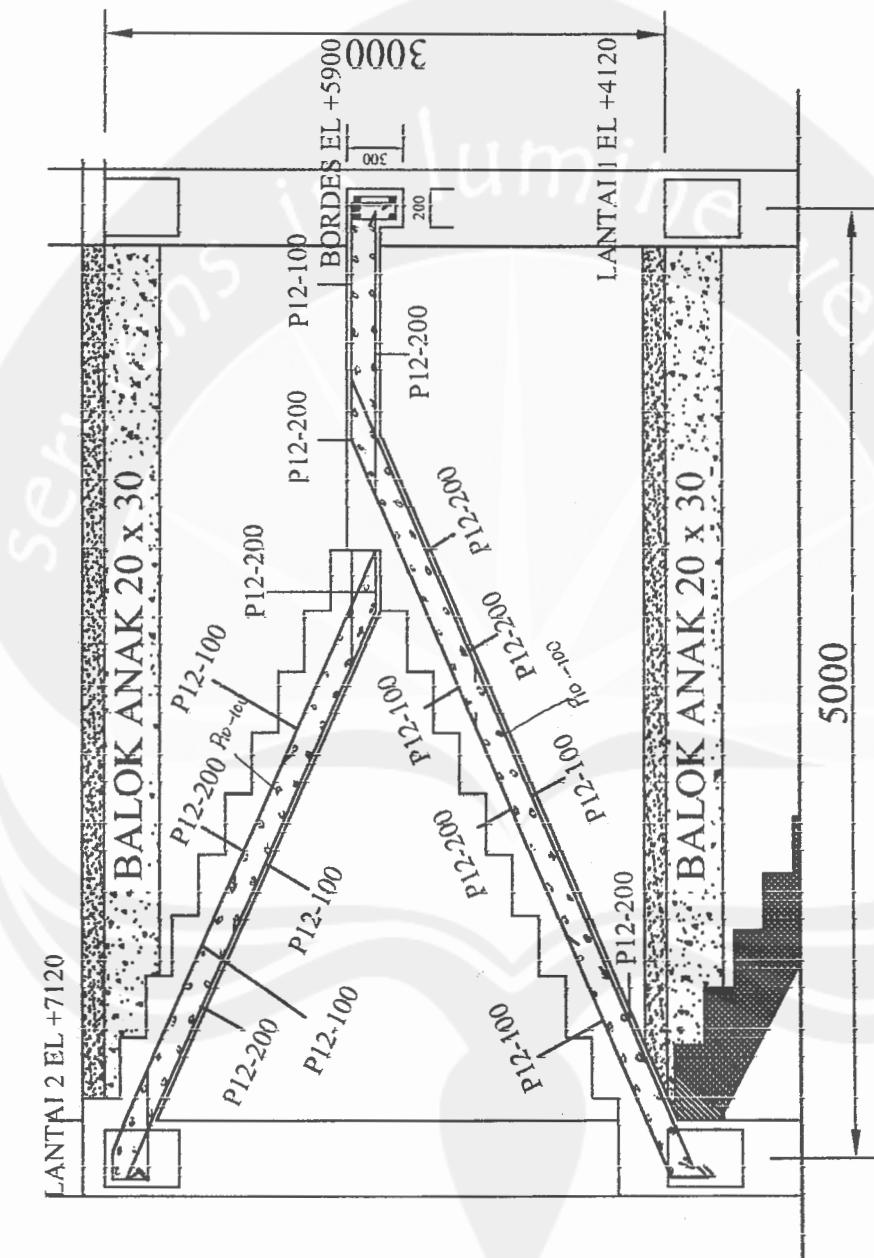
Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi					P8
				P8	P10	P12	D13	D19	
	P12	5200	6			2,6			
	P12	6100	6		3,1				

Daftar Bengkok Tulangan

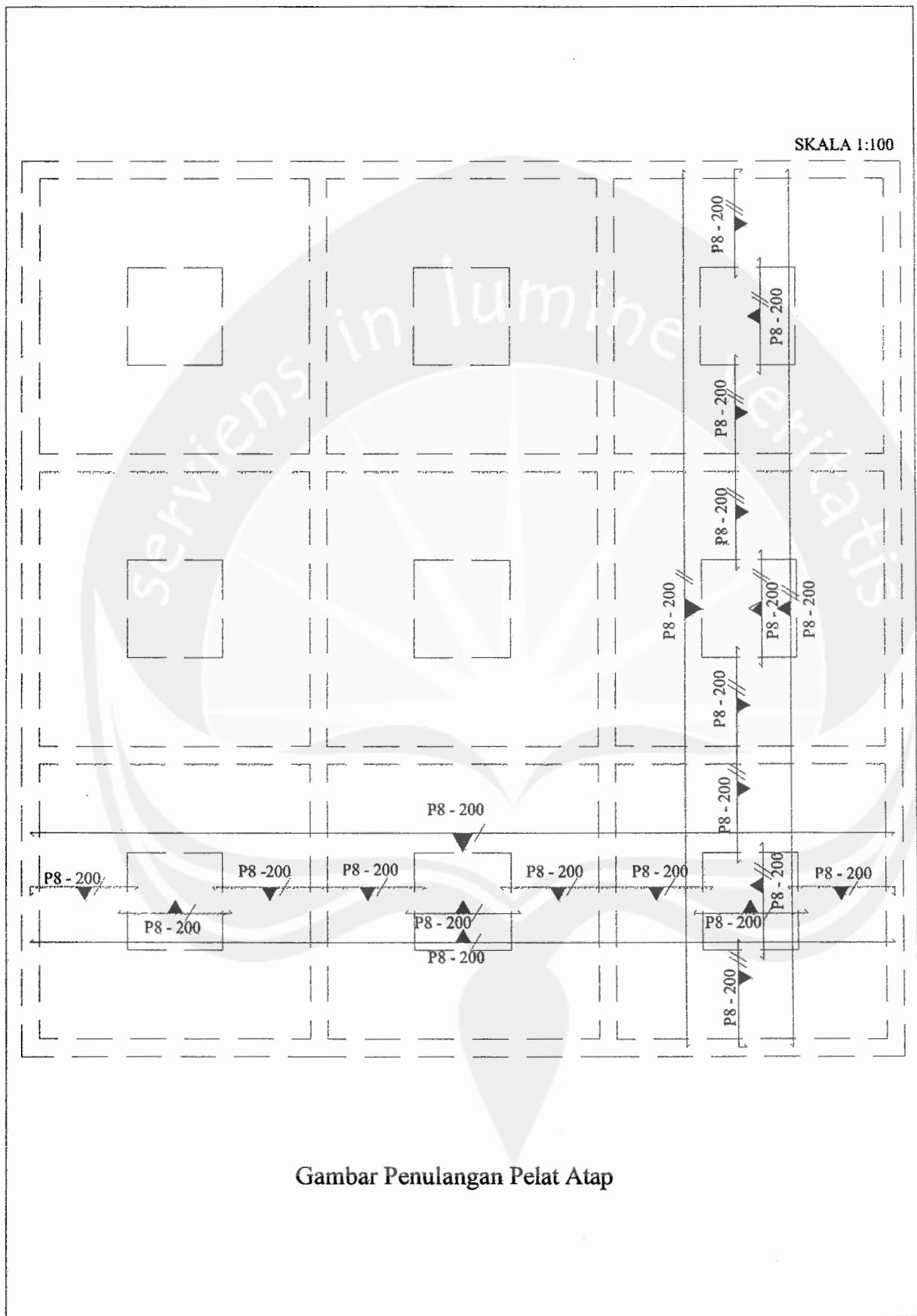
Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi				P8
				P8	P10	P12	D13	
	P12	5200	6			2,6		
	P12	6500	6			3,25		

