

BAB V

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Setelah melakukan analisis dan perancangan pada struktur Gedung Kantor dan Hunian PT. Mandala *Multi Finance.tbk* Jakarta, dapat diambil beberapa kesimpulan seperti yang tercantum di bawah ini.

1. a) Tangga Tipe 1 (H = 6 m)

Pelat tangga digunakan tebal 130 mm dengan tulangan D13-100 pada tumpuan, lapangan dengan tulangan D13-100 dan tulangan susut dengan tulangan P10-300. Balok bordes (L= 4,5 m) digunakan dimensi 200 mm x 400 mm dengan 2D16 untuk tulangan tarik dan 2D16 untuk tulangan tekan.

b) Tangga Tipe 2 (H = 6 m)

Pelat tangga digunakan tebal 130 mm dengan tulangan D13-250 pada tumpuan, lapangan dengan tulangan D13-150 dan tulangan susut dengan tulangan P10-300. Balok bordes (L= 4,5 m) digunakan dimensi 200 mm x 400 mm dengan 2D16 untuk tulangan tarik dan 2D16 untuk tulangan tekan.

c) Tangga Tipe 3 (H = 6 m)

Pelat tangga digunakan tebal 130 mm dengan tulangan D13-300 pada tumpuan, lapangan dengan tulangan D13-250 dan tulangan susut dengan tulangan P10-300. Balok bordes (L= 4,5 m) digunakan dimensi 200 mm x 400 mm dengan 3D16 untuk tulangan tarik dan 2D16 untuk tulangan tekan.

2. Pelat lantai dan atap digunakan tebal 130 mm. Pelat atap (7000 x 4000) dua arah dengan tulangan P10-150 untuk arah X dan untuk arah Y dengan tulangan P10-250. Pelat lantai dua arah dengan tulangan P10-100 untuk arah X dan untuk arah Y dengan tulangan P10-200.
3. Dalam perencanaan balok induk digunakan dimensi yaitu sebesar 500 mm x 700 mm dan balok anak digunakan dimensi yaitu sebesar 300 mm x 500 mm namun memiliki panjang yang berbeda-beda. Balok – balok tersebut direncanakan dengan tulangan lentur dan geser yang berbeda-beda.
4. Dalam perencanaan kolom, dimensi yang digunakan untuk kolom *basement 2 – basement 1* sebesar 750 mm x 750 mm, dimensi yang digunakan untuk kolom lantai 1 - lantai 2 sebesar 700 mm x 700 mm, dimensi yang digunakan untuk kolom lantai 3 - lantai 9 sebesar 600 mm x 600 mm. Kolom – kolom tersebut direncanakan dengan jumlah tulangan longitudinal dan transversal yang berbeda – beda pula.
5. Dinding penahan tanah menggunakan tulangan utama D25-200 pada bagian dinding dan pelat dasar, dengan lebar dasar pelat 7 m , panjang kaki depan 1,5 m. Tebal dasar plat dan dinding digunakan 0,5 m.
6. Dalam perencanaan pondasi, dimensi poer yang digunakan adalah 4,4 m x 4,4 m, dengan tebal poer 1 m. Tulangan yang digunakan untuk bagian poer adalah D25-200 untuk arah memanjang dan arah lebar. Jumlah tiang yang digunakan 4 buah dengan tulangan 8D25 .

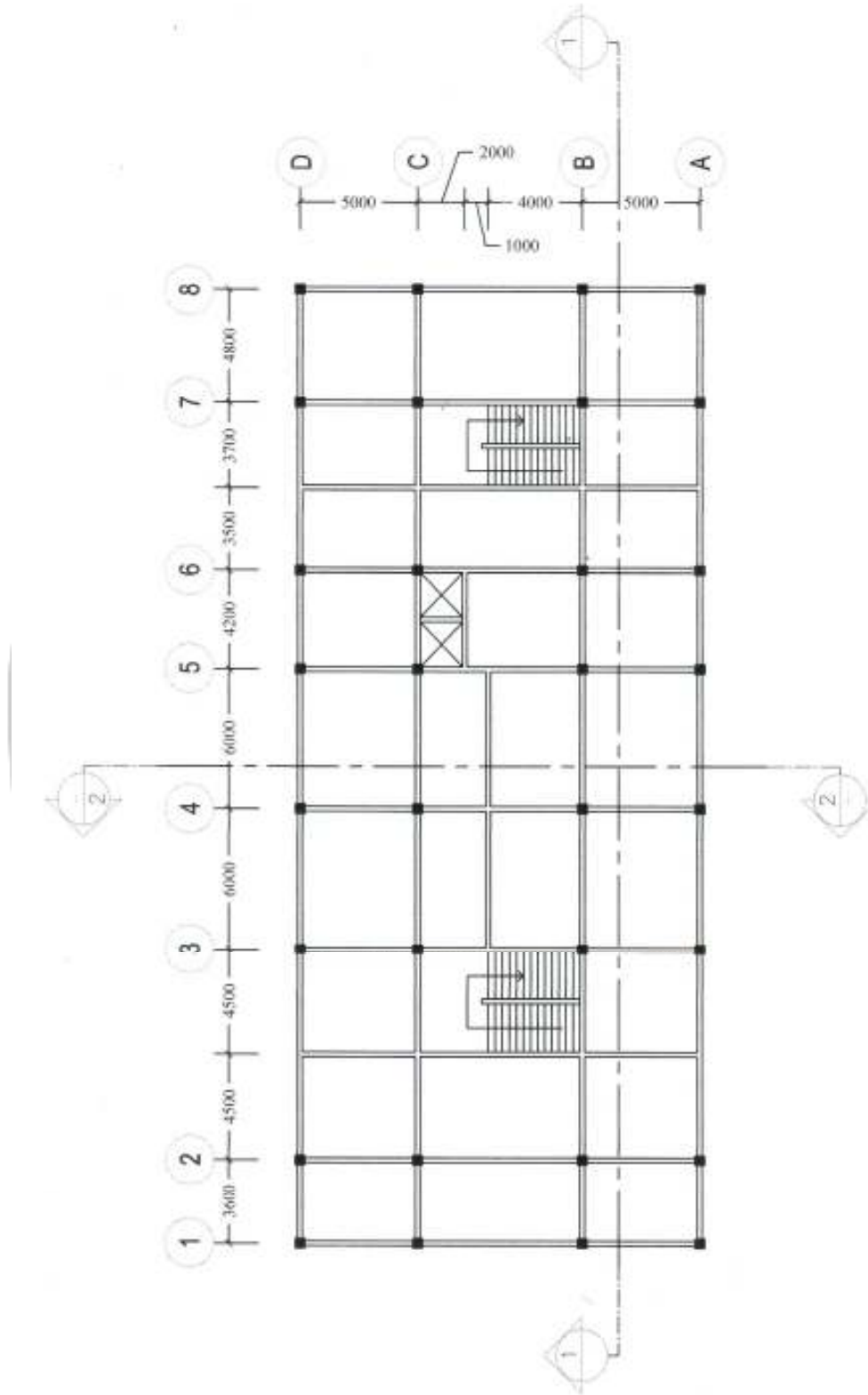
5.2 Saran

Saran-saran yang dapat diberikan penulis dari hasil Tugas Akhir yang disusun tercantum seperti di bawah ini.

1. Sebelum perencanaan struktur sebaiknya dilakukan estimasi awal pada ukuran elemen struktur, sehingga tidak terjadi penentuan elemen struktur berulang-ulang.
2. Untuk kemudahan dalam melaksanakan analisis struktur terutama dalam pembuatan model struktur gedung akan lebih mudah jika memakai program analisis struktur ETABS dan SAP2000 beserta program-program bantu lainnya.
3. Dalam merencanakan elemen struktur agar lebih memperhatikan ketentuan SNI dan peraturan-peraturan yang terkait.

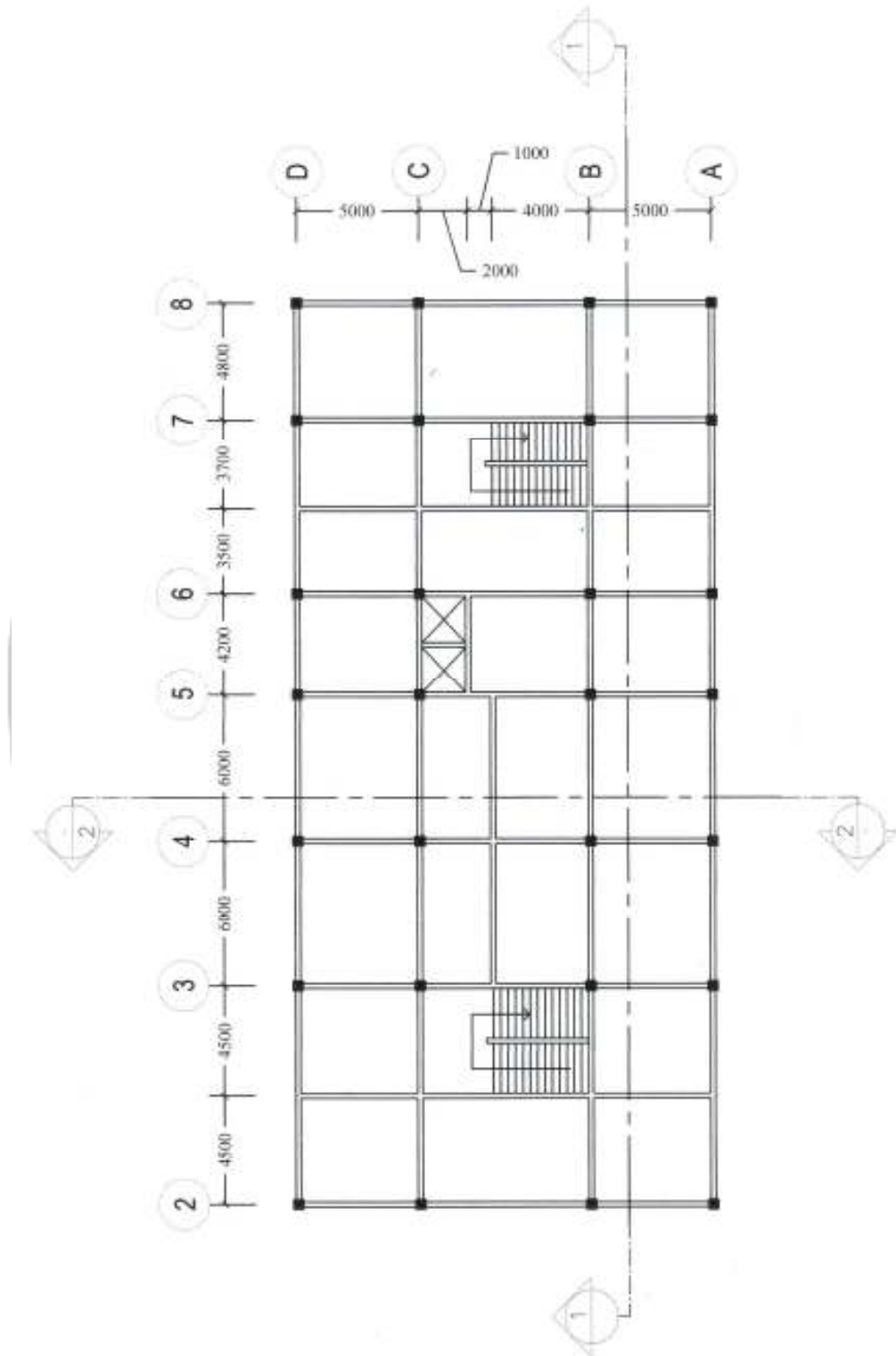
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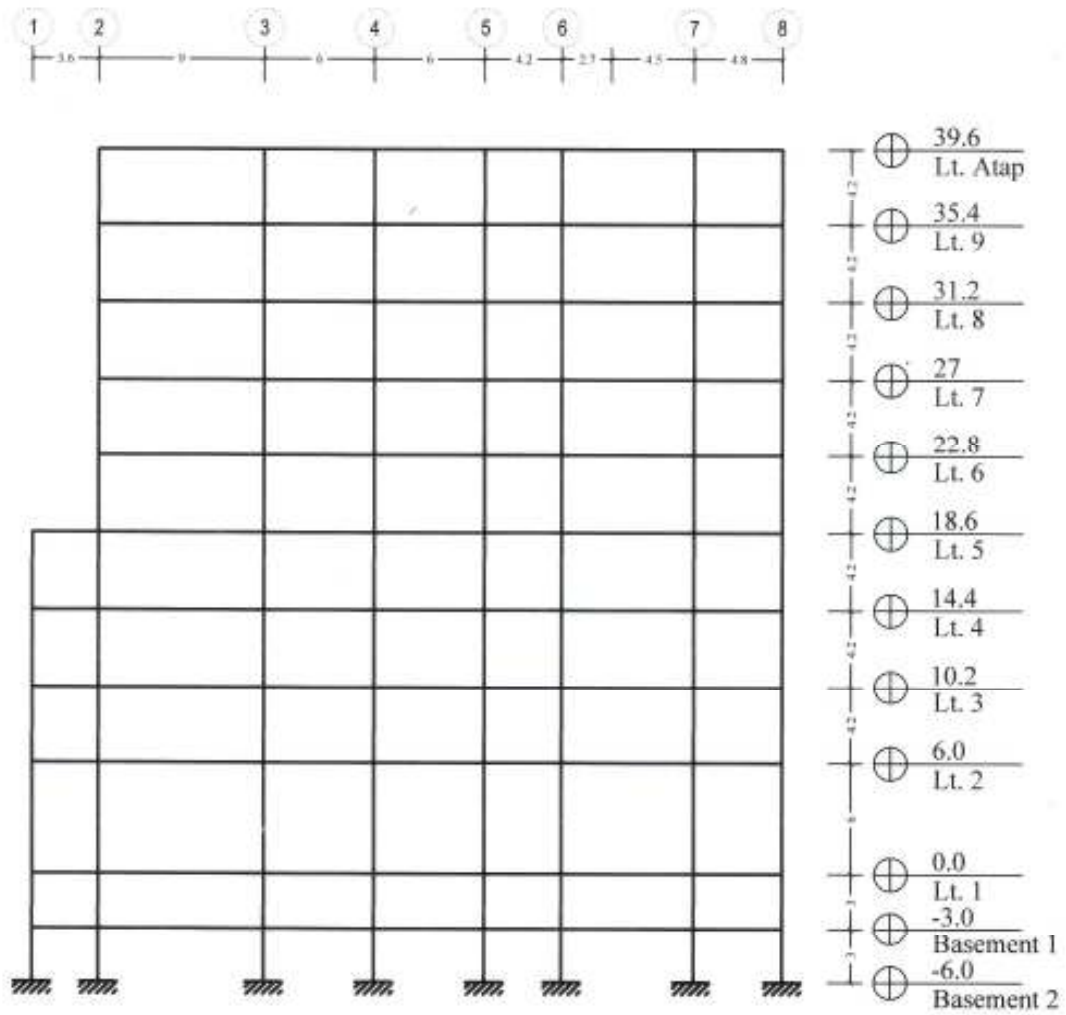
DENAH Basement 2 - Lt. 4

skala 1 : 250



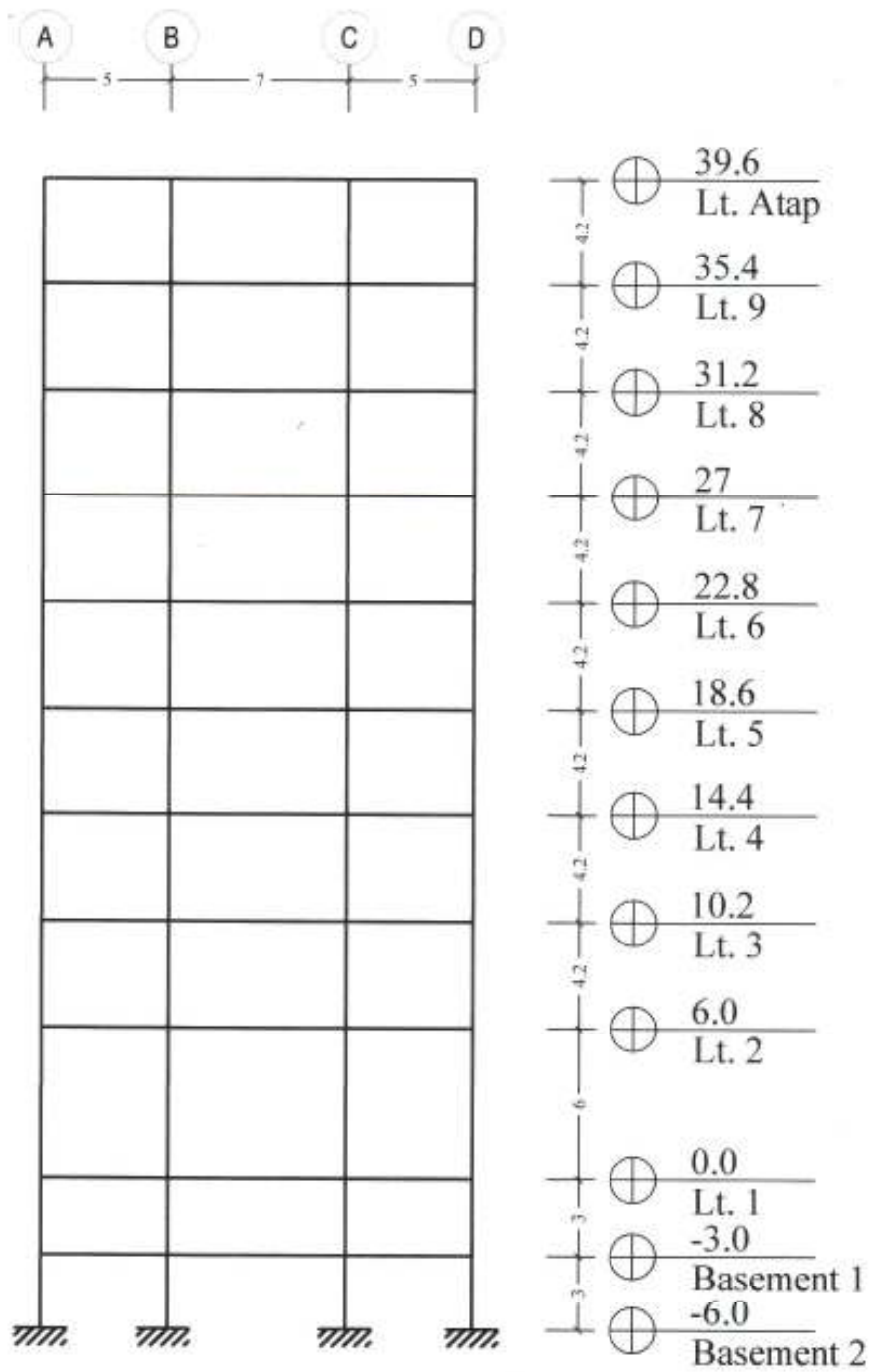
DENAH Lt. 5 - Lt. 9

skala 1 : 250



Gambar PORTAL potongan 1-1
 skala 1 : 350





Gambar PORTAL potongan 2-2

skala 1 : 250

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STATIC LOAD CASES

| STATIC CASE | CASE TYPE | SELF WT FACTOR |
|-------------|-----------|----------------|
| LOAD1 | DEAD | 0,0000 |

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JOINT DATA

| JOINT | GLOBAL-X | GLOBAL-Y | GLOBAL-Z | RESTRAINTS | ANGLE-A | ANGLE-B | ANGLE-C |
|-------|----------|----------|----------|-------------|---------|---------|---------|
| 1 | 0,00000 | 0,00000 | 0,00000 | 1 1 1 0 0 0 | 0,000 | 0,000 | 0,000 |
| 2 | 4,90000 | 0,00000 | 3,00000 | 0 0 0 0 0 0 | 0,000 | 0,000 | 0,000 |
| 3 | 7,00000 | 0,00000 | 3,00000 | 1 1 1 0 0 0 | 0,000 | 0,000 | 0,000 |

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FRAME ELEMENT DATA

| FRAME | JNT-1 | JNT-2 | SECTION | ANGLE | RELEASES | SEGMENTS | R1 | R2 | FACTOR | LENGTH |
|-------|-------|-------|---------|-------|----------|----------|-------|-------|--------|--------|
| 1 | 1 | 2 | FSEC1 | 0,000 | 000000 | 2 | 0,000 | 0,000 | 1,000 | 5,745 |
| 2 | 2 | 3 | FSEC1 | 0,000 | 000000 | 4 | 0,000 | 0,000 | 1,000 | 2,100 |

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FRAME SPAN DISTRIBUTED LOADS Load Case LOAD1

| FRAME | TYPE | DIRECTION | DISTANCE-A | VALUE-A | DISTANCE-B | VALUE-B |
|-------|-------|-----------|------------|----------|------------|----------|
| 2 | FORCE | GLOBAL-Z | 0,0000 | -10,5360 | 1,0000 | -10,5360 |
| 1 | FORCE | GLOBAL-Z | 0,0000 | -13,9920 | 1,0000 | -13,9920 |

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STATIC LOAD CASES

| STATIC CASE | CASE TYPE | SELF WT FACTOR |
|-------------|-----------|----------------|
| LOAD1 | DEAD | 0,0000 |

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JOINT DATA

| JOINT | GLOBAL-X | GLOBAL-Y | GLOBAL-Z | RESTRAINTS | ANGLE-A | ANGLE-B | ANGLE-C |
|-------|----------|----------|----------|-------------|---------|---------|---------|
| 1 | 0,00000 | 0,00000 | 0,00000 | 1 1 1 0 0 0 | 0,000 | 0,000 | 0,000 |
| 2 | 4,05000 | 0,00000 | 2,10000 | 0 0 0 0 0 0 | 0,000 | 0,000 | 0,000 |
| 3 | 7,00000 | 0,00000 | 2,10000 | 1 1 1 0 0 0 | 0,000 | 0,000 | 0,000 |

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FRAME ELEMENT DATA

| FRAME | JNT-1 | JNT-2 | SECTION | ANGLE | RELEASES | SEGMENTS | R1 | R2 | FACTOR | LENGTH |
|-------|-------|-------|---------|-------|----------|----------|-------|-------|--------|--------|
| 1 | 1 | 2 | FSEC1 | 0,000 | 000000 | 2 | 0,000 | 0,000 | 1,000 | 4,562 |
| 2 | 2 | 3 | FSEC1 | 0,000 | 000000 | 4 | 0,000 | 0,000 | 1,000 | 2,950 |

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FRAME SPAN DISTRIBUTED LOADS Load Case LOAD1

| FRAME | TYPE | DIRECTION | DISTANCE-A | VALUE-A | DISTANCE-B | VALUE-B |
|-------|-------|-----------|------------|----------|------------|----------|
| 2 | FORCE | GLOBAL-Z | 0,0000 | -10,5360 | 1,0000 | -10,5360 |
| 1 | FORCE | GLOBAL-Z | 0,0000 | -13,9920 | 1,0000 | -13,9920 |

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STATIC LOAD CASES

| STATIC CASE | CASE TYPE | SELF WT FACTOR |
|-------------|-----------|----------------|
| LOAD1 | DEAD | 0,0000 |

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JOINT DATA

| JOINT | GLOBAL-X | GLOBAL-Y | GLOBAL-Z | RESTRAINTS | ANGLE-A | ANGLE-B | ANGLE-C |
|-------|----------|----------|----------|-------------|---------|---------|---------|
| 1 | 0,00000 | 0,00000 | 0,00000 | 1 1 1 0 0 0 | 0,000 | 0,000 | 0,000 |
| 2 | 2,85000 | 0,00000 | 1,50000 | 0 0 0 0 0 0 | 0,000 | 0,000 | 0,000 |
| 3 | 7,00000 | 0,00000 | 1,50000 | 1 1 1 0 0 0 | 0,000 | 0,000 | 0,000 |

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FRAME ELEMENT DATA

| FRAME | JNT-1 | JNT-2 | SECTION | ANGLE | RELEASES | SEGMENTS | R1 | R2 | FACTOR | LENGTH |
|-------|-------|-------|---------|-------|----------|----------|-------|-------|--------|--------|
| 1 | 1 | 2 | FSEC1 | 0,000 | 000000 | 2 | 0,000 | 0,000 | 1,000 | 3,221 |
| 2 | 2 | 3 | FSEC1 | 0,000 | 000000 | 4 | 0,000 | 0,000 | 1,000 | 4,150 |

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| FRAME | SPAN | DISTRI | BUTED | LOADS | Load Case | LOAD1 |
|-------|-------|-----------|------------|----------|------------|----------|
| FRAME | TYPE | DIRECTION | DISTANCE-A | VALUE-A | DISTANCE-B | VALUE-B |
| 2 | FORCE | GLOBAL-Z | 0,0000 | -10,5360 | 1,0000 | -10,5360 |
| 1 | FORCE | GLOBAL-Z | 0,0000 | -13,9920 | 1,0000 | -13,9920 |



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FRAME ELEMENT FORCES

| FRAME | LOAD | LOC | P | V2 | V3 | T | M2 | M3 |
|-------|--------|-----|---------|--------|-------|-------|-------|--------|
| 1 | Minima | | -119,56 | -16,08 | 0,00 | 0,00 | 0,00 | -12,42 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 1 | Maxima | | -98,57 | 23,79 | 0,00 | 0,00 | 0,00 | 9,85 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 2 | Minima | | -98,31 | -24,85 | 0,00 | 0,00 | 0,00 | -12,42 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 2 | Maxima | | -98,31 | 18,87 | 0,00 | 0,00 | 0,00 | 16,47 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |

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JOINT REACTIONS

| JOINT | LOAD | F1 | F2 | F3 | M1 | M2 | M3 |
|-------|-------|----------|--------|---------|--------|--------|--------|
| 1 | LOAD1 | 98,3101 | 0,0000 | 69,9172 | 0,0000 | 0,0000 | 0,0000 |
| 3 | LOAD1 | -98,3101 | 0,0000 | 18,8704 | 0,0000 | 0,0000 | 0,0000 |

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FRAME ELEMENT FORCES

| FRAME | LOAD | LOC | P | V2 | V3 | T | M2 | M3 |
|-------|--------|-----|---------|--------|-------|-------|-------|--------|
| 1 | Minima | | -135,81 | -24,93 | 0,00 | 0,00 | 0,00 | -15,55 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 1 | Maxima | | -106,42 | 31,74 | 0,00 | 0,00 | 0,00 | 24,54 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 2 | Minima | | -109,09 | -20,81 | 0,00 | 0,00 | 0,00 | -15,55 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 2 | Maxima | | -109,09 | 10,27 | 0,00 | 0,00 | 0,00 | 4,71 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |

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JOINT REACTIONS

| JOINT | LOAD | F1 | F2 | F3 | M1 | M2 | M3 |
|-------|-------|-----------|--------|---------|--------|--------|--------|
| 1 | LOAD1 | 109,0905 | 0,0000 | 84,6431 | 0,0000 | 0,0000 | 0,0000 |
| 3 | LOAD1 | -109,0905 | 0,0000 | 10,2706 | 0,0000 | 0,0000 | 0,0000 |

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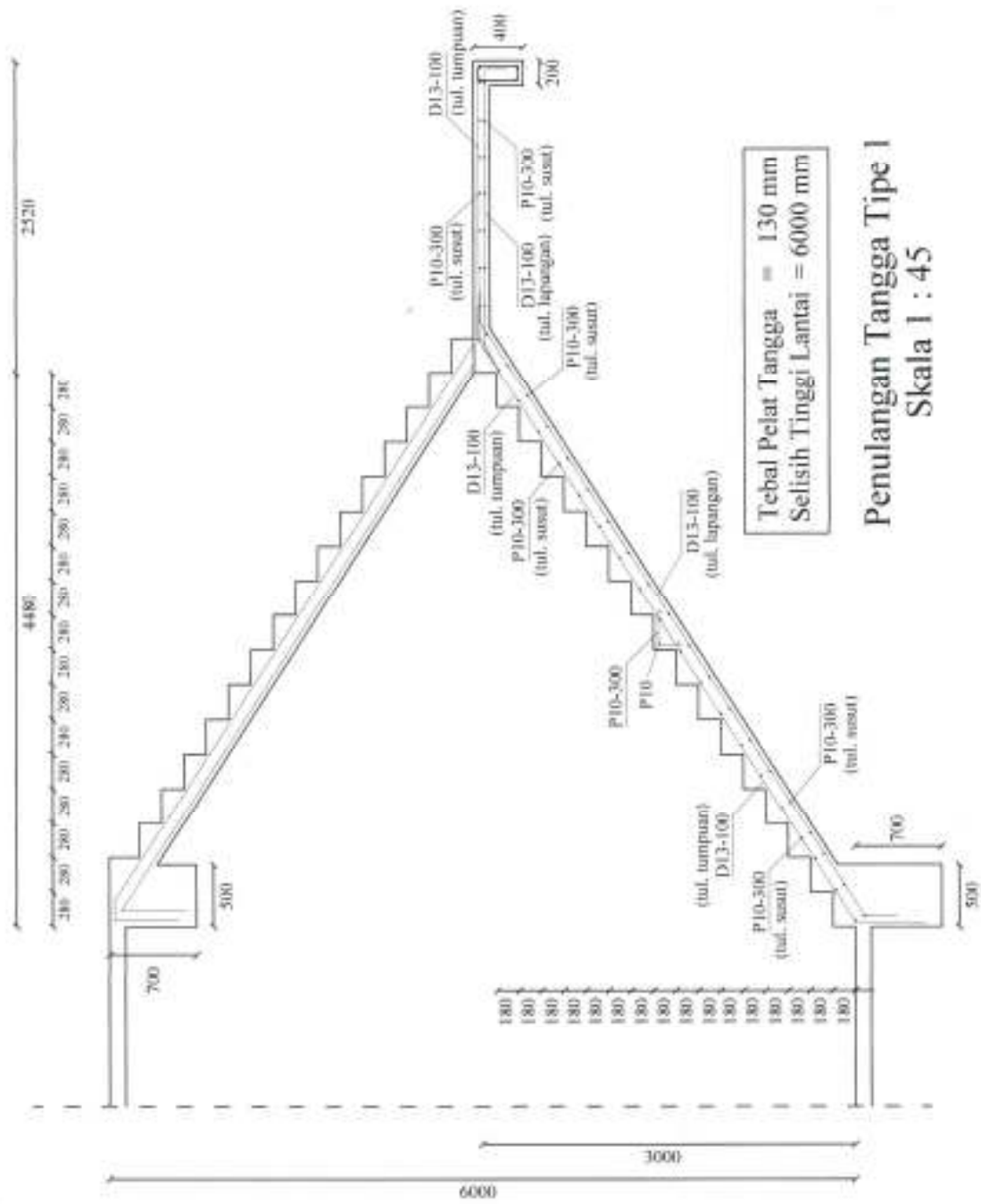
FRAME ELEMENT FORCES

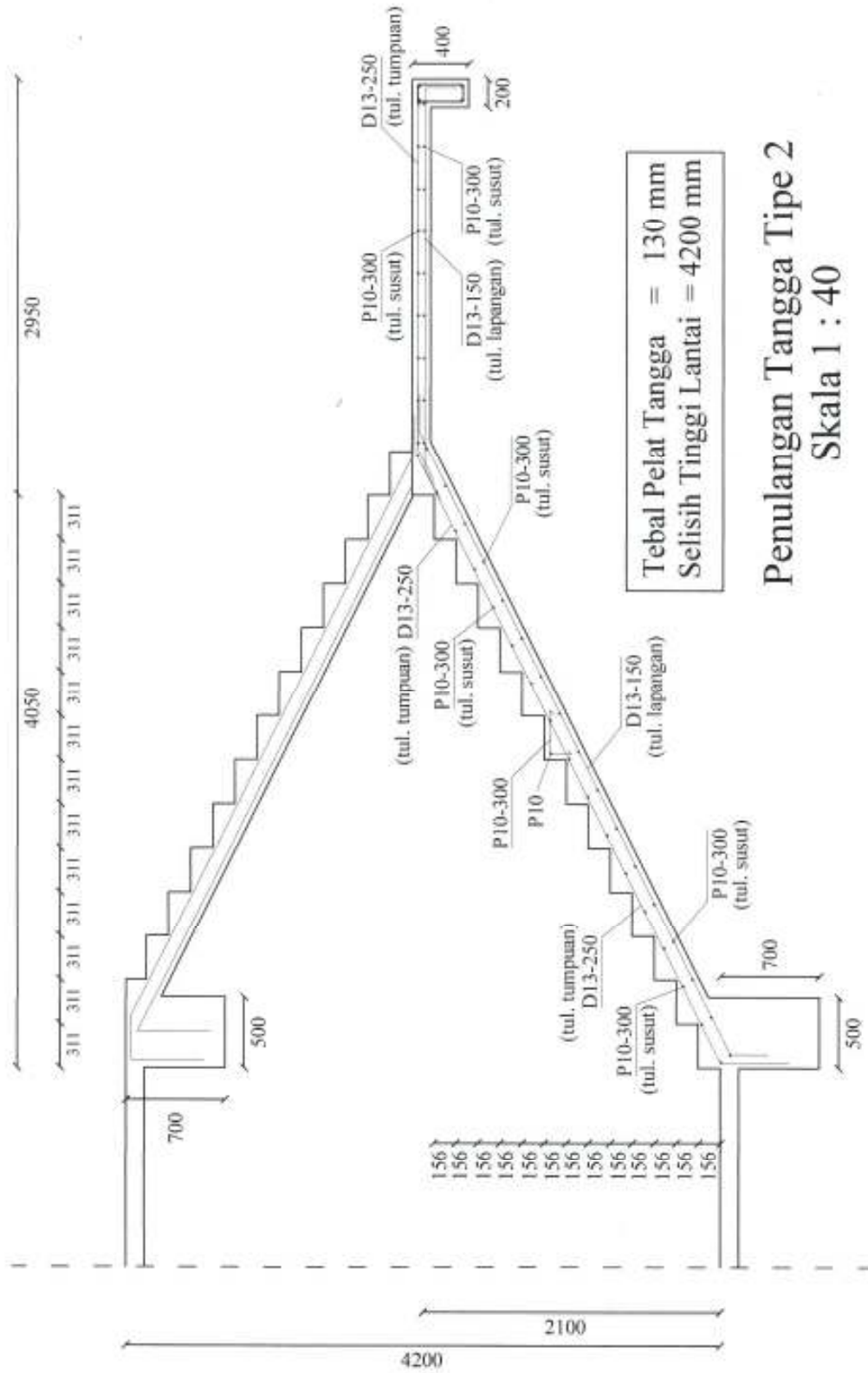
| FRAME | LOAD | LOC | P | V2 | V3 | T | M2 | M3 |
|-------|--------|-----|---------|--------|-------|-------|-------|--------|
| 1 | Minima | | -152,45 | -29,44 | 0,00 | 0,00 | 0,00 | -27,83 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 1 | Maxima | | -110,48 | 35,32 | 0,00 | 0,00 | 0,00 | 35,32 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 2 | Minima | | -114,65 | -24,32 | 0,00 | 0,00 | 0,00 | -27,83 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |
| 2 | Maxima | | -114,65 | -2,19 | 0,00 | 0,00 | 0,00 | 0,00 |
| | | | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 | LOAD1 |

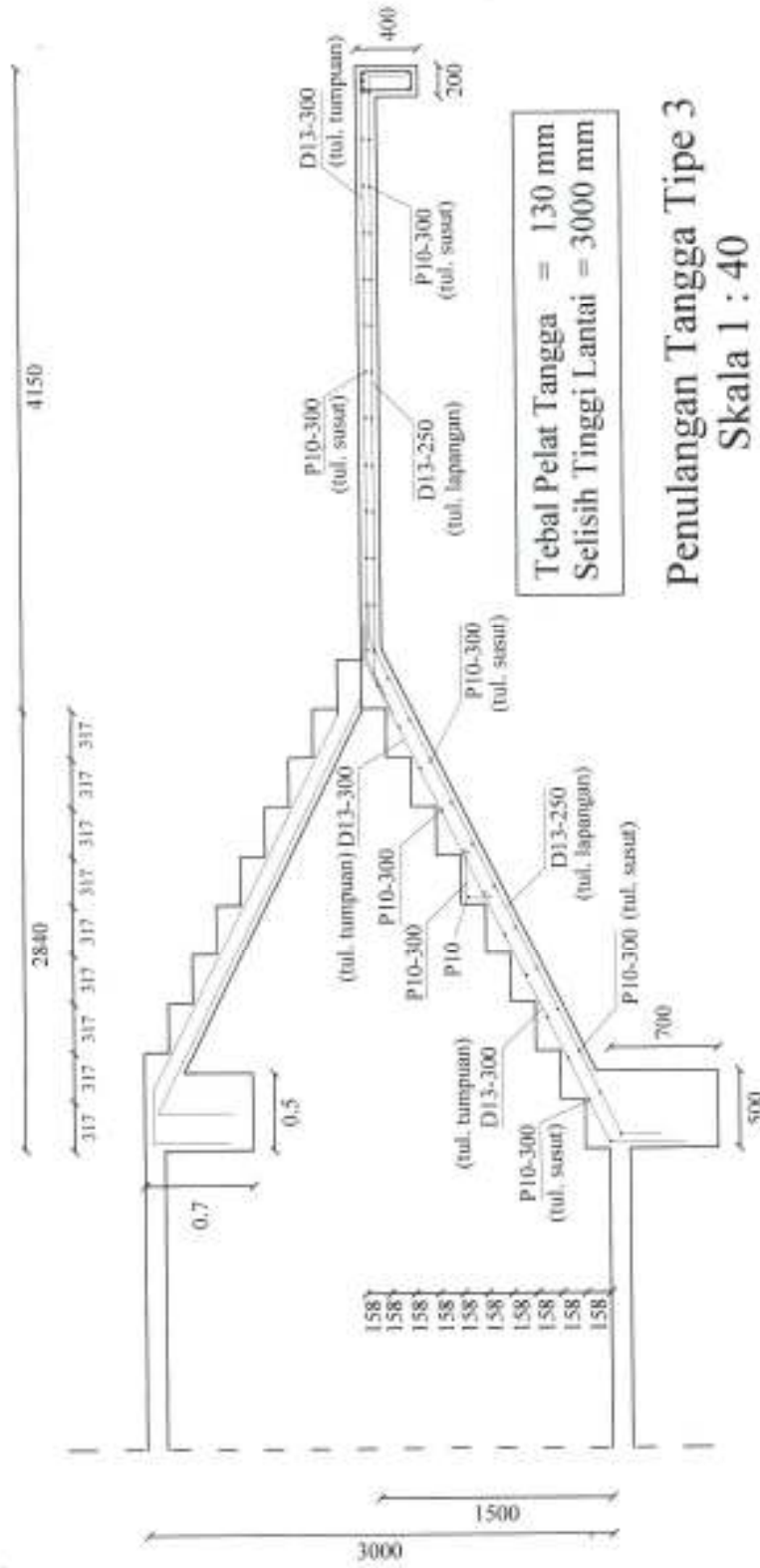
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JOINT REACTIONS

| JOINT | LOAD | F1 | F2 | F3 | M1 | M2 | M3 |
|-------|-------|-----------|--------|----------|--------|--------|--------|
| 1 | LOAD1 | 114,6479 | 0,0000 | 104,7071 | 0,0000 | 0,0000 | 0,0000 |
| 3 | LOAD1 | -114,6479 | 0,0000 | -2,1918 | 0,0000 | 0,0000 | 0,0000 |







Penulangan Tangga Tipe 3
Skala 1 : 40

Motif di dalam peta persegi yang menutupi pada keempat tepi:

| | | 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 | | Motif I 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| II | | Motif II 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| III | | Motif III 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| IV | | Motif IV 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| V | | Motif V 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| VI | | Motif VI 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| VII | | Motif VII 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| VIII | | Motif VIII 100% x 100% 100% x 100% 100% x 100% | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | >25 |
| | | | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

*) Untuk lebih jelasnya, lihatlah pada lampiran lainnya.