Daftar Bengkok Tulangan

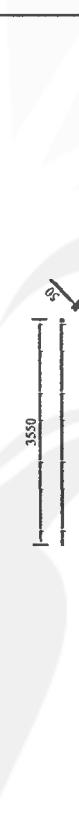
1 : 40



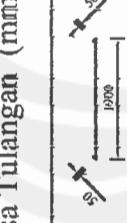
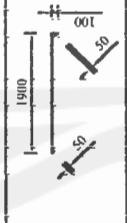
Gambar Penulangan Tangga Lantai 2 - 3

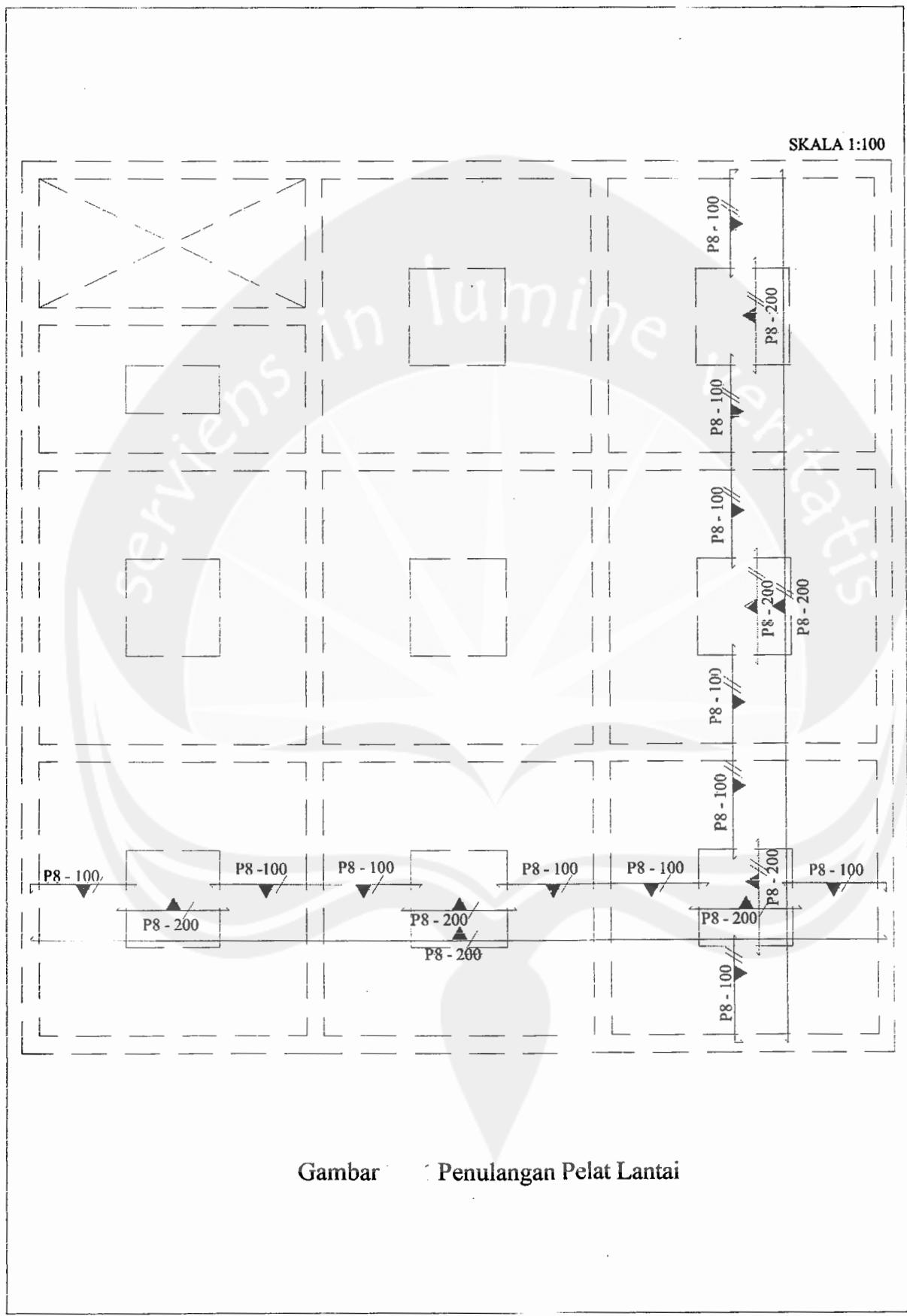


Daftar Bengkok Tulangan

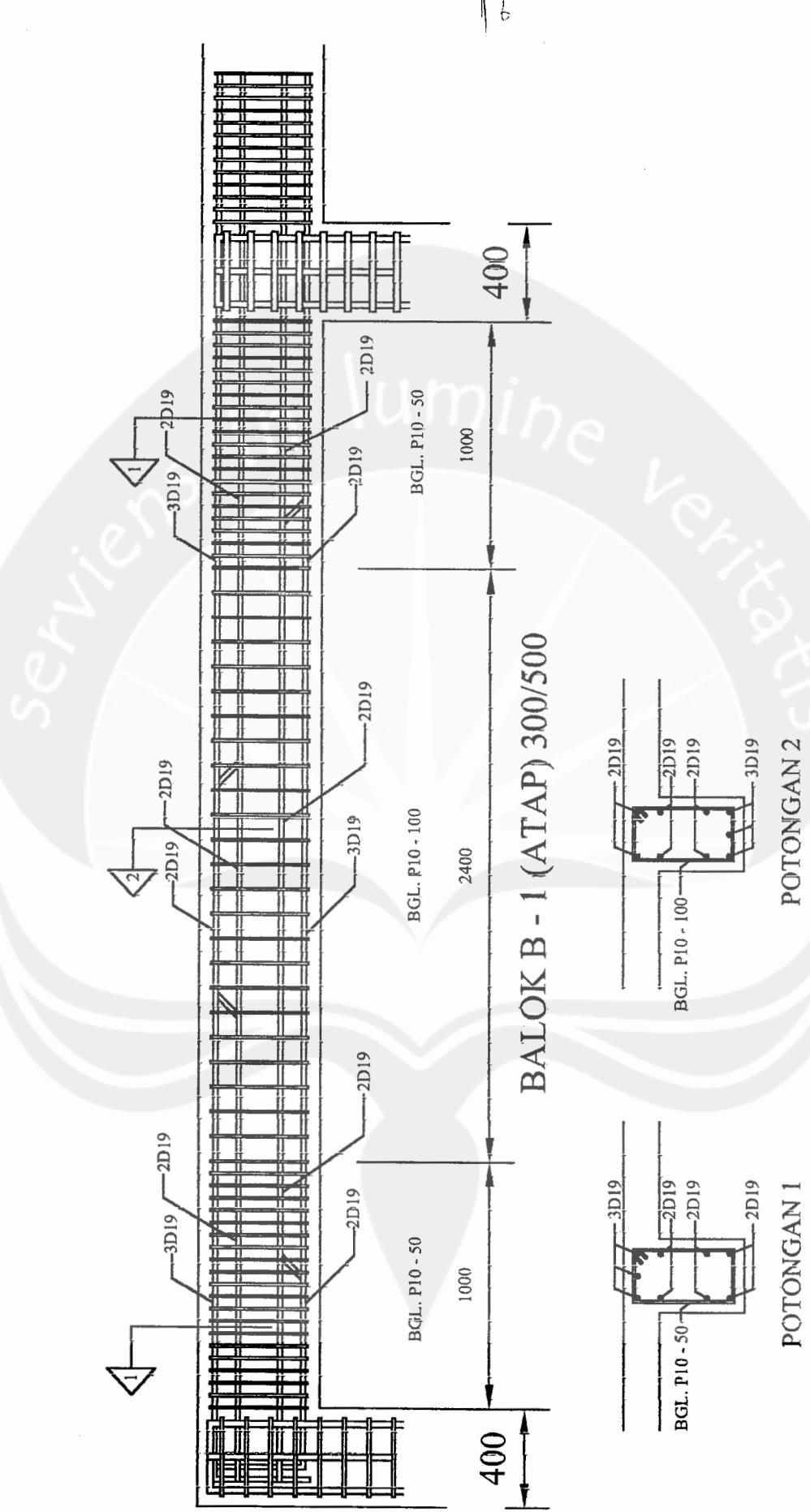
Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi					P8
				P8	P10	P12	D13	D19	
	P8	12000	150	150					
	P8	12000	150	150					
	P8	3800	150	47,5					
	P8	3600	150	45					
	P8	3900	300	97,5					