Penulangan Pelat Atap (Tinjauan Momen Arab X)

| Pelat Atap Tipe | $\beta = fy/fx$ | Nilai Koefisien Momen | | | | $q = 1,2qf + 1,6qod$ | Mlx + Mlrc | Rn | Dperu | ρ_{max} | As min | As | Spasi | dipasang |
|-----------------|-----------------|-----------------------|-------|-------|-------|----------------------|------------|--------|---------|--------------|--------|---------|---------|----------|
| | | X1 | X2 | X3 | X4 | | | | | | | | | |
| 7000x4500 | 1,5556 | 57,11 | 36,45 | 36,45 | | 6,82 | 7,8873 | 0,8943 | 0,00379 | 0,0484 | 275,6 | 398,348 | 197,164 | P10-150 |
| 5000x4500 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 6,82 | 5,8618 | 0,6646 | 0,00281 | 0,0484 | 275,6 | 294,655 | 266,549 | P10-250 |
| 6000x5000 | 1,2000 | 46,00 | 46,00 | 38,00 | 38,00 | 6,82 | 7,8130 | 0,8892 | 0,00377 | 0,0484 | 275,6 | 396,068 | 198,299 | P10-150 |
| 6000x3000 | 2,0000 | 62,00 | 62,00 | 35,00 | 35,00 | 6,82 | 3,8056 | 0,4315 | 0,00181 | 0,0484 | 275,6 | 190,392 | 412,513 | P10-350 |
| 6000x4000 | 1,5000 | 56,00 | 56,00 | 37,00 | 37,00 | 6,82 | 6,1107 | 0,6928 | 0,00293 | 0,0484 | 275,6 | 307,345 | 255,543 | P10-250 |
| 5000x4800 | 1,0417 | 38,50 | 38,50 | 36,42 | 36,42 | 6,82 | 6,0496 | 0,6859 | 0,00290 | 0,0484 | 275,6 | 304,228 | 258,161 | P10-250 |
| 5000x4200 | 1,1905 | 45,62 | 45,62 | 37,90 | 37,90 | 6,82 | 5,4882 | 0,6222 | 0,00263 | 0,0484 | 275,6 | 275,637 | 284,94 | P10-250 |
| 7000x4800 | 1,4583 | 54,75 | 54,75 | 38,58 | 38,58 | 6,82 | 8,6030 | 0,9754 | 0,00415 | 0,0484 | 275,6 | 435,227 | 180,457 | P10-150 |
| 7200x4000 | 1,7500 | 61,00 | 61,00 | 36,50 | 36,50 | 6,82 | 6,6563 | 0,7547 | 0,00519 | 0,0484 | 275,6 | 335,211 | 234,3 | P10-200 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 6,82 | 4,6551 | 0,5278 | 0,00222 | 0,0484 | 275,6 | 233,346 | 336,581 | P10-300 |
| 4500x4000 | 1,1250 | 43,00 | 43,00 | 37,25 | 37,25 | 6,82 | 4,6922 | 0,5320 | 0,00224 | 0,0484 | 275,6 | 235,226 | 333,891 | P10-300 |
| 7000x3600 | 1,9444 | 61,44 | 61,44 | 35,00 | 35,00 | 6,82 | 5,4309 | 0,6157 | 0,00260 | 0,0484 | 275,6 | 272,723 | 287,983 | P10-250 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 6,82 | 4,6551 | 0,5278 | 0,00222 | 0,0484 | 275,6 | 233,346 | 336,581 | P10-300 |
| 3000x2700 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 6,82 | 2,3102 | 0,2393 | 0,00100 | 0,0484 | 275,6 | 105,171 | 746,785 | P10-350 |

Penulangan Pelat Lantai (Tinjauan Momen Arah X)

| Pelat Atap Tipe | $\beta = f_v/zx$ | Nilai Koefisien Momen | | | | $q = 1,2q_d + 1,6q_l$ | Mlx = Mix | Ra | Dpersu | Dmaks | As min | As | Spasi | dipasang |
|-----------------|------------------|-----------------------|-------|-------|-------|-----------------------|-----------|--------|---------|--------|--------|---------|---------|----------|
| | | X1 | X2 | X3 | X4 | | | | | | | | | |
| 7000x4500 | 1,5556 | 57,11 | 57,11 | 36,45 | 36,45 | 9,508 | 10,9960 | 1,2467 | 0,00533 | 0,0484 | 275,6 | 559,465 | 140,384 | P10-100 |
| 5000x4500 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 9,508 | 8,1721 | 0,9265 | 0,00393 | 0,0484 | 275,6 | 413,008 | 190,165 | P10-150 |
| 6000x5000 | 1,2000 | 46,00 | 46,00 | 38,00 | 38,00 | 9,508 | 10,9342 | 1,2397 | 0,00530 | 0,0484 | 275,6 | 556,238 | 141,198 | P10-100 |
| 6000x3000 | 2,0000 | 62,00 | 62,00 | 35,00 | 35,00 | 9,508 | 5,3055 | 0,6015 | 0,00254 | 0,0484 | 275,6 | 266,347 | 294,877 | P10-250 |
| 6000x4000 | 1,5000 | 56,00 | 56,00 | 37,00 | 37,00 | 9,508 | 8,5192 | 0,9659 | 0,00410 | 0,0484 | 275,6 | 430,899 | 182,27 | P10-150 |
| 5000x4800 | 1,0417 | 38,50 | 38,50 | 36,42 | 36,42 | 9,508 | 8,4340 | 0,9562 | 0,00406 | 0,0484 | 275,6 | 426,505 | 184,148 | P10-150 |
| 5000x4200 | 1,1905 | 45,62 | 45,62 | 37,90 | 37,90 | 9,508 | 7,6513 | 0,8675 | 0,00368 | 0,0484 | 275,6 | 386,213 | 203,359 | P10-200 |
| 7000x4800 | 1,4583 | 54,75 | 54,75 | 38,58 | 38,58 | 9,508 | 11,9938 | 1,3598 | 0,00583 | 0,0484 | 275,6 | 611,699 | 128,396 | P10-100 |
| 7200x4000 | 1,7500 | 61,00 | 61,00 | 36,50 | 36,50 | 9,508 | 9,2798 | 1,0521 | 0,00448 | 0,0484 | 275,6 | 470,217 | 167,029 | P10-150 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 9,508 | 6,4898 | 0,7358 | 0,00311 | 0,0484 | 275,6 | 326,697 | 240,406 | P10-200 |
| 4500x4000 | 1,1250 | 43,00 | 43,00 | 37,25 | 37,25 | 9,508 | 6,5415 | 0,7417 | 0,00314 | 0,0484 | 275,6 | 329,341 | 238,476 | P10-200 |
| 7000x3600 | 1,9444 | 61,44 | 61,44 | 35,00 | 35,00 | 9,508 | 7,5714 | 0,8384 | 0,00364 | 0,0484 | 275,6 | 382,11 | 205,543 | P10-200 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 9,508 | 6,4898 | 0,7358 | 0,00311 | 0,0484 | 275,6 | 326,697 | 240,406 | P10-200 |
| 3000x2700 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 9,508 | 2,9420 | 0,3336 | 0,00140 | 0,0484 | 275,6 | 146,898 | 534,656 | P10-350 |



Penulangan Pelat Atap (Tinjauan Momen Arah Y)

| Pelat Atap Tipe | $\beta = b_v/b_x$ | Nilai Koefisien Momen | | | | $q = 1,2q_l + 1,6q_d$ | M _y = M _{0y} | R _m | ρ _{pers} | ρ _{max} | As min | As | Spasi | dipasang |
|-----------------|-------------------|-----------------------|----------------|----------------|----------------|-----------------------|----------------------------------|----------------|-------------------|------------------|--------|---------|---------|----------|
| | | X ₁ | X ₂ | X ₃ | X ₄ | | | | | | | | | |
| 7000x4500 | 1,5556 | 57,11 | 36,45 | 36,45 | 36,45 | 6,82 | 5,0339 | 0,6972 | 0,00295 | 0,0484 | 275,6 | 279,863 | 280,637 | P10-250 |
| 5000x4500 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 6,82 | 5,1252 | 0,7099 | 0,00300 | 0,0484 | 275,6 | 285,012 | 275,566 | P10-250 |
| 6000x5000 | 1,2000 | 46,00 | 46,00 | 38,00 | 38,00 | 6,82 | 6,4790 | 0,8974 | 0,00381 | 0,0484 | 275,6 | 361,689 | 217,148 | P10-200 |
| 6000x3000 | 2,0000 | 52,00 | 62,00 | 35,00 | 35,00 | 6,82 | 2,1483 | 0,2975 | 0,00125 | 0,0484 | 275,6 | 118,475 | 662,924 | P10-350 |
| 6000x4000 | 1,5000 | 56,00 | 56,00 | 37,00 | 37,00 | 6,82 | 4,0374 | 0,5592 | 0,00236 | 0,0484 | 275,6 | 223,833 | 350,886 | P10-350 |
| 5000x4800 | 1,0417 | 38,50 | 38,50 | 36,42 | 36,42 | 6,82 | 5,7223 | 0,7926 | 0,00336 | 0,0484 | 275,6 | 318,753 | 246,397 | P10-200 |
| 5000x4200 | 1,1905 | 45,62 | 45,62 | 37,90 | 37,90 | 6,82 | 4,5601 | 0,6316 | 0,00267 | 0,0484 | 275,6 | 253,182 | 310,211 | P10-300 |
| 7000x4800 | 1,4583 | 54,75 | 54,75 | 38,58 | 38,58 | 6,82 | 6,0627 | 0,8197 | 0,00356 | 0,0484 | 275,6 | 338,046 | 232,335 | P10-200 |
| 7200x4000 | 1,7500 | 61,00 | 61,00 | 36,50 | 36,50 | 6,82 | 3,9829 | 0,5516 | 0,00232 | 0,0484 | 275,6 | 220,774 | 355,747 | P10-350 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 6,82 | 3,3587 | 0,4552 | 0,00196 | 0,0484 | 275,6 | 185,851 | 422,596 | P10-350 |
| 4500x4000 | 1,1250 | 43,00 | 43,00 | 37,25 | 37,25 | 6,82 | 4,0647 | 0,5530 | 0,00237 | 0,0484 | 275,6 | 225,362 | 348,505 | P10-300 |
| 7000x3600 | 1,9444 | 61,44 | 61,44 | 35,00 | 35,00 | 6,82 | 3,0936 | 0,4385 | 0,00180 | 0,0484 | 275,6 | 171,052 | 459,158 | P10-350 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 6,82 | 3,3587 | 0,4552 | 0,00196 | 0,0484 | 275,6 | 185,851 | 422,596 | P10-350 |
| 3000x2700 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 6,82 | 1,8451 | 0,2556 | 0,00107 | 0,0484 | 275,6 | 101,668 | 772,514 | P10-350 |



Penulangan Pelat Lantai (Tinjauan Momen Arah Y)

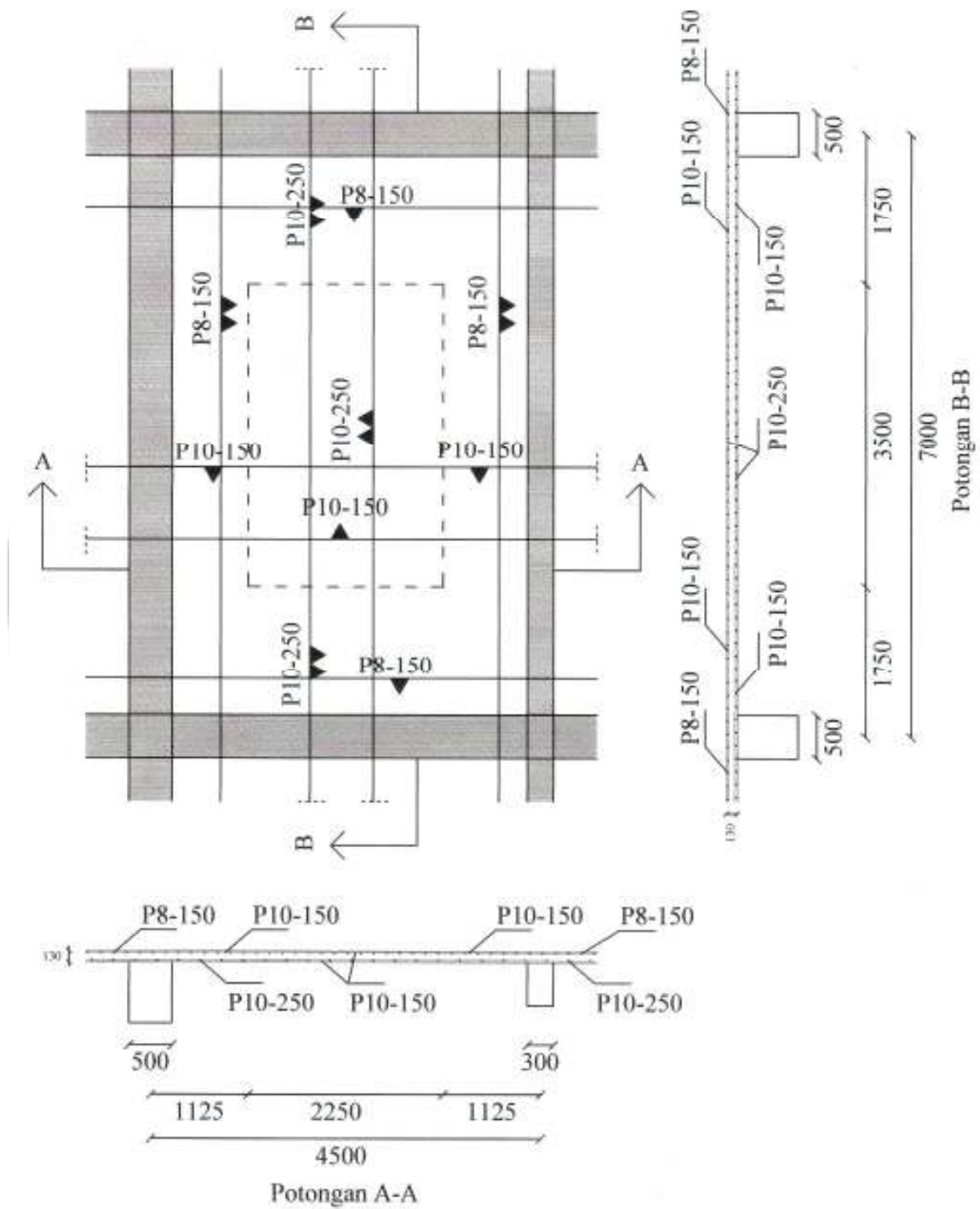
| Pelat Atap Tipe | $\beta = b_y/b_x$ | Nilai Koefisien Momen | | | | $q = 1,2q_d + 1,6q_l$ | Mly = Moy | Ra | p _{persu} | D _{max} | As min | As | Spasi | dipasang |
|-----------------|-------------------|-----------------------|-------|-------|-------|-----------------------|-----------|--------|--------------------|------------------|--------|---------|---------|----------|
| | | X1 | X2 | X3 | X4 | | | | | | | | | |
| 7000x4500 | 1,5556 | 57,11 | 57,11 | 36,45 | 36,45 | 9,508 | 7,0180 | 0,9720 | 0,00413 | 0,0484 | 275,6 | 392,384 | 200,161 | P10-200 |
| 5000x4500 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 9,508 | 7,1453 | 0,9896 | 0,00421 | 0,0484 | 275,6 | 399,648 | 196,523 | P10-150 |
| 6000x5000 | 1,2000 | 46,00 | 46,00 | 38,00 | 38,00 | 9,508 | 9,0326 | 1,2511 | 0,00535 | 0,0484 | 275,6 | 507,991 | 154,609 | P10-150 |
| 6000x3000 | 2,0000 | 62,00 | 62,00 | 35,00 | 35,00 | 9,508 | 2,9950 | 0,4148 | 0,00174 | 0,0484 | 275,6 | 165,558 | 474,393 | P10-350 |
| 6000x4000 | 1,5000 | 56,00 | 56,00 | 37,00 | 37,00 | 9,508 | 5,6287 | 0,7796 | 0,00330 | 0,0484 | 275,6 | 313,46 | 250,558 | P10-250 |
| 5000x4800 | 1,0417 | 38,50 | 38,50 | 36,42 | 36,42 | 9,508 | 7,9776 | 1,1049 | 0,00471 | 0,0484 | 275,6 | 447,278 | 175,595 | P10-150 |
| 5000x4200 | 1,1905 | 45,62 | 45,62 | 37,90 | 37,90 | 9,508 | 6,3574 | 0,8805 | 0,00373 | 0,0484 | 275,6 | 354,778 | 221,377 | P10-200 |
| 7000x4800 | 1,4583 | 54,75 | 54,75 | 38,58 | 38,58 | 9,508 | 8,4522 | 1,1707 | 0,00500 | 0,0484 | 275,6 | 474,545 | 165,506 | P10-150 |
| 7200x4000 | 1,7500 | 61,00 | 61,00 | 36,50 | 36,50 | 9,508 | 5,5527 | 0,7691 | 0,00325 | 0,0484 | 275,6 | 309,157 | 254,045 | P10-250 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 9,508 | 4,6825 | 0,6485 | 0,00274 | 0,0484 | 275,6 | 260,066 | 301,999 | P10-300 |
| 4500x4000 | 1,1250 | 43,00 | 43,00 | 37,25 | 37,25 | 9,508 | 5,6668 | 0,7849 | 0,00332 | 0,0484 | 275,6 | 315,612 | 248,849 | P10-200 |
| 7000x3600 | 1,9444 | 61,44 | 61,44 | 35,00 | 35,00 | 9,508 | 4,3128 | 0,5973 | 0,00252 | 0,0484 | 275,6 | 239,285 | 328,227 | P10-300 |
| 5000x3600 | 1,3889 | 52,67 | 52,67 | 38,00 | 38,00 | 9,508 | 4,6825 | 0,6485 | 0,00274 | 0,0484 | 275,6 | 260,066 | 301,999 | P10-300 |
| 3000x2700 | 1,1111 | 42,44 | 42,44 | 37,11 | 37,11 | 9,508 | 2,5723 | 0,3563 | 0,00149 | 0,0484 | 275,6 | 142,024 | 553,004 | P10-350 |

Penulangan Pelat Atap (Tulangan Susut)

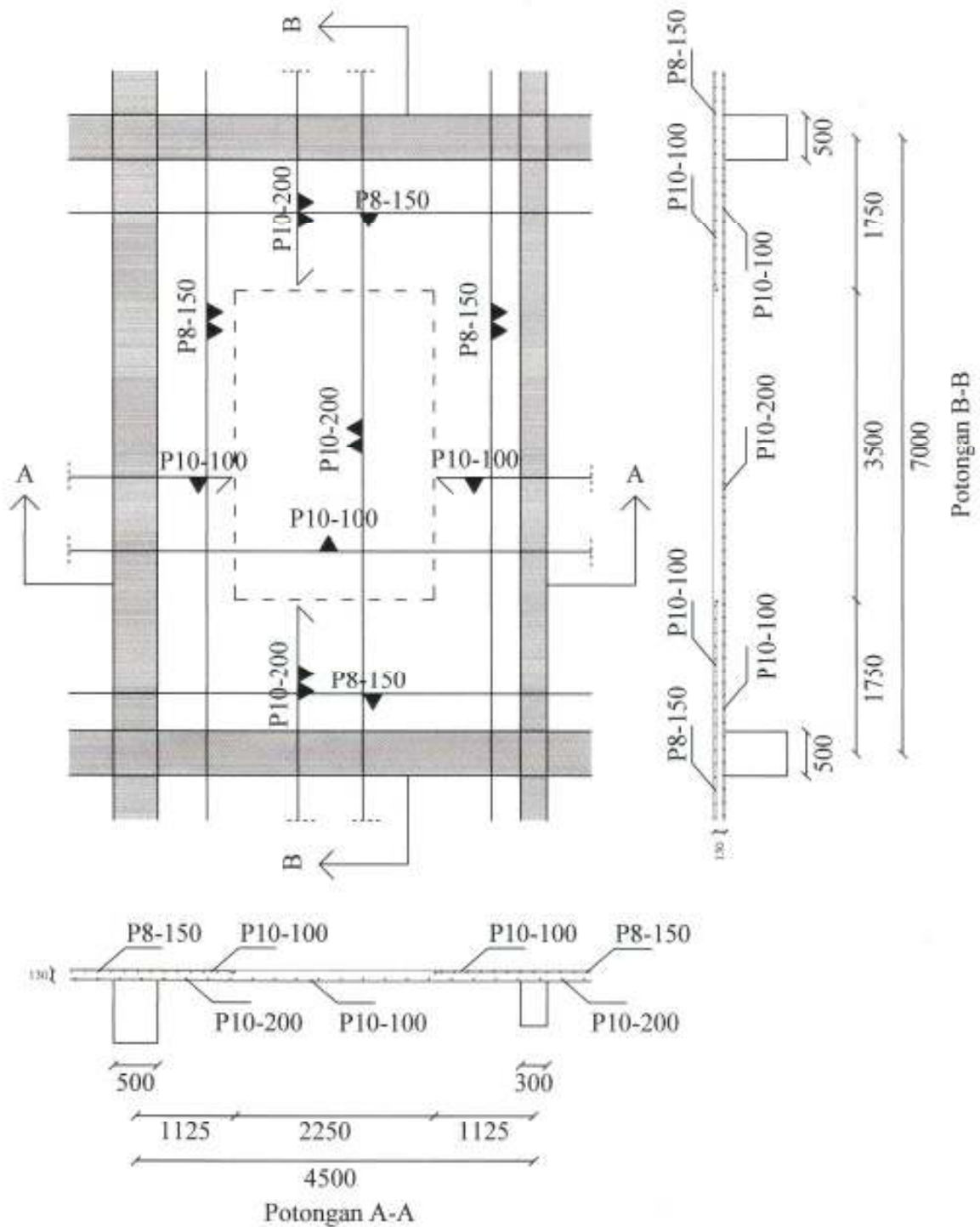
| Pelat Atap Tipe | ρ_s | As min | Spasi | dipasang |
|-----------------|----------|--------|----------|----------|
| 7000x4500 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x4500 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 6000x5000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 6000x3000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 6000x4000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x4800 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x4200 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 7000x4800 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 7200x4000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x3600 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 4500x4000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 7000x3600 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x3600 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 3000x2700 | 0,00212 | 275,6 | 182,3856 | P8-150 |

Penulangan Pelat Lantai (Tulangan Susut)

| Pelat Atap Tipe | ρ_s | As min | Spasi | dipasang |
|-----------------|----------|--------|----------|----------|
| 7000x4500 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x4500 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 6000x5000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 6000x3000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 6000x4000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x4800 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x4200 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 7000x4800 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 7200x4000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x3600 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 4500x4000 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 7000x3600 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 5000x3600 | 0,00212 | 275,6 | 182,3856 | P8-150 |
| 3000x2700 | 0,00212 | 275,6 | 182,3856 | P8-150 |



Gambar Penulangan Pelat Dua Arah Pada Atap
Skala 1 : 65



Gambar Penulangan Pelat Dua Arah Pada Lantai
Skala 1 : 65

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S T O R Y D A T A

| STORY | SIMILAR TO | HEIGHT | ELEVATION |
|------------|------------|--------|-----------|
| DAK MESIN | None | 2,200 | 49,800 |
| LT 9 | None | 4,200 | 47,600 |
| LT 8 | None | 4,200 | 43,400 |
| LT 7 | LT 8 | 4,200 | 39,200 |
| LT 6 | LT 8 | 4,200 | 35,000 |
| LT 5 | LT 8 | 4,200 | 30,800 |
| LT 4 | LT 8 | 4,200 | 26,600 |
| LT 3 | LT 8 | 4,200 | 22,400 |
| LT 2 | LT 8 | 4,200 | 18,200 |
| LT 1 | LT 8 | 6,000 | 14,000 |
| BASEMENT 1 | None | 3,000 | 8,000 |
| BASEMENT 2 | BASEMENT 1 | 3,000 | 5,000 |
| BASE | None | | 2,000 |

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

| MASS FROM | LATERAL MASS ONLY | LUMP MASS AT STORIES |
|-----------|-------------------|----------------------|
| Loads | Yes | Yes |

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

| LOAD | MULTIPLIER |
|-------|------------|
| SDEAD | 1,0000 |
| LIVE | 0,3000 |
| DEAD | 1,0000 |

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D I A P H R A G M M A S S D A T A

| STORY | DIAPHRAGM | MASS-X | MASS-Y | MMI | X-M | Y-M |
|------------|-----------|----------|----------|-------------|--------|-------|
| DAK MESIN | D12 | 28,2182 | 28,2182 | 470,1153 | 26,700 | 8,500 |
| LT 9 | D11 | 673,3192 | 673,3192 | 110397,9899 | 23,179 | 8,552 |
| LT 8 | D10 | 722,2992 | 722,2992 | 121114,0803 | 23,195 | 8,490 |
| LT 7 | D9 | 723,7383 | 723,7383 | 121385,5162 | 23,196 | 8,490 |
| LT 6 | D8 | 723,7383 | 723,7383 | 121385,5162 | 23,196 | 8,490 |
| LT 5 | D7 | 723,7383 | 723,7383 | 121385,5162 | 23,196 | 8,490 |
| LT 4 | D6 | 821,3826 | 821,3826 | 167026,9794 | 20,368 | 8,492 |
| LT 3 | D5 | 828,7833 | 828,7833 | 170442,3684 | 20,384 | 8,492 |
| LT 2 | D4 | 845,7090 | 845,7090 | 174451,1905 | 20,389 | 8,492 |
| LT 1 | D3 | 949,7151 | 949,7151 | 201676,8246 | 20,445 | 8,493 |
| BASEMENT 1 | D2 | 844,3385 | 844,3385 | 171142,7155 | 20,481 | 8,492 |
| BASEMENT 2 | D1 | 797,9373 | 797,9373 | 160772,7459 | 20,410 | 8,480 |

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A S S E M B L E D P O I N T M A S S E S

| STORY | POINT | UX | UY | UZ | RX | RY | RZ |
|------------|-------|-------------|-------------|----------|----------|----------|--------------|
| DAK MESIN | 1398 | 28,218204 | 28,218204 | 0,000000 | 0,000000 | 0,000000 | 470,115275 |
| LT 9 | 1399 | 673,319214 | 673,319214 | 0,000000 | 0,000000 | 0,000000 | 110397,98986 |
| LT 8 | 1400 | 722,299241 | 722,299241 | 0,000000 | 0,000000 | 0,000000 | 121114,08032 |
| LT 7 | 1401 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 6 | 1402 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 5 | 1403 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 4 | 1404 | 821,382616 | 821,382616 | 0,000000 | 0,000000 | 0,000000 | 167026,97937 |
| LT 3 | 1405 | 828,783309 | 828,783309 | 0,000000 | 0,000000 | 0,000000 | 170442,36840 |
| LT 2 | 1406 | 845,708966 | 845,708966 | 0,000000 | 0,000000 | 0,000000 | 174451,19052 |
| LT 1 | 1407 | 949,715123 | 949,715123 | 0,000000 | 0,000000 | 0,000000 | 201676,82461 |
| BASEMENT 1 | 1408 | 844,338467 | 844,338467 | 0,000000 | 0,000000 | 0,000000 | 171142,71550 |
| BASEMENT 2 | 1409 | 797,937302 | 797,937302 | 0,000000 | 0,000000 | 0,000000 | 160772,74588 |
| BASE | 1410 | 66,077609 | 66,077609 | 0,000000 | 0,000000 | 0,000000 | 15262,234499 |
| DAK MESIN | A11 | 28,218204 | 28,218204 | 0,000000 | 0,000000 | 0,000000 | 470,115275 |
| LT 9 | A11 | 673,319214 | 673,319214 | 0,000000 | 0,000000 | 0,000000 | 110397,98986 |
| LT 8 | A11 | 722,299241 | 722,299241 | 0,000000 | 0,000000 | 0,000000 | 121114,08032 |
| LT 7 | A11 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 6 | A11 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 5 | A11 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 4 | A11 | 821,382616 | 821,382616 | 0,000000 | 0,000000 | 0,000000 | 167026,97937 |
| LT 3 | A11 | 828,783309 | 828,783309 | 0,000000 | 0,000000 | 0,000000 | 170442,36840 |
| LT 2 | A11 | 845,708966 | 845,708966 | 0,000000 | 0,000000 | 0,000000 | 174451,19052 |
| LT 1 | A11 | 949,715123 | 949,715123 | 0,000000 | 0,000000 | 0,000000 | 201676,82461 |
| BASEMENT 1 | A11 | 844,338467 | 844,338467 | 0,000000 | 0,000000 | 0,000000 | 171142,71550 |
| BASEMENT 2 | A11 | 797,937302 | 797,937302 | 0,000000 | 0,000000 | 0,000000 | 160772,74588 |
| BASE | A11 | 66,077609 | 66,077609 | 0,000000 | 0,000000 | 0,000000 | 15262,234499 |
| Totals | A11 | 8748,994846 | 8748,994846 | 0,000000 | 0,000000 | 0,000000 | 1656913,7928 |

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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 |
|---------------|---------------|-------------|--------------------|-----------------------|-----------------|---------------|---------------|
| STEEL | Iso | Steel | A11 | 199947978,80 | 0,3000 | 1,1700E-05 | 76903068,77 |
| CONC | Iso | Concrete | A11 | 25743000,000 | 0,2000 | 9,9000E-06 | 10726250,000 |
| OTHER | Iso | None | A11 | 199947978,80 | 0,3000 | 1,1700E-05 | 76903068,77 |

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 |
|---------------|-------------------|---------------------|
| STEEL | 7,8271E+00 | 7,6820E+01 |
| CONC | 2,4010E+00 | 2,4000E+01 |
| OTHER | 7,8271E+00 | 7,6820E+01 |

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

| MATERIAL | STEEL | STEEL | STEEL |
|----------|-------|-------|-------|
|----------|-------|-------|-------|

| NAME | FY | FU | COST (\$) |
|-------|------------|------------|-----------|
| STEEL | 248211,284 | 399895,958 | 1,00 |

MATERIAL DESIGN DATA FOR CONCRETE MATERIALS

| MATERIAL NAME | LIGHTWEIGHT CONCRETE | CONCRETE FC | REBAR FY | REBAR FYS | LIGHTWT REDUC FACT |
|---------------|----------------------|-------------|------------|------------|--------------------|
| CONC | No | 30000,000 | 400000,000 | 240000,000 | N/A |

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FRAME SECTION PROPERTY DATA

| FRAME SECTION NAME | MATERIAL NAME | SECTION SHAPE NAME OR NAME IN SECTION DATABASE FILE | CONC COL | CONC BEAM |
|--------------------|---------------|---|----------|-----------|
| K600X600 | CONC | Rectangular | Yes | |
| K700X700 | CONC | Rectangular | Yes | |
| K800X800 | CONC | Rectangular | Yes | |
| B500X700 | CONC | Rectangular | | Yes |
| B300X500 | CONC | Rectangular | | Yes |
| K750X750 | 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 |
|--------------------|---------------|------------------|------------------|-----------|------------------|------------------|
| K600X600 | 0,6000 | 0,6000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| K700X700 | 0,7000 | 0,7000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| K800X800 | 0,8000 | 0,8000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| B500X700 | 0,7000 | 0,5000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| B300X500 | 0,5000 | 0,3000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| K750X750 | 0,7500 | 0,7500 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |

FRAME SECTION PROPERTY DATA

| FRAME SECTION NAME | SECTION AREA | TORSIONAL CONSTANT | MOMENTS OF INERTIA | | SHEAR AREAS | |
|--------------------|--------------|--------------------|--------------------|--------|-------------|--------|
| | | | I33 | I22 | A2 | A3 |
| K600X600 | 0,3600 | 0,0183 | 0,0108 | 0,0108 | 0,3000 | 0,3000 |
| K700X700 | 0,4900 | 0,0338 | 0,0200 | 0,0200 | 0,4083 | 0,4083 |
| K800X800 | 0,6400 | 0,0577 | 0,0341 | 0,0341 | 0,5333 | 0,5333 |
| B500X700 | 0,3500 | 0,0163 | 0,0143 | 0,0073 | 0,2917 | 0,2917 |
| B300X500 | 0,1500 | 0,0028 | 0,0031 | 0,0011 | 0,1250 | 0,1250 |
| K750X750 | 0,5625 | 0,0446 | 0,0264 | 0,0264 | 0,4688 | 0,4688 |

FRAME SECTION PROPERTY DATA

| FRAME SECTION NAME | SECTION MODULI S33 | SECTION MODULI S22 | PLASTIC MODULI Z33 | PLASTIC MODULI Z22 | RADIUS OF GYRATION | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------|
| | | | | | R33 | R22 |
| K600X600 | 0,0360 | 0,0360 | 0,0540 | 0,0540 | 0,1732 | 0,1732 |
| K700X700 | 0,0572 | 0,0572 | 0,0858 | 0,0858 | 0,2021 | 0,2021 |
| K800X800 | 0,0853 | 0,0853 | 0,1280 | 0,1280 | 0,2309 | 0,2309 |
| B500X700 | 0,0408 | 0,0292 | 0,0613 | 0,0438 | 0,2021 | 0,1443 |
| B300X500 | 0,0125 | 0,0075 | 0,0188 | 0,0113 | 0,1443 | 0,0866 |
| K750X750 | 0,0703 | 0,0703 | 0,1055 | 0,1055 | 0,2165 | 0,2165 |

FRAME SECTION WEIGHTS AND MASSES

| FRAME SECTION NAME | TOTAL WEIGHT | TOTAL MASS |
|--------------------|--------------|------------|
| K600X600 | 6462,7200 | 646,5413 |
| K700X700 | 3838,4640 | 384,0063 |
| K800X800 | 0,0000 | 0,0000 |
| B500X700 | 25958,5200 | 2596,9336 |
| B300X500 | 1388,5200 | 138,9099 |
| K750X750 | 2592,0000 | 259,3080 |

CONCRETE COLUMN DATA

| FRAME SECTION NAME | REINF CONFIGURATION LONGIT | REINF CONFIGURATION LATERAL | REINF SIZE/TYPE | NUM BARS 3DIR/2DIR | NUM BARS CIRCULAR | BAR COVER |
|--------------------|----------------------------|-----------------------------|-----------------|--------------------|-------------------|-----------|
| K600X600 | Rectangular Ties | | 250/Design | 5/5 | N/A | 0,0525 |
| K700X700 | Rectangular Ties | | 250/Design | 5/5 | N/A | 0,0525 |
| K800X800 | Rectangular Ties | | 250/Design | 5/5 | N/A | 0,0525 |
| K750X750 | Rectangular Ties | | #9/Design | 3/3 | N/A | 0,1000 |

CONCRETE BEAM DATA

| FRAME SECTION NAME | TOP COVER | BOT COVER | TOP LEFT AREA | TOP RIGHT AREA | BOT LEFT AREA | BOT RIGHT AREA |
|--------------------|-----------|-----------|---------------|----------------|---------------|----------------|
| B500X700 | 0,0400 | 0,0400 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |
| B300X500 | 0,0400 | 0,0400 | 0,0000 | 0,0000 | 0,0000 | 0,0000 |

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STATIC LOAD CASES

| STATIC CASE | CASE TYPE | AUTO LAT LOAD | SELF WT MULTIPLIER |
|-------------|------------|---------------|--------------------|
| SDEAD | SUPER DEAD | N/A | 0,0000 |
| LIVE | LIVE | N/A | 0,0000 |
| EX | QUAKE | None | 0,0000 |
| EY | QUAKE | None | 0,0000 |
| DEAD | DEAD | N/A | 1,0000 |

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RESPONSE SPECTRUM CASES

RESP SPEC CASE: EX

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|-------------|-----------------|---------------|----------------|---------------|
| CQC | SRSS | 0,0500 | 0,0000 | 0,0000 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | w3 | 1,3000 |
| UZ | ---- | N/A |
| UZ | ---- | N/A |

RESP SPEC CASE: EY

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|-------------|-----------------|---------------|----------------|---------------|
| CQC | SRSS | 0,0500 | 0,0000 | 0,0000 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | ---- | N/A |
| UZ | w3 | 1,3000 |
| UZ | ---- | N/A |

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LOADING COMBINATIONS

| COMBO | COMBO TYPE | CASE | CASE TYPE | SCALE FACTOR |
|--------|------------|-------|-----------|--------------|
| COMB1 | ADD | DEAD | Static | 1,4000 |
| | | SDEAD | Static | 1,4000 |
| COMB2 | ADD | DEAD | Static | 1,2000 |
| | | LIVE | Static | 1,6000 |
| | | SDEAD | Static | 1,2000 |
| COMB3 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 1,0000 |
| COMB4 | ADD | EY | Static | 0,3000 |
| | | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | -0,3000 |
| COMB5 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | 0,3000 |
| COMB6 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | -0,3000 |
| COMB7 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | 1,0000 |
| COMB8 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | -1,0000 |
| COMB9 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | 1,0000 |
| COMB10 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | -1,0000 |
| COMB11 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | 0,3000 |
| COMB12 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | -0,3000 |
| COMB13 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | 0,3000 |
| COMB14 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | -0,3000 |
| COMB15 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | 1,0000 |
| COMB16 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 0,9000 |
| | | EY | Static | -1,0000 |
| COMB17 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | 1,0000 |

| | | | | |
|--------|------|--------|--------|---------|
| COMB18 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | -1,0000 |
| 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 |
| | | COMB8 | Combo | 1,0000 |
| | | COMB7 | 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 |



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PROJECT INFORMATION

Company Name = Roy Inc.

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S T O R Y D A T A

| STORY | SIMILAR TO | HEIGHT | ELEVATION |
|------------|------------|--------|-----------|
| DAK MESIN | None | 2,200 | 49,800 |
| LT 9 | None | 4,200 | 47,600 |
| LT 8 | None | 4,200 | 43,400 |
| LT 7 | LT 8 | 4,200 | 39,200 |
| LT 6 | LT 8 | 4,200 | 35,000 |
| LT 5 | LT 8 | 4,200 | 30,800 |
| LT 4 | LT 8 | 4,200 | 26,600 |
| LT 3 | LT 8 | 4,200 | 22,400 |
| LT 2 | LT 8 | 4,200 | 18,200 |
| LT 1 | LT 8 | 6,000 | 14,000 |
| BASEMENT 1 | None | 3,000 | 8,000 |
| BASEMENT 2 | BASEMENT 1 | 3,000 | 5,000 |
| BASE | None | | 2,000 |

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S T A T I C L O A D C A S E S

| STATIC CASE | CASE TYPE | AUTO LAT LOAD | SELF WT MULTIPLIER |
|-------------|------------|---------------|--------------------|
| SDEAD | SUPER DEAD | N/A | 0,0000 |
| LIVE | LIVE | N/A | 0,0000 |
| EX | QUAKE | None | 0,0000 |
| EY | QUAKE | None | 0,0000 |
| DEAD | DEAD | N/A | 1,0000 |

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R E S P O N S E S P E C T R U M C A S E S

RESP SPEC CASE: EX

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|-------------|-----------------|---------------|----------------|---------------|
| CQC | SRSS | 0,0500 | 0,0000 | 0,0000 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | w3 | 1,3000 |
| U2 | ---- | N/A |
| UZ | ---- | N/A |

RESP SPEC CASE: EY

BASIC RESPONSE SPECTRUM DATA

| MODAL COMBO | DIRECTION COMBO | MODAL DAMPING | SPECTRUM ANGLE | TYPICAL ECCEN |
|-------------|-----------------|---------------|----------------|---------------|
| CQC | SRSS | 0,0500 | 0,0000 | 0,0000 |

RESPONSE SPECTRUM FUNCTION ASSIGNMENT DATA

| DIRECTION | FUNCTION | SCALE FACT |
|-----------|----------|------------|
| U1 | ---- | N/A |
| U2 | w3 | 1,3000 |
| UZ | ---- | N/A |

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

| MASS FROM | LATERAL MASS ONLY | LUMP MASS AT STORIES |
|-----------|-------------------|----------------------|
| Loads | Yes | Yes |

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

| LOAD | MULTIPLIER |
|-------|------------|
| SDEAD | 1,0000 |
| LIVE | 0,3000 |
| DEAD | 1,0000 |

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D I A P H R A G M M A S S D A T A

| STORY | DIAPHRAGM | MASS-X | MASS-Y | MMI | X-M | Y-M |
|------------|-----------|----------|----------|-------------|--------|-------|
| DAK MESIN | D12 | 28,2182 | 28,2182 | 470,1153 | 26,700 | 8,500 |
| LT 9 | D11 | 673,3192 | 673,3192 | 110397,9899 | 23,179 | 8,552 |
| LT 8 | D10 | 722,2992 | 722,2992 | 121114,0803 | 23,195 | 8,490 |
| LT 7 | D9 | 723,7383 | 723,7383 | 121385,5162 | 23,196 | 8,490 |
| LT 6 | D8 | 723,7383 | 723,7383 | 121385,5162 | 23,196 | 8,490 |
| LT 5 | D7 | 723,7383 | 723,7383 | 121385,5162 | 23,196 | 8,490 |
| LT 4 | D6 | 821,3826 | 821,3826 | 167026,9794 | 20,568 | 8,492 |
| LT 3 | D5 | 828,7833 | 828,7833 | 170442,3684 | 20,384 | 8,492 |
| LT 2 | D4 | 845,7090 | 845,7090 | 174451,1905 | 20,389 | 8,492 |
| LT 1 | D3 | 949,7151 | 949,7151 | 201676,8246 | 20,445 | 8,493 |
| BASEMENT 1 | D2 | 844,3385 | 844,3385 | 171142,7155 | 20,481 | 8,492 |
| BASEMENT 2 | D1 | 797,9373 | 797,9373 | 160772,7459 | 20,410 | 8,480 |

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ASSEMBLED POINT MASSES

| STORY | UX | UY | UZ | RX | RY | RZ |
|------------|-------------|-------------|----------|----------|----------|--------------|
| DAK MESIN | 28,218204 | 28,218204 | 0,000000 | 0,000000 | 0,000000 | 470,115275 |
| LT 9 | 673,319214 | 673,319214 | 0,000000 | 0,000000 | 0,000000 | 110397,98986 |
| LT 8 | 722,299241 | 722,299241 | 0,000000 | 0,000000 | 0,000000 | 121114,08032 |
| LT 7 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 6 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 5 | 723,738265 | 723,738265 | 0,000000 | 0,000000 | 0,000000 | 121385,51621 |
| LT 4 | 821,382616 | 821,382616 | 0,000000 | 0,000000 | 0,000000 | 167026,97937 |
| LT 3 | 828,783309 | 828,783309 | 0,000000 | 0,000000 | 0,000000 | 170442,36840 |
| LT 2 | 845,708966 | 845,708966 | 0,000000 | 0,000000 | 0,000000 | 174451,19052 |
| LT 1 | 949,715123 | 949,715123 | 0,000000 | 0,000000 | 0,000000 | 201676,82461 |
| BASEMENT 1 | 844,338467 | 844,338467 | 0,000000 | 0,000000 | 0,000000 | 171142,71550 |
| BASEMENT 2 | 797,937302 | 797,937302 | 0,000000 | 0,000000 | 0,000000 | 160772,74588 |
| BASE | 66,077609 | 66,077609 | 0,000000 | 0,000000 | 0,000000 | 15262,234499 |
| Totals | 8748,994846 | 8748,994846 | 0,000000 | 0,000000 | 0,000000 | 1656913,7928 |

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CENTERS OF CUMULATIVE MASS & CENTERS OF RIGIDITY

| STORY LEVEL | DIAPHRAGM NAME | CENTER OF MASS | | CENTER OF RIGIDITY | |
|-------------|----------------|------------------|------------------|--------------------|------------|
| | | MASS ORIGINATE-X | MASS ORIGINATE-Y | ORDINATE-X | ORDINATE-Y |
| DAK MESIN | D12 | 28,2182 | 26,700 | 8,500 | 25,062 |
| LT 9 | D11 | 673,3192 | 23,179 | 8,552 | 22,199 |
| LT 8 | D10 | 722,2992 | 23,195 | 8,490 | 22,012 |
| LT 7 | D9 | 723,7383 | 23,196 | 8,490 | 21,787 |
| LT 6 | D8 | 723,7383 | 23,196 | 8,490 | 21,481 |
| LT 5 | D7 | 723,7383 | 23,196 | 8,490 | 21,052 |
| LT 4 | D6 | 821,3826 | 20,568 | 8,492 | 20,625 |
| LT 3 | D5 | 828,7833 | 20,384 | 8,492 | 20,607 |
| LT 2 | D4 | 845,7090 | 20,389 | 8,492 | 20,604 |
| LT 1 | D3 | 949,7151 | 20,445 | 8,493 | 20,605 |
| BASEMENT 1 | D2 | 844,3385 | 20,481 | 8,492 | 20,604 |
| BASEMENT 2 | D1 | 797,9373 | 20,410 | 8,480 | 20,615 |

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MODAL PERIODS AND FREQUENCIES

| MODE NUMBER | PERIOD (TIME) | FREQUENCY (CYCLES/TIME) | CIRCULAR FREQ (RADIAN/TIME) |
|-------------|---------------|-------------------------|-----------------------------|
| Mode 1 | 1,62737 | 0,61449 | 3,86093 |
| Mode 2 | 1,50305 | 0,66531 | 4,18028 |
| Mode 3 | 1,35062 | 0,74040 | 4,65208 |
| Mode 4 | 0,56169 | 1,78035 | 11,18629 |
| Mode 5 | 0,52713 | 1,89707 | 11,91963 |
| Mode 6 | 0,51141 | 1,95536 | 12,28591 |
| Mode 7 | 0,30857 | 3,24072 | 20,36203 |
| Mode 8 | 0,29482 | 3,39186 | 21,31170 |
| Mode 9 | 0,28024 | 3,56840 | 22,42094 |
| Mode 10 | 0,21489 | 4,65357 | 29,23921 |
| Mode 11 | 0,20276 | 4,93198 | 30,98852 |
| Mode 12 | 0,19787 | 5,05394 | 31,75483 |
| Mode 13 | 0,13499 | 6,30957 | 39,64419 |
| Mode 14 | 0,14882 | 6,71935 | 42,21893 |
| Mode 15 | 0,14485 | 6,90372 | 43,37735 |
| Mode 16 | 0,13208 | 7,57097 | 47,56980 |
| Mode 17 | 0,12617 | 7,92599 | 49,80048 |
| Mode 18 | 0,12211 | 8,18912 | 51,45377 |
| Mode 19 | 0,11410 | 8,76400 | 55,06583 |
| Mode 20 | 0,10903 | 9,17210 | 57,62999 |

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MODAL PARTICIPATING MASS RATIOS

| 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 | 0,00 < 0> | 67,86 < 68> | 0,00 < 0> | 93,36 < 93> | 0,00 < 0> | 6,70 < 7> |
| Mode 2 | 74,03 < 74> | 0,00 < 68> | 0,00 < 0> | 0,00 < 93> | 98,95 < 99> | 0,00 < 7> |
| Mode 3 | 0,00 < 74> | 5,41 < 73> | 0,00 < 0> | 6,24 <100> | 0,00 < 99> | 64,96 < 72> |
| Mode 4 | 0,00 < 74> | 9,88 < 83> | 0,00 < 0> | 0,02 <100> | 0,00 < 99> | 1,55 < 73> |
| Mode 5 | 9,77 < 84> | 0,00 < 83> | 0,00 < 0> | 0,00 <100> | 0,01 < 99> | 0,00 < 73> |
| Mode 6 | 0,00 < 84> | 0,73 < 84> | 0,00 < 0> | 0,05 <100> | 0,00 < 99> | 9,78 < 83> |
| Mode 7 | 0,00 < 84> | 2,90 < 87> | 0,00 < 0> | 0,20 <100> | 39,64 <100> | 0,00 < 83> |
| Mode 8 | 3,06 < 87> | 0,00 < 87> | 0,00 < 0> | 0,00 <100> | 0,43 < 99> | 0,00 < 83> |
| Mode 9 | 0,00 < 87> | 0,02 < 87> | 0,00 < 0> | 0,00 <100> | 0,00 < 99> | 3,06 < 86> |
| Mode 10 | 0,00 < 87> | 1,70 < 89> | 0,00 < 0> | 0,00 <100> | 0,00 < 99> | 0,17 < 86> |
| Mode 11 | 1,73 < 89> | 0,00 < 89> | 0,00 < 0> | 0,00 <100> | 0,02 < 99> | 0,00 < 86> |
| Mode 12 | 0,00 < 89> | 0,06 < 89> | 0,00 < 0> | 0,00 <100> | 0,00 < 99> | 1,70 < 88> |
| Mode 13 | 0,00 < 89> | 2,09 < 91> | 0,00 < 0> | 0,04 <100> | 0,00 < 99> | 0,00 < 88> |
| Mode 14 | 2,50 < 91> | 0,00 < 91> | 0,00 < 0> | 0,00 <100> | 0,19 <100> | 0,00 < 88> |
| Mode 15 | 0,00 < 91> | 0,00 < 91> | 0,00 < 0> | 0,00 <100> | 0,00 <100> | 2,12 < 90> |
| Mode 16 | 0,00 < 91> | 4,81 < 95> | 0,00 < 0> | 0,05 <100> | 0,00 <100> | 0,30 < 90> |
| Mode 17 | 5,14 < 96> | 0,00 < 95> | 0,00 < 0> | 0,00 <100> | 0,23 <100> | 0,00 < 90> |
| Mode 18 | 0,00 < 96> | 0,10 < 96> | 0,00 < 0> | 0,00 <100> | 0,00 <100> | 4,99 < 95> |
| Mode 19 | 0,00 < 96> | 1,93 < 98> | 0,00 < 0> | 0,03 <100> | 0,00 <100> | 0,02 < 95> |
| Mode 20 | 1,47 < 98> | 0,00 < 98> | 0,00 < 0> | 0,00 <100> | 0,11 <100> | 0,00 < 95> |

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MODAL LOAD PARTICIPATION RATIOS

(STATIC AND DYNAMIC RATIOS ARE IN PERCENT)

| TYPE | NAME | STATIC | DYNAMIC |
|------|------|--------|---------|
|------|------|--------|---------|

| | | | |
|-------|-------|----------|---------|
| Load | SDEAD | 0,5136 | 0,0000 |
| Load | LIVE | 0,0944 | 0,0000 |
| Load | EX | 100,0000 | 99,9900 |
| Load | EY | 100,0000 | 99,9814 |
| Load | DEAD | 0,0853 | 0,0000 |
| Acce1 | UX | 99,9960 | 97,7061 |
| Acce1 | UY | 99,9956 | 97,5017 |



| Level | Dirig. | Point | Load | Min Value | Min Case | Max Value | Max Case | COMB19 | COMB19 | COMB19 | EY |
|------------|--------|-------|--------|-----------|----------|-----------|----------|---------|--------|----------|---------|
| LT 9 | D11 | 1373 | 23,179 | 8,552 | -0,0821 | 0,0843 | 0,0843 | -0,0982 | 0,0980 | 0,00060 | 0,00115 |
| LT 8 | D10 | 1374 | 23,195 | 8,490 | -0,0795 | 0,0818 | 0,0818 | -0,0937 | 0,0935 | -0,00059 | 0,00111 |
| LT 7 | D9 | 1375 | 23,196 | 8,490 | -0,0748 | 0,0772 | 0,0772 | -0,0876 | 0,0874 | -0,00058 | 0,00105 |
| LT 6 | D8 | 1376 | 23,196 | 8,490 | -0,0682 | 0,0708 | 0,0708 | -0,0798 | 0,0796 | -0,00057 | 0,00097 |
| LT 5 | D7 | 1377 | 23,196 | 8,490 | -0,0601 | 0,0629 | 0,0629 | -0,0703 | 0,0702 | -0,00056 | 0,00087 |
| LT 4 | D6 | 1378 | 20,568 | 8,492 | -0,0511 | 0,0537 | 0,0537 | -0,0584 | 0,0583 | -0,00053 | 0,00075 |
| LT 3 | D5 | 1379 | 20,384 | 8,492 | -0,0421 | 0,0438 | 0,0438 | -0,0476 | 0,0476 | -0,00042 | 0,00062 |
| LT 2 | D4 | 1380 | 20,389 | 8,492 | -0,0321 | 0,0332 | 0,0332 | -0,0362 | 0,0361 | -0,00031 | 0,00047 |
| LT 1 | D3 | 1381 | 20,445 | 8,493 | -0,0232 | 0,0238 | 0,0238 | -0,0258 | 0,0257 | -0,00022 | 0,00034 |
| BASEMENT 1 | D2 | 1382 | 20,481 | 8,492 | -0,0064 | 0,0066 | 0,0066 | -0,0073 | 0,0072 | -0,00006 | 0,00009 |
| BASEMENT 2 | D1 | 1383 | 20,410 | 8,480 | -0,0022 | 0,0022 | 0,0022 | -0,0024 | 0,0024 | -0,00002 | 0,00003 |
| BASE | D1 | 1384 | 20,625 | 8,500 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,00000 | 0,00000 |

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S T O R Y D R I F T E N V E L O P E S

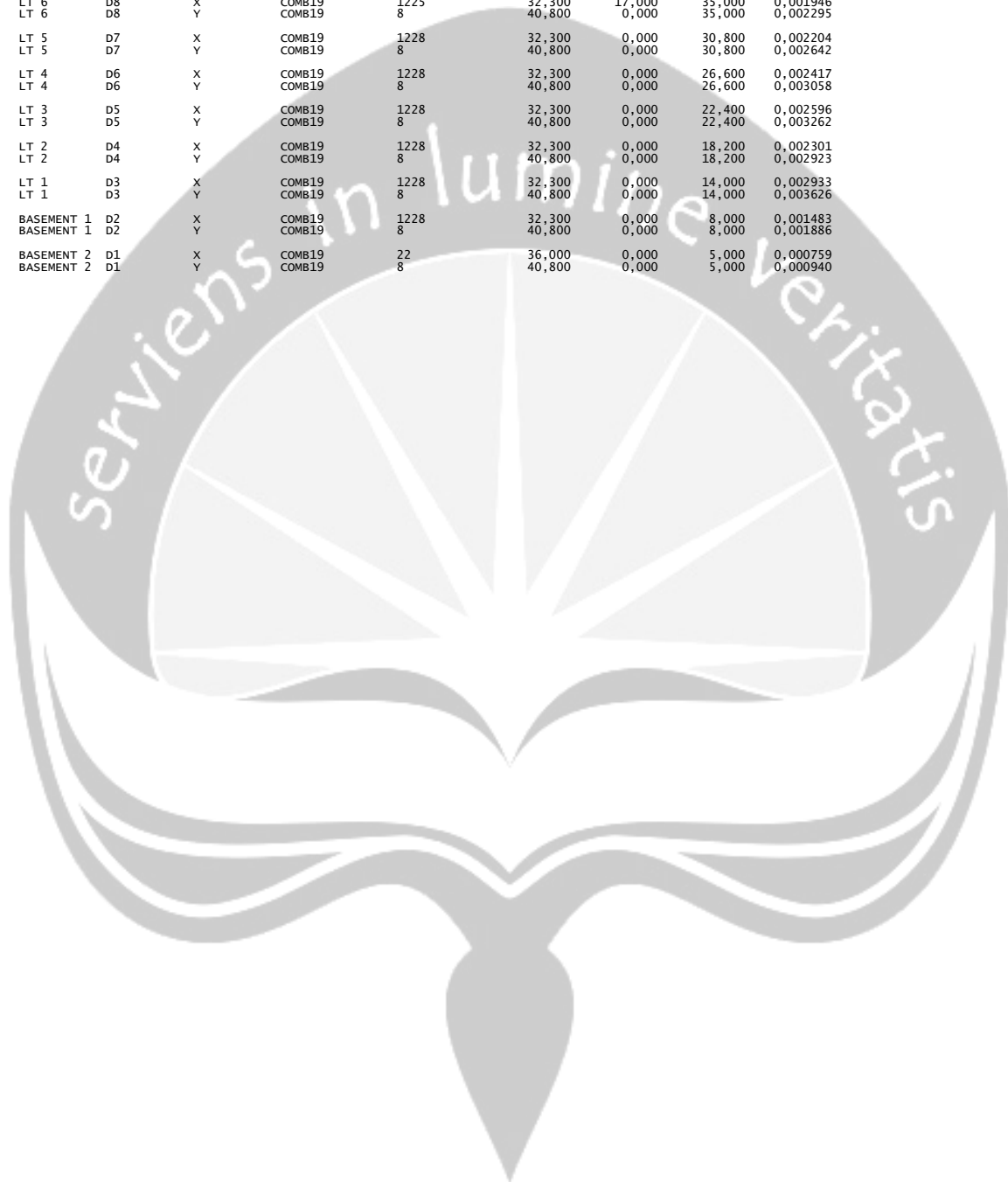
| STORY | DIRECTION | LOAD | POINT | X | Y | Z | MAX DRIFT |
|------------|-----------|--------|-------|--------|--------|--------|-----------|
| DAK MESIN | X | COMB19 | 34 | 28,800 | 5,000 | 49,800 | 0,000393 |
| DAK MESIN | Y | COMB19 | 34 | 28,800 | 5,000 | 49,800 | 0,000408 |
| LT 9 | X | COMB19 | 1225 | 32,300 | 17,000 | 47,600 | 0,000649 |
| LT 9 | Y | COMB19 | 8 | 40,800 | 0,000 | 47,600 | 0,001125 |
| LT 8 | X | COMB19 | 1225 | 32,300 | 17,000 | 43,400 | 0,001157 |
| LT 8 | Y | COMB19 | 8 | 40,800 | 0,000 | 43,400 | 0,001486 |
| LT 7 | X | COMB19 | 1225 | 32,300 | 17,000 | 39,200 | 0,001579 |
| LT 7 | Y | COMB19 | 8 | 40,800 | 0,000 | 39,200 | 0,001914 |
| LT 6 | X | COMB19 | 1225 | 32,300 | 17,000 | 35,000 | 0,001946 |
| LT 6 | Y | COMB19 | 8 | 40,800 | 0,000 | 35,000 | 0,002295 |
| LT 5 | X | COMB19 | 1228 | 32,300 | 0,000 | 30,800 | 0,002204 |
| LT 5 | Y | COMB19 | 8 | 40,800 | 0,000 | 30,800 | 0,002642 |
| LT 4 | X | COMB19 | 1228 | 32,300 | 0,000 | 26,600 | 0,002417 |
| LT 4 | Y | COMB19 | 8 | 40,800 | 0,000 | 26,600 | 0,003058 |
| LT 3 | X | COMB19 | 1228 | 32,300 | 0,000 | 22,400 | 0,002596 |
| LT 3 | Y | COMB19 | 8 | 40,800 | 0,000 | 22,400 | 0,003262 |
| LT 2 | X | COMB19 | 1228 | 32,300 | 0,000 | 18,200 | 0,002301 |
| LT 2 | Y | COMB19 | 8 | 40,800 | 0,000 | 18,200 | 0,002923 |
| LT 1 | X | COMB19 | 1228 | 32,300 | 0,000 | 14,000 | 0,002933 |
| LT 1 | Y | COMB19 | 8 | 40,800 | 0,000 | 14,000 | 0,003626 |
| BASEMENT 1 | X | COMB19 | 1228 | 32,300 | 0,000 | 8,000 | 0,001483 |
| BASEMENT 1 | Y | COMB19 | 8 | 40,800 | 0,000 | 8,000 | 0,001886 |
| BASEMENT 2 | X | COMB19 | 22 | 36,000 | 0,000 | 5,000 | 0,000759 |
| BASEMENT 2 | Y | COMB19 | 8 | 40,800 | 0,000 | 5,000 | 0,000940 |

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D I A P H R A G M D R I F T E N V E L O P E S

| STORY | DIAPHRAGM | DIRECTION | LOAD | POINT | X | Y | Z | MAX DRIFT |
|-----------|-----------|-----------|--------|-------|--------|--------|--------|-----------|
| DAK MESIN | D12 | X | COMB19 | 34 | 28,800 | 5,000 | 49,800 | 0,000393 |
| DAK MESIN | D12 | Y | COMB19 | 34 | 28,800 | 5,000 | 49,800 | 0,000408 |
| LT 9 | D11 | X | COMB19 | 1225 | 32,300 | 17,000 | 47,600 | 0,000649 |
| LT 9 | D11 | Y | COMB19 | 8 | 40,800 | 0,000 | 47,600 | 0,001125 |

| | | | | | | | | |
|------------|-----|---|--------|------|--------|--------|--------|----------|
| LT 8 | D10 | X | COMB19 | 1225 | 32,300 | 17,000 | 43,400 | 0,001157 |
| LT 8 | D10 | Y | COMB19 | 8 | 40,800 | 0,000 | 43,400 | 0,001486 |
| LT 7 | D9 | X | COMB19 | 1225 | 32,300 | 17,000 | 39,200 | 0,001579 |
| LT 7 | D9 | Y | COMB19 | 8 | 40,800 | 0,000 | 39,200 | 0,001914 |
| LT 6 | D8 | X | COMB19 | 1225 | 32,300 | 17,000 | 35,000 | 0,001946 |
| LT 6 | D8 | Y | COMB19 | 8 | 40,800 | 0,000 | 35,000 | 0,002295 |
| LT 5 | D7 | X | COMB19 | 1228 | 32,300 | 0,000 | 30,800 | 0,002204 |
| LT 5 | D7 | Y | COMB19 | 8 | 40,800 | 0,000 | 30,800 | 0,002642 |
| LT 4 | D6 | X | COMB19 | 1228 | 32,300 | 0,000 | 26,600 | 0,002417 |
| LT 4 | D6 | Y | COMB19 | 8 | 40,800 | 0,000 | 26,600 | 0,003058 |
| LT 3 | D5 | X | COMB19 | 1228 | 32,300 | 0,000 | 22,400 | 0,002596 |
| LT 3 | D5 | Y | COMB19 | 8 | 40,800 | 0,000 | 22,400 | 0,003262 |
| LT 2 | D4 | X | COMB19 | 1228 | 32,300 | 0,000 | 18,200 | 0,002301 |
| LT 2 | D4 | Y | COMB19 | 8 | 40,800 | 0,000 | 18,200 | 0,002923 |
| LT 1 | D3 | X | COMB19 | 1228 | 32,300 | 0,000 | 14,000 | 0,002933 |
| LT 1 | D3 | Y | COMB19 | 8 | 40,800 | 0,000 | 14,000 | 0,003626 |
| BASEMENT 1 | D2 | X | COMB19 | 1228 | 32,300 | 0,000 | 8,000 | 0,001483 |
| BASEMENT 1 | D2 | Y | COMB19 | 8 | 40,800 | 0,000 | 8,000 | 0,001886 |
| BASEMENT 2 | D1 | X | COMB19 | 22 | 36,000 | 0,000 | 5,000 | 0,000759 |
| BASEMENT 2 | D1 | Y | COMB19 | 8 | 40,800 | 0,000 | 5,000 | 0,000940 |



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LOADING COMBINATIONS

| COMBO | COMBO TYPE | CASE | CASE TYPE | SCALE FACTOR |
|--------|------------|--------|-----------|--------------|
| 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 |
| | | COMB8 | Combo | 1,0000 |
| | | COMB7 | 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 |

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BEAM FORCES

| STORY | BEAM | LOAD | LOC | P | V2 | V3 | T | M2 | M3 | | | | |
|--------|------|------------|--------|------|------------|--------|---------|---------|----------|---------|-------|----------|--|
| LT 9 | B34 | COMB19 MAX | 0,3500 | 0,00 | -41,32 | 0,00 | 2,198 | 0,000 | -28,372 | | | | |
| | | | 0,8318 | 0,00 | -35,45 | 0,00 | 2,198 | 0,000 | -9,803 | | | | |
| | | | 1,3136 | 0,00 | -27,76 | 0,00 | 2,198 | 0,000 | 5,499 | | | | |
| | | | 1,7955 | 0,00 | -18,25 | 0,00 | 2,198 | 0,000 | 16,658 | | | | |
| | | | 2,2773 | 0,00 | -7,08 | 0,00 | 2,198 | 0,000 | 28,770 | | | | |
| | | | 2,7591 | 0,00 | 4,95 | 0,00 | 2,198 | 0,000 | 34,225 | | | | |
| | | | 3,2409 | 0,00 | 17,08 | 0,00 | 2,198 | 0,000 | 38,025 | | | | |
| | | | 3,7227 | 0,00 | 34,36 | 0,00 | 2,198 | 0,000 | 42,226 | | | | |
| | | | 4,2045 | 0,00 | 51,18 | 0,00 | 2,198 | 0,000 | 37,938 | | | | |
| | | | 4,6864 | 0,00 | 65,36 | 0,00 | 2,198 | 0,000 | 26,146 | | | | |
| | | | 5,1682 | 0,00 | 76,64 | 0,00 | 2,198 | 0,000 | 15,485 | | | | |
| | | | 5,6500 | 0,00 | 85,04 | 0,00 | 2,198 | 0,000 | 2,398 | | | | |
| | | | LT 9 | B34 | COMB19 MIN | 0,3500 | 0,00 | -105,14 | 0,00 | 1,163 | 0,000 | -159,196 | |
| | | | | | | 0,8318 | 0,00 | -96,74 | 0,00 | 1,163 | 0,000 | -110,447 | |
| | | | | | | 1,3136 | 0,00 | -85,45 | 0,00 | 1,163 | 0,000 | -66,440 | |
| | | | | | | 1,7955 | 0,00 | -71,28 | 0,00 | 1,163 | 0,000 | -28,567 | |
| | | | | | | 2,2773 | 0,00 | -54,45 | 0,00 | 1,163 | 0,000 | -4,154 | |
| | | | | | | 2,7591 | 0,00 | -36,27 | 0,00 | 1,163 | 0,000 | 12,800 | |
| 3,2409 | 0,00 | -17,92 | | | | 0,00 | 1,163 | 0,000 | 16,746 | | | | |
| 3,7227 | 0,00 | -4,97 | | | | 0,00 | 1,163 | 0,000 | 5,626 | | | | |
| 4,2045 | 0,00 | 6,20 | | | | 0,00 | 1,163 | 0,000 | -11,120 | | | | |
| 4,6864 | 0,00 | 15,71 | | | | 0,00 | 1,163 | 0,000 | -32,871 | | | | |
| 5,1682 | 0,00 | 23,40 | | | | 0,00 | 1,163 | 0,000 | -65,728 | | | | |
| 5,6500 | 0,00 | 29,27 | | | | 0,00 | 1,163 | 0,000 | -104,768 | | | | |
| LT 9 | B46 | COMB19 MAX | | | | 0,2500 | 0,00 | -52,07 | 0,00 | 8,567 | 0,000 | 55,904 | |
| | | | | | | 0,7083 | 0,00 | -46,88 | 0,00 | 8,567 | 0,000 | 78,644 | |
| | | | | | | 1,1667 | 0,00 | -40,05 | 0,00 | 8,567 | 0,000 | 103,227 | |
| | | | | | | 1,6250 | 0,00 | -31,70 | 0,00 | 8,567 | 0,000 | 137,262 | |
| | | | | | | 2,0833 | 0,00 | -24,13 | 0,00 | 8,567 | 0,000 | 165,797 | |
| | | | | | | 2,5417 | 0,00 | -18,19 | 0,00 | 8,567 | 0,000 | 190,026 | |
| | | | 3,0000 | 0,00 | -13,91 | 0,00 | 8,567 | 0,000 | 210,940 | | | | |
| | | | 3,4688 | 0,00 | 79,44 | 0,00 | 6,498 | 0,000 | 211,969 | | | | |
| | | | 3,9375 | 0,00 | 85,54 | 0,00 | 6,498 | 0,000 | 184,692 | | | | |
| | | | 4,4063 | 0,00 | 94,36 | 0,00 | 6,498 | 0,000 | 167,134 | | | | |
| | | | 4,8750 | 0,00 | 105,92 | 0,00 | 6,498 | 0,000 | 158,782 | | | | |
| | | | 5,3438 | 0,00 | 120,21 | 0,00 | 6,498 | 0,000 | 144,370 | | | | |
| | | | 5,8125 | 0,00 | 135,77 | 0,00 | 6,498 | 0,000 | 122,884 | | | | |
| | | | 6,2813 | 0,00 | 148,78 | 0,00 | 6,498 | 0,000 | 95,658 | | | | |
| | | | 6,7500 | 0,00 | 159,07 | 0,00 | 6,498 | 0,000 | 76,299 | | | | |
| | | | 6,7500 | 0,00 | 166,62 | 0,00 | 6,498 | 0,000 | 57,190 | | | | |
| | | | LT 9 | B46 | COMB19 MIN | 0,2500 | 0,00 | -181,34 | 0,00 | -7,823 | 0,000 | -247,776 | |
| | | | | | | 0,7083 | 0,00 | -173,99 | 0,00 | -7,823 | 0,000 | -166,245 | |
| 1,1667 | 0,00 | -164,03 | | | | 0,00 | -7,823 | 0,000 | -93,281 | | | | |
| 1,6250 | 0,00 | -151,64 | | | | 0,00 | -7,823 | 0,000 | -38,427 | | | | |
| 2,0833 | 0,00 | -140,49 | | | | 0,00 | -7,823 | 0,000 | 12,615 | | | | |
| 2,5417 | 0,00 | -131,95 | | | | 0,00 | -7,823 | 0,000 | 60,355 | | | | |
| 3,0000 | 0,00 | -126,02 | | | | 0,00 | -7,823 | 0,000 | 105,754 | | | | |
| 3,4688 | 0,00 | -16,14 | | | | 0,00 | -6,703 | 0,000 | 104,648 | | | | |
| 3,9375 | 0,00 | -11,74 | | | | 0,00 | -6,703 | 0,000 | 111,249 | | | | |
| 4,4063 | 0,00 | -5,61 | | | | 0,00 | -6,703 | 0,000 | 79,600 | | | | |
| 4,8750 | 0,00 | 2,23 | | | | 0,00 | -6,703 | 0,000 | 41,978 | | | | |
| 5,3438 | 0,00 | 11,80 | | | | 0,00 | -6,703 | 0,000 | 0,275 | | | | |
| 5,8125 | 0,00 | 22,16 | | | | 0,00 | -6,703 | 0,000 | -46,269 | | | | |
| 6,2813 | 0,00 | 30,92 | | | | 0,00 | -6,703 | 0,000 | -97,383 | | | | |
| 6,7500 | 0,00 | 37,96 | | | | 0,00 | -6,703 | 0,000 | -167,498 | | | | |
| 6,7500 | 0,00 | 43,28 | | | | 0,00 | -6,703 | 0,000 | -243,936 | | | | |
| LT 9 | B47 | COMB19 MAX | | | | 0,2500 | 0,00 | -33,42 | 0,00 | -4,173 | 0,000 | -19,806 | |
| | | | | | | 0,7500 | 0,00 | -27,69 | 0,00 | -4,173 | 0,000 | 4,045 | |
| | | | 1,2500 | 0,00 | -19,99 | 0,00 | -4,173 | 0,000 | 28,848 | | | | |
| | | | 1,7500 | 0,00 | -10,34 | 0,00 | -4,173 | 0,000 | 47,243 | | | | |
| | | | 2,2500 | 0,00 | 2,32 | 0,00 | -4,173 | 0,000 | 57,676 | | | | |
| | | | 2,7500 | 0,00 | 21,74 | 0,00 | -4,173 | 0,000 | 58,753 | | | | |
| | | | 3,2500 | 0,00 | 39,22 | 0,00 | -4,173 | 0,000 | 50,528 | | | | |
| | | | 3,7500 | 0,00 | 53,59 | 0,00 | -4,173 | 0,000 | 38,259 | | | | |
| | | | 4,2500 | 0,00 | 64,85 | 0,00 | -4,173 | 0,000 | 25,813 | | | | |
| | | | 4,7500 | 0,00 | 73,00 | 0,00 | -4,173 | 0,000 | 10,008 | | | | |
| | | | LT 9 | B47 | COMB19 MIN | 0,2500 | 0,00 | -63,42 | 0,00 | -10,136 | 0,000 | -49,737 | |
| | | | | | | 0,7500 | 0,00 | -55,27 | 0,00 | -10,136 | 0,000 | -28,424 | |
| 1,2500 | 0,00 | -44,01 | | | | 0,00 | -10,136 | 0,000 | -16,274 | | | | |
| 1,7500 | 0,00 | -29,64 | | | | 0,00 | -10,136 | 0,000 | -8,461 | | | | |
| 2,2500 | 0,00 | -13,21 | | | | 0,00 | -10,136 | 0,000 | -5,964 | | | | |
| 2,7500 | 0,00 | -0,38 | | | | 0,00 | -10,136 | 0,000 | -9,659 | | | | |
| 3,2500 | 0,00 | 11,23 | | | | 0,00 | -10,136 | 0,000 | -19,668 | | | | |
| 3,7500 | 0,00 | 20,88 | | | | 0,00 | -10,136 | 0,000 | -38,775 | | | | |
| 4,2500 | 0,00 | 28,58 | | | | 0,00 | -10,136 | 0,000 | -68,516 | | | | |
| 4,7500 | 0,00 | 34,32 | | | | 0,00 | -10,136 | 0,000 | -103,110 | | | | |

| | | | | | | | | | |
|------|-----|------------|--------|------|---------|------|---------|-------|----------|
| | | | 6,8333 | 0,00 | 5,05 | 0,00 | -34,224 | 0,000 | -165,165 |
| | | | 7,3000 | 0,00 | 13,31 | 0,00 | -34,224 | 0,000 | -257,709 |
| | | | 7,7667 | 0,00 | 18,66 | 0,00 | -34,224 | 0,000 | -364,083 |
| | | | 8,2333 | 0,00 | 24,12 | 0,00 | -34,224 | 0,000 | -474,803 |
| | | | 8,7000 | 0,00 | 28,67 | 0,00 | -34,224 | 0,000 | -589,055 |
| LT 2 | B34 | COMB19 MAX | 0,3500 | 0,00 | 102,82 | 0,00 | 2,328 | 0,000 | 371,443 |
| | | | 0,8318 | 0,00 | 108,82 | 0,00 | 2,328 | 0,000 | 320,533 |
| | | | 1,3136 | 0,00 | 116,73 | 0,00 | 2,328 | 0,000 | 266,272 |
| | | | 1,7955 | 0,00 | 126,56 | 0,00 | 2,328 | 0,000 | 218,207 |
| | | | 2,2773 | 0,00 | 138,15 | 0,00 | 2,328 | 0,000 | 163,443 |
| | | | 2,7591 | 0,00 | 150,65 | 0,00 | 2,328 | 0,000 | 98,421 |
| | | | 3,2409 | 0,00 | 168,25 | 0,00 | 2,328 | 0,000 | 85,260 |
| | | | 3,7227 | 0,00 | 190,27 | 0,00 | 2,328 | 0,000 | 148,098 |
| | | | 4,2045 | 0,00 | 210,53 | 0,00 | 2,328 | 0,000 | 200,679 |
| | | | 4,6864 | 0,00 | 227,39 | 0,00 | 2,328 | 0,000 | 247,204 |
| | | | 5,1682 | 0,00 | 240,52 | 0,00 | 2,328 | 0,000 | 299,164 |
| | | | 5,6500 | 0,00 | 249,94 | 0,00 | 2,328 | 0,000 | 348,373 |
| LT 2 | B34 | COMB19 MIN | 0,3500 | 0,00 | -245,41 | 0,00 | -4,819 | 0,000 | -497,240 |
| | | | 0,8318 | 0,00 | -235,99 | 0,00 | -4,819 | 0,000 | -381,119 |
| | | | 1,3136 | 0,00 | -222,85 | 0,00 | -4,819 | 0,000 | -270,430 |
| | | | 1,7955 | 0,00 | -206,00 | 0,00 | -4,819 | 0,000 | -177,436 |
| | | | 2,2773 | 0,00 | -187,74 | 0,00 | -4,819 | 0,000 | -91,119 |
| | | | 2,7591 | 0,00 | -163,72 | 0,00 | -4,819 | 0,000 | -12,229 |
| | | | 3,2409 | 0,00 | -146,50 | 0,00 | -4,819 | 0,000 | -1,161 |
| | | | 3,7227 | 0,00 | -134,00 | 0,00 | -4,819 | 0,000 | -82,845 |
| | | | 4,2045 | 0,00 | -122,41 | 0,00 | -4,819 | 0,000 | -170,368 |
| | | | 4,6864 | 0,00 | -112,58 | 0,00 | -4,819 | 0,000 | -266,006 |
| | | | 5,1682 | 0,00 | -104,67 | 0,00 | -4,819 | 0,000 | -378,878 |
| | | | 5,6500 | 0,00 | -98,67 | 0,00 | -4,819 | 0,000 | -497,184 |
| LT 2 | B46 | COMB19 MAX | 0,3500 | 0,00 | 77,34 | 0,00 | 11,621 | 0,000 | 364,806 |
| | | | 0,7917 | 0,00 | 81,72 | 0,00 | 11,621 | 0,000 | 329,709 |
| | | | 1,2333 | 0,00 | 86,91 | 0,00 | 11,621 | 0,000 | 292,499 |
| | | | 1,6750 | 0,00 | 92,77 | 0,00 | 11,621 | 0,000 | 262,083 |
| | | | 2,1167 | 0,00 | 98,13 | 0,00 | 11,621 | 0,000 | 234,004 |
| | | | 2,5583 | 0,00 | 102,68 | 0,00 | 11,621 | 0,000 | 202,279 |
| | | | 3,0000 | 0,00 | 106,42 | 0,00 | 11,621 | 0,000 | 168,498 |
| | | | 3,0000 | 0,00 | 151,53 | 0,00 | 50,487 | 0,000 | 168,464 |
| | | | 3,4563 | 0,00 | 156,97 | 0,00 | 50,487 | 0,000 | 102,266 |
| | | | 3,9125 | 0,00 | 164,07 | 0,00 | 50,487 | 0,000 | 134,059 |
| | | | 4,3688 | 0,00 | 172,83 | 0,00 | 50,487 | 0,000 | 177,543 |
| | | | 4,8250 | 0,00 | 183,27 | 0,00 | 50,487 | 0,000 | 216,646 |
| | | | 5,2813 | 0,00 | 193,73 | 0,00 | 50,487 | 0,000 | 250,832 |
| | | | 5,7375 | 0,00 | 204,78 | 0,00 | 50,487 | 0,000 | 287,577 |
| | | | 6,1938 | 0,00 | 213,16 | 0,00 | 50,487 | 0,000 | 327,607 |
| | | | 6,6500 | 0,00 | 219,87 | 0,00 | 50,487 | 0,000 | 365,430 |
| LT 2 | B46 | COMB19 MIN | 0,3500 | 0,00 | -228,22 | 0,00 | -66,602 | 0,000 | -507,445 |
| | | | 0,7917 | 0,00 | -221,75 | 0,00 | -66,602 | 0,000 | -408,020 |
| | | | 1,2333 | 0,00 | -213,71 | 0,00 | -66,602 | 0,000 | -311,709 |
| | | | 1,6750 | 0,00 | -203,36 | 0,00 | -66,602 | 0,000 | -228,711 |
| | | | 2,1167 | 0,00 | -196,01 | 0,00 | -66,602 | 0,000 | -154,462 |
| | | | 2,5583 | 0,00 | -189,21 | 0,00 | -66,602 | 0,000 | -82,400 |
| | | | 3,0000 | 0,00 | -183,98 | 0,00 | -66,602 | 0,000 | -12,169 |
| | | | 3,0000 | 0,00 | -124,57 | 0,00 | -9,025 | 0,000 | -11,588 |
| | | | 3,4563 | 0,00 | -120,69 | 0,00 | -9,025 | 0,000 | 40,278 |
| | | | 3,9125 | 0,00 | -115,95 | 0,00 | -9,025 | 0,000 | 10,671 |
| | | | 4,3688 | 0,00 | -110,35 | 0,00 | -9,025 | 0,000 | -79,889 |
| | | | 4,8250 | 0,00 | -103,89 | 0,00 | -9,025 | 0,000 | -150,657 |
| | | | 5,2813 | 0,00 | -96,90 | 0,00 | -9,025 | 0,000 | -225,301 |
| | | | 5,7375 | 0,00 | -90,64 | 0,00 | -9,025 | 0,000 | -310,438 |
| | | | 6,1938 | 0,00 | -85,24 | 0,00 | -9,025 | 0,000 | -405,843 |
| | | | 6,6500 | 0,00 | -80,70 | 0,00 | -9,025 | 0,000 | -504,690 |
| LT 2 | B47 | COMB19 MAX | 0,3500 | 0,00 | 173,37 | 0,00 | 1,026 | 0,000 | 408,781 |
| | | | 0,8278 | 0,00 | 179,30 | 0,00 | 1,026 | 0,000 | 332,697 |
| | | | 1,3056 | 0,00 | 187,13 | 0,00 | 1,026 | 0,000 | 252,417 |
| | | | 1,7833 | 0,00 | 196,84 | 0,00 | 1,026 | 0,000 | 165,064 |
| | | | 2,2611 | 0,00 | 211,75 | 0,00 | 1,026 | 0,000 | 68,889 |
| | | | 2,7389 | 0,00 | 234,28 | 0,00 | 1,026 | 0,000 | 114,044 |
| | | | 3,2167 | 0,00 | 254,27 | 0,00 | 1,026 | 0,000 | 132,832 |
| | | | 3,6944 | 0,00 | 271,21 | 0,00 | 1,026 | 0,000 | 267,620 |
| | | | 4,1722 | 0,00 | 284,18 | 0,00 | 1,026 | 0,000 | 345,025 |
| | | | 4,6500 | 0,00 | 293,51 | 0,00 | 1,026 | 0,000 | 419,644 |
| LT 2 | B47 | COMB19 MIN | 0,3500 | 0,00 | -257,09 | 0,00 | -4,703 | 0,000 | -419,510 |
| | | | 0,8278 | 0,00 | -247,76 | 0,00 | -4,703 | 0,000 | -306,852 |
| | | | 1,3056 | 0,00 | -234,79 | 0,00 | -4,703 | 0,000 | -198,612 |
| | | | 1,7833 | 0,00 | -218,15 | 0,00 | -4,703 | 0,000 | -94,561 |
| | | | 2,2611 | 0,00 | -201,18 | 0,00 | -4,703 | 0,000 | -4,402 |
| | | | 2,7389 | 0,00 | -188,43 | 0,00 | -4,703 | 0,000 | -54,232 |
| | | | 3,2167 | 0,00 | -176,84 | 0,00 | -4,703 | 0,000 | -162,752 |
| | | | 3,6944 | 0,00 | -167,13 | 0,00 | -4,703 | 0,000 | -280,705 |
| | | | 4,1722 | 0,00 | -159,30 | 0,00 | -4,703 | 0,000 | -413,527 |
| | | | 4,6500 | 0,00 | -153,37 | 0,00 | -4,703 | 0,000 | -551,677 |
| LT 2 | B83 | COMB19 MAX | 0,3500 | 0,00 | -28,78 | 0,00 | 36,232 | 0,000 | 199,018 |
| | | | 0,8111 | 0,00 | -23,09 | 0,00 | 36,232 | 0,000 | 211,044 |
| | | | 1,2722 | 0,00 | -15,63 | 0,00 | 36,232 | 0,000 | 220,037 |
| | | | 1,7333 | 0,00 | -6,42 | 0,00 | 36,232 | 0,000 | 225,189 |
| | | | 2,1944 | 0,00 | 4,55 | 0,00 | 36,232 | 0,000 | 248,653 |
| | | | 2,6556 | 0,00 | 15,91 | 0,00 | 36,232 | 0,000 | 265,603 |
| | | | 3,1167 | 0,00 | 25,55 | 0,00 | 36,232 | 0,000 | 274,334 |
| | | | 3,5778 | 0,00 | 33,43 | 0,00 | 36,232 | 0,000 | 277,985 |
| | | | 4,0389 | 0,00 | 39,55 | 0,00 | 36,232 | 0,000 | 276,353 |
| | | | 4,5000 | 0,00 | 43,91 | 0,00 | 36,232 | 0,000 | 297,064 |
| | | | 4,5000 | 0,00 | 171,43 | 0,00 | 55,919 | 0,000 | 299,542 |
| | | | 4,9611 | 0,00 | 176,93 | 0,00 | 55,919 | 0,000 | 269,517 |
| | | | 5,4222 | 0,00 | 184,13 | 0,00 | 55,919 | 0,000 | 262,845 |
| | | | 5,8833 | 0,00 | 193,03 | 0,00 | 55,919 | 0,000 | 252,460 |
| | | | 6,3444 | 0,00 | 203,64 | 0,00 | 55,919 | 0,000 | 237,577 |
| | | | 6,8056 | 0,00 | 215,93 | 0,00 | 55,919 | 0,000 | 217,410 |
| | | | 7,2667 | 0,00 | 227,83 | 0,00 | 55,919 | 0,000 | 207,798 |
| | | | 7,7278 | 0,00 | 238,02 | 0,00 | 55,919 | 0,000 | 203,574 |
| | | | 8,1889 | 0,00 | 246,52 | 0,00 | 55,919 | 0,000 | 196,625 |
| | | | 8,6500 | 0,00 | 253,31 | 0,00 | 55,919 | 0,000 | 187,356 |
| LT 2 | B83 | COMB19 MIN | 0,3500 | 0,00 | -273,49 | 0,00 | -49,630 | 0,000 | -599,039 |
| | | | 0,8111 | 0,00 | -264,55 | 0,00 | -49,630 | 0,000 | -474,859 |
| | | | 1,2722 | 0,00 | -252,21 | 0,00 | -49,630 | 0,000 | -355,585 |
| | | | 1,7333 | 0,00 | -236,47 | 0,00 | -49,630 | 0,000 | -242,787 |
| | | | 2,1944 | 0,00 | -217,32 | 0,00 | -49,630 | 0,000 | -160,999 |
| | | | 2,6556 | 0,00 | -197,39 | 0,00 | -49,630 | 0,000 | -87,236 |
| | | | 3,1167 | 0,00 | -180,83 | 0,00 | -49,630 | 0,000 | -18,525 |