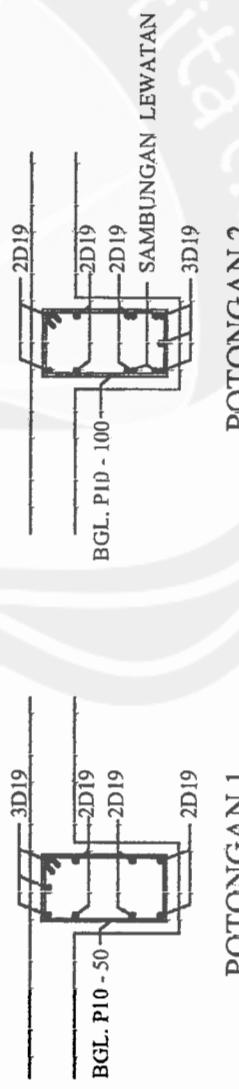
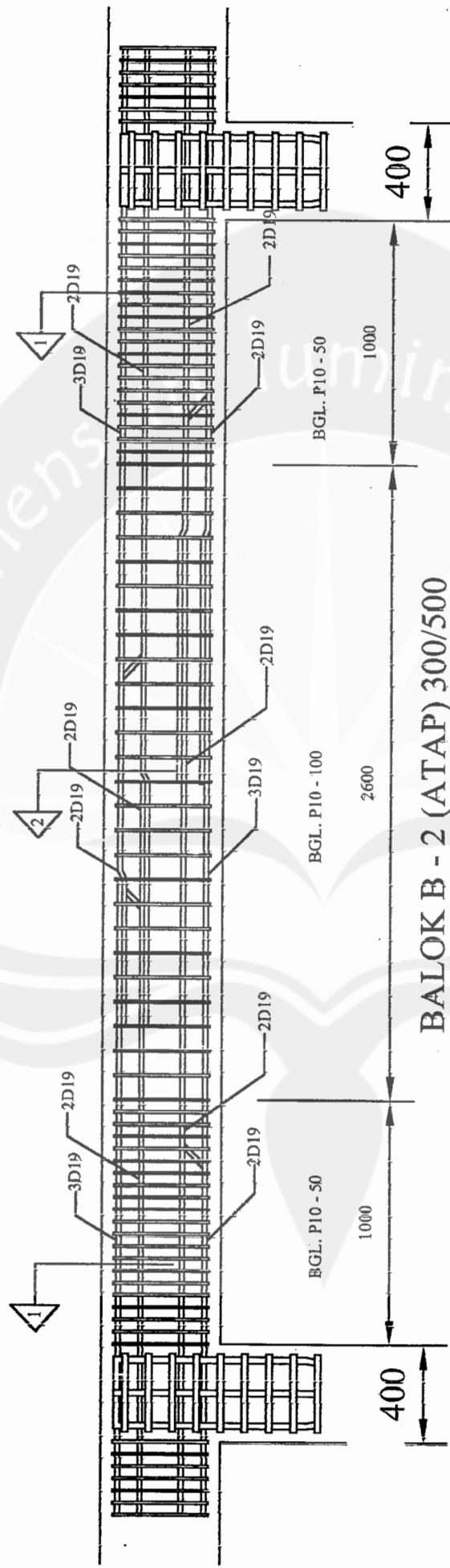
Daftar Bengkok Tulangan

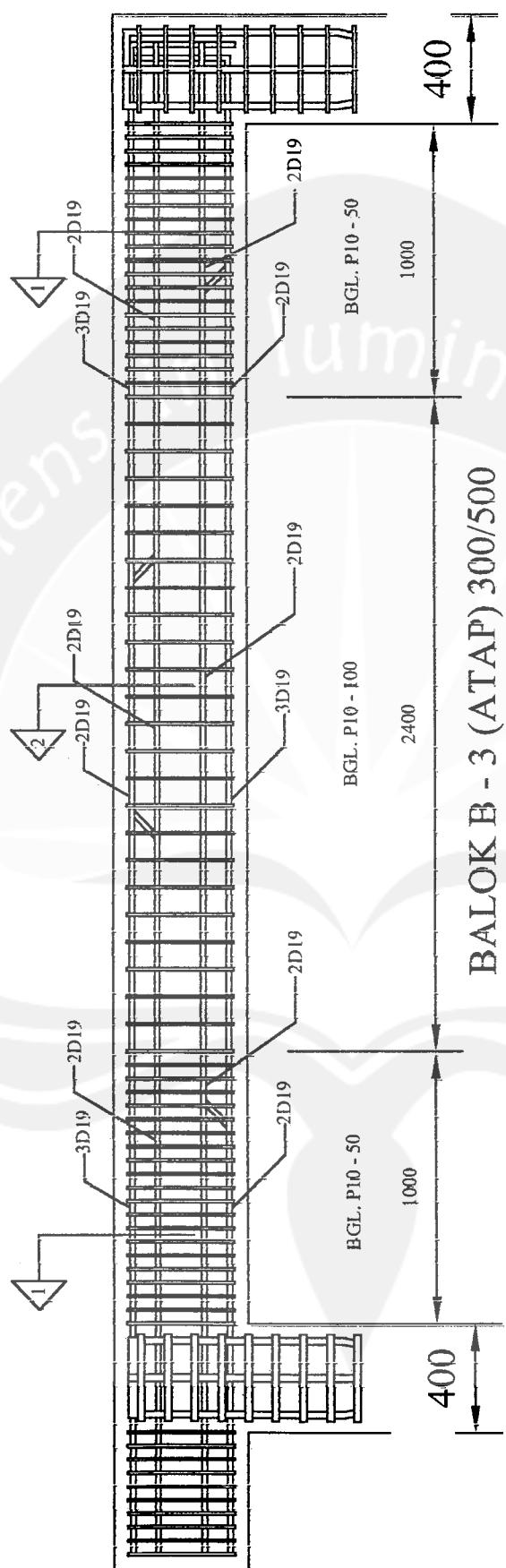
Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8				
				P8	P10	P12	D13	D19 D25
	P8	2000	450	75				
	P8	2100	300	52,5				
TOTAL KEBUTUHAN BESI UNTUK PELAT ATAP				617,5				