| | | | | | | | | | |
|------|-----|------------|--------|------|---------|------|---------|-------|----------|
| | | | 3,5778 | 0,00 | -167,66 | 0,00 | -49,630 | 0,000 | 44,375 |
| | | | 4,0389 | 0,00 | -157,91 | 0,00 | -49,630 | 0,000 | 104,007 |
| | | | 4,5000 | 0,00 | -151,56 | 0,00 | -49,630 | 0,000 | 154,177 |
| | | | 4,5000 | 0,00 | -30,58 | 0,00 | -41,033 | 0,000 | 154,919 |
| | | | 4,9611 | 0,00 | -26,65 | 0,00 | -41,033 | 0,000 | 99,312 |
| | | | 5,4222 | 0,00 | -21,85 | 0,00 | -41,033 | 0,000 | 34,022 |
| | | | 5,8833 | 0,00 | -16,17 | 0,00 | -41,033 | 0,000 | -33,685 |
| | | | 6,3444 | 0,00 | -9,61 | 0,00 | -41,033 | 0,000 | -104,215 |
| | | | 6,8055 | 0,00 | -2,18 | 0,00 | -41,033 | 0,000 | -177,972 |
| | | | 7,2667 | 0,00 | 5,04 | 0,00 | -41,033 | 0,000 | -271,429 |
| | | | 7,7278 | 0,00 | 11,39 | 0,00 | -41,033 | 0,000 | -378,498 |
| | | | 8,1889 | 0,00 | 16,86 | 0,00 | -41,033 | 0,000 | -489,876 |
| | | | 8,6500 | 0,00 | 21,46 | 0,00 | -41,033 | 0,000 | -604,779 |
| LT 1 | B34 | COMB19 MAX | 0,3500 | 0,00 | 132,05 | 0,00 | 2,688 | 0,000 | 450,409 |
| | | | 0,8318 | 0,00 | 138,05 | 0,00 | 2,688 | 0,000 | 385,417 |
| | | | 1,3136 | 0,00 | 148,96 | 0,00 | 2,688 | 0,000 | 317,074 |
| | | | 1,7955 | 0,00 | 155,79 | 0,00 | 2,688 | 0,000 | 254,182 |
| | | | 2,2773 | 0,00 | 167,38 | 0,00 | 2,688 | 0,000 | 185,583 |
| | | | 2,7591 | 0,00 | 179,88 | 0,00 | 2,688 | 0,000 | 106,728 |
| | | | 3,2409 | 0,00 | 196,96 | 0,00 | 2,688 | 0,000 | 91,232 |
| | | | 3,7227 | 0,00 | 218,98 | 0,00 | 2,688 | 0,000 | 169,658 |
| | | | 4,2045 | 0,00 | 239,24 | 0,00 | 2,688 | 0,000 | 237,827 |
| | | | 4,6864 | 0,00 | 258,10 | 0,00 | 2,688 | 0,000 | 299,731 |
| | | | 5,1682 | 0,00 | 269,23 | 0,00 | 2,688 | 0,000 | 366,791 |
| | | | 5,6500 | 0,00 | 278,65 | 0,00 | 2,688 | 0,000 | 431,040 |
| LT 1 | B34 | COMB19 MIN | 0,3500 | 0,00 | -277,76 | 0,00 | -5,131 | 0,000 | -584,799 |
| | | | 0,8318 | 0,00 | -268,34 | 0,00 | -5,131 | 0,000 | -453,089 |
| | | | 1,3136 | 0,00 | -255,21 | 0,00 | -5,131 | 0,000 | -326,812 |
| | | | 1,7955 | 0,00 | -235,35 | 0,00 | -5,131 | 0,000 | -217,435 |
| | | | 2,2773 | 0,00 | -218,09 | 0,00 | -5,131 | 0,000 | -116,622 |
| | | | 2,7591 | 0,00 | -196,07 | 0,00 | -5,131 | 0,000 | -21,599 |
| | | | 3,2409 | 0,00 | -178,33 | 0,00 | -5,131 | 0,000 | -6,689 |
| | | | 3,7227 | 0,00 | -165,84 | 0,00 | -5,131 | 0,000 | -102,455 |
| | | | 4,2045 | 0,00 | -154,25 | 0,00 | -5,131 | 0,000 | -204,061 |
| | | | 4,6864 | 0,00 | -144,42 | 0,00 | -5,131 | 0,000 | -313,032 |
| | | | 5,1682 | 0,00 | -136,50 | 0,00 | -5,131 | 0,000 | -439,738 |
| | | | 5,6500 | 0,00 | -130,51 | 0,00 | -5,131 | 0,000 | -571,878 |
| LT 1 | B46 | COMB19 MAX | 0,3500 | 0,00 | 93,85 | 0,00 | 17,514 | 0,000 | 414,690 |
| | | | 0,7917 | 0,00 | 98,23 | 0,00 | 17,514 | 0,000 | 372,302 |
| | | | 1,2333 | 0,00 | 103,42 | 0,00 | 17,514 | 0,000 | 327,802 |
| | | | 1,6750 | 0,00 | 109,28 | 0,00 | 17,514 | 0,000 | 289,453 |
| | | | 2,1167 | 0,00 | 114,67 | 0,00 | 17,514 | 0,000 | 254,638 |
| | | | 2,5583 | 0,00 | 119,18 | 0,00 | 17,514 | 0,000 | 216,478 |
| | | | 3,0000 | 0,00 | 122,92 | 0,00 | 17,514 | 0,000 | 175,658 |
| | | | 3,0000 | 0,00 | 167,92 | 0,00 | 55,379 | 0,000 | 175,633 |
| | | | 3,4563 | 0,00 | 173,35 | 0,00 | 55,379 | 0,000 | 103,125 |
| | | | 3,9125 | 0,00 | 180,45 | 0,00 | 55,379 | 0,000 | 139,506 |
| | | | 4,3688 | 0,00 | 189,22 | 0,00 | 55,379 | 0,000 | 190,149 |
| | | | 4,8250 | 0,00 | 199,65 | 0,00 | 55,379 | 0,000 | 236,412 |
| | | | 5,2813 | 0,00 | 211,12 | 0,00 | 55,379 | 0,000 | 279,738 |
| | | | 5,7375 | 0,00 | 221,17 | 0,00 | 55,379 | 0,000 | 322,659 |
| | | | 6,1938 | 0,00 | 229,54 | 0,00 | 55,379 | 0,000 | 370,253 |
| | | | 6,6500 | 0,00 | 236,26 | 0,00 | 55,379 | 0,000 | 415,580 |
| LT 1 | B46 | COMB19 MIN | 0,3500 | 0,00 | -245,06 | 0,00 | -73,099 | 0,000 | -560,926 |
| | | | 0,7917 | 0,00 | -238,58 | 0,00 | -73,099 | 0,000 | -454,064 |
| | | | 1,2333 | 0,00 | -230,55 | 0,00 | -73,099 | 0,000 | -350,408 |
| | | | 1,6750 | 0,00 | -221,20 | 0,00 | -73,099 | 0,000 | -259,239 |
| | | | 2,1167 | 0,00 | -212,84 | 0,00 | -73,099 | 0,000 | -178,107 |
| | | | 2,5583 | 0,00 | -206,05 | 0,00 | -73,099 | 0,000 | -99,162 |
| | | | 3,0000 | 0,00 | -200,82 | 0,00 | -73,099 | 0,000 | -22,047 |
| | | | 3,0000 | 0,00 | -141,01 | 0,00 | -13,498 | 0,000 | -21,468 |
| | | | 3,4563 | 0,00 | -137,13 | 0,00 | -13,498 | 0,000 | 36,736 |
| | | | 3,9125 | 0,00 | -132,40 | 0,00 | -13,498 | 0,000 | 18,776 |
| | | | 4,3688 | 0,00 | -126,80 | 0,00 | -13,498 | 0,000 | -94,526 |
| | | | 4,8250 | 0,00 | -120,34 | 0,00 | -13,498 | 0,000 | -173,028 |
| | | | 5,2813 | 0,00 | -113,35 | 0,00 | -13,498 | 0,000 | -254,806 |
| | | | 5,7375 | 0,00 | -107,09 | 0,00 | -13,498 | 0,000 | -348,133 |
| | | | 6,1938 | 0,00 | -101,69 | 0,00 | -13,498 | 0,000 | -451,015 |
| | | | 6,6500 | 0,00 | -97,15 | 0,00 | -13,498 | 0,000 | -557,339 |
| LT 1 | B47 | COMB19 MAX | 0,3500 | 0,00 | 220,39 | 0,00 | 1,423 | 0,000 | 505,556 |
| | | | 0,8278 | 0,00 | 226,33 | 0,00 | 1,423 | 0,000 | 403,143 |
| | | | 1,3056 | 0,00 | 234,15 | 0,00 | 1,423 | 0,000 | 301,480 |
| | | | 1,7833 | 0,00 | 243,86 | 0,00 | 1,423 | 0,000 | 192,743 |
| | | | 2,2611 | 0,00 | 256,50 | 0,00 | 1,423 | 0,000 | 75,185 |
| | | | 2,7389 | 0,00 | 279,03 | 0,00 | 1,423 | 0,000 | 131,433 |
| | | | 3,2167 | 0,00 | 299,32 | 0,00 | 1,423 | 0,000 | 236,450 |
| | | | 3,6944 | 0,00 | 315,96 | 0,00 | 1,423 | 0,000 | 334,544 |
| | | | 4,1722 | 0,00 | 328,94 | 0,00 | 1,423 | 0,000 | 437,706 |
| | | | 4,6500 | 0,00 | 338,26 | 0,00 | 1,423 | 0,000 | 537,582 |
| LT 1 | B47 | COMB19 MIN | 0,3500 | 0,00 | -312,36 | 0,00 | -6,013 | 0,000 | -534,227 |
| | | | 0,8278 | 0,00 | -303,03 | 0,00 | -6,013 | 0,000 | -391,300 |
| | | | 1,3056 | 0,00 | -290,05 | 0,00 | -6,013 | 0,000 | -257,337 |
| | | | 1,7833 | 0,00 | -273,42 | 0,00 | -6,013 | 0,000 | -128,361 |
| | | | 2,2611 | 0,00 | -254,18 | 0,00 | -6,013 | 0,000 | -4,075 |
| | | | 2,7389 | 0,00 | -241,43 | 0,00 | -6,013 | 0,000 | -69,860 |
| | | | 3,2167 | 0,00 | -229,83 | 0,00 | -6,013 | 0,000 | -200,781 |
| | | | 3,6944 | 0,00 | -220,13 | 0,00 | -6,013 | 0,000 | -338,490 |
| | | | 4,1722 | 0,00 | -212,30 | 0,00 | -6,013 | 0,000 | -492,628 |
| | | | 4,6500 | 0,00 | -206,37 | 0,00 | -6,013 | 0,000 | -652,094 |
| LT 1 | B83 | COMB19 MAX | 0,3500 | 0,00 | -19,81 | 0,00 | 44,089 | 0,000 | 234,291 |
| | | | 0,8111 | 0,00 | -14,11 | 0,00 | 44,089 | 0,000 | 242,181 |
| | | | 1,2722 | 0,00 | -6,66 | 0,00 | 44,089 | 0,000 | 247,038 |
| | | | 1,7333 | 0,00 | 2,55 | 0,00 | 44,089 | 0,000 | 248,052 |
| | | | 2,1944 | 0,00 | 13,52 | 0,00 | 44,089 | 0,000 | 265,687 |
| | | | 2,6556 | 0,00 | 24,88 | 0,00 | 44,089 | 0,000 | 278,732 |
| | | | 3,1167 | 0,00 | 34,52 | 0,00 | 44,089 | 0,000 | 283,374 |
| | | | 3,5778 | 0,00 | 42,40 | 0,00 | 44,089 | 0,000 | 281,153 |
| | | | 4,0389 | 0,00 | 48,52 | 0,00 | 44,089 | 0,000 | 274,056 |
| | | | 4,5000 | 0,00 | 52,88 | 0,00 | 44,089 | 0,000 | 295,444 |
| | | | 4,5000 | 0,00 | 182,11 | 0,00 | 63,353 | 0,000 | 297,612 |
| | | | 4,9611 | 0,00 | 187,61 | 0,00 | 63,353 | 0,000 | 274,080 |
| | | | 5,4222 | 0,00 | 194,81 | 0,00 | 63,353 | 0,000 | 272,925 |
| | | | 5,8833 | 0,00 | 203,72 | 0,00 | 63,353 | 0,000 | 268,056 |
| | | | 6,3444 | 0,00 | 214,33 | 0,00 | 63,353 | 0,000 | 258,689 |
| | | | 6,8056 | 0,00 | 226,61 | 0,00 | 63,353 | 0,000 | 244,038 |
| | | | 7,2667 | 0,00 | 238,51 | 0,00 | 63,353 | 0,000 | 240,464 |
| | | | 7,7278 | 0,00 | 248,71 | 0,00 | 63,353 | 0,000 | 241,750 |
| | | | 8,1889 | 0,00 | 257,20 | 0,00 | 63,353 | 0,000 | 240,311 |
| | | | 8,6500 | 0,00 | 263,99 | 0,00 | 63,353 | 0,000 | 236,553 |

| | | | | | | | | |
|------------|-----|------------|------|---------|------|---------|-------|----------|
| | | 5,4167 | 0,00 | 179,06 | 0,00 | 55,120 | 0,000 | 252,605 |
| | | 5,8750 | 0,00 | 187,88 | 0,00 | 55,120 | 0,000 | 240,307 |
| | | 6,3333 | 0,00 | 198,39 | 0,00 | 55,120 | 0,000 | 223,578 |
| | | 6,7917 | 0,00 | 210,57 | 0,00 | 55,120 | 0,000 | 201,648 |
| | | 7,2500 | 0,00 | 222,45 | 0,00 | 55,120 | 0,000 | 191,465 |
| | | 7,7083 | 0,00 | 232,65 | 0,00 | 55,120 | 0,000 | 185,373 |
| | | 8,1667 | 0,00 | 241,17 | 0,00 | 55,120 | 0,000 | 176,572 |
| | | 8,6250 | 0,00 | 248,01 | 0,00 | 55,120 | 0,000 | 165,459 |
| BASEMENT 1 | B83 | COMB19 MIN | | | | | | |
| | | 0,3750 | 0,00 | -268,61 | 0,00 | -49,915 | 0,000 | -579,416 |
| | | 0,8333 | 0,00 | -259,56 | 0,00 | -49,915 | 0,000 | -458,247 |
| | | 1,2917 | 0,00 | -247,14 | 0,00 | -49,915 | 0,000 | -342,001 |
| | | 1,7500 | 0,00 | -231,36 | 0,00 | -49,915 | 0,000 | -232,217 |
| | | 2,2083 | 0,00 | -212,21 | 0,00 | -49,915 | 0,000 | -149,270 |
| | | 2,6667 | 0,00 | -192,47 | 0,00 | -49,915 | 0,000 | -78,769 |
| | | 3,1250 | 0,00 | -176,08 | 0,00 | -49,915 | 0,000 | -13,038 |
| | | 3,5833 | 0,00 | -163,05 | 0,00 | -49,915 | 0,000 | 48,718 |
| | | 4,0417 | 0,00 | -153,38 | 0,00 | -49,915 | 0,000 | 107,295 |
| | | 4,5000 | 0,00 | -147,08 | 0,00 | -49,915 | 0,000 | 157,075 |
| | | 4,5000 | 0,00 | -25,33 | 0,00 | -42,746 | 0,000 | 158,298 |
| | | 4,9583 | 0,00 | -21,43 | 0,00 | -42,746 | 0,000 | 98,540 |
| | | 5,4167 | 0,00 | -16,66 | 0,00 | -42,746 | 0,000 | 36,426 |
| | | 5,8750 | 0,00 | -11,03 | 0,00 | -42,746 | 0,000 | -28,922 |
| | | 6,3333 | 0,00 | -4,53 | 0,00 | -42,746 | 0,000 | -97,452 |
| | | 6,7917 | 0,00 | 2,84 | 0,00 | -42,746 | 0,000 | -168,360 |
| | | 7,2500 | 0,00 | 10,05 | 0,00 | -42,746 | 0,000 | -260,460 |
| | | 7,7083 | 0,00 | 16,39 | 0,00 | -42,746 | 0,000 | -364,818 |
| | | 8,1667 | 0,00 | 21,87 | 0,00 | -42,746 | 0,000 | -473,467 |
| | | 8,6250 | 0,00 | 26,48 | 0,00 | -42,746 | 0,000 | -585,635 |
| BASEMENT 2 | B34 | COMB19 MAX | | | | | | |
| | | 0,3750 | 0,00 | 48,07 | 0,00 | 1,154 | 0,000 | 222,074 |
| | | 0,8523 | 0,00 | 54,10 | 0,00 | 1,154 | 0,000 | 197,770 |
| | | 1,3295 | 0,00 | 62,01 | 0,00 | 1,154 | 0,000 | 170,139 |
| | | 1,8068 | 0,00 | 71,80 | 0,00 | 1,154 | 0,000 | 148,318 |
| | | 2,2841 | 0,00 | 83,30 | 0,00 | 1,154 | 0,000 | 120,683 |
| | | 2,7614 | 0,00 | 95,69 | 0,00 | 1,154 | 0,000 | 82,970 |
| | | 3,2386 | 0,00 | 112,00 | 0,00 | 1,154 | 0,000 | 79,457 |
| | | 3,7159 | 0,00 | 133,75 | 0,00 | 1,154 | 0,000 | 119,334 |
| | | 4,1932 | 0,00 | 153,95 | 0,00 | 1,154 | 0,000 | 149,131 |
| | | 4,6705 | 0,00 | 170,75 | 0,00 | 1,154 | 0,000 | 170,072 |
| | | 5,1477 | 0,00 | 183,90 | 0,00 | 1,154 | 0,000 | 198,916 |
| | | 5,6250 | 0,00 | 193,40 | 0,00 | 1,154 | 0,000 | 224,497 |
| BASEMENT 2 | B34 | COMB19 MIN | | | | | | |
| | | 0,3750 | 0,00 | -197,93 | 0,00 | -2,807 | 0,000 | -361,782 |
| | | 0,8523 | 0,00 | -175,28 | 0,00 | -2,807 | 0,000 | -269,436 |
| | | 1,3295 | 0,00 | -158,48 | 0,00 | -2,807 | 0,000 | -182,197 |
| | | 1,8068 | 0,00 | -138,36 | 0,00 | -2,807 | 0,000 | -112,738 |
| | | 2,2841 | 0,00 | -116,54 | 0,00 | -2,807 | 0,000 | -51,129 |
| | | 2,7614 | 0,00 | -98,36 | 0,00 | -2,807 | 0,000 | 4,744 |
| | | 3,2386 | 0,00 | -85,98 | 0,00 | -2,807 | 0,000 | 9,976 |
| | | 3,7159 | 0,00 | -74,47 | 0,00 | -2,807 | 0,000 | -44,621 |
| | | 4,1932 | 0,00 | -64,68 | 0,00 | -2,807 | 0,000 | -104,935 |
| | | 4,6705 | 0,00 | -56,77 | 0,00 | -2,807 | 0,000 | -170,853 |
| | | 5,1477 | 0,00 | -50,74 | 0,00 | -2,807 | 0,000 | -255,109 |
| | | 5,6250 | 0,00 | -45,74 | 0,00 | -2,807 | 0,000 | -345,291 |
| BASEMENT 2 | B46 | COMB19 MAX | | | | | | |
| | | 0,3750 | 0,00 | 25,39 | 0,00 | 0,709 | 0,000 | 197,848 |
| | | 0,8125 | 0,00 | 29,77 | 0,00 | 0,709 | 0,000 | 185,809 |
| | | 1,2500 | 0,00 | 34,94 | 0,00 | 0,709 | 0,000 | 171,681 |
| | | 1,6875 | 0,00 | 40,70 | 0,00 | 0,709 | 0,000 | 160,809 |
| | | 2,1250 | 0,00 | 46,05 | 0,00 | 0,709 | 0,000 | 155,108 |
| | | 2,5625 | 0,00 | 50,54 | 0,00 | 0,709 | 0,000 | 146,055 |
| | | 3,0000 | 0,00 | 54,24 | 0,00 | 0,709 | 0,000 | 134,402 |
| | | 3,0000 | 0,00 | 99,65 | 0,00 | 42,612 | 0,000 | 134,606 |
| | | 3,4531 | 0,00 | 105,03 | 0,00 | 42,612 | 0,000 | 92,100 |
| | | 3,9063 | 0,00 | 112,07 | 0,00 | 42,612 | 0,000 | 105,077 |
| | | 4,3594 | 0,00 | 120,75 | 0,00 | 42,612 | 0,000 | 125,734 |
| | | 4,8125 | 0,00 | 131,07 | 0,00 | 42,612 | 0,000 | 142,086 |
| | | 5,2656 | 0,00 | 142,47 | 0,00 | 42,612 | 0,000 | 153,634 |
| | | 5,7188 | 0,00 | 152,51 | 0,00 | 42,612 | 0,000 | 169,111 |
| | | 6,1719 | 0,00 | 160,90 | 0,00 | 42,612 | 0,000 | 185,774 |
| | | 6,6250 | 0,00 | 167,65 | 0,00 | 42,612 | 0,000 | 200,182 |
| BASEMENT 2 | B46 | COMB19 MIN | | | | | | |
| | | 0,3750 | 0,00 | -176,70 | 0,00 | -56,539 | 0,000 | -350,328 |
| | | 0,8125 | 0,00 | -170,21 | 0,00 | -56,539 | 0,000 | -274,383 |
| | | 1,2500 | 0,00 | -162,19 | 0,00 | -56,539 | 0,000 | -201,613 |
| | | 1,6875 | 0,00 | -152,92 | 0,00 | -56,539 | 0,000 | -138,435 |
| | | 2,1250 | 0,00 | -144,68 | 0,00 | -56,539 | 0,000 | -86,628 |
| | | 2,5625 | 0,00 | -137,97 | 0,00 | -56,539 | 0,000 | -36,960 |
| | | 3,0000 | 0,00 | -132,79 | 0,00 | -56,539 | 0,000 | 10,915 |
| | | 3,0000 | 0,00 | -73,23 | 0,00 | -0,678 | 0,000 | 11,779 |
| | | 3,4531 | 0,00 | -69,38 | 0,00 | -0,678 | 0,000 | 41,118 |
| | | 3,9063 | 0,00 | -64,68 | 0,00 | -0,678 | 0,000 | 8,120 |
| | | 4,3594 | 0,00 | -59,14 | 0,00 | -0,678 | 0,000 | -37,136 |
| | | 4,8125 | 0,00 | -52,74 | 0,00 | -0,678 | 0,000 | -85,098 |
| | | 5,2656 | 0,00 | -45,79 | 0,00 | -0,678 | 0,000 | -136,320 |
| | | 5,7188 | 0,00 | -39,54 | 0,00 | -0,678 | 0,000 | -199,388 |
| | | 6,1719 | 0,00 | -34,14 | 0,00 | -0,678 | 0,000 | -270,458 |
| | | 6,6250 | 0,00 | -29,59 | 0,00 | -0,678 | 0,000 | -344,959 |
| BASEMENT 2 | B47 | COMB19 MAX | | | | | | |
| | | 0,3750 | 0,00 | 105,53 | 0,00 | 0,852 | 0,000 | 277,658 |
| | | 0,8472 | 0,00 | 111,48 | 0,00 | 0,852 | 0,000 | 226,491 |
| | | 1,3194 | 0,00 | 119,28 | 0,00 | 0,852 | 0,000 | 178,449 |
| | | 1,7917 | 0,00 | 128,92 | 0,00 | 0,852 | 0,000 | 127,489 |
| | | 2,2639 | 0,00 | 140,40 | 0,00 | 0,852 | 0,000 | 67,883 |
| | | 2,7361 | 0,00 | 158,85 | 0,00 | 0,852 | 0,000 | 83,591 |
| | | 3,2083 | 0,00 | 178,94 | 0,00 | 0,852 | 0,000 | 141,416 |
| | | 3,6806 | 0,00 | 195,47 | 0,00 | 0,852 | 0,000 | 190,595 |
| | | 4,1528 | 0,00 | 208,42 | 0,00 | 0,852 | 0,000 | 240,176 |
| | | 4,6250 | 0,00 | 217,80 | 0,00 | 0,852 | 0,000 | 290,510 |
| BASEMENT 2 | B47 | COMB19 MIN | | | | | | |
| | | 0,3750 | 0,00 | -214,07 | 0,00 | -2,969 | 0,000 | -342,193 |
| | | 0,8472 | 0,00 | -204,69 | 0,00 | -2,969 | 0,000 | -243,177 |
| | | 1,3194 | 0,00 | -191,74 | 0,00 | -2,969 | 0,000 | -155,808 |
| | | 1,7917 | 0,00 | -175,21 | 0,00 | -2,969 | 0,000 | -76,597 |
| | | 2,2639 | 0,00 | -155,12 | 0,00 | -2,969 | 0,000 | -2,373 |
| | | 2,7361 | 0,00 | -138,68 | 0,00 | -2,969 | 0,000 | -19,369 |
| | | 3,2083 | 0,00 | -127,20 | 0,00 | -2,969 | 0,000 | -94,385 |
| | | 3,6806 | 0,00 | -117,56 | 0,00 | -2,969 | 0,000 | -174,388 |
| | | 4,1528 | 0,00 | -109,76 | 0,00 | -2,969 | 0,000 | -265,871 |
| | | 4,6250 | 0,00 | -103,81 | 0,00 | -2,969 | 0,000 | -366,627 |
| BASEMENT 2 | B83 | COMB19 MAX | | | | | | |
| | | 0,3750 | 0,00 | -67,08 | 0,00 | 24,191 | 0,000 | 39,180 |
| | | 0,8333 | 0,00 | -61,33 | 0,00 | 24,191 | 0,000 | 68,674 |
| | | 1,2917 | 0,00 | -53,84 | 0,00 | 24,191 | 0,000 | 95,133 |
| | | 1,7500 | 0,00 | -44,62 | 0,00 | 24,191 | 0,000 | 117,763 |

| | | | | | | |
|----------------|------|---------|------|---------|-------|----------|
| 2,2083 | 0,00 | -33,66 | 0,00 | 24,191 | 0,000 | 152,835 |
| 2,6667 | 0,00 | -22,40 | 0,00 | 24,191 | 0,000 | 187,974 |
| 3,1250 | 0,00 | -12,86 | 0,00 | 24,191 | 0,000 | 214,828 |
| 3,5833 | 0,00 | -5,05 | 0,00 | 24,191 | 0,000 | 234,938 |
| 4,0417 | 0,00 | 1,02 | 0,00 | 24,191 | 0,000 | 252,900 |
| 4,5000 | 0,00 | 5,35 | 0,00 | 24,191 | 0,000 | 290,213 |
| 4,5000 | 0,00 | 138,24 | 0,00 | 38,324 | 0,000 | 291,791 |
| 4,9583 | 0,00 | 143,71 | 0,00 | 38,324 | 0,000 | 245,906 |
| 5,4167 | 0,00 | 150,85 | 0,00 | 38,324 | 0,000 | 223,617 |
| 5,8750 | 0,00 | 159,67 | 0,00 | 38,324 | 0,000 | 198,291 |
| 6,3333 | 0,00 | 170,18 | 0,00 | 38,324 | 0,000 | 168,718 |
| 6,7917 | 0,00 | 182,36 | 0,00 | 38,324 | 0,000 | 133,944 |
| 7,2500 | 0,00 | 194,24 | 0,00 | 38,324 | 0,000 | 111,530 |
| 7,7083 | 0,00 | 204,45 | 0,00 | 38,324 | 0,000 | 92,585 |
| 8,1667 | 0,00 | 212,96 | 0,00 | 38,324 | 0,000 | 70,931 |
| 8,6250 | 0,00 | 219,80 | 0,00 | 38,324 | 0,000 | 46,965 |
| BASEMENT 2 B83 | | | | | | |
| COMB19 MIN | | | | | | |
| 0,3750 | 0,00 | -241,90 | 0,00 | -34,899 | 0,000 | -472,331 |
| 0,8333 | 0,00 | -232,85 | 0,00 | -34,899 | 0,000 | -363,406 |
| 1,2917 | 0,00 | -220,43 | 0,00 | -34,899 | 0,000 | -259,401 |
| 1,7500 | 0,00 | -204,64 | 0,00 | -34,899 | 0,000 | -161,860 |
| 2,2083 | 0,00 | -185,50 | 0,00 | -34,899 | 0,000 | -89,393 |
| 2,6667 | 0,00 | -165,76 | 0,00 | -34,899 | 0,000 | -31,375 |
| 3,1250 | 0,00 | -149,37 | 0,00 | -34,899 | 0,000 | 21,873 |
| 3,5833 | 0,00 | -136,34 | 0,00 | -34,899 | 0,000 | 71,146 |
| 4,0417 | 0,00 | -126,67 | 0,00 | -34,899 | 0,000 | 117,241 |
| 4,5000 | 0,00 | -120,37 | 0,00 | -34,899 | 0,000 | 156,866 |
| 4,5000 | 0,00 | 2,71 | 0,00 | -26,870 | 0,000 | 157,734 |
| 4,9583 | 0,00 | 6,61 | 0,00 | -26,870 | 0,000 | 111,553 |
| 5,4167 | 0,00 | 11,38 | 0,00 | -26,870 | 0,000 | 62,314 |
| 5,8750 | 0,00 | 17,01 | 0,00 | -26,870 | 0,000 | 10,069 |
| 6,3333 | 0,00 | 23,52 | 0,00 | -26,870 | 0,000 | -45,141 |
| 6,7917 | 0,00 | 30,88 | 0,00 | -26,870 | 0,000 | -103,529 |
| 7,2500 | 0,00 | 38,09 | 0,00 | -26,870 | 0,000 | -183,323 |
| 7,7083 | 0,00 | 44,43 | 0,00 | -26,870 | 0,000 | -274,753 |
| 8,1667 | 0,00 | 49,91 | 0,00 | -26,870 | 0,000 | -370,474 |
| 8,6250 | 0,00 | 54,52 | 0,00 | -26,870 | 0,000 | -469,714 |

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 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 |
|-------|------|-----------|------|--------|------|--------|-------|---------|
| LT 9 | B34 | Min Value | 0,00 | -10,26 | 0,00 | -0,145 | 0,000 | -13,251 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 6,24 | 0,00 | -0,145 | 0,000 | 5,830 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 9 | B46 | Min Value | 0,00 | -14,25 | 0,00 | -0,736 | 0,000 | -8,891 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 12,82 | 0,00 | 0,578 | 0,000 | 23,741 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 9 | B47 | Min Value | 0,00 | -1,96 | 0,00 | -0,211 | 0,000 | -14,063 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 10,35 | 0,00 | -0,211 | 0,000 | 6,195 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 9 | B83 | Min Value | 0,00 | -19,24 | 0,00 | -1,893 | 0,000 | -30,450 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 15,57 | 0,00 | 0,904 | 0,000 | 27,147 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 8 | B34 | Min Value | 0,00 | -22,71 | 0,00 | -1,053 | 0,000 | -25,573 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 18,72 | 0,00 | -1,053 | 0,000 | 14,480 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 8 | B46 | Min Value | 0,00 | -17,34 | 0,00 | -9,982 | 0,000 | -15,722 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 15,64 | 0,00 | 7,507 | 0,000 | 23,107 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 8 | B47 | Min Value | 0,00 | -6,78 | 0,00 | 0,278 | 0,000 | -28,756 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 23,87 | 0,00 | 0,278 | 0,000 | 14,536 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 8 | B83 | Min Value | 0,00 | -38,37 | 0,00 | -1,701 | 0,000 | -57,461 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 27,45 | 0,00 | 1,663 | 0,000 | 47,824 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 7 | B34 | Min Value | 0,00 | -22,79 | 0,00 | -0,833 | 0,000 | -25,956 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 18,63 | 0,00 | -0,833 | 0,000 | 14,350 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 7 | B46 | Min Value | 0,00 | -17,34 | 0,00 | -9,957 | 0,000 | -16,003 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 15,62 | 0,00 | 7,495 | 0,000 | 22,814 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 7 | B47 | Min Value | 0,00 | -6,46 | 0,00 | 0,220 | 0,000 | -29,890 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 24,19 | 0,00 | 0,220 | 0,000 | 14,340 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 7 | B83 | Min Value | 0,00 | -37,91 | 0,00 | -1,818 | 0,000 | -55,101 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 27,84 | 0,00 | 1,711 | 0,000 | 48,337 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 6 | B34 | Min Value | 0,00 | -22,80 | 0,00 | -0,863 | 0,000 | -26,024 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 18,63 | 0,00 | -0,863 | 0,000 | 14,301 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 6 | B46 | Min Value | 0,00 | -17,35 | 0,00 | -9,972 | 0,000 | -16,196 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 15,62 | 0,00 | 7,505 | 0,000 | 22,641 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 6 | B47 | Min Value | 0,00 | -7,12 | 0,00 | 0,208 | 0,000 | -28,378 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 23,52 | 0,00 | 0,208 | 0,000 | 13,909 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 6 | B83 | Min Value | 0,00 | -37,82 | 0,00 | -1,742 | 0,000 | -54,617 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 28,06 | 0,00 | 1,678 | 0,000 | 48,454 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 5 | B34 | Min Value | 0,00 | -22,56 | 0,00 | -0,852 | 0,000 | -25,396 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 18,86 | 0,00 | -0,852 | 0,000 | 14,238 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 5 | B46 | Min Value | 0,00 | -17,34 | 0,00 | -9,920 | 0,000 | -16,448 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 15,60 | 0,00 | 7,466 | 0,000 | 22,360 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 5 | B47 | Min Value | 0,00 | -7,87 | 0,00 | 0,188 | 0,000 | -26,752 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 22,77 | 0,00 | 0,188 | 0,000 | 13,323 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 5 | B83 | Min Value | 0,00 | -37,74 | 0,00 | -1,693 | 0,000 | -54,484 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 28,27 | 0,00 | 1,623 | 0,000 | 48,310 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 4 | B34 | Min Value | 0,00 | -21,92 | 0,00 | -0,832 | 0,000 | -24,006 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 19,51 | 0,00 | -0,832 | 0,000 | 13,734 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 4 | B46 | Min Value | 0,00 | -17,31 | 0,00 | -9,822 | 0,000 | -16,756 |
| | | Min Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| | | Max Value | 0,00 | 15,55 | 0,00 | 7,392 | 0,000 | 21,972 |
| | | Max Case | LIVE | LIVE | LIVE | LIVE | LIVE | LIVE |
| LT 4 | B47 | Min Value | 0,00 | -8,86 | 0,00 | 0,109 | 0,000 | -24,601 |

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LOADING COMBINATIONS

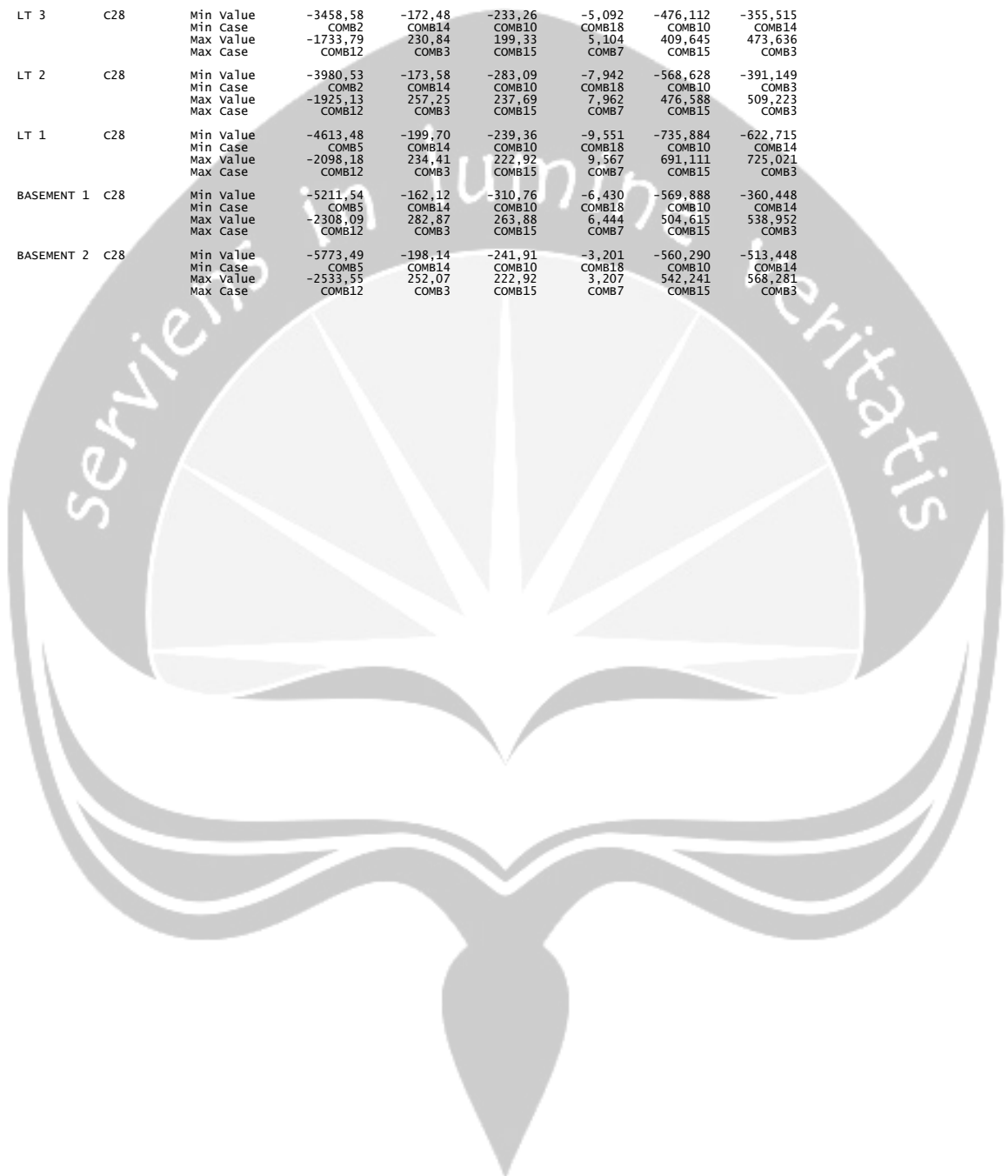
| COMBO | COMBO TYPE | CASE | CASE TYPE | SCALE FACTOR |
|--------|------------|-------|-----------|--------------|
| COMB0 | | | | |
| COMB1 | ADD | DEAD | Static | 1,4000 |
| | | SDEAD | Static | 1,4000 |
| COMB2 | ADD | DEAD | Static | 1,2000 |
| | | LIVE | Static | 1,6000 |
| | | SDEAD | Static | 1,2000 |
| COMB3 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | 0,3000 |
| COMB4 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | -0,3000 |
| COMB5 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | 0,3000 |
| COMB6 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | -0,3000 |
| COMB7 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | 1,0000 |
| COMB8 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | -1,0000 |
| COMB9 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | 1,0000 |
| COMB10 | ADD | DEAD | Static | 1,2000 |
| | | SDEAD | Static | 1,2000 |
| | | LIVE | Static | 1,0000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | -1,0000 |
| COMB11 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | 0,3000 |
| COMB12 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 1,0000 |
| | | EY | Static | -0,3000 |
| COMB13 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | 0,3000 |
| COMB14 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -1,0000 |
| | | EY | Static | -0,3000 |
| COMB15 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | 1,0000 |
| COMB16 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | 0,3000 |
| | | EY | Static | -1,0000 |
| COMB17 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | 1,0000 |
| COMB18 | ADD | DEAD | Static | 0,9000 |
| | | SDEAD | Static | 0,9000 |
| | | EX | Static | -0,3000 |
| | | EY | Static | -1,0000 |

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COLUMN FORCE ENVELOPES

| STORY | COLUMN | ITEM | P | V2 | V3 | T | M2 | M3 |
|-------|--------|-----------|----------|---------|---------|--------|----------|----------|
| LT 9 | C28 | Min Value | -549,89 | -25,64 | -101,70 | -0,360 | -188,613 | -199,866 |
| | | Min Case | COMB8 | COMB13 | COMB10 | COMB16 | COMB10 | COMB4 |
| | | Max Value | -273,75 | 110,55 | 36,15 | 0,385 | 167,323 | 187,056 |
| | | Max Case | COMB17 | COMB4 | COMB15 | COMB9 | COMB10 | COMB4 |
| | | | | | | | | |
| LT 8 | C28 | Min Value | -1006,04 | -78,19 | -141,29 | -0,462 | -281,994 | -170,800 |
| | | Min Case | COMB10 | COMB13 | COMB10 | COMB18 | COMB10 | COMB4 |
| | | Max Value | -508,04 | 114,24 | 85,88 | 0,494 | 212,537 | 229,026 |
| | | Max Case | COMB15 | COMB4 | COMB15 | COMB7 | COMB10 | COMB4 |
| | | | | | | | | |
| LT 7 | C28 | Min Value | -1476,92 | -109,80 | -179,30 | -0,503 | -363,559 | -234,295 |
| | | Min Case | COMB2 | COMB13 | COMB10 | COMB18 | COMB10 | COMB4 |
| | | Max Value | -764,20 | 156,22 | 126,06 | 0,537 | 263,999 | 312,458 |
| | | Max Case | COMB15 | COMB4 | COMB15 | COMB7 | COMB10 | COMB4 |
| | | | | | | | | |
| LT 6 | C28 | Min Value | -1960,54 | -143,18 | -213,28 | -0,607 | -437,604 | -291,005 |
| | | Min Case | COMB2 | COMB13 | COMB10 | COMB18 | COMB10 | COMB13 |
| | | Max Value | -1041,05 | 187,67 | 163,13 | 0,640 | 333,473 | 383,167 |
| | | Max Case | COMB15 | COMB4 | COMB15 | COMB7 | COMB15 | COMB4 |
| | | | | | | | | |
| LT 5 | C28 | Min Value | -2449,06 | -159,52 | -239,21 | -1,387 | -500,699 | -328,431 |
| | | Min Case | COMB2 | COMB13 | COMB10 | COMB18 | COMB10 | COMB13 |
| | | Max Value | -1291,25 | 210,90 | 192,70 | 1,417 | 404,437 | 434,150 |
| | | | | | | | | |
| | | | | | | | | |

| | | | | | | | | |
|------------|-----|-----------|----------|---------|---------|--------|----------|----------|
| | | Max Case | COMB11 | COMB4 | COMB15 | COMB7 | COMB15 | COMB4 |
| LT 4 | C28 | Min Value | -2950,09 | -146,40 | -216,21 | -5,068 | -453,865 | -315,783 |
| | | Min Case | COMB2 | COMB14 | COMB10 | COMB18 | COMB10 | COMB3 |
| | | Max Value | -1525,59 | 221,53 | 173,85 | 5,082 | 366,318 | 459,558 |
| | | Max Case | COMB12 | COMB3 | COMB15 | COMB7 | COMB15 | COMB3 |
| LT 3 | C28 | Min Value | -3458,58 | -172,48 | -233,26 | -5,092 | -476,112 | -355,515 |
| | | Min Case | COMB2 | COMB14 | COMB10 | COMB18 | COMB10 | COMB14 |
| | | Max Value | -1733,79 | 230,84 | 199,33 | 5,104 | 409,645 | 473,636 |
| | | Max Case | COMB12 | COMB3 | COMB15 | COMB7 | COMB15 | COMB3 |
| LT 2 | C28 | Min Value | -3980,53 | -173,58 | -283,09 | -7,942 | -568,628 | -391,149 |
| | | Min Case | COMB2 | COMB14 | COMB10 | COMB18 | COMB10 | COMB3 |
| | | Max Value | -1925,13 | 257,25 | 237,69 | 7,962 | 476,588 | 509,223 |
| | | Max Case | COMB12 | COMB3 | COMB15 | COMB7 | COMB15 | COMB3 |
| LT 1 | C28 | Min Value | -4613,48 | -199,70 | -239,36 | -9,551 | -735,884 | -622,715 |
| | | Min Case | COMB5 | COMB14 | COMB10 | COMB18 | COMB10 | COMB14 |
| | | Max Value | -2098,18 | 234,41 | 222,92 | 9,567 | 691,111 | 725,021 |
| | | Max Case | COMB12 | COMB3 | COMB15 | COMB7 | COMB15 | COMB3 |
| BASEMENT 1 | C28 | Min Value | -5211,54 | -162,12 | -310,76 | -6,430 | -569,888 | -360,448 |
| | | Min Case | COMB5 | COMB14 | COMB10 | COMB18 | COMB10 | COMB14 |
| | | Max Value | -2308,09 | 282,87 | 263,88 | 6,444 | 504,615 | 538,952 |
| | | Max Case | COMB12 | COMB3 | COMB15 | COMB7 | COMB15 | COMB3 |
| BASEMENT 2 | C28 | Min Value | -5773,49 | -198,14 | -241,91 | -3,201 | -560,290 | -513,448 |
| | | Min Case | COMB5 | COMB14 | COMB10 | COMB18 | COMB10 | COMB14 |
| | | Max Value | -2533,55 | 252,07 | 222,92 | 3,207 | 542,241 | 568,281 |
| | | Max Case | COMB12 | COMB3 | COMB15 | COMB7 | COMB15 | COMB3 |



ETABS v9.0.0 File:SKRIPSI STEPHEN Units:KN-m Juli 13, 2010 3:12
S U P P O R T R E A C T I O N S

| STORY | POINT | LOAD | FX | FY | FZ | MX | MY | MZ |
|-------|-------|-------|---------|---------|----------|---------|----------|--------|
| BASE | 1 | SDEAD | 0,97 | -2,75 | 236,92 | 2,514 | 0,803 | 0,000 |
| BASE | 1 | LIVE | 0,94 | -1,41 | 113,59 | 1,175 | 0,213 | -0,002 |
| BASE | 1 | EX | -198,18 | 0,02 | -1704,45 | -0,095 | -512,434 | -0,004 |
| BASE | 1 | EY | 16,07 | -162,85 | 1275,81 | 449,687 | 40,378 | -3,201 |
| BASE | 1 | DEAD | 4,73 | -5,75 | 835,27 | 4,876 | 1,978 | -0,002 |
| BASE | 2 | SDEAD | -0,84 | -2,53 | 385,59 | 2,314 | -0,844 | 0,000 |
| BASE | 2 | LIVE | 1,78 | -1,58 | 226,16 | 1,333 | 0,968 | -0,002 |
| BASE | 2 | EX | -198,19 | 0,04 | -1704,29 | -0,106 | -512,458 | -0,004 |
| BASE | 2 | EY | 6,20 | -201,04 | -356,08 | 484,441 | 16,243 | -3,201 |
| BASE | 2 | DEAD | 6,49 | -5,78 | 1236,47 | 4,904 | 3,570 | -0,002 |
| BASE | 3 | SDEAD | 0,80 | 2,52 | 397,86 | -2,287 | 0,650 | 0,000 |
| BASE | 3 | LIVE | 1,78 | 1,69 | 225,81 | -1,646 | 0,950 | -0,002 |
| BASE | 3 | EX | -198,19 | 0,03 | -1704,58 | -0,105 | -512,491 | -0,004 |
| BASE | 3 | EY | -6,21 | -201,04 | 355,99 | 484,442 | -16,265 | -3,201 |
| BASE | 3 | DEAD | 6,48 | 6,17 | 1235,36 | -5,968 | 3,551 | -0,002 |
| BASE | 4 | SDEAD | 1,01 | 2,78 | 237,34 | -2,525 | 0,841 | 0,000 |
| BASE | 4 | LIVE | 0,93 | 1,49 | 114,15 | -1,459 | 0,170 | -0,002 |
| BASE | 4 | EX | -198,20 | 0,02 | -1704,26 | -0,095 | -512,516 | -0,004 |
| BASE | 4 | EY | -16,07 | -162,85 | -1275,89 | 449,687 | -40,400 | -3,201 |
| BASE | 4 | DEAD | 4,72 | 6,03 | 837,86 | -5,841 | 1,934 | -0,002 |
| BASE | 5 | SDEAD | -2,30 | -2,54 | 536,86 | 2,309 | -2,178 | 0,000 |
| BASE | 5 | LIVE | -1,66 | -1,64 | 229,02 | 1,461 | -2,159 | -0,002 |
| BASE | 5 | EX | -189,07 | -0,02 | 1541,02 | 0,096 | -504,140 | -0,004 |
| BASE | 5 | EY | 14,42 | -230,01 | 1843,65 | 634,468 | 38,879 | -3,201 |
| BASE | 5 | DEAD | -6,40 | -6,27 | 1466,39 | 5,431 | -8,144 | -0,002 |
| BASE | 6 | SDEAD | 0,81 | -2,30 | 587,97 | 2,095 | 0,660 | 0,000 |
| BASE | 6 | LIVE | -2,89 | -2,10 | 359,22 | 1,882 | -3,286 | -0,002 |
| BASE | 6 | EX | -189,07 | -0,04 | 1540,96 | 0,106 | -504,166 | -0,004 |
| BASE | 6 | EY | 5,73 | -283,93 | -587,99 | 683,531 | 15,817 | -3,201 |
| BASE | 6 | DEAD | -8,67 | -6,82 | 2014,94 | 5,935 | -10,220 | -0,002 |
| BASE | 7 | SDEAD | 0,82 | 2,30 | 587,78 | -2,100 | 0,666 | 0,000 |
| BASE | 7 | LIVE | -2,90 | 2,13 | 389,40 | -1,969 | -3,307 | -0,002 |
| BASE | 7 | EX | -189,08 | -0,02 | 1540,99 | 0,105 | -504,189 | -0,004 |
| BASE | 7 | EY | -5,74 | -283,93 | 588,04 | 683,531 | -15,838 | -3,201 |
| BASE | 7 | DEAD | -8,68 | 7,12 | 2014,33 | -6,756 | -10,243 | -0,002 |
| BASE | 8 | SDEAD | -2,30 | 2,54 | 537,05 | -2,313 | -2,169 | 0,000 |
| BASE | 8 | LIVE | -1,68 | 1,66 | 229,40 | -1,541 | -2,205 | -0,002 |
| BASE | 8 | EX | -189,09 | -0,02 | 1540,69 | 0,095 | -504,220 | -0,004 |
| BASE | 8 | EY | -14,43 | -230,01 | -1843,60 | 634,468 | -38,900 | -3,201 |
| BASE | 8 | DEAD | -6,41 | 6,49 | 1469,46 | -6,177 | -8,194 | -0,002 |
| BASE | 9 | SDEAD | -2,67 | 0,90 | 577,31 | -0,820 | -2,508 | 0,000 |
| BASE | 9 | LIVE | -3,04 | -3,84 | 391,81 | 3,455 | -3,415 | -0,002 |
| BASE | 9 | EX | -229,25 | -0,02 | -489,95 | 0,073 | -540,712 | -0,004 |
| BASE | 9 | EY | 15,62 | -224,55 | 1969,18 | 614,951 | 39,972 | -3,201 |
| BASE | 9 | DEAD | -10,95 | -10,81 | 2039,69 | 9,557 | -12,285 | -0,002 |
| BASE | 10 | SDEAD | 3,41 | 1,00 | 534,36 | -0,907 | 3,022 | 0,000 |
| BASE | 10 | LIVE | 2,62 | -3,83 | 417,19 | 3,437 | 1,741 | -0,002 |
| BASE | 10 | EX | -234,29 | -0,04 | 789,48 | 0,069 | -545,296 | -0,004 |
| BASE | 10 | EY | 20,16 | -212,98 | 1795,83 | 582,594 | 44,100 | -3,201 |
| BASE | 10 | DEAD | 9,62 | -10,90 | 2134,93 | 9,620 | 6,427 | -0,002 |
| BASE | 11 | SDEAD | -1,85 | 0,78 | 490,76 | -0,707 | -1,762 | 0,000 |
| BASE | 11 | LIVE | -1,85 | -3,08 | 396,51 | 2,742 | -2,333 | -0,002 |
| BASE | 11 | EX | -240,17 | -0,01 | -515,58 | 0,021 | -550,647 | -0,004 |
| BASE | 11 | EY | 18,54 | -202,97 | 1800,76 | 560,760 | 42,625 | -3,201 |
| BASE | 11 | DEAD | -5,98 | -9,02 | 2021,19 | 7,906 | -7,765 | -0,002 |
| BASE | 12 | SDEAD | 0,17 | 0,91 | 523,36 | -0,822 | 0,078 | 0,000 |
| BASE | 12 | LIVE | -0,26 | 3,22 | 459,97 | 2,887 | -0,378 | -0,002 |
| BASE | 12 | EX | -228,54 | 0,01 | -90,32 | -0,015 | -540,062 | -0,004 |
| BASE | 12 | EY | 17,58 | -193,14 | 1694,55 | 533,623 | 41,753 | -3,201 |
| BASE | 12 | DEAD | -0,85 | -9,26 | 2210,04 | 8,105 | -3,097 | -0,002 |
| BASE | 13 | SDEAD | 4,03 | 0,49 | 290,18 | -0,440 | 3,583 | 0,000 |
| BASE | 13 | LIVE | -4,03 | -3,83 | 535,30 | 3,404 | -4,311 | -0,002 |
| BASE | 13 | EX | -215,72 | -0,04 | -515,04 | -0,063 | -527,941 | -0,004 |
| BASE | 13 | EY | 14,26 | -186,66 | 1687,09 | 509,548 | 38,729 | -3,201 |
| BASE | 13 | DEAD | -16,75 | -11,35 | 2581,47 | 9,996 | -17,566 | -0,002 |
| BASE | 15 | SDEAD | -1,75 | -0,05 | 139,07 | 0,051 | -1,669 | 0,000 |
| BASE | 15 | LIVE | 5,97 | -3,58 | 375,44 | 3,161 | 4,785 | -0,002 |
| BASE | 15 | EX | -230,49 | 0,02 | 989,37 | -0,075 | -541,835 | -0,004 |
| BASE | 15 | EY | 20,97 | -172,13 | 1376,32 | 469,044 | 44,838 | -3,201 |
| BASE | 15 | DEAD | 23,88 | -10,79 | 1976,05 | 9,471 | 19,406 | -0,002 |
| BASE | 16 | SDEAD | -1,78 | 0,07 | 139,58 | -0,059 | -1,699 | 0,000 |
| BASE | 16 | LIVE | 5,95 | 3,66 | 376,52 | -3,428 | 4,739 | -0,002 |
| BASE | 16 | EX | -230,52 | 0,02 | 990,00 | -0,080 | -541,924 | -0,004 |
| BASE | 16 | EY | -20,98 | -172,13 | -1376,26 | 469,044 | -44,862 | -3,201 |
| BASE | 16 | DEAD | 23,87 | 11,07 | 1979,87 | -10,421 | 19,361 | -0,002 |
| BASE | 18 | SDEAD | 4,03 | -0,50 | 290,22 | 0,458 | 3,595 | 0,000 |
| BASE | 18 | LIVE | -4,04 | 3,91 | 536,12 | -3,637 | -4,356 | -0,002 |
| BASE | 18 | EX | -215,24 | -0,01 | -518,14 | -0,022 | -528,020 | -0,004 |
| BASE | 18 | EY | -14,26 | -186,66 | -1687,13 | 509,548 | -38,751 | -3,201 |
| BASE | 18 | DEAD | -16,77 | 11,62 | 2581,79 | -10,908 | -17,623 | -0,002 |
| BASE | 19 | SDEAD | 0,16 | -0,91 | 520,85 | 0,835 | 0,069 | 0,000 |
| BASE | 19 | LIVE | -0,26 | 3,30 | 461,90 | -3,072 | -0,911 | -0,002 |
| BASE | 19 | EX | -228,56 | 0,00 | -89,57 | -0,003 | -540,143 | -0,004 |
| BASE | 19 | EY | -17,59 | -193,13 | -1694,53 | 533,623 | -41,776 | -3,201 |
| BASE | 19 | DEAD | -0,84 | 9,54 | 2212,16 | -9,000 | -3,125 | -0,002 |
| BASE | 20 | SDEAD | -1,86 | -0,81 | 480,11 | 0,738 | -1,769 | 0,000 |
| BASE | 20 | LIVE | -1,95 | 3,22 | 456,97 | -2,887 | -0,378 | -0,002 |
| BASE | 20 | EX | -240,99 | 0,02 | -515,84 | -0,002 | -550,722 | -0,004 |
| BASE | 20 | EY | -18,55 | -202,97 | -1800,81 | 560,760 | -42,649 | -3,201 |
| BASE | 20 | DEAD | -5,96 | 9,41 | 2037,43 | -8,872 | -7,786 | -0,002 |
| BASE | 21 | SDEAD | 3,42 | -1,03 | 523,08 | 0,937 | 3,035 | 0,000 |
| BASE | 21 | LIVE | 2,59 | 3,96 | 428,44 | -3,652 | 1,682 | -0,002 |
| BASE | 21 | EX | -234,30 | -0,01 | 787,96 | 0,044 | -545,368 | -0,004 |

| | | | | | | | | |
|-----------|------------|-------|----------|----------|----------|------------|--------------|-------------|
| BASE | 21 | EY | -20,17 | -212,98 | -1795,78 | 582,595 | -44,123 | -3,201 |
| BASE | 21 | DEAD | 9,59 | 11,27 | 2153,82 | -10,555 | 6,367 | -0,002 |
| BASE | 22 | SDEAD | -2,65 | -0,90 | 575,82 | 0,821 | -2,488 | 0,000 |
| BASE | 22 | LIVE | -3,07 | 3,88 | 393,60 | -3,564 | -3,476 | -0,002 |
| BASE | 22 | EX | -229,28 | -0,02 | -490,76 | 0,072 | -540,800 | -0,004 |
| BASE | 22 | EY | -15,63 | -224,55 | -1969,20 | 614,951 | -39,996 | -3,201 |
| BASE | 22 | DEAD | -10,99 | 11,05 | 2044,70 | -10,337 | -12,358 | -0,002 |
| BASE | 23 | SDEAD | -1,18 | -0,06 | 138,33 | 0,060 | -1,150 | 0,000 |
| BASE | 23 | LIVE | 10,85 | -3,67 | 656,09 | 3,240 | 9,222 | -0,002 |
| BASE | 23 | EX | -230,47 | 0,03 | 990,09 | -0,086 | -541,839 | -0,004 |
| BASE | 23 | EY | 6,81 | -212,09 | -421,06 | 505,408 | 16,799 | -3,201 |
| BASE | 23 | DEAD | 39,21 | -10,36 | 2841,85 | 9,078 | 33,344 | -0,002 |
| BASE | 24 | SDEAD | -2,69 | 0,05 | 150,50 | -0,037 | -2,524 | 0,000 |
| BASE | 24 | LIVE | 10,85 | 3,78 | 655,89 | -3,534 | 9,202 | -0,002 |
| BASE | 24 | EX | -230,49 | 0,03 | 989,91 | -0,087 | -541,880 | -0,004 |
| BASE | 24 | EY | -6,82 | -212,09 | 421,09 | 505,408 | -16,822 | -3,201 |
| BASE | 24 | DEAD | 39,19 | 10,74 | 2840,74 | -10,126 | 33,319 | -0,002 |
| BASE | 27 | SDEAD | 0,10 | 0,47 | 74,03 | -0,425 | 0,009 | 0,000 |
| BASE | 27 | LIVE | -4,68 | -2,13 | 826,72 | 1,862 | -4,912 | -0,002 |
| BASE | 27 | EX | -217,77 | -1,50 | -559,93 | -1,392 | -530,278 | -0,004 |
| BASE | 27 | EY | 6,96 | -229,93 | -384,11 | 548,917 | 16,932 | -3,201 |
| BASE | 27 | DEAD | -23,26 | -9,29 | 3532,39 | 8,119 | -23,503 | -0,002 |
| BASE | 28 | SDEAD | 0,13 | -0,48 | 73,88 | 0,438 | 0,039 | 0,000 |
| BASE | 28 | LIVE | -4,72 | 1,86 | 812,71 | -1,775 | -4,962 | -0,002 |
| BASE | 28 | EX | -217,15 | -1,15 | -547,10 | -1,016 | -529,736 | -0,004 |
| BASE | 28 | EY | -6,96 | -229,92 | 394,12 | 548,911 | -16,949 | -3,201 |
| BASE | 28 | DEAD | -23,56 | 8,63 | 3508,16 | -8,188 | -23,787 | -0,002 |
| BASE | 29 | SDEAD | 0,04 | -0,88 | 115,21 | 0,804 | -0,041 | 0,000 |
| BASE | 29 | LIVE | -0,08 | 6,11 | 835,98 | -5,632 | -0,737 | -0,002 |
| BASE | 29 | EX | -231,52 | 0,16 | -89,50 | -0,151 | -542,814 | -0,004 |
| BASE | 29 | EY | -6,94 | -238,51 | 458,33 | 574,911 | -16,933 | -3,201 |
| BASE | 29 | DEAD | -0,42 | 17,33 | 3242,56 | -16,085 | -2,728 | -0,002 |
| BASE | 30 | SDEAD | 0,07 | 0,88 | 119,30 | -0,799 | -0,011 | 0,000 |
| BASE | 30 | LIVE | -0,13 | -6,95 | 843,46 | 6,253 | -0,772 | -0,002 |
| BASE | 30 | EX | -232,48 | -0,19 | -89,99 | 0,168 | -543,670 | -0,004 |
| BASE | 30 | EY | 6,95 | -238,50 | -458,19 | 574,909 | 16,920 | -3,201 |
| BASE | 30 | DEAD | -0,51 | -19,44 | 3289,43 | 17,370 | -2,798 | -0,002 |
| BASE | 31 | SDEAD | 0,02 | 0,78 | 147,19 | -0,707 | -0,061 | 0,000 |
| BASE | 31 | LIVE | -4,29 | -4,52 | 679,20 | 4,055 | -4,555 | -0,002 |
| BASE | 31 | EX | -244,96 | 1,27 | -539,44 | -1,144 | -555,027 | -0,004 |
| BASE | 31 | EY | 7,45 | -250,64 | -464,18 | 604,137 | 17,376 | -3,201 |
| BASE | 31 | DEAD | -10,65 | -14,32 | 2908,35 | 12,722 | -12,025 | -0,002 |
| BASE | 32 | SDEAD | -0,01 | -0,76 | 124,52 | 0,690 | -0,086 | 0,000 |
| BASE | 32 | LIVE | -3,92 | 4,31 | 721,79 | -3,985 | -4,240 | -0,002 |
| BASE | 32 | EX | -242,81 | -0,18 | -508,43 | 0,179 | -553,090 | -0,004 |
| BASE | 32 | EY | -7,41 | -250,60 | 464,91 | 604,104 | -17,361 | -3,201 |
| BASE | 32 | DEAD | -10,16 | 13,12 | 2946,33 | -12,242 | -11,593 | -0,002 |
| BASE | 33 | SDEAD | 0,24 | 0,96 | 167,19 | -0,874 | 0,138 | 0,000 |
| BASE | 33 | LIVE | 5,21 | -2,66 | 675,40 | 2,374 | 4,085 | -0,002 |
| BASE | 33 | EX | -237,73 | -2,57 | 851,65 | 2,371 | -548,442 | -0,004 |
| BASE | 33 | EY | 6,29 | -263,36 | -525,65 | 628,443 | 16,326 | -3,201 |
| BASE | 33 | DEAD | 15,90 | -9,54 | 2979,33 | 8,380 | 12,134 | -0,002 |
| BASE | 34 | SDEAD | 0,26 | -0,94 | 143,82 | 0,851 | 0,162 | 0,000 |
| BASE | 34 | LIVE | 4,65 | 3,02 | 726,96 | -2,794 | 3,567 | -0,002 |
| BASE | 34 | EX | -235,71 | -1,16 | 807,88 | -1,024 | -546,630 | -0,004 |
| BASE | 34 | EY | -6,25 | -263,40 | 524,81 | 628,480 | -16,306 | -3,201 |
| BASE | 34 | DEAD | 15,24 | 9,79 | 3047,03 | -9,207 | 11,521 | -0,002 |
| BASE | 35 | SDEAD | 0,71 | -0,85 | 227,06 | 0,769 | 0,567 | 0,000 |
| BASE | 35 | LIVE | -4,41 | 1,01 | 609,44 | -0,954 | -4,683 | -0,002 |
| BASE | 35 | EX | -229,26 | -0,02 | -489,37 | 0,074 | -540,759 | -0,004 |
| BASE | 35 | EY | -7,93 | -277,58 | 514,79 | 663,208 | -17,837 | -3,201 |
| BASE | 35 | DEAD | -15,57 | 5,46 | 2746,64 | -5,249 | -16,520 | -0,002 |
| BASE | 36 | SDEAD | 0,68 | 0,85 | 229,40 | -0,775 | 0,543 | 0,000 |
| BASE | 36 | LIVE | -4,37 | -0,97 | 607,13 | 0,842 | -4,632 | -0,002 |
| BASE | 36 | EX | -229,23 | -0,04 | -489,29 | 0,091 | -540,710 | -0,004 |
| BASE | 36 | EY | 7,93 | -277,58 | -514,81 | 663,208 | 17,813 | -3,201 |
| BASE | 36 | DEAD | -15,52 | -5,15 | 2744,90 | 4,399 | -16,456 | -0,002 |
| Summation | 0, 0, Base | SDEAD | 0,00 | 0,00 | 10302,51 | 87881,190 | -254716,408 | 0,000 |
| Summation | 0, 0, Base | LIVE | 0,00 | 0,00 | 15736,40 | 133213,400 | -331364,630 | 0,000 |
| Summation | 0, 0, Base | EX | -7084,71 | 0,00 | 0,00 | 0,000 | -220645,028 | 60219,998 |
| Summation | 0, 0, Base | EY | 0,00 | -7084,71 | 0,00 | 220645,071 | 0,000 | -159989,237 |
| Summation | 0, 0, Base | DEAD | 0,00 | 0,00 | 73710,94 | 625973,217 | -1562142,503 | 0,000 |

Tabel Penulangan Lentur Balok

| Lantai | Balok | Dimensi (mm) | | Lokasi | Mu (kNm) | Rn | P | Pun | Poin | As _{pasang} (mm ²) | As _{min} (mm ²) | As _{pers} (mm ²) | As _{max} (mm ²) | Dipasang | | | |
|----------|-------|--------------|-----|--------|--------------|----------|--------|----------|--------|---|--------------------------------------|---------------------------------------|--------------------------------------|-----------|-----------|----|-----|
| | | b | h | | | | | | | | | | | | d | As | D |
| Lantai 9 | B34 | 500 | 700 | 639 | Tumpuan (+) | 79,598 | 0,4873 | 0,001290 | 0,0035 | 0,0244 | 1118,25 | 393,0630 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 42,276 | 0,2585 | 0,000650 | 0,0035 | 0,0244 | 1118,25 | 297,5619 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 139,196 | 0,9747 | 0,002485 | 0,0035 | 0,0244 | 1118,25 | 794,0174 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 39,799 | 0,2437 | 0,000612 | 0,0035 | 0,0244 | 1118,25 | 195,5741 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 173,888 | 0,7585 | 0,001915 | 0,0035 | 0,0244 | 1118,25 | 615,1580 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 211,969 | 1,2978 | 0,003312 | 0,0035 | 0,0244 | 1118,25 | 1064,4384 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 9 | B46 | 500 | 700 | 639 | Tumpuan (-) | 247,776 | 1,5170 | 0,003913 | 0,0035 | 0,0244 | 1118,25 | 1250,0997 | 7790,808 | 1250,0997 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 61,944 | 0,3793 | 0,000915 | 0,0035 | 0,0244 | 1118,25 | 305,2212 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 51,555 | 0,3157 | 0,000794 | 0,0035 | 0,0244 | 1118,25 | 253,7075 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 58,793 | 0,3597 | 0,000906 | 0,0035 | 0,0244 | 1118,25 | 289,3946 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 103,111 | 0,6313 | 0,001598 | 0,0035 | 0,0244 | 1118,25 | 510,6561 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 25,7775 | 0,1578 | 0,000396 | 0,0035 | 0,0244 | 1118,25 | 126,4562 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 8 | B83 | 500 | 700 | 639 | Tumpuan (+) | 175,6275 | 1,0753 | 0,002747 | 0,0035 | 0,0244 | 1118,25 | 877,8139 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 332,171 | 2,0338 | 0,005305 | 0,0035 | 0,0244 | 1118,25 | 1694,9939 | 7790,808 | 1694,9939 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 351,255 | 2,1506 | 0,005625 | 0,0035 | 0,0244 | 1118,25 | 1797,0740 | 7790,808 | 1797,0740 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 87,81375 | 0,5377 | 0,001359 | 0,0035 | 0,0244 | 1118,25 | 434,0745 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 109,4405 | 0,6701 | 0,001698 | 0,0035 | 0,0244 | 1118,25 | 542,4367 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 87,305 | 0,5245 | 0,001351 | 0,0035 | 0,0244 | 1118,25 | 431,5324 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 8 | B34 | 500 | 700 | 639 | Tumpuan (-) | 218,881 | 1,3401 | 0,003443 | 0,0035 | 0,0244 | 1118,25 | 1100,1382 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 54,72025 | 0,3350 | 0,000843 | 0,0035 | 0,0244 | 1118,25 | 269,3883 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 149,138 | 0,9131 | 0,002735 | 0,0035 | 0,0244 | 1118,25 | 742,9077 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 166,669 | 1,0205 | 0,002604 | 0,0035 | 0,0244 | 1118,25 | 832,0813 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 298,276 | 1,8262 | 0,004742 | 0,0035 | 0,0244 | 1118,25 | 1515,0525 | 7790,808 | 1515,0525 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 74,569 | 0,4566 | 0,001162 | 0,0035 | 0,0244 | 1118,25 | 368,0007 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 8 | B47 | 500 | 700 | 639 | Tumpuan (+) | 137,302 | 0,7794 | 0,001979 | 0,0035 | 0,0244 | 1118,25 | 632,3815 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 120,893 | 0,7602 | 0,001878 | 0,0035 | 0,0244 | 1118,25 | 600,0608 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 254,604 | 1,5588 | 0,004024 | 0,0035 | 0,0244 | 1118,25 | 1285,7083 | 7790,808 | 1285,7083 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 63,651 | 0,3897 | 0,000982 | 0,0035 | 0,0244 | 1118,25 | 313,6980 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 241,3435 | 1,4777 | 0,003908 | 0,0035 | 0,0244 | 1118,25 | 1216,6142 | 7790,808 | 1216,6142 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 290,239 | 1,7770 | 0,004609 | 0,0035 | 0,0244 | 1118,25 | 1472,6370 | 7790,808 | 1472,6370 | 1520,5308 | 4 | D22 |
| Lantai 7 | B83 | 500 | 700 | 639 | Tumpuan (-) | 482,687 | 2,9553 | 0,007875 | 0,0035 | 0,0244 | 1118,25 | 2515,9482 | 7790,808 | 2515,9482 | 2660,9290 | 7 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 120,6718 | 0,7388 | 0,001875 | 0,0035 | 0,0244 | 1118,25 | 598,9459 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 149,9285 | 0,9118 | 0,002322 | 0,0035 | 0,0244 | 1118,25 | 741,8374 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 145,518 | 0,8910 | 0,002268 | 0,0035 | 0,0244 | 1118,25 | 724,5357 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 297,857 | 1,8237 | 0,004735 | 0,0035 | 0,0244 | 1118,25 | 1512,8388 | 7790,808 | 1512,8388 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 74,46425 | 0,4559 | 0,001150 | 0,0035 | 0,0244 | 1118,25 | 367,0790 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 7 | B46 | 500 | 700 | 639 | Tumpuan (+) | 181,5785 | 1,1117 | 0,002843 | 0,0035 | 0,0244 | 1118,25 | 908,2516 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 230,408 | 1,4107 | 0,003630 | 0,0035 | 0,0244 | 1118,25 | 1159,8215 | 7790,808 | 1159,8215 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 363,157 | 2,2235 | 0,005825 | 0,0035 | 0,0244 | 1118,25 | 1861,0238 | 7790,808 | 1861,0238 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 90,78925 | 0,5559 | 0,001405 | 0,0035 | 0,0244 | 1118,25 | 448,9484 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |

Tabel Penulangan Lentur Balok

| Lantai | Balok | dimensi (mm) | | Lokasi | Mu (kNm) | βm | ρ | Pmax | Pmin | Aspasang (mm ²) | Asmax (mm ²) | Asperlu (mm ²) | As pasang (mm ²) | Dipasang As | Dipasang D | |
|----------|-------|--------------|-----|------------------|----------|--------|----------|--------|--------|-----------------------------|--------------------------|----------------------------|------------------------------|-------------|------------|-----|
| | | h | b | | | | | | | | | | | | | |
| Lantai 7 | 847 | 500 | 700 | 639 Tumpuan (+) | 173,871 | 1,0642 | 0,002719 | 0,0035 | 0,0244 | 1118,25 | 868,5811 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 202,304 | 1,2386 | 0,003176 | 0,0035 | 0,0244 | 1118,25 | 1014,6301 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 347,641 | 2,1285 | 0,005584 | 0,0035 | 0,0244 | 1118,25 | 1777,6998 | 7790,808 | 1777,6998 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 46,31025 | 0,3321 | 0,001344 | 0,0035 | 0,0244 | 1118,25 | 479,5602 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 245,417 | 1,6251 | 0,004201 | 0,0035 | 0,0244 | 1118,25 | 1342,2355 | 7790,808 | 1342,2355 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 299,142 | 1,8315 | 0,004726 | 0,0035 | 0,0244 | 1118,25 | 1519,6285 | 7790,808 | 1519,6285 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 530,834 | 3,2501 | 0,008722 | 0,0035 | 0,0244 | 1118,25 | 2786,6453 | 7790,808 | 2786,6453 | 3041,0617 | 8 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 132,7085 | 0,8125 | 0,002045 | 0,0035 | 0,0244 | 1118,25 | 659,6879 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 183,209 | 1,1217 | 0,002869 | 0,0035 | 0,0244 | 1118,25 | 916,5994 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 214,207 | 1,3115 | 0,003388 | 0,0035 | 0,0244 | 1118,25 | 1075,9902 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 6 | 847 | 500 | 700 | 639 Tumpuan (-) | 366,418 | 2,2434 | 0,005980 | 0,0035 | 0,0244 | 1118,25 | 1878,5825 | 7790,808 | 1878,5825 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 91,6645 | 0,5609 | 0,001418 | 0,0035 | 0,0244 | 1118,25 | 453,0257 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 109,8885 | 1,2851 | 0,003296 | 0,0035 | 0,0244 | 1118,25 | 1053,7057 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 285,402 | 1,7474 | 0,004529 | 0,0035 | 0,0244 | 1118,25 | 1447,1555 | 7790,808 | 1447,1555 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 419,777 | 2,5701 | 0,006787 | 0,0035 | 0,0244 | 1118,25 | 2168,3155 | 7790,808 | 2168,3155 | 2280,7963 | 6 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 104,9443 | 0,6425 | 0,001627 | 0,0035 | 0,0244 | 1118,25 | 519,8582 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 214,486 | 1,3132 | 0,003332 | 0,0035 | 0,0244 | 1118,25 | 1077,4308 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 273,531 | 1,6747 | 0,004334 | 0,0035 | 0,0244 | 1118,25 | 1384,7635 | 7790,808 | 1384,7635 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 428,972 | 2,6264 | 0,006944 | 0,0035 | 0,0244 | 1118,25 | 2218,7104 | 7790,808 | 2218,7104 | 2380,7963 | 6 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 107,243 | 0,6566 | 0,001660 | 0,0035 | 0,0244 | 1118,25 | 531,3980 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| Lantai 5 | 847 | 500 | 700 | 639 Tumpuan (+) | 795,8155 | 1,8112 | 0,004700 | 0,0035 | 0,0244 | 1118,25 | 1502,0570 | 7790,808 | 1502,0570 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 298,136 | 1,8254 | 0,004740 | 0,0035 | 0,0244 | 1118,25 | 1514,3128 | 7790,808 | 1514,3128 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 591,6311 | 3,6223 | 0,009811 | 0,0035 | 0,0244 | 1118,25 | 3134,5378 | 7790,808 | 3134,5378 | 2280,7963 | 6 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 147,9078 | 0,9056 | 0,002306 | 0,0035 | 0,0244 | 1118,25 | 736,6574 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 207,6105 | 1,3711 | 0,003261 | 0,0035 | 0,0244 | 1118,25 | 1041,9611 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 263,989 | 1,6163 | 0,004178 | 0,0035 | 0,0244 | 1118,25 | 1334,7607 | 7790,808 | 1334,7607 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 415,221 | 2,5422 | 0,006708 | 0,0035 | 0,0244 | 1118,25 | 2143,3971 | 7790,808 | 2143,3971 | 2280,7963 | 6 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 103,8053 | 0,6356 | 0,001608 | 0,0035 | 0,0244 | 1118,25 | 514,1439 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 232,2275 | 1,4218 | 0,003660 | 0,0035 | 0,0244 | 1118,25 | 1169,2593 | 7790,808 | 1169,2593 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 327,926 | 2,0078 | 0,005234 | 0,0035 | 0,0244 | 1118,25 | 1672,3632 | 7790,808 | 1672,3632 | 1900,6636 | 5 | D22 |
| Lantai 4 | 847 | 500 | 700 | 639 Tumpuan (-) | 464,455 | 2,8437 | 0,007557 | 0,0035 | 0,0244 | 1118,25 | 2414,5078 | 7790,808 | 2414,5078 | 2660,9290 | 7 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 116,1138 | 0,7109 | 0,001808 | 0,0035 | 0,0244 | 1118,25 | 575,9932 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 747,9355 | 1,5180 | 0,003915 | 0,0035 | 0,0244 | 1118,25 | 1250,9308 | 7790,808 | 1250,9308 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 331,598 | 2,0303 | 0,005296 | 0,0035 | 0,0244 | 1118,25 | 1691,9376 | 7790,808 | 1691,9376 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 495,871 | 3,0360 | 0,008106 | 0,0035 | 0,0244 | 1118,25 | 2589,6629 | 7790,808 | 2589,6629 | 2660,9290 | 7 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 123,9678 | 0,7590 | 0,001927 | 0,0035 | 0,0244 | 1118,25 | 635,5602 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |
| | | 500 | 700 | 639 Tumpuan (+) | 327,361 | 2,0043 | 0,005225 | 0,0035 | 0,0244 | 1118,25 | 1669,3532 | 7790,808 | 1669,3532 | 1900,6636 | 5 | D22 |
| | | 500 | 700 | 639 Lapangan (+) | 297,347 | 1,8205 | 0,004727 | 0,0035 | 0,0244 | 1118,25 | 1510,1448 | 7790,808 | 1510,1448 | 1520,5308 | 4 | D22 |
| | | 500 | 700 | 639 Tumpuan (-) | 654,722 | 4,0086 | 0,010964 | 0,0035 | 0,0244 | 1118,25 | 3503,1430 | 7790,808 | 3503,1430 | 3801,3271 | 10 | D22 |
| | | 500 | 700 | 639 Lapangan (-) | 163,6805 | 1,0023 | 0,002557 | 0,0035 | 0,0244 | 1118,25 | 816,8516 | 7790,808 | 1118,2500 | 1140,3981 | 3 | D22 |

Tabel Penulangan Lentur Balok

| Lantai | Balok | dimensi (mm) b x h x d | Lokok | Mu (kNm) | Rn | ρ | Pada | Pada | Asapada (mm ²) | Asumpu (mm ²) | Asperph (mm ²) | As usang (mm ²) | Dipasang As D |
|----------|-------------|---------------------------|--------------|-------------|----------|----------|---------|-----------|-------------------------------|------------------------------|-------------------------------|--------------------------------|------------------|
| Lantai 4 | B34 | 500 700 635 | Tumpuan (+) | 227,684 | 1,3634 | 0,003305 | 0,0244 | 1118,25 | 1119,8059 | 7790,808 | 1119,8059 | 1140,3981 | 3 022 |
| | | 500 700 635 | Lapangan (+) | 303,142 | 1,8560 | 0,004822 | 0,0035 | 1118,25 | 1540,7793 | 7790,808 | 1540,7793 | 1900,6636 | 5 022 |
| | | 500 700 635 | Tumpuan (-) | 445,367 | 2,7268 | 0,007227 | 0,0035 | 1118,25 | 2306,9152 | 7790,808 | 2306,9152 | 2660,9290 | 7 022 |
| | | 500 700 635 | Lapangan (-) | 111,3418 | 0,6817 | 0,001728 | 0,0035 | 1118,25 | 551,9914 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | B46 | 500 700 635 | Tumpuan (+) | 235,4495 | 1,4416 | 0,003712 | 0,0035 | 1118,25 | 1185,9833 | 7790,808 | 1185,9833 | 1520,5308 | 4 022 |
| | | 500 700 635 | Lapangan (+) | 331,745 | 2,0312 | 0,005298 | 0,0035 | 1118,25 | 1692,7716 | 7790,808 | 1692,7716 | 1900,6636 | 5 022 |
| | | 500 700 635 | Tumpuan (-) | 470,889 | 2,8831 | 0,007669 | 0,0035 | 1118,25 | 2450,2957 | 7790,808 | 2450,2957 | 2660,9290 | 7 022 |
| | | 500 700 635 | Lapangan (-) | 117,7248 | 0,7208 | 0,001828 | 0,0035 | 1118,25 | 584,1027 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | B47 | 500 700 635 | Tumpuan (+) | 250,925 | 1,5363 | 0,003864 | 0,0035 | 1118,25 | 1266,5138 | 7790,808 | 1266,5138 | 1520,5308 | 4 022 |
| | | 500 700 635 | Lapangan (+) | 347,119 | 2,0947 | 0,005471 | 0,0035 | 1118,25 | 1748,1358 | 7790,808 | 1748,1358 | 1900,6636 | 5 022 |
| | | 500 700 635 | Tumpuan (-) | 501,85 | 3,0726 | 0,008201 | 0,0035 | 1118,25 | 2623,1937 | 7790,808 | 2623,1937 | 2660,9290 | 7 022 |
| | | 500 700 635 | Lapangan (-) | 125,4625 | 0,7682 | 0,001960 | 0,0035 | 1118,25 | 633,0955 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| B83 | 500 700 635 | Tumpuan (+) | 284,583 | 1,7424 | 0,004516 | 0,0035 | 1118,25 | 1442,8444 | 7790,808 | 1442,8444 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 309,979 | 1,8976 | 0,004985 | 0,0035 | 1118,25 | 1576,7214 | 7790,808 | 1576,7214 | 1900,6636 | 5 022 | |
| | 500 700 635 | Tumpuan (-) | 569,166 | 3,4848 | 0,009406 | 0,0035 | 1118,25 | 3005,1766 | 7790,808 | 3005,1766 | 3041,0617 | 8 022 | |
| | 500 700 635 | Lapangan (-) | 142,2915 | 0,8712 | 0,002217 | 0,0035 | 1118,25 | 708,1814 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |
| B34 | 500 700 635 | Tumpuan (+) | 233,548 | 1,4298 | 0,003681 | 0,0035 | 1118,25 | 1176,1117 | 7790,808 | 1176,1117 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 328,001 | 2,0082 | 0,005296 | 0,0035 | 1118,25 | 1672,7628 | 7790,808 | 1672,7628 | 1900,6636 | 5 022 | |
| | 500 700 635 | Tumpuan (-) | 467,096 | 2,8599 | 0,007603 | 0,0035 | 1118,25 | 2429,1664 | 7790,808 | 2429,1664 | 2660,9290 | 7 022 | |
| | 500 700 635 | Lapangan (-) | 116,774 | 0,7150 | 0,001813 | 0,0035 | 1118,25 | 579,3164 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |
| B46 | 500 700 635 | Tumpuan (+) | 234,858 | 1,4379 | 0,003702 | 0,0035 | 1118,25 | 1182,9120 | 7790,808 | 1182,9120 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 328,135 | 2,0091 | 0,005238 | 0,0035 | 1118,25 | 1673,4768 | 7790,808 | 1673,4768 | 1900,6636 | 5 022 | |
| | 500 700 635 | Tumpuan (-) | 469,716 | 2,8759 | 0,007619 | 0,0035 | 1118,25 | 2443,7204 | 7790,808 | 2443,7204 | 2660,9290 | 7 022 | |
| | 500 700 635 | Lapangan (-) | 117,429 | 0,7190 | 0,001824 | 0,0035 | 1118,25 | 582,6137 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |
| B47 | 500 700 635 | Tumpuan (+) | 254,435 | 1,5578 | 0,004401 | 0,0035 | 1118,25 | 1284,8262 | 7790,808 | 1284,8262 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 370,285 | 2,2671 | 0,005945 | 0,0035 | 1118,25 | 1899,4271 | 7790,808 | 1899,4271 | 1900,6636 | 5 022 | |
| | 500 700 635 | Tumpuan (-) | 508,87 | 3,1156 | 0,008334 | 0,0035 | 1118,25 | 2662,6436 | 7790,808 | 2662,6436 | 3041,0617 | 8 022 | |
| | 500 700 635 | Lapangan (-) | 127,2175 | 0,7789 | 0,001978 | 0,0035 | 1118,25 | 631,9550 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |
| B83 | 500 700 635 | Tumpuan (+) | 294,5275 | 1,8033 | 0,004680 | 0,0035 | 1118,25 | 1495,2578 | 7790,808 | 1495,2578 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 368,28 | 1,8936 | 0,004304 | 0,0035 | 1118,25 | 1573,2815 | 7790,808 | 1573,2815 | 1900,6636 | 5 022 | |
| | 500 700 635 | Tumpuan (-) | 589,055 | 3,6066 | 0,009764 | 0,0035 | 1118,25 | 3119,6551 | 7790,808 | 3119,6551 | 3421,1944 | 9 022 | |
| | 500 700 635 | Lapangan (-) | 147,2638 | 0,9016 | 0,002295 | 0,0035 | 1118,25 | 733,3901 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |
| B34 | 500 700 635 | Tumpuan (+) | 248,62 | 1,5222 | 0,003806 | 0,0035 | 1118,25 | 1294,4977 | 7790,808 | 1294,4977 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 371,443 | 2,2742 | 0,005965 | 0,0035 | 1118,25 | 1905,6738 | 7790,808 | 1905,6738 | 2280,7963 | 6 022 | |
| | 500 700 635 | Tumpuan (-) | 497,24 | 3,0444 | 0,008129 | 0,0035 | 1118,25 | 2597,3348 | 7790,808 | 2597,3348 | 2660,9290 | 7 022 | |
| | 500 700 635 | Lapangan (-) | 124,31 | 0,7611 | 0,001982 | 0,0035 | 1118,25 | 617,2862 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |
| B46 | 500 700 635 | Tumpuan (+) | 253,7225 | 1,5534 | 0,004402 | 0,0035 | 1118,25 | 1281,1075 | 7790,808 | 1281,1075 | 1520,5308 | 4 022 | |
| | 500 700 635 | Lapangan (+) | 365,43 | 2,2374 | 0,005863 | 0,0035 | 1118,25 | 1873,2606 | 7790,808 | 1873,2606 | 1900,6636 | 5 022 | |
| | 500 700 635 | Tumpuan (-) | 507,445 | 3,1069 | 0,008309 | 0,0035 | 1118,25 | 2654,6285 | 7790,808 | 2654,6285 | 2660,9290 | 7 022 | |
| | 500 700 635 | Lapangan (-) | 126,8613 | 0,7767 | 0,001972 | 0,0035 | 1118,25 | 630,1571 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |

Tabel Penulangan Lentur Balok

| Lantai | Balok | dimensi (mm) | | Lokasi | Mu (kNm) | Ro | ρ | f _{peak} | P _{max} | A _s (mm ²) | A _s (mm ²) | Aspek _h (mm ²) | As _{pasang} (mm ²) | Dipasang | |
|----------|-------|--------------|-----|--------------|--------------|----------|----------|-------------------|------------------|-----------------------------------|-----------------------------------|---------------------------------------|---|-----------|-------|
| | | b | h | | | | | | | | | | | | d |
| Lantai 2 | B47 | 500 | 700 | 639 | Tumpuan (+) | 275,839 | 1,6888 | 0,004377 | 0,0035 | 0,0244 | 1118,25 | 1396,8753 | 7790,808 | 1520,5308 | 4 D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 419,644 | 2,5693 | 0,006784 | 0,0035 | 0,0244 | 1118,25 | 2167,5876 | 7790,808 | 2280,7963 | 6 D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 551,677 | 3,3777 | 0,009093 | 0,0035 | 0,0244 | 1118,25 | 2905,1323 | 7790,808 | 3041,0617 | 8 D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 137,9193 | 0,8444 | 0,002147 | 0,0035 | 0,0244 | 1118,25 | 486,0414 | 7790,808 | 1140,3981 | 3 D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 302,3895 | 1,8514 | 0,004810 | 0,0035 | 0,0244 | 1118,25 | 1536,7985 | 7790,808 | 1900,6636 | 5 D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 299,542 | 1,8340 | 0,004761 | 0,0035 | 0,0244 | 1118,25 | 1521,7425 | 7790,808 | 1900,6636 | 5 D22 |
| | B83 | 500 | 700 | 639 | Tumpuan (-) | 604,779 | 3,7028 | 0,010049 | 0,0035 | 0,0244 | 1118,25 | 3210,7010 | 7790,808 | 3421,1944 | 9 D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 151,1948 | 0,9257 | 0,002358 | 0,0035 | 0,0244 | 1118,25 | 753,3426 | 7790,808 | 1140,3981 | 3 D22 |
| | | 500 | 700 | 639 | Tumpuan (+) | 292,3995 | 1,7903 | 0,004645 | 0,0035 | 0,0244 | 1118,25 | 1484,0298 | 7790,808 | 1520,5308 | 4 D22 |
| | | 500 | 700 | 639 | Lapangan (+) | 450,409 | 2,7577 | 0,007314 | 0,0035 | 0,0244 | 1118,25 | 2336,7468 | 7790,808 | 2660,9790 | 7 D22 |
| | | 500 | 700 | 639 | Tumpuan (-) | 584,799 | 3,5805 | 0,009687 | 0,0035 | 0,0244 | 1118,25 | 3095,0543 | 7790,808 | 3421,1944 | 9 D22 |
| | | 500 | 700 | 639 | Lapangan (-) | 146,1998 | 0,8951 | 0,002279 | 0,0035 | 0,0244 | 1118,25 | 727,9930 | 7790,808 | 1140,3981 | 3 D22 |
| B46 | 500 | 700 | 639 | Tumpuan (+) | 280,463 | 1,7172 | 0,004448 | 0,0035 | 0,0244 | 1118,25 | 1421,1720 | 7790,808 | 1520,5308 | 4 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 415,58 | 2,5444 | 0,006715 | 0,0035 | 0,0244 | 1118,25 | 2145,3594 | 7790,808 | 2280,7963 | 6 D22 | |
| | 500 | 700 | 639 | Tumpuan (-) | 560,926 | 3,4343 | 0,009258 | 0,0035 | 0,0244 | 1118,25 | 2957,9688 | 7790,808 | 3041,0617 | 8 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 140,2315 | 0,8586 | 0,002184 | 0,0035 | 0,0244 | 1118,25 | 697,7470 | 7790,808 | 1140,3981 | 3 D22 | |
| | 500 | 700 | 639 | Tumpuan (+) | 326,047 | 1,9863 | 0,005203 | 0,0035 | 0,0244 | 1118,25 | 1662,3548 | 7790,808 | 1900,6636 | 5 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 537,582 | 3,2914 | 0,008942 | 0,0035 | 0,0244 | 1118,25 | 2824,9183 | 7790,808 | 3041,0617 | 8 D22 | |
| B47 | 500 | 700 | 639 | Tumpuan (-) | 652,094 | 3,9925 | 0,010916 | 0,0035 | 0,0244 | 1118,25 | 3487,6284 | 7790,808 | 3801,3271 | 10 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 163,0235 | 0,9881 | 0,002546 | 0,0035 | 0,0244 | 1118,25 | 813,5046 | 7790,808 | 1140,3981 | 3 D22 | |
| | 500 | 700 | 639 | Tumpuan (+) | 377,743 | 2,0067 | 0,005231 | 0,0035 | 0,0244 | 1118,25 | 1671,3882 | 7790,808 | 1900,6636 | 5 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 297,612 | 1,8222 | 0,004731 | 0,0035 | 0,0244 | 1118,25 | 1511,5446 | 7790,808 | 1520,5308 | 4 D22 | |
| | 500 | 700 | 639 | Tumpuan (-) | 655,486 | 4,0133 | 0,010979 | 0,0035 | 0,0244 | 1118,25 | 3507,6560 | 7790,808 | 3801,3271 | 10 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 163,8715 | 1,0033 | 0,002560 | 0,0035 | 0,0244 | 1118,25 | 817,8247 | 7790,808 | 1140,3981 | 3 D22 | |
| B34 | 500 | 700 | 639 | Tumpuan (+) | 255,3755 | 1,5633 | 0,004036 | 0,0035 | 0,0244 | 1118,25 | 1289,4749 | 7790,808 | 1289,4749 | 4 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 373,717 | 2,2881 | 0,006003 | 0,0035 | 0,0244 | 1118,25 | 1917,9466 | 7790,808 | 2280,7963 | 6 D22 | |
| | 500 | 700 | 639 | Tumpuan (-) | 510,651 | 3,1265 | 0,008365 | 0,0035 | 0,0244 | 1118,25 | 2672,6662 | 7790,808 | 3041,0617 | 8 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 127,6628 | 0,7816 | 0,001985 | 0,0035 | 0,0244 | 1118,25 | 634,2024 | 7790,808 | 1140,3981 | 3 D22 | |
| | 500 | 700 | 639 | Tumpuan (+) | 347,1375 | 1,4825 | 0,003821 | 0,0035 | 0,0244 | 1118,25 | 1720,7443 | 7790,808 | 1520,5308 | 4 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 336,6 | 2,0609 | 0,005379 | 0,0035 | 0,0244 | 1118,25 | 1718,6348 | 7790,808 | 1900,6636 | 5 D22 | |
| B46 | 500 | 700 | 639 | Tumpuan (-) | 484,275 | 2,9650 | 0,007902 | 0,0035 | 0,0244 | 1118,25 | 2524,8110 | 7790,808 | 2660,9790 | 7 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 121,0688 | 0,7413 | 0,001388 | 0,0035 | 0,0244 | 1118,25 | 600,9464 | 7790,808 | 1140,3981 | 3 D22 | |
| | 500 | 700 | 639 | Tumpuan (+) | 276,342 | 1,6919 | 0,004380 | 0,0035 | 0,0244 | 1118,25 | 1399,5191 | 7790,808 | 1520,5308 | 4 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 463,338 | 2,8367 | 0,007537 | 0,0035 | 0,0244 | 1118,25 | 2408,2006 | 7790,808 | 2660,9790 | 7 D22 | |
| | 500 | 700 | 639 | Tumpuan (-) | 552,684 | 3,3939 | 0,009111 | 0,0035 | 0,0244 | 1118,25 | 2910,8772 | 7790,808 | 3041,0617 | 8 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 138,171 | 0,8460 | 0,002151 | 0,0035 | 0,0244 | 1118,25 | 687,3155 | 7790,808 | 1140,3981 | 3 D22 | |
| B83 | 500 | 700 | 639 | Tumpuan (+) | 292,8175 | 1,7928 | 0,004652 | 0,0035 | 0,0244 | 1118,25 | 1486,2347 | 7790,808 | 1520,5308 | 4 D22 | |
| | 500 | 700 | 639 | Lapangan (+) | 293,887 | 1,7994 | 0,004669 | 0,0035 | 0,0244 | 1118,25 | 1491,8776 | 7790,808 | 1520,5308 | 4 D22 | |
| | 500 | 700 | 639 | Tumpuan (-) | 585,635 | 3,5856 | 0,009702 | 0,0035 | 0,0244 | 1118,25 | 3099,9160 | 7790,808 | 3421,1944 | 9 D22 | |
| | 500 | 700 | 639 | Lapangan (-) | 146,4088 | 0,8964 | 0,002282 | 0,0035 | 0,0244 | 1118,25 | 729,0530 | 7790,808 | 1140,3981 | 3 D22 | |

Tabel Penulangan Lentur Balok

| Lantai | Balok | dimensi (mm) | | | Torsi | Mu (kNm) | Rn | ρ | Poin | Poin | As (mm ²) | Asmax (mm ²) | Asperlu (mm ²) | As (mm ²) | Dipasang |
|------------|-------|--------------|-----|-----|----------|----------|----------|----------|--------|---------|-----------------------|--------------------------|----------------------------|-----------------------|----------|
| | | b | h | d | | | | | | | | | | | |
| Basement 2 | B34 | 500 | 700 | 639 | (+) | 180,891 | 1,1075 | 0,002832 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | | 500 | 700 | 639 | (-) | 224,497 | 1,3745 | 0,003534 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | | 500 | 700 | 639 | (+) | 361,782 | 2,2151 | 0,005802 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1853,6237 | 1900,6636 | 5 022 |
| | | 500 | 700 | 639 | (-) | 90,4455 | 0,5538 | 0,001400 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | B46 | 500 | 700 | 639 | (+) | 175,164 | 1,0725 | 0,002740 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | | 500 | 700 | 639 | (-) | 200,182 | 1,2256 | 0,003142 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | | 500 | 700 | 639 | (+) | 350,328 | 2,1449 | 0,005609 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1792,1026 | 1900,6636 | 5 022 |
| | | 500 | 700 | 639 | (-) | 87,582 | 0,5362 | 0,001355 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | B47 | 500 | 700 | 639 | (+) | 183,3135 | 1,1724 | 0,002871 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| | | 500 | 700 | 639 | (-) | 290,51 | 1,7787 | 0,004614 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1474,0657 | 1520,5308 | 4 022 |
| | | 500 | 700 | 639 | (+) | 366,627 | 2,2447 | 0,005883 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1879,7085 | 1900,6636 | 5 022 |
| | | 500 | 700 | 639 | (-) | 91,65675 | 0,5612 | 0,001419 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 |
| B83 | 500 | 700 | 639 | (+) | 236,1655 | 1,4460 | 0,003724 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1189,7017 | 1520,5308 | 4 022 | |
| | 500 | 700 | 639 | (-) | 291,791 | 1,7865 | 0,004635 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1480,8203 | 1520,5308 | 4 022 | |
| | 500 | 700 | 639 | (+) | 472,331 | 2,8919 | 0,007604 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 2458,2583 | 2660,9240 | 7 022 | |
| | 500 | 700 | 639 | (-) | 118,0828 | 0,7230 | 0,001834 | 0,0035 | 0,0244 | 1118,25 | 7790,808 | 1118,2500 | 1140,3981 | 3 022 | |

Tabel Perhitungan Momen Kapasitas Positif Balok

| Lantai | Balok | Asumsi (mm) | | Tol. Atas Pelat | | Tol. Lintang Piat | | Tol. Atas Balok | Tol. Bawah Balok | As | As' | be | bf | fc | Mikrop | |
|------------|-------|-------------|-----|-------------------------|-------------------------|-------------------|---------|-----------------|------------------|---------|------|-------|-----|---------|---------|---------|
| | | h | d | Luas (mm ²) | Luas (mm ²) | | | | | | | | | | | |
| | | h | b | h | d | | | | | | | | | | | |
| Lantai 9 | 814 | 500 | 700 | 639 | 467,31 | 1140,40 | 1140,40 | 1140,40 | 1140,40 | 1420,79 | 1350 | 425 | 400 | 400 | 310,762 | |
| | 846 | 500 | 700 | 639 | 280,05 | 296,05 | 1520,53 | 1140,40 | 1140,40 | 1688,56 | 1540 | 520 | 400 | 400 | 315,795 | |
| | 847 | 500 | 700 | 639 | 212,06 | 212,06 | 1140,40 | 1140,40 | 1140,40 | 1267,63 | 1100 | 300 | 400 | 360,642 | 304,056 | |
| | 883 | 500 | 700 | 639 | 425,63 | 435,63 | 1900,66 | 1140,40 | 1140,40 | 2162,04 | 1540 | 520 | 400 | 373,256 | 320,707 | |
| Lantai 8 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 1474,19 | 1350 | 425 | 400 | 400 | 311,640 | |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 1520,53 | 1140,40 | 1140,40 | 1741,07 | 1540 | 520 | 400 | 400 | 316,663 | |
| | 847 | 500 | 700 | 639 | 314,16 | 314,16 | 1520,53 | 1140,40 | 1140,40 | 1709,03 | 1100 | 300 | 400 | 302,29 | 306,515 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 2660,93 | 1520,53 | 1520,53 | 3099,34 | 1540 | 520 | 400 | 365,08 | 412,876 | |
| Lantai 7 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 1854,33 | 1350 | 425 | 400 | 400 | 360,623 | 314,265 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 1900,66 | 1140,40 | 1140,40 | 2131,20 | 1540 | 520 | 400 | 377,43 | 320,481 | |
| | 847 | 500 | 700 | 639 | 314,16 | 314,16 | 1900,66 | 1140,40 | 1140,40 | 2089,16 | 1100 | 300 | 400 | 265,202 | 307,308 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3041,06 | 1520,53 | 1520,53 | 3449,47 | 1540 | 520 | 400 | 300,854 | 430,987 | |
| Lantai 6 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 2214,46 | 1350 | 425 | 400 | 400 | 320,066 | 315,541 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 2280,80 | 1140,40 | 1140,40 | 2501,34 | 1540 | 520 | 400 | 336,787 | 321,855 | |
| | 847 | 500 | 700 | 639 | 314,16 | 314,16 | 2280,80 | 1140,40 | 1140,40 | 2469,29 | 1100 | 300 | 400 | 236,479 | 306,088 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 2880,13 | 1520,53 | 1520,53 | 3381,47 | 1540 | 520 | 400 | 288,207 | 316,568 | |
| Lantai 5 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 2594,72 | 1350 | 425 | 400 | 400 | 275,3 | 412,228 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 2660,93 | 1520,53 | 1520,53 | 2849,42 | 1100 | 300 | 400 | 180,392 | 307,665 | |
| | 847 | 500 | 700 | 639 | 314,16 | 314,16 | 2660,93 | 1520,53 | 1520,53 | 2809,73 | 1540 | 520 | 400 | 260,792 | 331,509 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3001,33 | 1900,66 | 1900,66 | 4209,73 | 1540 | 520 | 400 | 300,854 | 430,987 | |
| Lantai 4 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 2994,72 | 1350 | 425 | 400 | 400 | 275,3 | 412,228 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 2660,93 | 1520,53 | 1520,53 | 2881,47 | 1540 | 520 | 400 | 218,75 | 410,996 | |
| | 847 | 500 | 700 | 639 | 314,16 | 314,16 | 2660,93 | 1520,53 | 1520,53 | 2849,42 | 1100 | 300 | 400 | 320,329 | 449,217 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3041,06 | 1900,66 | 1900,66 | 3449,47 | 1540 | 520 | 400 | 300,854 | 430,987 | |
| Lantai 3 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 3229,56 | 1350 | 425 | 400 | 400 | 280,375 | 406,487 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 2660,93 | 1520,53 | 1520,53 | 2881,47 | 1540 | 520 | 400 | 275,3 | 412,228 | |
| | 847 | 500 | 700 | 639 | 314,16 | 314,16 | 2660,93 | 1520,53 | 1520,53 | 2829,60 | 1100 | 300 | 400 | 218,75 | 410,996 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3041,06 | 1900,66 | 1900,66 | 3449,47 | 1540 | 520 | 400 | 320,329 | 449,217 | |
| Lantai 2 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 3469,91 | 1350 | 425 | 400 | 400 | 275,3 | 412,228 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 2660,93 | 1520,53 | 1520,53 | 2984,91 | 1125 | 412,5 | 400 | 225,328 | 405,632 | |
| | 847 | 500 | 700 | 639 | 301,07 | 301,07 | 2660,93 | 1520,53 | 1520,53 | 2881,47 | 1540 | 520 | 400 | 275,3 | 412,228 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3041,06 | 1900,66 | 1900,66 | 3449,47 | 1540 | 520 | 400 | 213,058 | 406,798 | |
| Lantai 1 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 3745,17 | 1350 | 425 | 400 | 400 | 294,474 | 535,516 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 3041,06 | 1520,53 | 1520,53 | 3745,17 | 1525 | 412,5 | 400 | 281,613 | 437,458 | |
| | 847 | 500 | 700 | 639 | 301,07 | 301,07 | 3041,06 | 1520,53 | 1520,53 | 3251,60 | 1540 | 520 | 400 | 316,41 | 431,847 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3041,06 | 1900,66 | 1900,66 | 3449,47 | 1540 | 520 | 400 | 185,242 | 506,944 | |
| Basement 1 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 4209,73 | 1350 | 425 | 400 | 400 | 249,702 | 533,459 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 2660,93 | 1520,53 | 1520,53 | 3160,13 | 1313 | 406,3 | 400 | 250,383 | 420,862 | |
| | 847 | 500 | 700 | 639 | 294,52 | 294,52 | 3041,06 | 1520,53 | 1520,53 | 2811,78 | 1063 | 281,3 | 400 | 275,3 | 412,228 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 3423,19 | 1520,53 | 1520,53 | 3829,60 | 1540 | 520 | 400 | 210,18 | 490,135 | |
| Basement 2 | 814 | 500 | 700 | 639 | 556,32 | 556,32 | 1140,40 | 1140,40 | 1140,40 | 4509,91 | 1350 | 425 | 400 | 400 | 320,329 | 449,217 |
| | 846 | 500 | 700 | 639 | 367,57 | 367,57 | 1900,66 | 1140,40 | 1140,40 | 2121,20 | 1540 | 520 | 400 | 377,43 | 330,481 | |
| | 847 | 500 | 700 | 639 | 294,52 | 294,52 | 1900,66 | 1140,40 | 1140,40 | 2077,38 | 1063 | 281,3 | 400 | 256,58 | 306,081 | |
| | 883 | 500 | 700 | 639 | 680,68 | 680,68 | 2660,93 | 1520,53 | 1520,53 | 3099,34 | 1540 | 520 | 400 | 265,08 | 412,876 | |

Tabel Perhitungan Momen Kapasitas Negatif Balok

| Lantai | Balok | dimensi (mm) | | Tul. Atas Peleir | | Tul. Bawah Peleir | | Tul. Atas Balok | Tul. Bawah Balok | As | As' | Ie | Ie' | S' | Min |
|------------|-------|--------------|-----|-------------------------|-------------------------|-------------------|-----------------|-----------------|------------------|---------|-----------|-----------|-----------|---------|-----|
| | | b | h | Luas (mm ²) | Luas (mm ²) | mm ² | mm ² | | | | | | | | |
| Lantai 9 | 834 | 500 | 700 | 639 | 467,31 | 1140,40 | 1140,40 | 1701,17 | 1140,40 | 1340,40 | 1540 | 520 | 58,605006 | 423,381 | |
| | 846 | 500 | 700 | 639 | 280,05 | 1140,40 | 1140,40 | 1856,59 | 1340,40 | 1540 | 520 | 58,617528 | 457,316 | | |
| | 847 | 500 | 700 | 639 | 212,06 | 1140,40 | 1140,40 | 1394,87 | 1340,40 | 1540 | 520 | 18,292161 | 347,866 | | |
| Lantai 8 | 883 | 500 | 700 | 639 | 435,63 | 1140,40 | 1140,40 | 2423,42 | 1340,40 | 1540 | 520 | 155,78733 | 591,941 | | |
| | 834 | 500 | 700 | 639 | 556,32 | 1140,40 | 1140,40 | 1807,99 | 1340,40 | 1540 | 520 | 82,138712 | 449,741 | | |
| | 846 | 500 | 700 | 639 | 367,57 | 1140,40 | 1140,40 | 1961,61 | 1340,40 | 1540 | 520 | 88,257062 | 483,248 | | |
| Lantai 7 | 847 | 500 | 700 | 639 | 314,16 | 1140,40 | 1140,40 | 1897,52 | 1340,40 | 1540 | 520 | 74,00567 | 467,437 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 2660,93 | 3477,74 | 1520,53 | 1540 | 520 | 253,64367 | 838,973 | | |
| | 834 | 500 | 700 | 639 | 556,32 | 1140,40 | 1140,40 | 2188,12 | 1340,40 | 1540 | 520 | 134,35876 | 539,034 | | |
| Lantai 6 | 846 | 500 | 700 | 639 | 314,16 | 1140,40 | 1140,40 | 2277,65 | 1340,40 | 1540 | 520 | 140,52661 | 571,863 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 3041,06 | 3857,88 | 1520,53 | 1540 | 520 | 241,23141 | 901,975 | | |
| | 834 | 500 | 700 | 639 | 556,32 | 1140,40 | 1140,40 | 2568,25 | 1340,40 | 1540 | 520 | 186,84923 | 659,624 | | |
| Lantai 5 | 846 | 500 | 700 | 639 | 367,57 | 1140,40 | 1140,40 | 2657,79 | 1340,40 | 1540 | 520 | 175,92911 | 643,924 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 2280,80 | 2657,79 | 1520,53 | 1540 | 520 | 202,36356 | 752,208 | | |
| | 834 | 500 | 700 | 639 | 556,32 | 1140,40 | 1140,40 | 2948,38 | 1340,40 | 1540 | 520 | 222,25845 | 714,463 | | |
| Lantai 4 | 846 | 500 | 700 | 639 | 367,57 | 1520,53 | 2660,93 | 3102,01 | 1520,53 | 1540 | 520 | 205,85478 | 747,423 | | |
| | 847 | 500 | 700 | 639 | 314,16 | 1520,53 | 2660,93 | 3037,92 | 1520,53 | 1540 | 520 | 196,78444 | 731,704 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 3041,06 | 3857,88 | 1520,53 | 1540 | 520 | 241,23141 | 901,975 | | |
| Lantai 3 | 834 | 500 | 700 | 639 | 556,32 | 1140,40 | 1140,40 | 3328,52 | 1340,40 | 1540 | 520 | 235,69868 | 802,741 | | |
| | 846 | 500 | 700 | 639 | 367,57 | 1520,53 | 2660,93 | 3102,01 | 1520,53 | 1540 | 520 | 205,85478 | 747,423 | | |
| | 847 | 500 | 700 | 639 | 314,16 | 1520,53 | 3041,06 | 3418,05 | 1520,53 | 1540 | 520 | 182,07842 | 799,317 | | |
| Lantai 2 | 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 3421,19 | 4238,01 | 1520,53 | 1540 | 520 | 237,23217 | 963,743 | | |
| | 834 | 500 | 700 | 639 | 530,96 | 1520,53 | 2660,93 | 3308,88 | 1520,53 | 1540 | 520 | 233,24033 | 797,960 | | |
| | 846 | 500 | 700 | 639 | 367,57 | 1520,53 | 2660,93 | 3102,01 | 1520,53 | 1540 | 520 | 205,85478 | 747,423 | | |
| Lantai 1 | 847 | 500 | 700 | 639 | 301,07 | 1520,53 | 3041,06 | 3402,34 | 1520,53 | 1540 | 520 | 179,71176 | 791,375 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1900,66 | 3421,19 | 4238,01 | 1900,66 | 1540 | 520 | 220,58741 | 963,377 | | |
| | 834 | 500 | 700 | 639 | 539,96 | 1520,53 | 2660,93 | 3328,52 | 1520,53 | 1540 | 520 | 216,20255 | 823,208 | | |
| Basement 1 | 846 | 500 | 700 | 639 | 367,57 | 1520,53 | 3041,06 | 3482,14 | 1520,53 | 1540 | 520 | 191,53677 | 810,870 | | |
| | 847 | 500 | 700 | 639 | 301,07 | 1900,66 | 3801,33 | 4162,61 | 1900,66 | 1540 | 520 | 198,85851 | 918,351 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1900,66 | 3801,33 | 4618,14 | 1900,66 | 1540 | 520 | 251,25954 | 1048,179 | | |
| Basement 2 | 846 | 500 | 700 | 639 | 367,57 | 1520,53 | 2660,93 | 3102,01 | 1520,53 | 1540 | 520 | 205,85478 | 747,423 | | |
| | 847 | 500 | 700 | 639 | 294,52 | 1520,53 | 3041,06 | 3394,49 | 1520,53 | 1540 | 520 | 178,52312 | 789,454 | | |
| | 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 3421,19 | 4238,01 | 1520,53 | 1540 | 520 | 237,23217 | 963,743 | | |
| Basement 2 | 834 | 500 | 700 | 639 | 531,78 | 1140,40 | 1900,66 | 2538,80 | 1140,40 | 1540 | 520 | 176,11925 | 620,240 | | |
| | 846 | 500 | 700 | 639 | 367,57 | 1140,40 | 1900,66 | 2341,74 | 1140,40 | 1540 | 520 | 140,52661 | 571,863 | | |
| | 847 | 500 | 700 | 639 | 294,52 | 1140,40 | 1900,66 | 2254,09 | 1140,40 | 1540 | 520 | 123,28039 | 556,282 | | |
| 883 | 500 | 700 | 639 | 680,68 | 1520,53 | 2660,93 | 3477,74 | 1520,53 | 1540 | 520 | 253,64367 | 838,973 | | | |