Gambar Penulangan Pelat Lantai







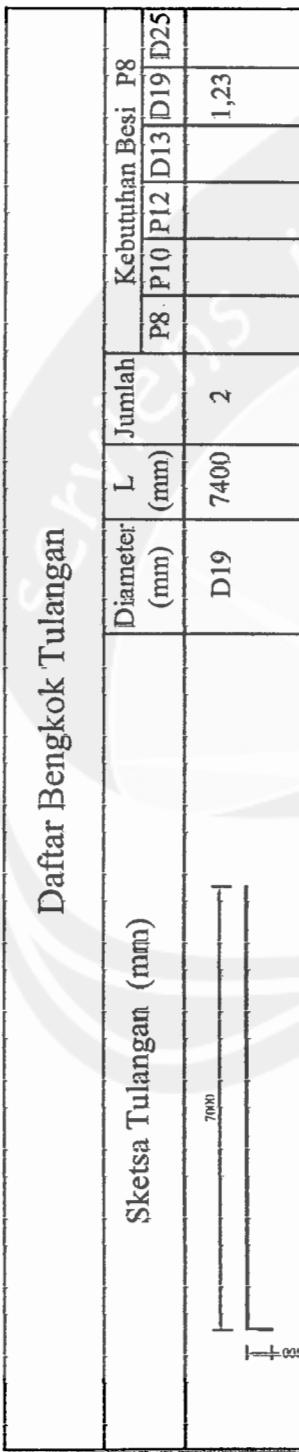
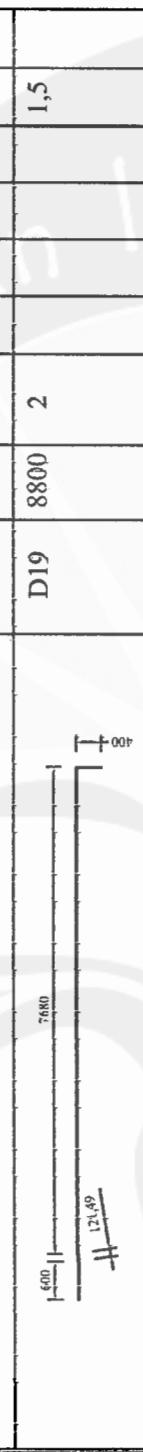
BALOK B - 3 (ATAP) 300/500



POTONGAN 1

POTONGAN 2

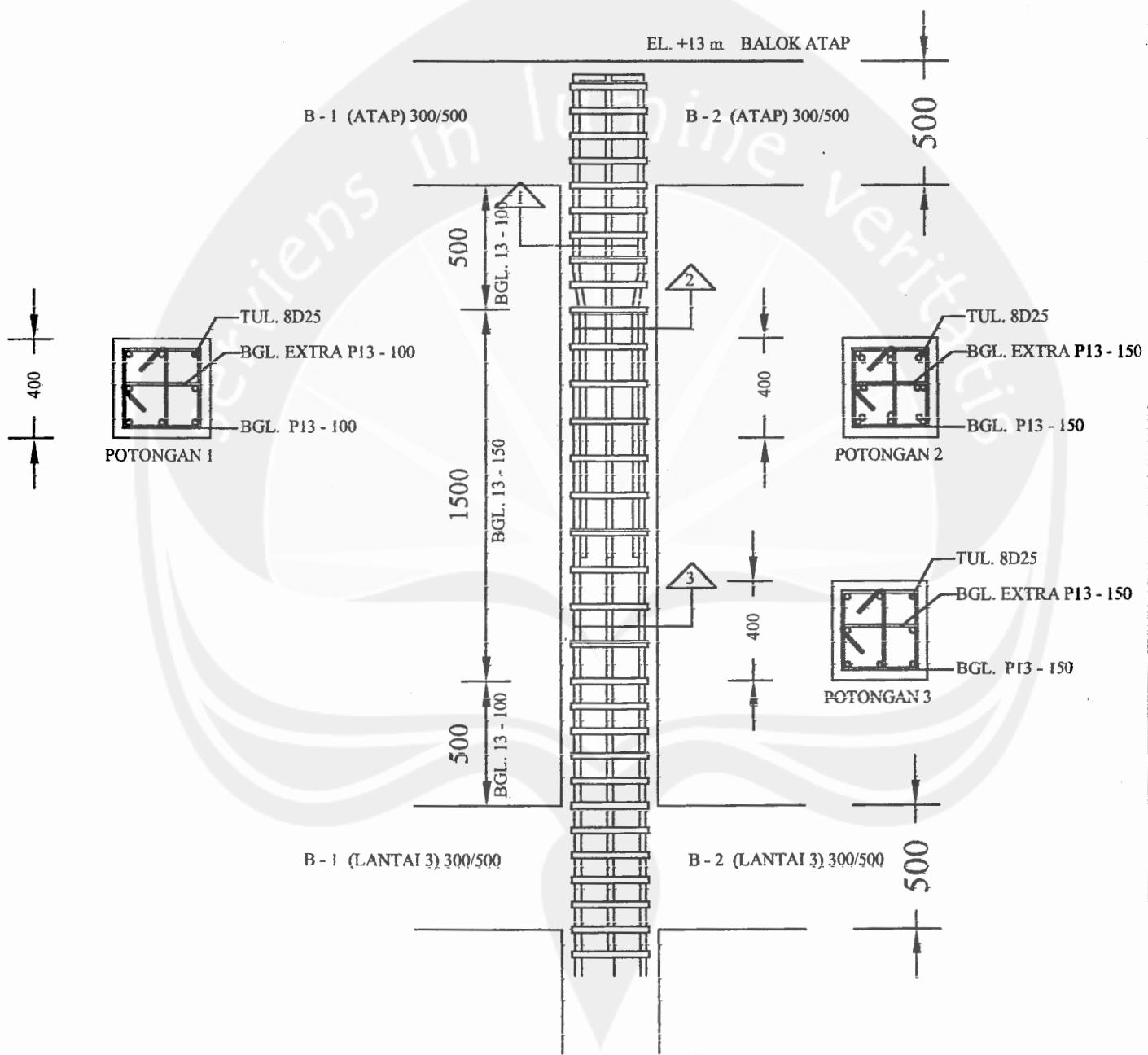
Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8					
				P8	P10	P12	D13	D19	D25
	D19	7400	2					1,23	
	D19	8800	2					1,5	
	D19	7400	2					1,23	
	D19	8400	2					1,4	

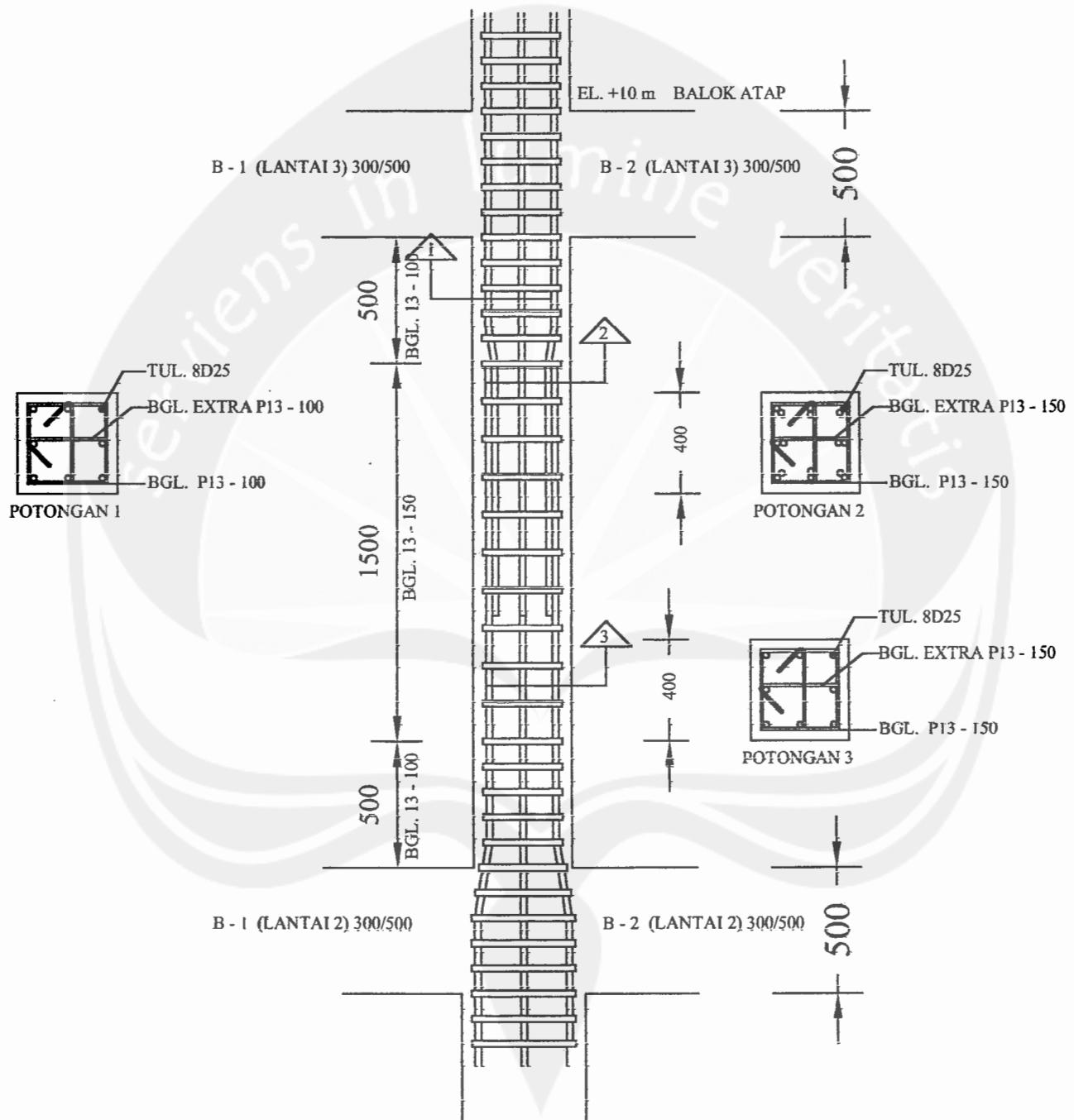
Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8					
				P8	P10	P12	D13	D19	D25
1000 6280 121,49 11	D19	8400	2					1,4	
1000 6280 121,49 11	D19	7400	2					1,23	
1000 6280 121,49 11	D19	8800	2					1,47	
1000 6280 121,49 11	D19	7800	2					1,3	
2080 121,49 11	D19	2550	2					0,43	