Tabel Perhitungan Tulangan Geser

| Lantai | Balok | dimensi b x h | Lu m ² | V _a kN | M _a kNm | M _{seis} kNm | V _{seis} kN | V _{seis} kN/m | Seis Plastik | | Luar Seis Plastik | | | | | | | | |
|------------|-------|------------------|----------------------|----------------------|-----------------------|--------------------------|-------------------------|---------------------------|----------------|----------------|-------------------|----------------|--------|--------|--------|---|---|----|-----|
| | | | | | | | | | V _s | V _u | V _s | V _u | | | | | | | |
| Lantai 9 | B34 | 500/700/5,4 | 67,992 | 310,76 | 423,38 | 203,94 | 67,96 | 187,85 | -8,19 | 2 | 2 | 150 | 108,69 | 291,66 | -665,4 | 2 | 2 | 10 | 150 |
| | B46 | 500/700/5,4 | 125,44 | 515,79 | 457,34 | 216,24 | -4,64 | 221,19 | 1,20 | 2 | 2 | 150 | 101,36 | 291,66 | -36,52 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/4,4 | 65,754 | 304,66 | 347,87 | 214,05 | 82,55 | 194,96 | -31,72 | 2 | 2 | 150 | 172,21 | 291,66 | -62,85 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,4 | 170,898 | 320,71 | 591,94 | 285,55 | -68,25 | 298,03 | 53,18 | 2 | 2 | 150 | 226,38 | 291,66 | 10,45 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/5,4 | 65,665 | 311,64 | 409,74 | 226,05 | 43,33 | 214,02 | -6,30 | 2 | 2 | 150 | 187,06 | 291,66 | -42,25 | 2 | 2 | 10 | 150 |
| Lantai 8 | B46 | 500/700/6,4 | 87,368 | 315,66 | 483,25 | 212,55 | 37,42 | 195,07 | -31,57 | 2 | 2 | 150 | 174,24 | 291,66 | -59,34 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/6,4 | 155,546 | 412,88 | 838,97 | 304,38 | -63,32 | 290,71 | 82,66 | 2 | 2 | 150 | 215,16 | 291,66 | -4,78 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,4 | 91,968 | 314,27 | 539,05 | 219,12 | 69,62 | 227,79 | 32,00 | 2 | 2 | 150 | 252,99 | 291,66 | 45,13 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/5,4 | 87,96 | 320,48 | 571,86 | 227,11 | 31,73 | 209,60 | -12,29 | 2 | 2 | 150 | 188,75 | 291,66 | -40,00 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/4,4 | 107,47 | 307,31 | 556,04 | 303,70 | 88,70 | 272,48 | 71,65 | 2 | 2 | 150 | 235,21 | 291,66 | 22,08 | 2 | 2 | 10 | 150 |
| Lantai 5 | B83 | 500/700/8,4 | 138,556 | 430,99 | 901,90 | 317,24 | 0,11 | 293,12 | 59,16 | 2 | 2 | 150 | 188,75 | 291,66 | -60,86 | 2 | 2 | 10 | 150 |
| | B46 | 500/700/6,4 | 85,032 | 321,86 | 659,62 | 230,60 | 65,72 | 223,40 | 0,32 | 2 | 2 | 150 | 218,35 | 291,66 | -0,26 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/4,4 | 104,172 | 308,09 | 643,93 | 330,34 | 112,19 | 269,28 | 95,38 | 2 | 2 | 150 | 202,65 | 291,66 | -21,46 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,4 | 179,968 | 411,97 | 752,23 | 288,16 | -20,98 | 271,88 | 73,52 | 2 | 2 | 150 | 241,97 | 291,66 | 17,33 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/5,4 | 94,342 | 317,41 | 801,19 | 301,47 | 112,83 | 279,16 | 80,55 | 2 | 2 | 150 | 232,57 | 291,66 | 15,10 | 2 | 2 | 10 | 150 |
| Lantai 4 | B46 | 500/700/6,4 | 87,220 | 412,23 | 747,42 | 268,42 | 93,97 | 251,00 | 43,01 | 2 | 2 | 150 | 230,26 | 291,66 | 15,33 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/4,4 | 102,016 | 297,67 | 731,70 | 339,71 | 154,03 | 329,07 | 147,10 | 2 | 2 | 150 | 293,22 | 291,66 | 100,04 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,4 | 170,548 | 430,99 | 903,30 | 326,23 | -41,80 | 303,29 | 132,72 | 2 | 2 | 150 | 272,88 | 291,66 | 71,52 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/5,4 | 95,812 | 406,49 | 802,74 | 319,74 | 126,32 | 297,07 | 104,13 | 2 | 2 | 150 | 230,00 | 291,66 | 13,30 | 2 | 2 | 10 | 150 |
| | B46 | 500/700/4,4 | 82,988 | 411,00 | 795,22 | 364,11 | 184,15 | 337,99 | 158,99 | 2 | 2 | 150 | 300,80 | 291,66 | 117,49 | 2 | 2 | 10 | 150 |
| Lantai 2 | B83 | 500/700/8,4 | 172,114 | 409,22 | 963,74 | 340,63 | -4,21 | 314,39 | 42,79 | 2 | 2 | 150 | 273,04 | 291,66 | 68,42 | 2 | 2 | 10 | 150 |
| | B46 | 500/700/5,3 | 95,07 | 405,63 | 797,46 | 322,16 | 132,02 | 290,21 | 107,32 | 2 | 2 | 150 | 271,94 | 291,66 | 30,02 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/6,3 | 86,126 | 412,23 | 747,42 | 270,20 | 97,95 | 252,33 | 45,31 | 2 | 2 | 150 | 231,92 | 291,66 | 17,56 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,3 | 160,92 | 405,52 | 965,38 | 350,75 | 10,01 | 324,59 | 163,90 | 2 | 2 | 150 | 310,28 | 291,66 | 122,04 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/5,3 | 93,25 | 437,46 | 923,24 | 349,98 | 163,48 | 327,40 | 145,00 | 2 | 2 | 150 | 270,43 | 291,66 | 99,56 | 2 | 2 | 10 | 150 |
| Lantai 1 | B46 | 500/700/6,3 | 86,082 | 431,85 | 810,87 | 283,34 | 111,17 | 266,88 | 62,81 | 2 | 2 | 150 | 245,68 | 291,66 | 35,11 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/4,3 | 83,436 | 506,94 | 938,35 | 419,55 | 252,68 | 394,75 | 234,68 | 2 | 2 | 150 | 365,22 | 291,66 | 195,30 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,3 | 169,718 | 533,56 | 1048,71 | 360,36 | 20,02 | 344,22 | 153,07 | 2 | 2 | 150 | 308,10 | 291,66 | 112,47 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/5,3 | 91,012 | 470,86 | 858,80 | 334,70 | 132,73 | 312,02 | 125,04 | 2 | 2 | 150 | 286,22 | 291,66 | 84,96 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/6,3 | 85,37 | 412,23 | 747,42 | 271,11 | 99,97 | 253,62 | 46,49 | 2 | 2 | 150 | 232,78 | 291,66 | 18,71 | 2 | 2 | 10 | 150 |
| Basement 1 | B83 | 500/700/8,3 | 76,082 | 409,11 | 789,45 | 358,10 | 205,04 | 155,22 | 155,30 | 2 | 2 | 150 | 307,98 | 291,66 | 118,98 | 2 | 2 | 10 | 150 |
| | B34 | 500/700/8,3 | 169,702 | 449,22 | 963,74 | 341,05 | 1,31 | 314,73 | 127,98 | 2 | 2 | 150 | 283,41 | 291,66 | 86,22 | 2 | 2 | 10 | 150 |
| | B46 | 500/700/5,3 | 83,132 | 314,35 | 620,20 | 308,15 | 87,89 | 246,21 | 30,62 | 2 | 2 | 150 | 220,08 | 291,66 | 1,78 | 2 | 2 | 10 | 150 |
| Basement 2 | B46 | 500/700/6,3 | 85,444 | 320,48 | 571,86 | 228,27 | 37,33 | 210,75 | -10,67 | 2 | 2 | 150 | 189,59 | 291,66 | -90,41 | 2 | 2 | 10 | 150 |
| | B47 | 500/700/4,3 | 71,95 | 306,08 | 550,28 | 273,15 | 129,55 | 230,81 | 44,09 | 2 | 2 | 150 | 226,04 | 291,66 | 3,73 | 2 | 2 | 10 | 150 |
| | B83 | 500/700/8,3 | 160,678 | 412,88 | 838,07 | 327,42 | -17,94 | 295,33 | 101,83 | 2 | 2 | 150 | 263,83 | 291,66 | 60,11 | 2 | 2 | 10 | 150 |

Table Perhitungan Torsi Balok

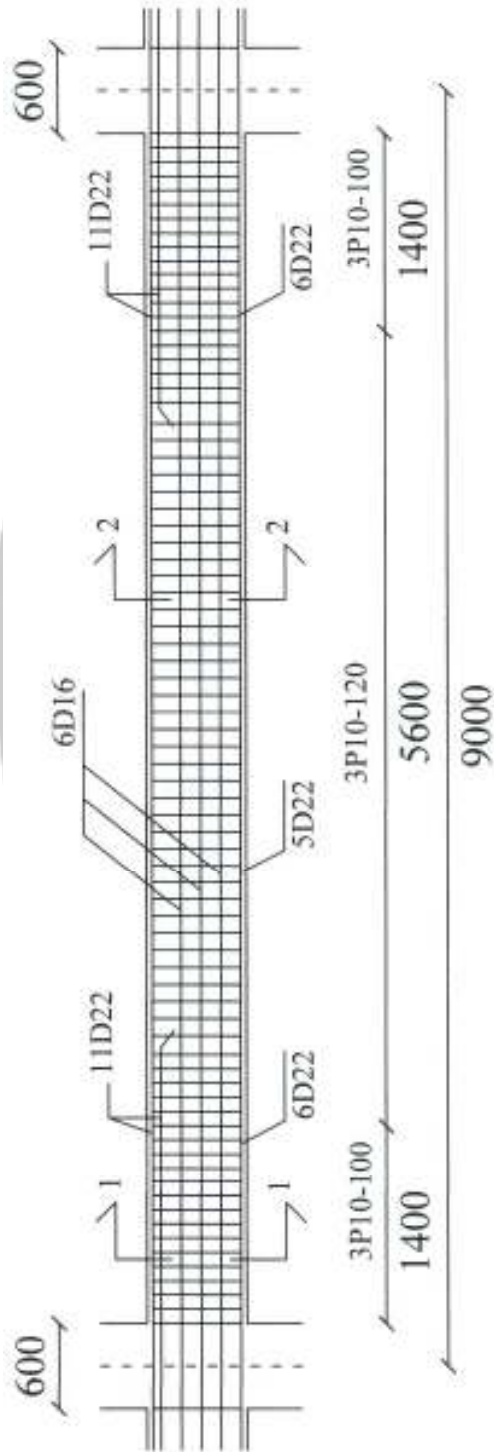
| Lantai | Balok | h _x mm | b _x mm | h _y mm | b _y mm | h _w mm | b _w mm | h _s mm | b _s mm | h _e mm | b _e mm | A _{sp} mm ² | T _u kNm | Syarat Tu kN/m ² | Keterangan |
|-------------|-------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------------------|-----------------------|--------------------------------|------------|
| Lantai 9 | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.198 | 17.9889 | ditinjau |
| | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 8.567 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 0.989 | 17.9889 | ditinjau |
| Lantai 8 | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 16.543 | 17.9889 | ditinjau |
| | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 1.273 | 17.9889 | ditinjau |
| | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 33.88 | 17.9889 | ditinjau |
| Lantai 7 | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 0.994 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 28.269 | 17.9889 | ditinjau |
| | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 1.812 | 17.9889 | ditinjau |
| Lantai 6 | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 38.753 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 1.323 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 38.334 | 17.9889 | ditinjau |
| Lantai 5 | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.299 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 42.515 | 17.9889 | ditinjau |
| | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 1.799 | 17.9889 | ditinjau |
| Lantai 4 | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.627 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 43.072 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.065 | 17.9889 | ditinjau |
| Lantai 3 | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.914 | 17.9889 | ditinjau |
| | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 47.171 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.425 | 17.9889 | ditinjau |
| Lantai 2 | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 49.312 | 17.9889 | ditinjau |
| | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 3.201 | 17.9889 | ditinjau |
| | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 48.55 | 17.9889 | ditinjau |
| Lantai 1 | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.799 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 49.323 | 17.9889 | ditinjau |
| | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 3.563 | 17.9889 | ditinjau |
| Batas Atas | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 50.487 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 3.296 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 55.919 | 17.9889 | ditinjau |
| Batas Bawah | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 55.379 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 4.05 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 63.253 | 17.9889 | ditinjau |
| Batas Mula | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 3.476 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 51.264 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 3.531 | 17.9889 | ditinjau |
| Batas Akhir | B34 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 55.12 | 17.9889 | ditinjau |
| | B46 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.255 | 17.9889 | ditinjau |
| | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 42.612 | 17.9889 | ditinjau |
| Batas Akhir | B47 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 2.28 | 17.9889 | ditinjau |
| | B83 | 500 | 700 | 130 | 570 | 1640 | 1540 | 1540 | 1540 | 520 | 4480 | 485200 | 38.324 | 17.9889 | ditinjau |

Tabel Perhitungan Kebutuhan Sengkang Balok Akibat Torsi

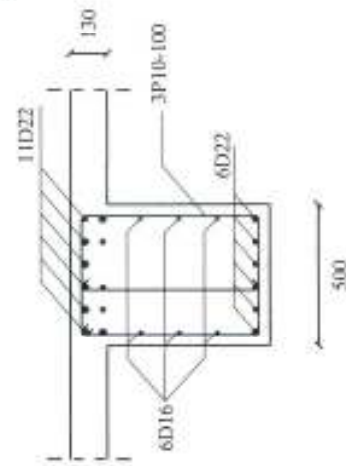
| Lantai | Balok | Ekstensi | b_w (mm) | h (mm) | T_u (kNm) | Tu maks (kNm) | W_p (mm) | W_{pl} (mm) | W_{pl} (mm) | W_{pl} (mm) | W_{pl} (mm) | Asv | Asv sengkang | Asv geseran | s (mm) |
|------------|-------|----------|------------|----------|-------------|---------------|------------|---------------|---------------|---------------|---------------|-------|--------------------|-------------|----------|
| Lantai 8 | B46 | SP | 500 | 700 | 33,81 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,44 | 0,20 | 2 P 10 - 150 | 157,080 | 231,78 |
| | | Luar SP | 500 | 700 | 33,81 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,44 | -0,07 | 2 P 10 - 150 | 157,080 | 316,28 |
| Lantai 7 | B85 | SP | 500 | 700 | 28,269 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,37 | 0,39 | 2 P 10 - 100 | 157,080 | 122,91 |
| | | Luar SP | 500 | 700 | 28,269 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,37 | -0,34 | 2 P 10 - 150 | 157,080 | 152,06 |
| Lantai 6 | B46 | SP | 500 | 700 | 38,753 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,51 | -0,88 | 2 P 10 - 150 | 157,080 | 168,32 |
| | | Luar SP | 500 | 700 | 38,753 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,51 | -0,20 | 2 P 10 - 150 | 157,080 | 308,90 |
| Lantai 5 | B83 | SP | 500 | 700 | 36,331 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,47 | 0,07 | 3 P 10 - 100 | 235,619 | 147,63 |
| | | Luar SP | 500 | 700 | 36,331 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,47 | 0,07 | 3 P 10 - 150 | 235,619 | 175,02 |
| Lantai 4 | B46 | SP | 500 | 700 | 42,515 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,56 | 0,01 | 1,152 2 P 10 - 100 | 157,080 | 136,32 |
| | | Luar SP | 500 | 700 | 42,515 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,56 | -0,10 | 0,971 2 P 10 - 150 | 157,080 | 161,75 |
| Lantai 3 | B83 | SP | 500 | 700 | 43,072 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,56 | 0,79 | 1,605 3 P 10 - 100 | 235,619 | 146,80 |
| | | Luar SP | 500 | 700 | 43,072 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,56 | 0,28 | 1,354 3 P 10 - 150 | 235,619 | 174,07 |
| Lantai 2 | B46 | SP | 500 | 700 | 45,143 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,59 | 0,28 | 2 P 10 - 100 | 157,080 | 107,44 |
| | | Luar SP | 500 | 700 | 45,143 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,59 | 0,10 | 1,281 2 P 10 - 100 | 157,080 | 122,61 |
| Lantai 1 | B83 | SP | 500 | 700 | 48,518 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,63 | 0,51 | 3 P 10 - 100 | 235,619 | 107,66 |
| | | Luar SP | 500 | 700 | 48,518 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,63 | 0,04 | 1,035 3 P 10 - 120 | 235,619 | 121,75 |
| Basement 1 | B46 | SP | 500 | 700 | 47,171 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,62 | 0,20 | 1,513 2 P 10 - 100 | 157,080 | 103,81 |
| | | Luar SP | 500 | 700 | 47,171 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,62 | 0,10 | 1,333 2 P 10 - 100 | 157,080 | 117,85 |
| Basement 2 | B83 | SP | 500 | 700 | 49,312 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,64 | 0,75 | 3,024 3 P 10 - 100 | 235,619 | 116,43 |
| | | Luar SP | 500 | 700 | 49,312 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,64 | 0,66 | 1,755 3 P 10 - 100 | 235,619 | 134,25 |
| Lantai 2 | B46 | SP | 500 | 700 | 48,55 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,63 | 0,29 | 1,548 2 P 10 - 100 | 157,080 | 101,49 |
| | | Luar SP | 500 | 700 | 48,55 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,63 | 0,09 | 1,168 2 P 10 - 100 | 157,080 | 114,84 |
| Lantai 1 | B83 | SP | 500 | 700 | 49,323 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,64 | 0,03 | 2,121 3 P 10 - 100 | 235,619 | 111,11 |
| | | Luar SP | 500 | 700 | 49,323 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,64 | 0,50 | 1,840 3 P 10 - 100 | 235,619 | 137,44 |
| Lantai 2 | B46 | SP | 500 | 700 | 50,487 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,66 | 0,20 | 1,615 3 P 10 - 100 | 235,619 | 145,91 |
| | | Luar SP | 500 | 700 | 50,487 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,66 | 0,13 | 1,434 3 P 10 - 150 | 235,619 | 164,32 |
| Lantai 1 | B83 | SP | 500 | 700 | 55,919 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,73 | 0,20 | 2,382 3 P 10 - 80 | 235,619 | 104,32 |
| | | Luar SP | 500 | 700 | 55,919 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,73 | 0,09 | 2,111 3 P 10 - 100 | 235,619 | 98,94 |
| Basement 1 | B46 | SP | 500 | 700 | 55,379 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,72 | 0,10 | 1,857 3 P 10 - 100 | 235,619 | 111,63 |
| | | Luar SP | 500 | 700 | 55,379 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,72 | 0,29 | 1,676 3 P 10 - 100 | 235,619 | 140,57 |
| Basement 1 | B83 | SP | 500 | 700 | 63,353 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,83 | 1,00 | 2,660 3 P 10 - 80 | 235,619 | 88,59 |
| | | Luar SP | 500 | 700 | 63,353 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,83 | 0,33 | 2,389 3 P 10 - 80 | 235,619 | 98,63 |
| Basement 1 | B46 | SP | 500 | 700 | 51,264 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,67 | 0,12 | 1,643 3 P 10 - 100 | 235,619 | 143,42 |
| | | Luar SP | 500 | 700 | 51,264 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,67 | 0,12 | 1,462 3 P 10 - 150 | 235,619 | 161,20 |
| Basement 1 | B83 | SP | 500 | 700 | 55,12 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,72 | 0,35 | 2,275 3 P 10 - 100 | 235,619 | 103,57 |
| | | Luar SP | 500 | 700 | 55,12 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,72 | 0,32 | 2,003 3 P 10 - 100 | 235,619 | 117,65 |
| Basement 2 | B46 | SP | 500 | 700 | 42,612 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,56 | -0,79 | 1,044 2 P 10 - 150 | 157,080 | 150,45 |
| | | Luar SP | 500 | 700 | 42,612 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,56 | 0,20 | 0,863 2 P 10 - 150 | 157,080 | 181,99 |
| Basement 2 | B83 | SP | 500 | 700 | 38,124 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,50 | 0,04 | 1,666 3 P 10 - 100 | 235,619 | 141,46 |
| | | Luar SP | 500 | 700 | 38,124 | 71,96 | 410 | 2000 | 250100 | 212585 | 0,50 | 0,30 | 1,393 3 P 10 - 150 | 235,619 | 169,09 |

Tabel Perhitungan Pendangian Tambahan Balok

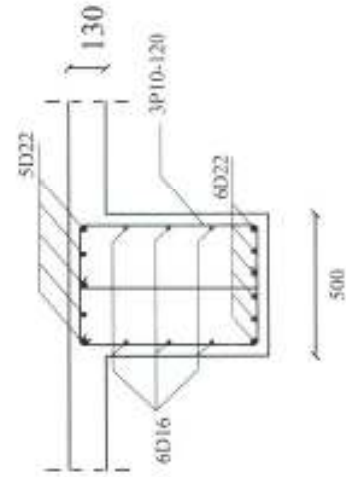
| Lantai | Balok | D _{nom} | h _{nom} | Lantai | AF | M _{max} | M _{min} | M _{max} | M _{min} | A _s / f _y | Tumpuan | | | Lapangan | | | atas luas existing balok | | | | | | |
|------------|-------|------------------|------------------|------------|---------|------------------|------------------|------------------|------------------|---------------------------------|---------------------------------|---------------------------------|--------------------------|-------------------|---------------------------------|---------------------------------|--------------------------|-------------------|----------------|--------------------------|--------|---|-----|
| | | | | | | | | | | | A _s / f _y | A _s + A _f | Dipasang jumlah tulangan | Diameter tulangan | A _s / f _y | A _s + A _f | Dipasang jumlah tulangan | Diameter tulangan | A _f | Dipasang jumlah tulangan | | | |
| Lantai 8 | B46 | 500 | 700 | Alan Bawah | 540,74 | 2227,53789 | 2227,5374 | 556,8845476 | 1313,6725 | 1118,25 | 4,4937 | 5 | D22 | 1118,25 | 4,4937 | 5 | D22 | 5,5394 | 6 | D22 | | | |
| | B47 | 500 | 700 | Alan Atas | 452,12 | 2316,15782 | 2316,1579 | 570,0394855 | 2513,9482 | 8,1419 | 9 | D22 | 1118,25 | 4,4937 | 5 | D22 | 1118,25 | 4,4937 | 5 | D22 | 5,7508 | 6 | D22 |
| | B48 | 500 | 700 | Alan Bawah | 619,80 | 2148,481013 | 2148,481 | 537,1202532 | 3863,0228 | 6,1087 | 7 | D22 | 1118,25 | 4,3347 | 5 | D22 | 1118,25 | 4,3347 | 5 | D22 | 5,3428 | 6 | D22 |
| Lantai 7 | B49 | 500 | 700 | Alan Bawah | 381,06 | 2187,217518 | 2187,2179 | 546,0437915 | 2786,6453 | 8,2622 | 9 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |
| | B50 | 500 | 700 | Alan Atas | 070,57 | 2088,31308 | 2088,3131 | 522,07827 | 2188,3753 | 7,0775 | 8 | D22 | 1118,25 | 4,3151 | 5 | D22 | 1118,25 | 4,3151 | 5 | D22 | 5,1832 | 6 | D22 |
| | B51 | 500 | 700 | Alan Bawah | 488,88 | 2070,408643 | 2070,4086 | 519,8511688 | 3124,3378 | 9,6135 | 10 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |
| Lantai 6 | B52 | 500 | 700 | Alan Bawah | 722,60 | 2046,281802 | 2046,2819 | 511,5704711 | 3914,5078 | 7,6973 | 8 | D22 | 1118,25 | 4,2675 | 5 | D22 | 1118,25 | 4,2675 | 5 | D22 | 5,0887 | 6 | D22 |
| | B53 | 500 | 700 | Alan Atas | 773,58 | 1992,303484 | 1992,3035 | 468,0758769 | 1593,143 | 10,5236 | 11 | D22 | 1118,25 | 4,2520 | 5 | D22 | 1118,25 | 4,2520 | 5 | D22 | 4,9048 | 6 | D22 |
| | B54 | 500 | 700 | Alan Bawah | 754,43 | 2013,444866 | 2013,4449 | 502,4617166 | 1659,2532 | 5,2018 | 6 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |
| Lantai 5 | B55 | 500 | 700 | Alan Bawah | 783,68 | 1979,644563 | 1979,6446 | 484,9114408 | 2443,2043 | 7,7385 | 8 | D22 | 1118,25 | 4,2675 | 5 | D22 | 1118,25 | 4,2675 | 5 | D22 | 5,0887 | 6 | D22 |
| | B56 | 500 | 700 | Alan Atas | 776,49 | 1971,791688 | 1971,7917 | 492,9479221 | 1182,912 | 4,4218 | 5 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |
| | B57 | 500 | 700 | Alan Bawah | 783,65 | 1973,426634 | 1973,4266 | 494,8573364 | 1405,2578 | 3,2353 | 6 | D22 | 1118,25 | 4,2675 | 5 | D22 | 1118,25 | 4,2675 | 5 | D22 | 4,9532 | 6 | D22 |
| Lantai 4 | B58 | 500 | 700 | Alan Bawah | 802,47 | 1960,81218 | 1960,8121 | 489,1303031 | 2654,6245 | 8,7730 | 9 | D22 | 1118,25 | 4,2313 | 5 | D22 | 1118,25 | 4,2313 | 5 | D22 | 4,8761 | 6 | D22 |
| | B59 | 500 | 700 | Alan Atas | 804,35 | 1872,934831 | 1872,9348 | 468,4837078 | 1281,1078 | 4,6597 | 5 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |
| | B60 | 500 | 700 | Alan Bawah | 805,31 | 1882,571377 | 1882,5714 | 470,6428442 | 1336,7865 | 5,2752 | 6 | D22 | 1118,25 | 4,1742 | 5 | D22 | 1118,25 | 4,1742 | 5 | D22 | 4,6801 | 6 | D22 |
| Basement 1 | B61 | 500 | 700 | Alan Bawah | 805,31 | 1882,571377 | 1882,5714 | 470,6428442 | 2397,9688 | 8,0705 | 10 | D22 | 1118,25 | 4,1742 | 5 | D22 | 1118,25 | 4,1742 | 5 | D22 | 4,6801 | 6 | D22 |
| | B62 | 500 | 700 | Alan Atas | 1013,24 | 1755,03819 | 1755,0382 | 438,3595925 | 1421,172 | 4,0767 | 5 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |
| | B63 | 500 | 700 | Alan Bawah | 815,90 | 1948,585651 | 1948,5857 | 487,0962628 | 3587,635 | 10,3817 | 11 | D22 | 1118,25 | 4,0881 | 5 | D22 | 1118,25 | 4,0881 | 5 | D22 | 4,3644 | 6 | D22 |
| Basement 2 | B64 | 500 | 700 | Alan Bawah | 881,52 | 2080,2017 | 2080,2017 | 527,6944551 | 1671,3882 | 5,5311 | 6 | D22 | 1311,54 | 5,1366 | 6 | D22 | 1311,54 | 5,1366 | 6 | D22 | 4,3644 | 6 | D22 |
| | B65 | 500 | 700 | Alan Atas | 012,94 | 2155,142268 | 2155,1423 | 538,6755671 | 2524,811 | 7,9233 | 8 | D22 | 1118,25 | 4,2211 | 5 | D22 | 1118,25 | 4,2211 | 5 | D22 | 4,8452 | 6 | D22 |
| | B66 | 500 | 700 | Alan Bawah | 881,52 | 2080,2017 | 2080,2017 | 527,6944551 | 1220,7443 | 4,4927 | 5 | D22 | 1342,2355 | 4,5604 | 5 | D22 | 1519,03 | 4,5604 | 5 | D22 | 5,4292 | 6 | D22 |



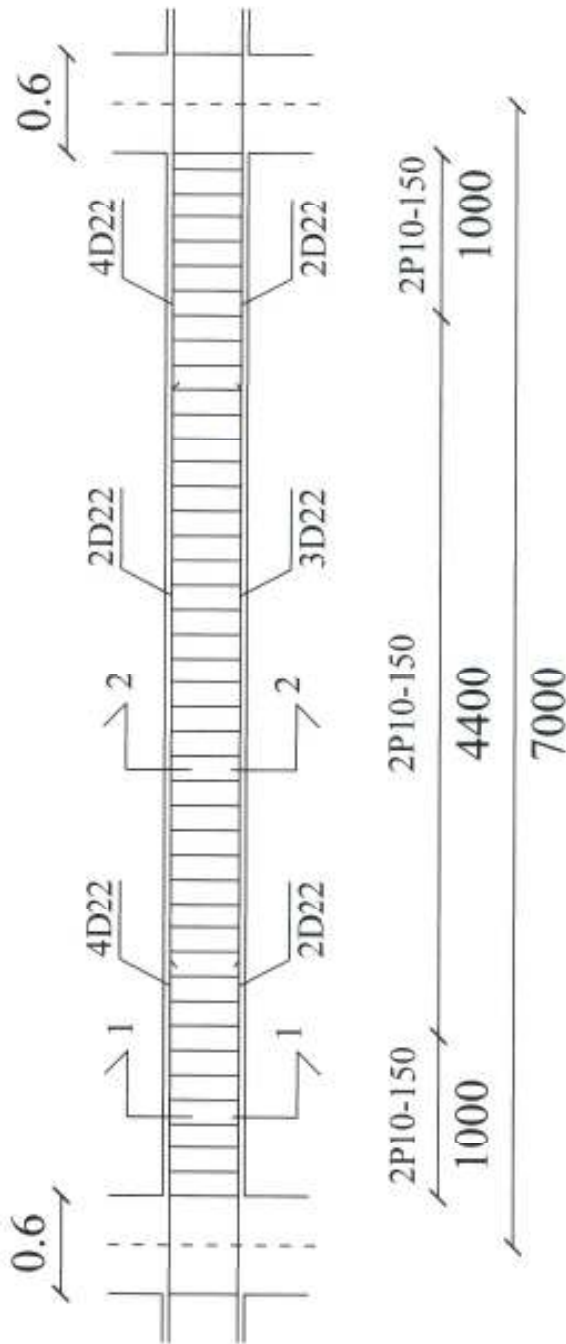
Gambar Penulangan Balok Induk
Skala 1 : 50



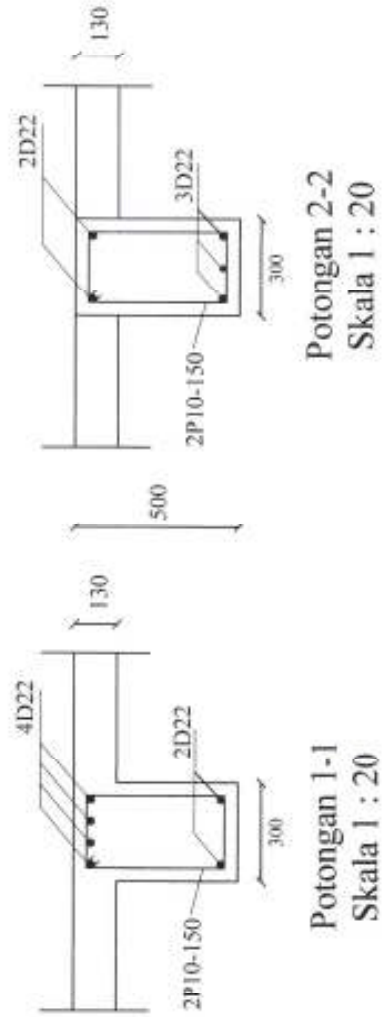
Potongan 1-1
Skala 1 : 25

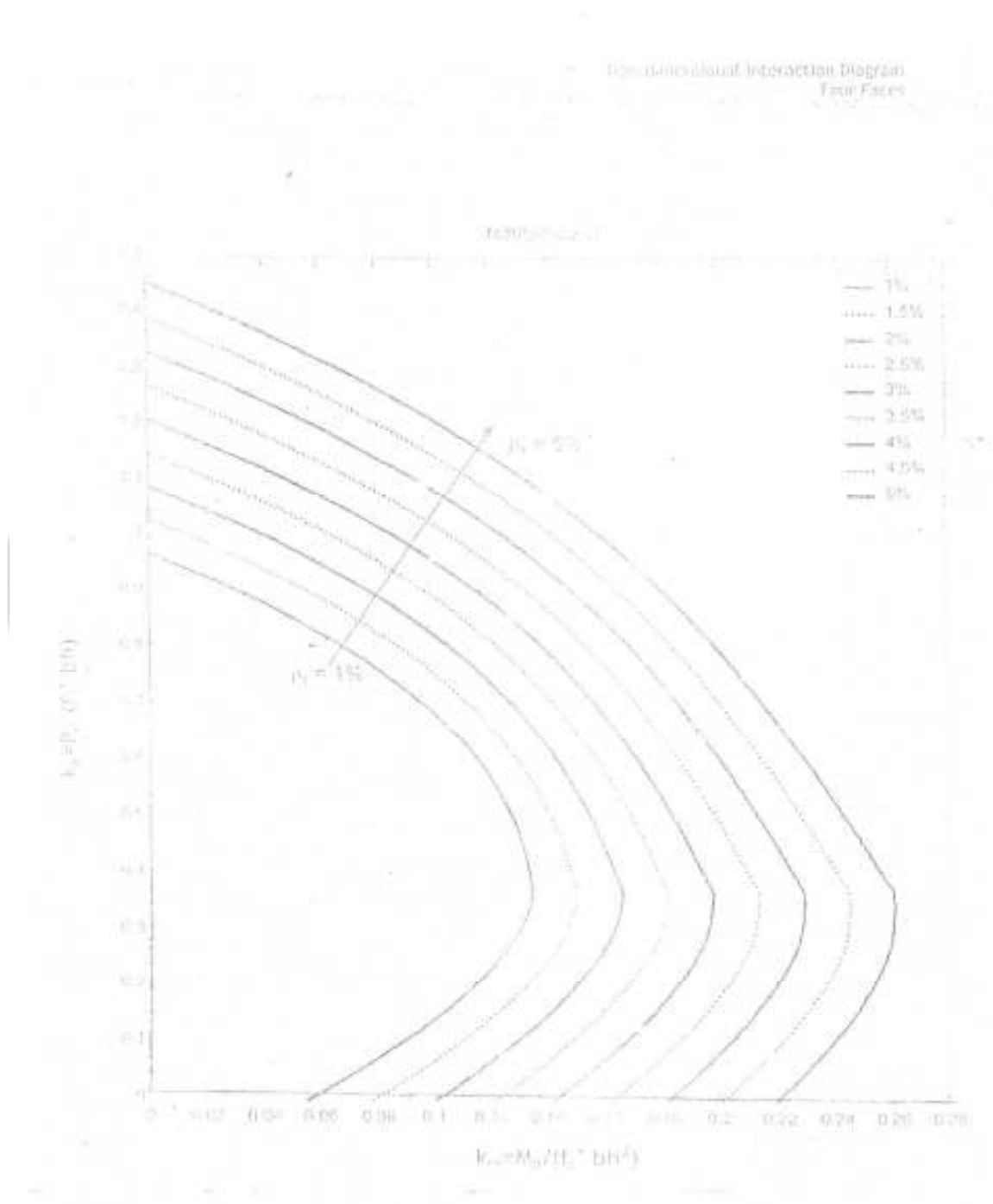


Potongan 2-2
Skala 1 : 25



Gambar Penulangan Balok Anak
Skala 1 : 40





Tabel Penulangan Longitudinal Kolom

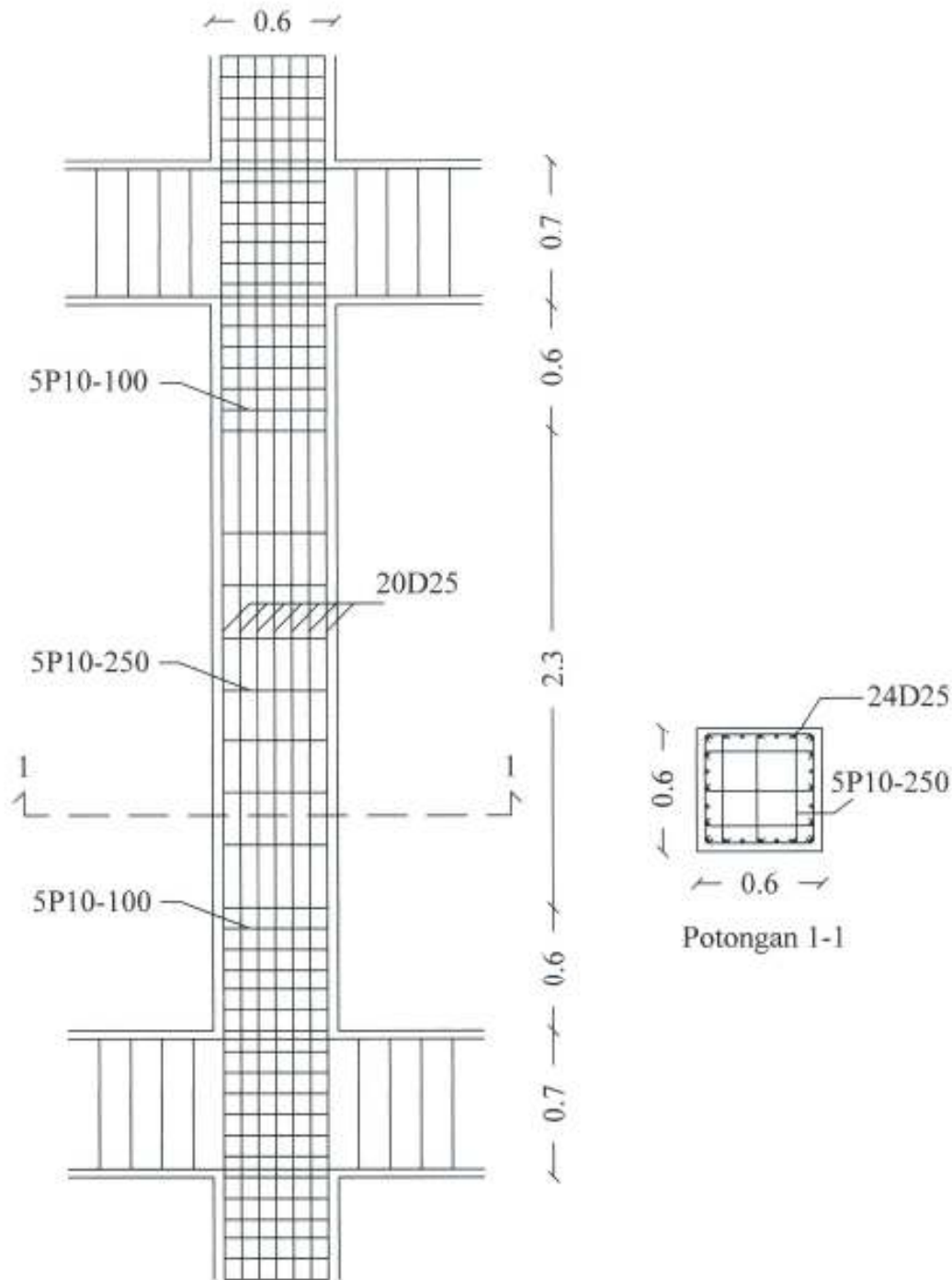
| Lantai | Kolom | Dimensi (mm) | | L_y (m) | Tul. Pokok mm | Tul. Sengkang mm | d mm | M_{ax} (kNm) | M_{xy} (kNm) | P_g (kN) | M_{max} (kNm) | km | kp | ρ_s | A_s (mm ²) | Dipakai tulangan |
|------------|-------|--------------|-----|--------------|------------------|---------------------|---------|-------------------|-------------------|---------------|--------------------|------|------|----------|-----------------------------|------------------|
| | | b | h | | | | | | | | | | | | | |
| Lantai 9 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 290,1733 | 307,4862 | 845,9846 | 455,7433 | 0,07 | 0,08 | 1,5% | 5400 | 16 D 22 |
| Lantai 8 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 433,8369 | 262,7692 | 1547,7538 | 575,3280 | 0,09 | 0,14 | 1,0% | 3600 | 12 D 22 |
| Lantai 7 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 559,3215 | 360,4538 | 2272,1846 | 753,4121 | 0,12 | 0,21 | 1,5% | 5400 | 16 D 22 |
| Lantai 6 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 673,2369 | 447,7000 | 3016,2154 | 914,3062 | 0,14 | 0,28 | 1,5% | 5400 | 16 D 22 |
| Lantai 5 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 770,3062 | 505,2785 | 3767,7846 | 1042,3792 | 0,16 | 0,35 | 2,5% | 9000 | 24 D 22 |
| Lantai 4 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 698,2538 | 485,8200 | 4538,6000 | 959,8492 | 0,15 | 0,42 | 2,5% | 9000 | 24 D 22 |
| Lantai 3 | C28 | 600 | 600 | 3,5 | 22 | 10 | 539 | 732,4800 | 546,9462 | 5320,8923 | 1026,9895 | 0,16 | 0,49 | 2,5% | 9000 | 24 D 22 |
| Lantai 2 | C28 | 700 | 700 | 3,5 | 22 | 10 | 639 | 874,8123 | 601,7677 | 6123,8923 | 1198,8411 | 0,12 | 0,42 | 1,0% | 4900 | 16 D 22 |
| Lantai 1 | C28 | 700 | 700 | 5,3 | 22 | 10 | 639 | 1132,1292 | 958,0231 | 7097,6615 | 1647,9878 | 0,16 | 0,48 | 2,5% | 12250 | 36 D 22 |
| Basement 1 | C28 | 750 | 750 | 2,8 | 22 | 10 | 689 | 876,7508 | 554,5354 | 8017,7558 | 1175,3467 | 0,09 | 0,48 | 1,0% | 5625 | 16 D 22 |
| Basement 2 | C28 | 750 | 750 | 2,8 | 22 | 10 | 689 | 861,9844 | 789,9200 | 8882,2923 | 1287,3262 | 0,10 | 0,53 | 1,0% | 5625 | 16 D 22 |