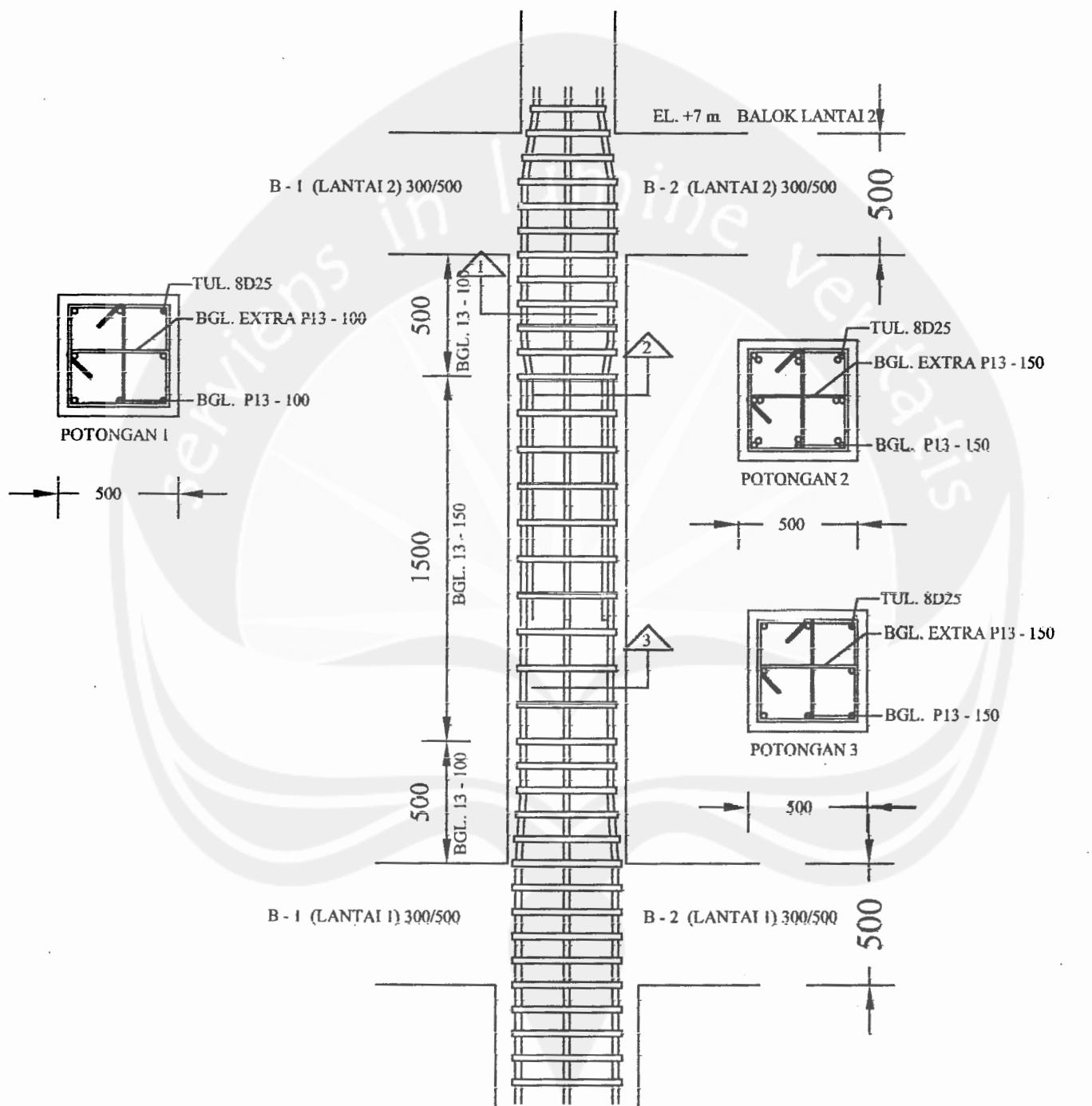
Daftar Bengkok Tulangan



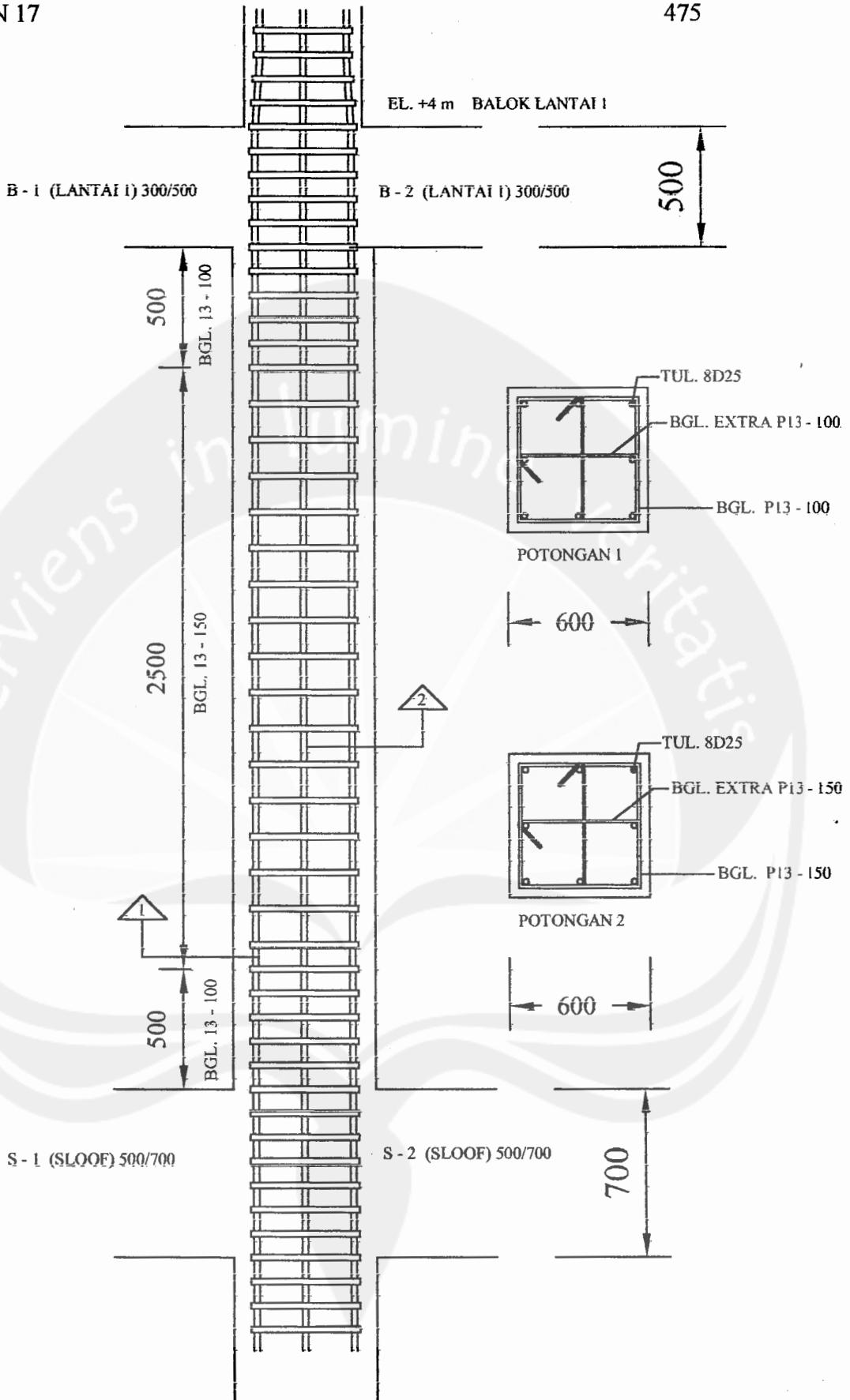
KOLOM C5 (ATAP) AS - 4



KOLOM C5 (LANTAI 3) AS - 4



KOLOM C5 (LANTAI 2) AS - 4



KOLOM C5 (LANTAI 1) AS - 4

Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8			
				P8	P10	P12	D13
	D25	1090	8				0,73
	D25	4000	8				2,67
	D25	4000	8				2,67
	D25	8100	8				5,4
	D13	1500	50				6,25

Daftar Bengkok Tulangan

Sketsa Tulangan (mm)	Diameter (mm)	L (mm)	Jumlah	Kebutuhan Besi P8			
				P8	P10	P12	D13 D19 D25
	D13	1950	30			4,9	
	D13	2350	51		10		
	D13	570	100			4,75	
	D13	670	60			3,35	
	D13	770	102			6,5	