Tabel Penulangan Geser Kolom Diluar λ_0

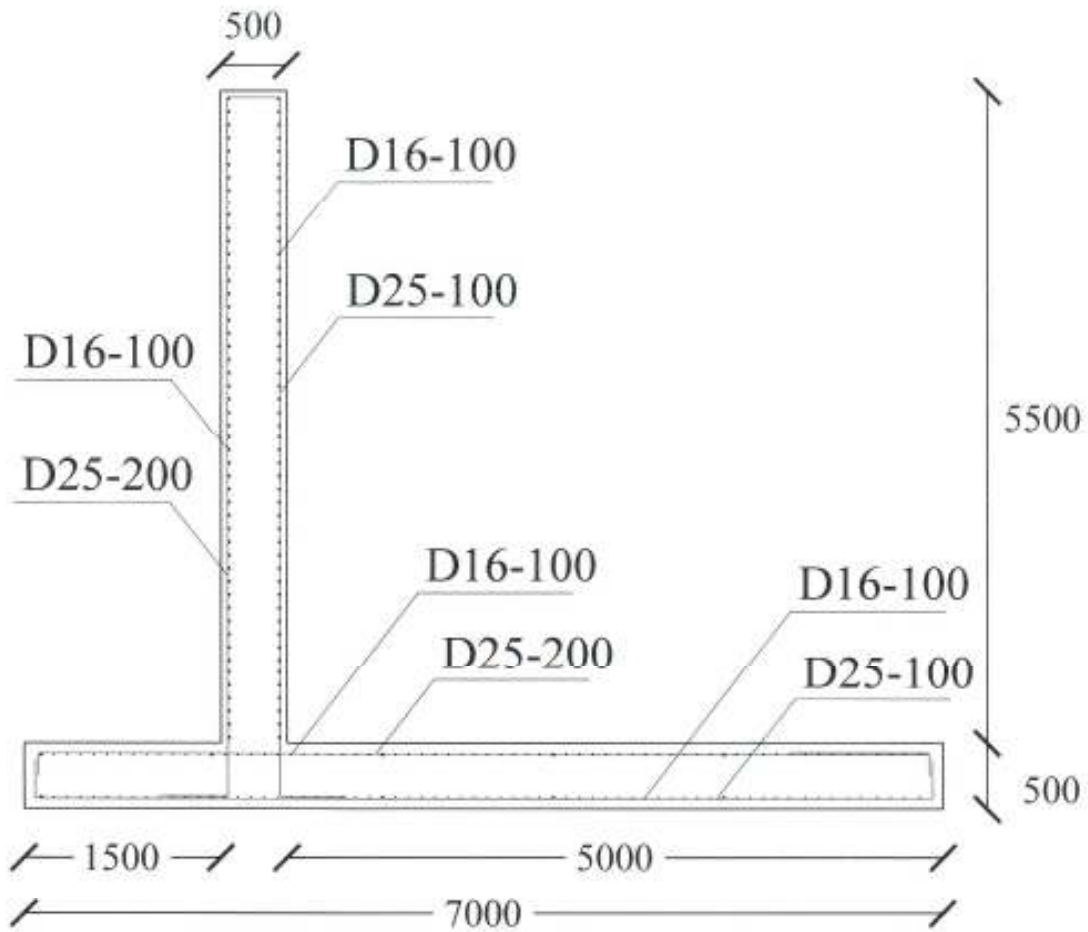
| Lantai | Kolom | dimensi (mm) | | l_n (m) | Diluar λ_0 S (mm) | V_e KN | V_e (KN) | N_u (KN) | V_c (KN) | (V_s) (KN) | Digunakan |
|------------|-------|--------------|-----|--------------|------------------------------|-------------|------------|------------|------------|--------------|-----------|
| | | b | h | | | | | | | | |
| Lantai 9 | C28 | 600 | 600 | 3,5 | 100 | 422,29 | 422,29 | 273,75 | 311,25761 | 251,79369 | 5 P - 10 |
| Lantai 8 | C28 | 600 | 600 | 3,5 | 100 | 338,12 | 338,12 | 508,04 | 324,98135 | 125,84785 | 5 P - 10 |
| Lantai 7 | C28 | 600 | 600 | 3,5 | 100 | 326,28 | 326,28 | 764,2 | 339,98615 | 95,059577 | 5 P - 10 |
| Lantai 6 | C28 | 600 | 600 | 3,5 | 100 | 347,58 | 347,58 | 1041,05 | 356,20288 | 107,23452 | 5 P - 10 |
| Lantai 5 | C28 | 600 | 600 | 3,5 | 100 | 369,24 | 369,24 | 1291,25 | 370,85857 | 121,46276 | 5 P - 10 |
| Lantai 4 | C28 | 600 | 600 | 3,5 | 100 | 369,95 | 369,95 | 1525,59 | 384,58524 | 108,67559 | 5 P - 10 |
| Lantai 3 | C28 | 600 | 600 | 3,5 | 100 | 450,15 | 450,15 | 1733,79 | 396,78074 | 203,41364 | 5 P - 10 |
| Lantai 2 | C28 | 700 | 700 | 3,5 | 100 | 466,71 | 466,71 | 1925,13 | 522,91651 | 99,364998 | 5 P - 10 |
| Lantai 1 | C28 | 700 | 700 | 5,3 | 250 | 288,74 | 288,74 | 2098,18 | 533,21695 | -148,2303 | 4 P - 10 |
| Basement 1 | C28 | 750 | 750 | 2,3 | 100 | 593,00 | 593,00 | 2308,09 | 609,98462 | 180,67659 | 6 P - 10 |
| Basement 2 | C28 | 750 | 750 | 2,3 | 250 | 250,72 | 250,72 | 2533,55 | 623,49006 | -289,1932 | 4 P - 10 |

Tabel Penulangan Geser Kolom Sepanjang λ_0

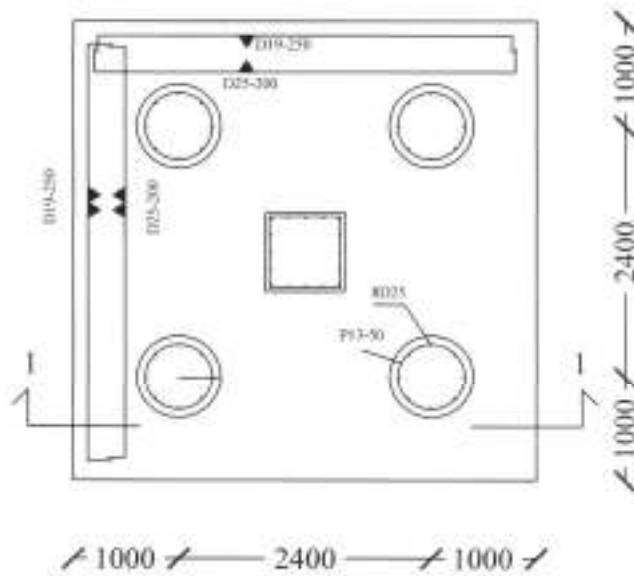
| Lantai | Kolom | dimensi (mm) | | I_{b0} (m) | Sepanjang λ_0 | | V_c KN | Sepanjang λ_0 | | | | | | | | | |
|------------|-------|--------------|-----|-----------------|-----------------------|--------|-------------|-----------------------|-----------------|----------------|----------------|-----------|--------|----------------|------------|----------------|-----|
| | | b | h | | l_0 (mm) | S (mm) | | V_3 | A _{ch} | A _g | A _s | Digunakan | s (mm) | A _s | V_{maks} | $0, V_s > V_c$ | |
| Lantai 9 | C28 | 600 | 600 | 3,5 | 600 | 100 | 422,29 | 563,05 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 563,0513 | OK! |
| Lantai 8 | C28 | 600 | 600 | 3,5 | 600 | 100 | 338,12 | 450,83 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 450,8292 | OK! |
| Lantai 7 | C28 | 600 | 600 | 3,5 | 600 | 100 | 376,28 | 435,05 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 435,0457 | OK! |
| Lantai 6 | C28 | 600 | 600 | 3,5 | 600 | 100 | 347,58 | 463,44 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 463,4374 | OK! |
| Lantai 5 | C28 | 600 | 600 | 3,5 | 600 | 100 | 369,24 | 492,32 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 492,3213 | OK! |
| Lantai 4 | C28 | 600 | 600 | 3,5 | 600 | 100 | 369,95 | 493,26 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 493,2608 | OK! |
| Lantai 3 | C28 | 600 | 600 | 3,5 | 600 | 100 | 450,15 | 600,19 | 270400 | 360000 | 356,38 | 5 P - 10 | 100 | 392,6991 | 846,6592 | 600,1944 | OK! |
| Lantai 2 | C28 | 700 | 700 | 3,5 | 700 | 100 | 466,71 | 622,28 | 384400 | 490000 | 390,15 | 5 P - 10 | 100 | 392,6991 | 1003,7389 | 622,2815 | OK! |
| Lantai 1 | C28 | 700 | 700 | 5,3 | 883,33 | 100 | 288,74 | 384,99 | 384400 | 490000 | 390,15 | 5 P - 10 | 100 | 392,6991 | 1003,7389 | 384,9866 | OK! |
| Basement 1 | C28 | 750 | 750 | 2,3 | 750 | 100 | 593,00 | 790,66 | 448900 | 562500 | 423,90 | 6 P - 10 | 100 | 471,2389 | 1298,7344 | 790,6612 | OK! |
| Basement 2 | C28 | 750 | 750 | 2,3 | 750 | 100 | 250,72 | 334,30 | 448900 | 562500 | 423,90 | 6 P - 10 | 100 | 471,2389 | 1298,7344 | 334,2969 | OK! |



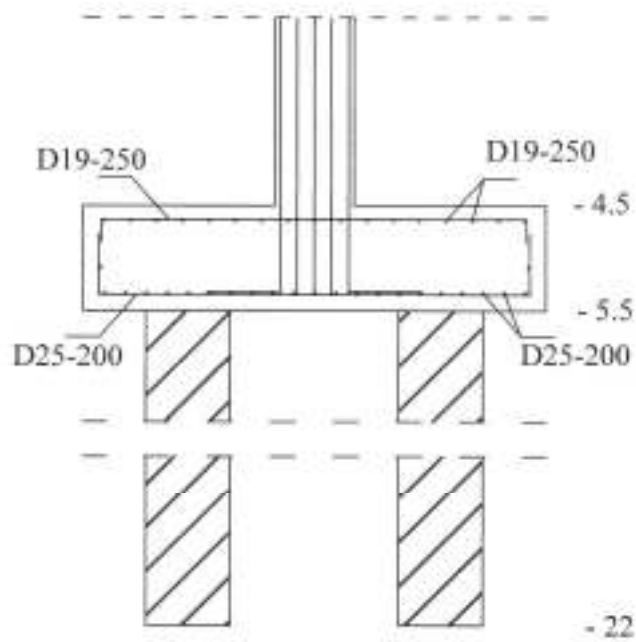
Gambar Penulangan Kolom
Skala 1 : 30



Gambar Penulangan Dinding Penahan Tanah
Skala 1 : 50



Gambar Denah Pondasi



Gambar Potongan 1-1

Gambar Detail Pondasi
Skala 1:60



pt. SOLEFOUND SAKTI
soil mechanics and engineering consultant

No : 599/SS/XII/1995.
Hal: Rekomendasi sementara

Jakarta, 23 Desember 1995

Kepada Yth
PT KARSINDO UTAMA
Harmoni Plaza II Blok I no.6-7,
Jakarta.
Up.Ibu Ir. Nany

Dengan hormat,

Sehubungan dengan penyelidikan tanah untuk proyek : Bekasi Mall, yang penyelidikan tanahnya di laboratorium masih sedang berlangsung, dengan ini diberikan rekomendasi sementara sebagai berikut :

Untuk bangunan Gedung 5 (lima) Lantai + 1 (satu) lantai basement dianjurkan menggunakan fondasi dengan alternatif sebagai berikut :

Alternatif 1.


Dianjurkan menggunakan :

FONDASI TIANG PANCANG

Tiang pancang penampang # 40 x 40 cm², panjang L = 20 m terhadap dasar pte cau (2.00 m - MT , dengan dasar tiang pada 22.00 m - MT dianjurkan menggunakan daya dukung tiang :

1 tiang tekan = 100 tonf
1 tiang tarik = 50 tonf

SOLEFOUN... KIRAWATI



- 2 -

Selanjutnya dianjurkan :

1. Agar pemancangan dilaksanakan dengan palu pancang sejenis tipe K 35.
2. Melaksanakan pengecekan set untuk masing masing tiang dengan formula dinamis.
3. Melaksanakan percobaan pembebanan tiang dengan beban rencana 2 x design load.

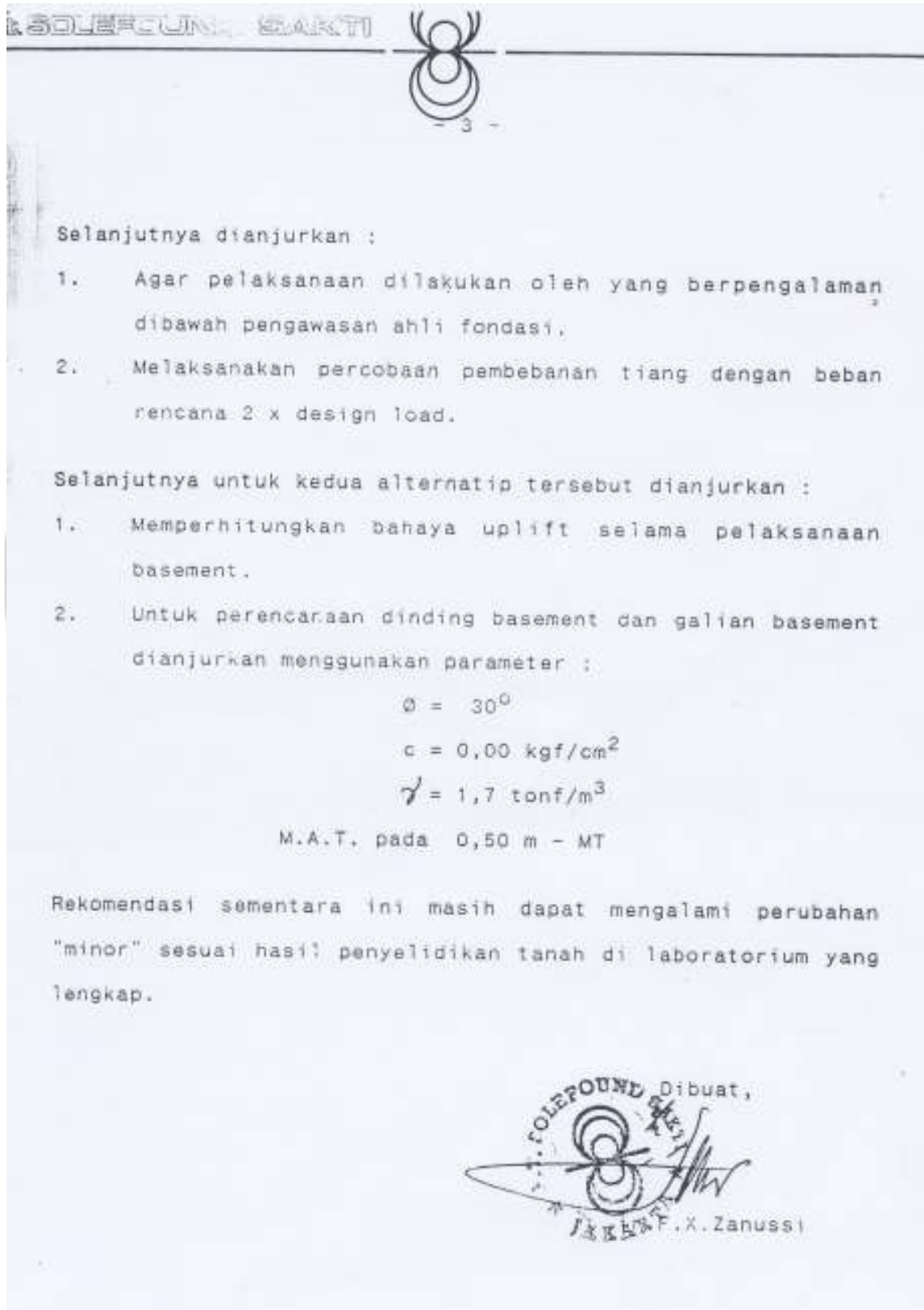
Alternatif 2.

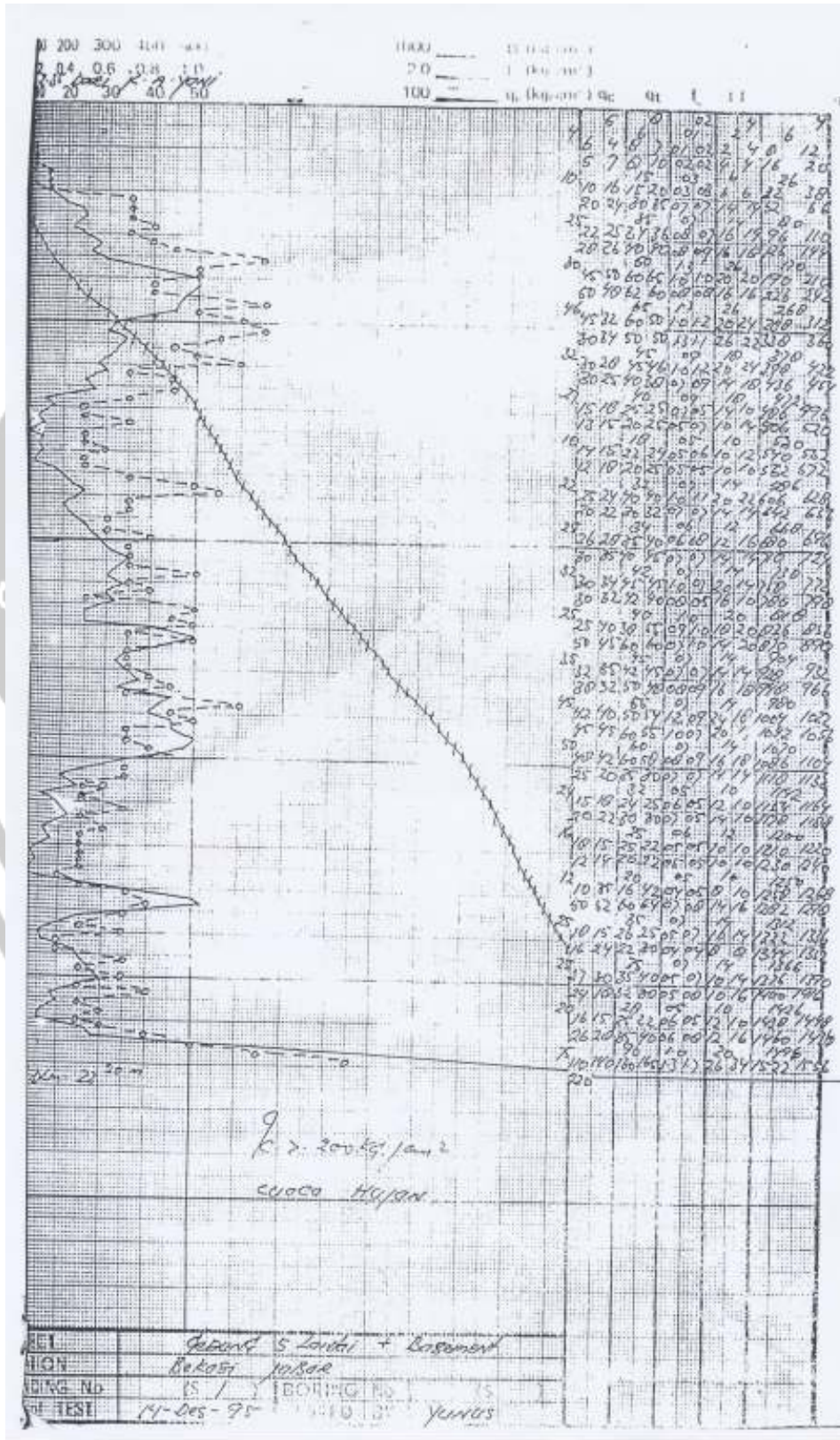
Dianjurkan menggunakan :

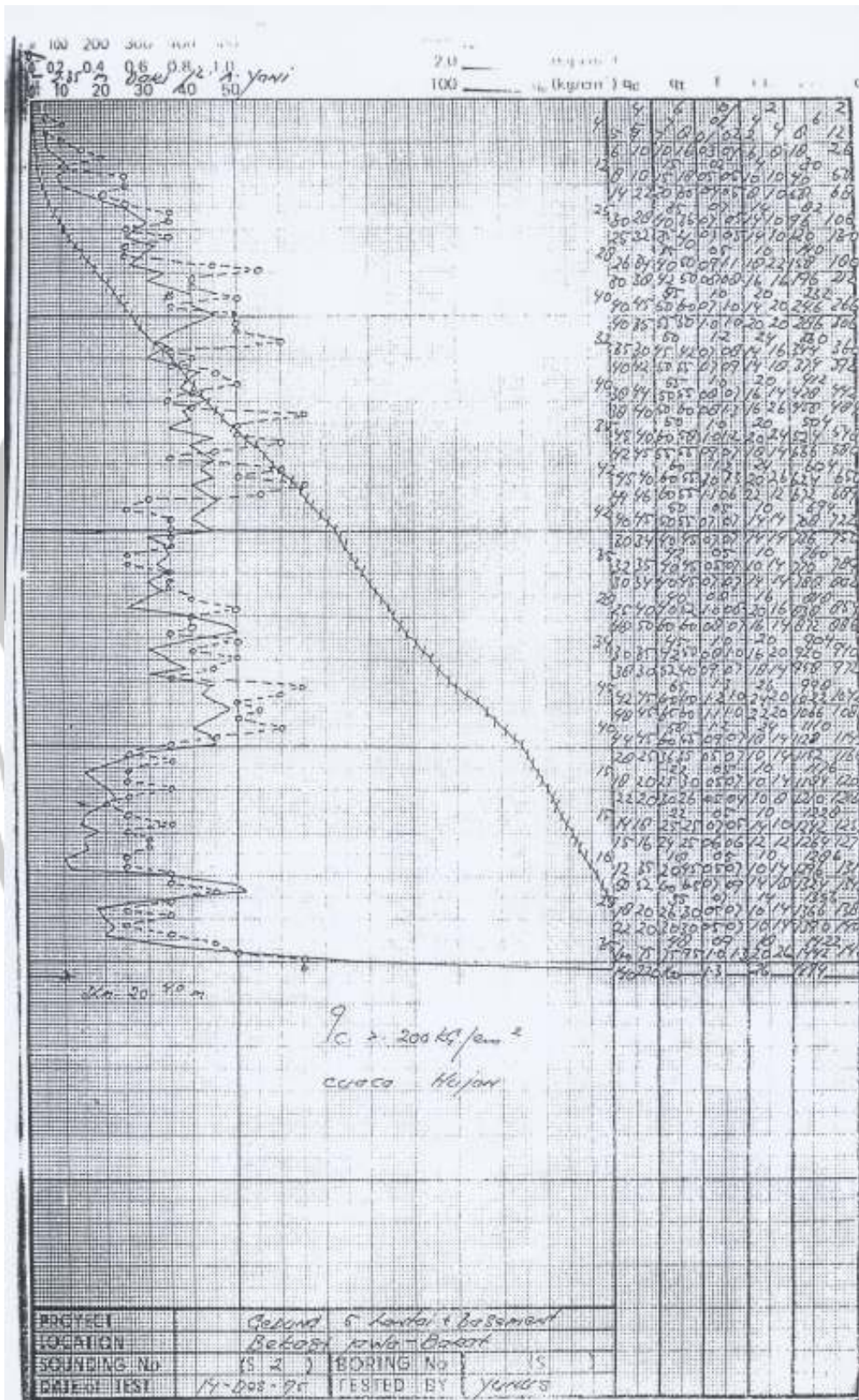
FONDASI TIANG BOR

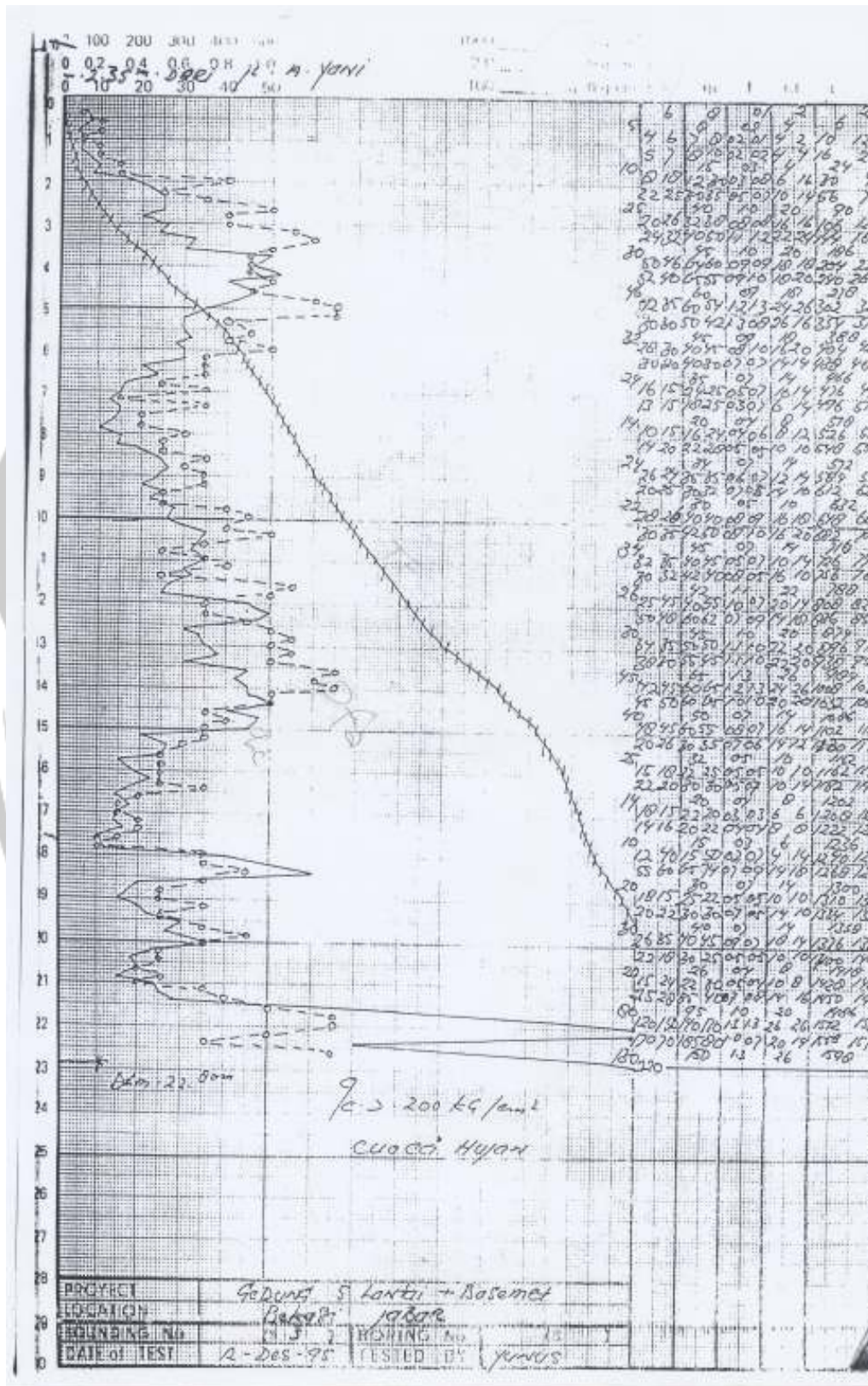
Tiang bor diameter $\varnothing = 50 - 100$ cm, panjang $L = 20$ meter terhadap dasar pile cap (2.00 m - MT) dengan dasar tiang pada lapisan cadas keras pada ± 22.00 m - MT, dianjurkan menggunakan daya dukung tiang :

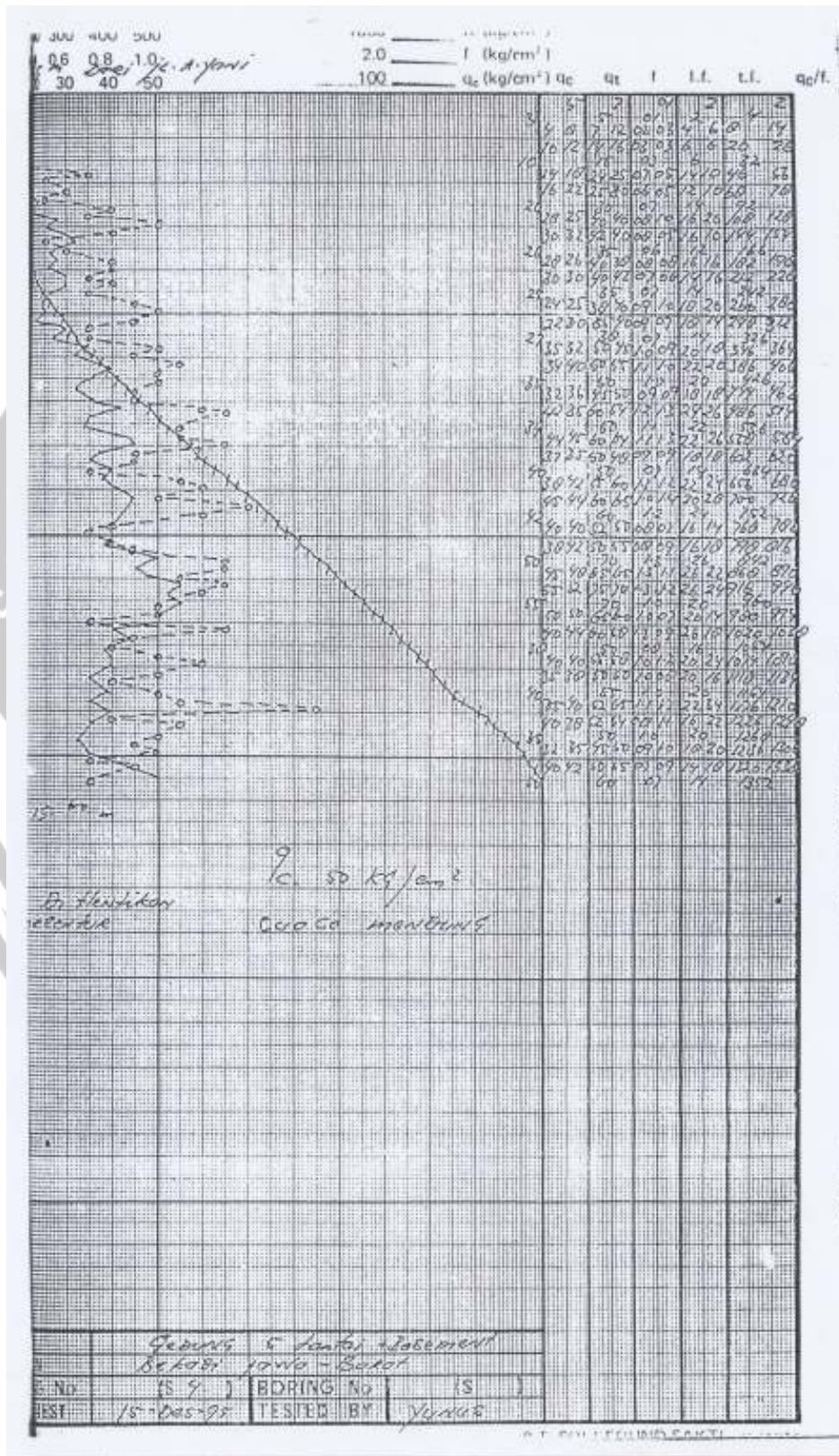
| Diameter (cm) | \bar{P}_1 tiang tekan (tonf) | \bar{P}_1 tiang tarik (tonf) |
|------------------|-----------------------------------|-----------------------------------|
| 50 | 100 | 50 |
| 80 | 225 | 80 |
| 100 | 300 | 100 |

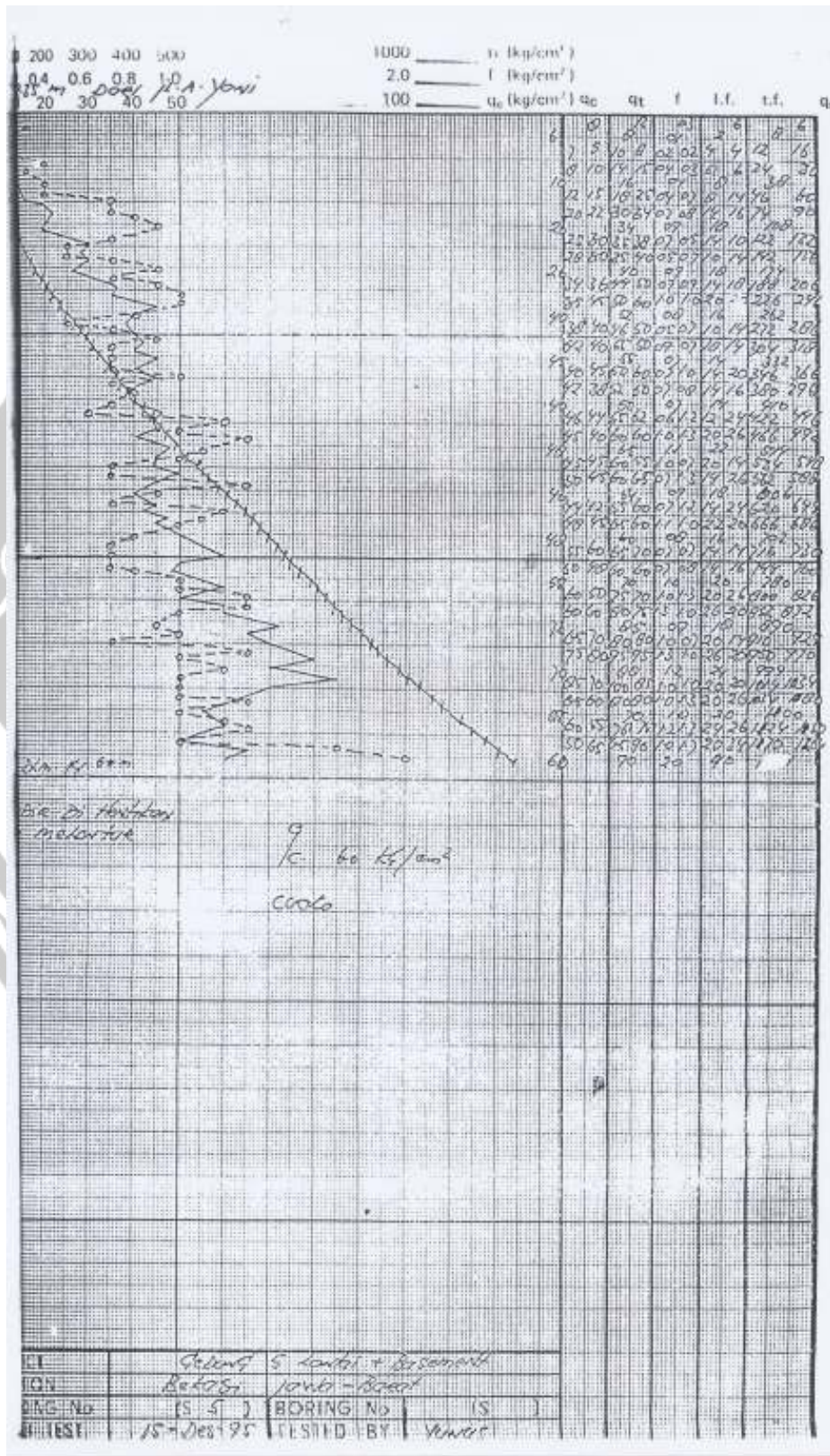












| | | | | | |
|---------|-----------------------------|--|--|-----------|------------|
| PROJEK | Gedung 5 lantai + Basement, | | | MULAI | 08-12-95 |
| LOKASI | Rokasi, Jabar. | | | SELESAI | 10-12-95 |
| WILAYAH | J.A. I | | | MAT | 0,35 m |
| DALAM | 25 ⁰⁰ m | | | ASISTEN | WIDIA H.S. |
| LEVEL | -2,35 m dari J.A. yang. | | | CREW INTI | Katrin |

| G.111 | CORONG TANAH | S P I | | | | JENIS DAN WARNA TANAH | KET. |
|-------|--------------|-------|----|-----|----|---------------------------------|-------------------|
| | | I | II | III | IV | | |
| | | | | | | campuran silt, lempung, lempung | |
| | | 3 | 5 | 6 | 11 | campuran silt, lempung, lempung | giling 1/4" 250mm |
| | | 4 | 2 | 6 | 10 | campuran silt, lempung, lempung | |
| | | 5 | 7 | 13 | 19 | campuran silt, lempung, lempung | giling 1/4" 250mm |
| | | 7 | 9 | 13 | 22 | campuran silt, lempung, lempung | |
| | | 7 | 7 | 11 | 18 | campuran silt, lempung, lempung | |
| | | 11 | 7 | 2 | 16 | campuran silt, lempung, lempung | |
| | | 3 | 4 | 11 | 8 | campuran silt, lempung, lempung | |
| | | 4 | 4 | 5 | 7 | campuran silt, lempung, lempung | |
| | | 2 | 2 | 2 | 4 | campuran silt, lempung, lempung | |
| | | 1 | 6 | 1 | 12 | silt, lempung, lempung | giling 1/4" 250mm |
| | | 7 | 14 | 20 | 42 | campuran silt, lempung, lempung | |
| | | 7 | 12 | 14 | 27 | campuran silt, lempung, lempung | |
| | | 11 | 12 | 23 | 23 | campuran silt, lempung, lempung | |
| | | 12 | 18 | 22 | 40 | campuran silt, lempung, lempung | |
| | | 14 | 21 | 25 | 45 | campuran silt, lempung, lempung | |

PT. SOLEFOUNDA SAKTI

| | | | |
|--------|--------------------------|-----------|----------|
| PROYK | 650493 Cantai + Berment. | MUNI | 05-12-95 |
| LOKASI | Kitasi Jabar. | SIITSAI | 07-12-95 |
| BORING | 30-II | MAT | 0.10M. |
| DALAM | 350m. | ASISTEN | Utomo H. |
| LEVEL | - 2.35 m Dari 2m A. Yani | CREW INTI | Kalirin |

| DEPTH | CONTOH TANAH | SIIT | | | | JENIS DAN WARNA TANAH | KI-T |
|-------|--------------|------|----|-----|-----|---|---------------------|
| | | I | II | III | IV | | |
| | 200 201 | | | | | Lempung silt sabbat kuning | |
| | 202 203 | 5 | 6 | 7 | 11 | Lempung silt abu-abu sabbat kuning hitam Lempung silt abu-abu kuning | 200g 0.4 2.0m |
| | 204 205 | 4 | 5 | 6 | 11 | Lempung silt abu-abu kuning hitam Lempung silt abu-abu merah | |
| | 206 207 | 4 | 5 | 8 | 11 | " " " " | 200g 0.4 2.0m |
| | 208 209 | | | | | Lempung silt abu-abu sabbat | |
| | 210 211 | 2 | 2 | 3 | 5 | Lempung silt abu-abu hitam | |
| | 212 213 | | | | | Lempung silt abu-abu merah kuning | |
| | 214 215 | 4 | 5 | 6 | 12 | silt sabbat kemerahan | |
| | 216 217 | | | | | Silt sabbat kuning | |
| | 218 219 | 3 | 5 | 2 | 12 | silt sabbat kuning hitam sedikit | |
| | 220 221 | 5 | 6 | 7 | 13 | Silt sabbat kuning | |
| | 222 223 | | | | | " " " " | |
| | 224 225 | 8 | 11 | 4 | 8 | Lempung silt sabbat hitam silt sabbat hitam pekat | |
| | 226 227 | 4 | 5 | 4 | 8 | Silt sabbat | |
| | 228 229 | 4 | 5 | 15 | 23 | " " " " | |
| | 230 231 | 8 | 12 | 24 | 46 | Padas silt sabbat | 200g 0.4 2.0m |
| | 232 233 | | | | | Padas pasir halus sabbat | |
| | 234 235 | 17 | 17 | 18 | 32 | silt abu-abu padas | |
| | 236 237 | 12 | 15 | 24 | 39 | silt sabbat kuning padas | |
| | 238 239 | | | | | Padas silt sabbat | |
| | 240 241 | 11 | 17 | 24 | 41 | Padas silt abu-abu sabbat | |
| | 242 243 | 25 | 52 | 60 | 112 | " " " " | PT. SOLEFOUND SAKTI |