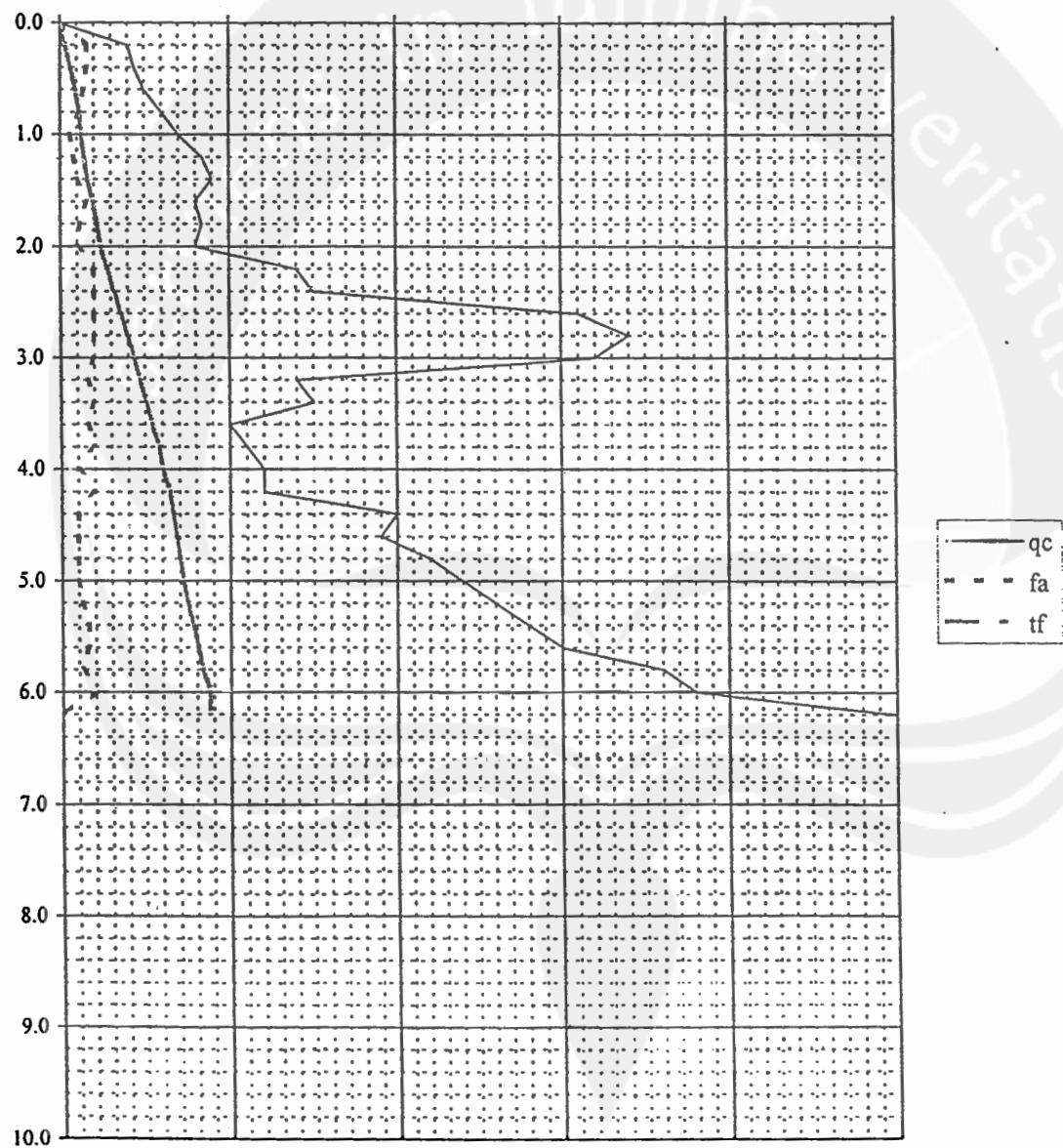
Daftar Bengkok Tulangan

LABORATORIUM MEKANIKA TANAH
PROGRAM STUDI TEKNIK SIPIL
FAKULTAS TEKNIK UNIVERSITAS ATMA JAYA YOGYAKARTA

2 TON CONE PENETRATION TEST

Proyek : Bangunan Perumahan Casa Grande, Ring Road Utara, Maguwoharjo, Yogyakarta.
Titik Sondir No. : S.7 Elevasi : + 0,00 m dari muka tanah setempat.
Tanggal : 06 Juni 2003 Muka air tanah : -15,00 meter
Cuaca : Cerah

fa	5	10	15	20	25	kg/cm^2
qc	50	100	150	200	250	kg/cm^2
tf	500	1000	1500	2000	2500	kg/cm^2



RANGKUMAN HASIL PENGUTIAN LABORATORIUM

Proyek LOKASI : Perumahan Casa Grande
 : Pugeran, Maguwoharjo, Depok, Sleman.



LABORATORIUM MEKANIKA TANAH
FAKULTAS TEKNIK UNIVERSITAS ATMA JAYA YOGYAKARTA
Jalan Babarsari No.44 Telephone (0274) 487711 Yogyakarta 55281

BORING LOG

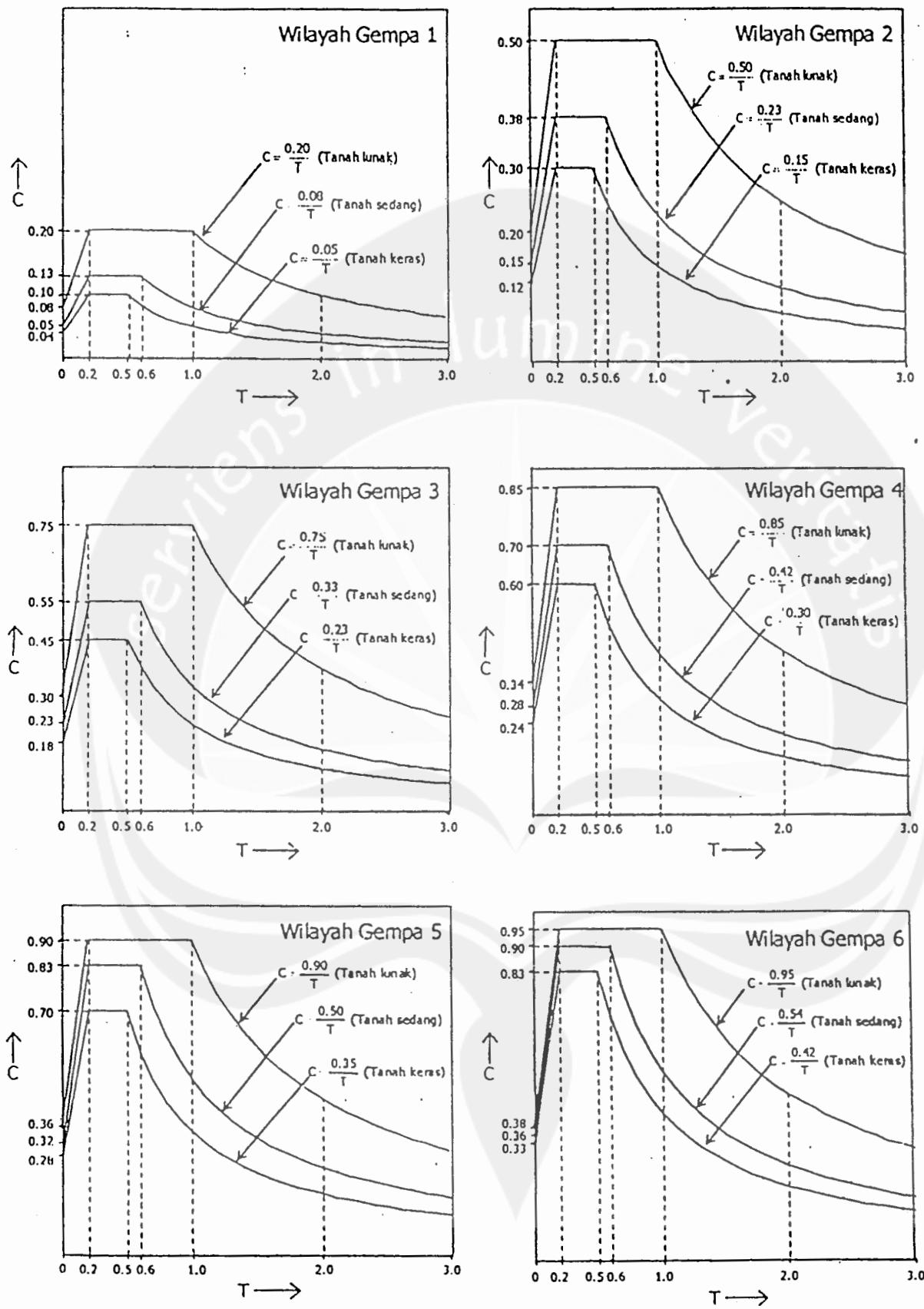
Proyek : PERUMAHAN

Lokasi : Pugeran, Maguwoharjo, Sleman, DIY

Tanggal : Juni 2003 Cuaca : Cerah/Berawan/Hujan No. Bor B2

Muka Air Tanah : -- Elevasi : --

KEDALAMAN (Meter)	PROFIL BOR	DISKRIPSI TANAH	KETERANGAN
(1)	(2)	(3)	(4)
-			disturbed sammel
-1,00			
-			
2,00		pasir kasar,coklat	pasir kasar
-			
3,00			pasir halus
-			
-4,00			
-			
-5,00			
-			
-6,00			
-			
-7,00			
-			
-8,00			
-			
-9,00			
-			



Gambar 2 Respons spektrum gempa rencana

Tabel 13.3.1
Momen di dalam pelat persegi yang menumpu pada keempat tepinya
akibat beban terbagi rata

		l_y/l_x	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5	>2,5	
I	Mix	= + 0,001	$q l x^2 X$	44	52	59	66	73	78	84	88	93	97	100	103	106	108	110	112	125
	Mly	= + 0,001	$q l x^2 X$	44	45	45	44	44	43	41	39	37	36	35	34	33	34	33	32	25
	Mlx	= + 0,001	$q l x^2 X$	21	25	28	31	34	36	37	40	40	40	41	41	41	42	42	42	42
	Mly	= + 0,001	$q l x^2 X$	21	21	20	19	18	17	16	14	13	12	12	11	11	11	10	10	8
II	Mtx	= - 0,001	$q l x^2 X$	52	59	64	69	73	76	79	81	82	83	83	83	83	83	83	83	83
	Mty	= - 0,001	$q l x^2 X$	52	54	56	57	57	57	57	57	57	57	57	57	57	57	57	57	57
	Mix	= + 0,001	$q l x^2 X$	28	33	38	42	45	48	51	53	55	57	58	59	59	60	61	61	63
	Mly	= + 0,001	$q l x^2 X$	28	28	27	26	25	23	23	22	21	19	18	17	17	16	16	16	13
III	Mtx	= - 0,001	$q l x^2 X$	68	77	85	92	98	103	107	111	113	116	118	119	120	121	122	122	125
	Mty	= - 0,001	$q l x^2 X$	68	72	74	76	77	77	78	78	78	79	79	79	79	79	79	79	79
	Mix	= + 0,001	$q l x^2 X$	22	28	34	42	49	55	62	68	74	80	85	89	93	97	100	103	125
	Mly	= + 0,001	$q l x^2 X$	32	35	37	39	40	41	41	41	40	40	39	38	37	36	35	35	25
IV A	Mtx	= - 0,001	$q l x^2 X$	70	79	87	94	100	105	109	112	115	117	119	120	121	122	123	123	125
	Mty	= + 0,001	$q l x^2 X$	32	34	36	38	39	40	41	41	42	42	42	42	42	42	42	42	42
	Mix	= + 0,001	$q l x^2 X$	22	20	18	17	15	14	13	12	11	10	10	9	9	9	9	9	8
	Mly	= - 0,001	$q l x^2 X$	70	74	77	79	81	82	83	84	84	84	84	84	83	83	83	83	83
IV B	Mtx	= - 0,001	$q l x^2 X$	70	74	77	79	81	82	83	84	84	84	84	84	83	83	83	83	83
	Mly	= + 0,001	$q l x^2 X$	31	38	45	53	60	66	72	78	83	88	92	96	99	102	105	108	125
	Mtx	= + 0,001	$q l x^2 X$	37	39	41	41	42	42	41	41	40	39	38	37	36	35	34	33	25
	Mty	= - 0,001	$q l x^2 X$	84	92	99	104	109	112	115	117	119	121	122	122	123	123	124	124	125
V A	Mix	= + 0,001	$q l x^2 X$	37	41	45	48	51	53	55	56	58	59	60	60	61	61	62	63	63
	Mly	= + 0,001	$q l x^2 X$	31	30	28	27	25	24	22	21	20	19	18	17	17	16	16	15	13
	Mtx	= - 0,001	$q l x^2 X$	84	92	98	103	108	111	114	117	119	120	121	122	122	123	123	124	125
	Mty	= - 0,001	$q l x^2 X$	84	92	99	104	109	112	115	117	119	121	122	122	123	123	124	124	125
V B	Mix	= + 0,001	$q l x^2 X$	21	26	31	36	40	43	46	49	51	53	55	56	57	58	59	60	63
	Mly	= + 0,001	$q l x^2 X$	26	27	28	28	27	26	25	23	22	21	21	20	19	19	18	18	13
	Mtx	= - 0,001	$q l x^2 X$	55	65	74	82	89	94	99	103	106	110	114	116	117	118	119	120	125
	Mty	= - 0,001	$q l x^2 X$	60	65	72	74	76	77	78	78	78	78	78	78	78	78	79	79	79
VI A	Mix	= + 0,001	$q l x^2 X$	26	29	32	35	36	38	39	40	40	41	41	42	42	42	42	42	42
	Mly	= + 0,001	$q l x^2 X$	21	20	19	18	17	15	14	13	12	11	11	11	10	10	10	10	8
	Mtx	= - 0,001	$q l x^2 X$	60	66	71	74	77	79	80	82	83	83	83	83	83	83	83	83	83
	Mty	= - 0,001	$q l x^2 X$	55	57	57	58	57	57	57	57	57	57	57	57	57	57	57	57	57

— Terletak bebas
— Terjepit penuh

Tabel 13.3.2
Momen di dalam pelat persegi, yang menumpu pada keempat tepinya
akibat beban terbagi rata

	I_y/I_x	1,0	1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	2,0	2,1	2,2	2,3	2,4	2,5	$>2,5$
I	(M _{lx}) = 0,001 q _{x²} X	44	52	59	66	73	73	84	88	93	97	100	103	106	108	110	112	125
	(M _{ly}) = 0,001 q _{x²} X	44	45	45	44	44	43	41	40	39	38	37	36	35	34	32	32	25
II	(M _{lx}) = - (M _{lx}) = 0,001 q _{x²} X	36	42	46	50	53	56	58	59	60	61	62	62	63	63	63	63	63
	(M _{ly}) = - (M _{ly}) = 0,001 q _{x²} X	36	37	38	38	38	37	36	36	35	35	35	34	34	34	34	34	38
III	(M _{lx}) = - (M _{lx}) = 0,001 q _{x²} X	48	55	61	67	71	76	79	82	84	86	88	89	90	91	92	92	94
	(M _{ly}) = - (M _{ly}) = 0,001 q _{x²} X	48	50	51	51	51	51	51	51	50	50	49	49	49	48	48	47	19
IV A	(M _{lx}) = 0,001 q _{x²} X	22	28	34	41	48	55	62	68	74	80	85	89	93	97	100	103	125
	(M _{ly}) = 0,001 q _{x²} X	51	57	62	67	70	73	75	77	78	79	79	79	79	79	79	79	25
IV B	(M _{lx}) = - (M _{lx}) = 0,001 q _{x²} X	51	57	62	67	70	73	75	77	78	79	79	79	79	79	79	79	75
	(M _{ly}) = - (M _{ly}) = 0,001 q _{x²} X	51	54	57	59	60	61	62	62	63	63	63	63	63	63	63	63	13
VA	(M _{lx}) = 0,001 q _{x²} X	31	38	45	53	59	66	72	78	83	88	92	96	99	102	105	108	125
	(M _{ly}) = 0,001 q _{x²} X	60	65	69	73	75	77	78	79	80	80	80	80	80	79	79	79	25
VB	(M _{lx}) = - (M _{lx}) = 0,001 q _{x²} X	60	65	69	73	75	77	78	79	80	80	80	80	80	79	79	79	75
	(M _{ly}) = - (M _{ly}) = 0,001 q _{x²} X	31	30	28	27	25	24	22	21	20	19	18	17	17	16	16	16	12
VI A	(M _{lx}) = 0,001 q _{x²} X	38	46	53	59	65	69	73	77	80	83	85	86	87	88	89	90	54
	(M _{ly}) = 0,001 q _{x²} X	43	46	48	50	51	51	51	51	50	50	50	49	49	48	48	48	19
VI B	(M _{lx}) = - (M _{lx}) = 0,001 q _{x²} X	13	18	21	25	27	25	24	22	21	20	19	18	17	17	16	16	56
	(M _{ly}) = - (M _{ly}) = 0,001 q _{x²} X	38	39	38	37	36	36	35	35	34	34	34	33	33	33	33	33	38

= Terletak bebas

= Menerus atau terjepit elastis