

## BAB VI

### KESIMPULAN DAN SARAN

#### 6.1. Kesimpulan

Berdasarkan hasil perancangan ulang yang telah dilakukan terhadap bangunan Hotel Arcs di Propinsi Daerah Istimewa Yogyakarta, Penyusun dapat mengambil beberapa kesimpulan berikut ini:

1. Pada perancangan pelat, menggunakan sistem pelat 2 arah.

Untuk seluruh pelat lantai bangunan menggunakan tebal pelat 120 mm dengan P10 mm sebagai tulangan utamanya.

Untuk pelat atap bangunan menggunakan tebal pelat 100 mm dengan P10 mm sebagai tulangan utama dan P10 mm sebagai tulangan susutnya.

2. Pada perancangan balok, digunakan dimensi 400 mm x 600 mm dan 500 mm x 750 mm sebagai balok induk, dimensi 300 mm x 500 mm dan 400 mm x 600 mm sebagai balok anak.

Untuk tulangan lentur balok menggunakan D29 dan P12 sebagai tulangan geser balok, dengan jumlah yang disesuaikan menurut kebutuhan masing-masing dimensinya.

3. Pada perancangan kolom, digunakan dimensi 900 mm x 900 mm untuk kolom lantai dasar, lantai *mezza* dan lantai-2 bangunan; dimensi 800 mm x 800 mm untuk kolom lantai-3 dan lantai-4 bangunan; sedangkan untuk kolom lantai-5, lantai-6 dan kolom lantai-7 (atap) digunakan dimensi 700 mm x 700 mm.

Tulangan utama kolom menggunakan D29 dan P12 sebagai tulangan gesernya, dengan jumlah yang disesuaikan menurut kebutuhan masing-masing dimensi kolom.

## 6.2. Saran

Adapun beberapa saran yang dapat disampaikan oleh Penyusun, yang mungkin bermanfaat bagi para penyusun Tugas Akhir serupa, antara lain:

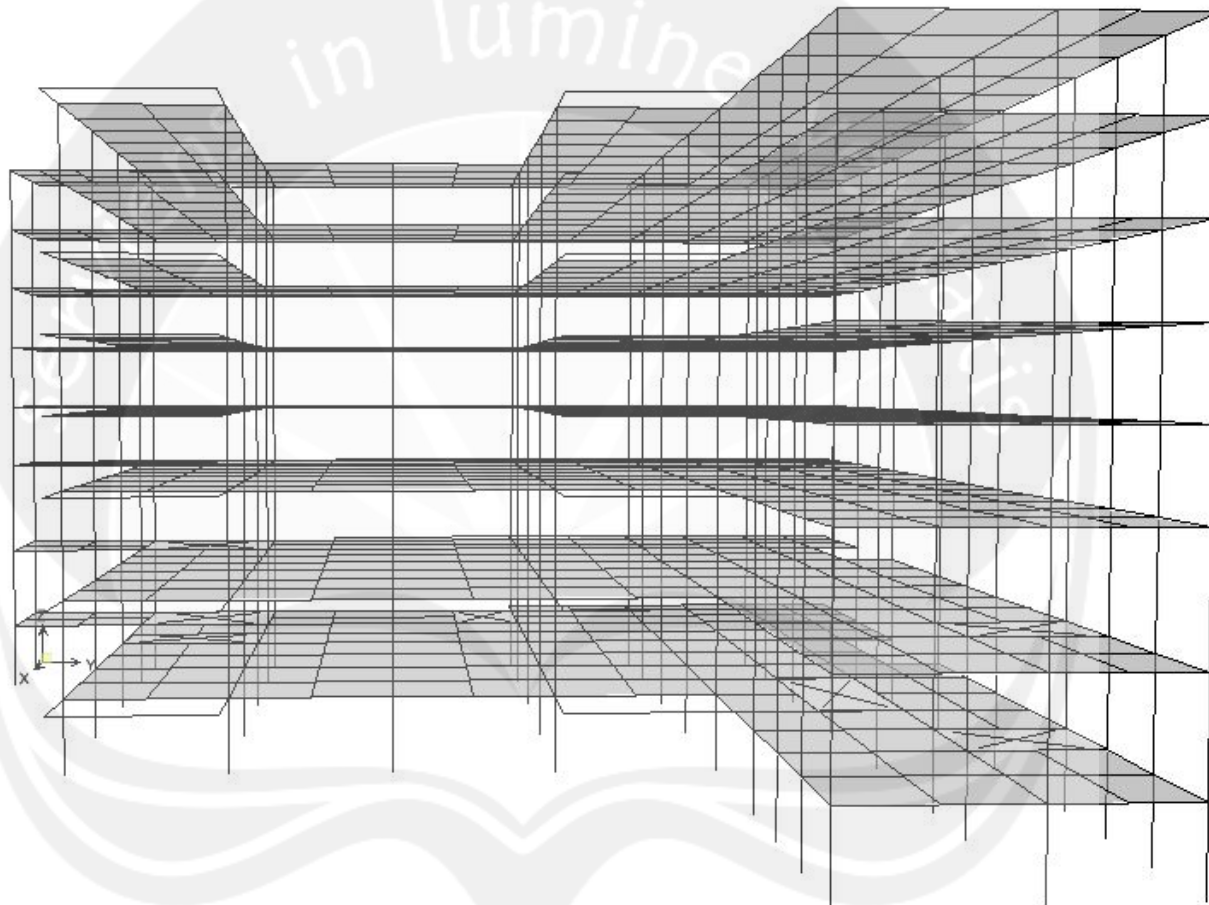
1. Untuk perencanaan, sebaiknya direncanakan dengan denah struktur bangunan yang sesederhana mungkin, agar diperoleh estimasi dimensi struktur yang baik dan seragam, serta perilaku strukturnya yang sesuai dengan peraturan-peraturan yang berlaku.
2. Untuk perancangan strukturnya, dapat menggunakan program bantu analisis dengan komputer yang telah cukup dipahami agar benar-benar mempermudah dan mempercepat proses perancangan strukturnya.

## DAFTAR PUSTAKA

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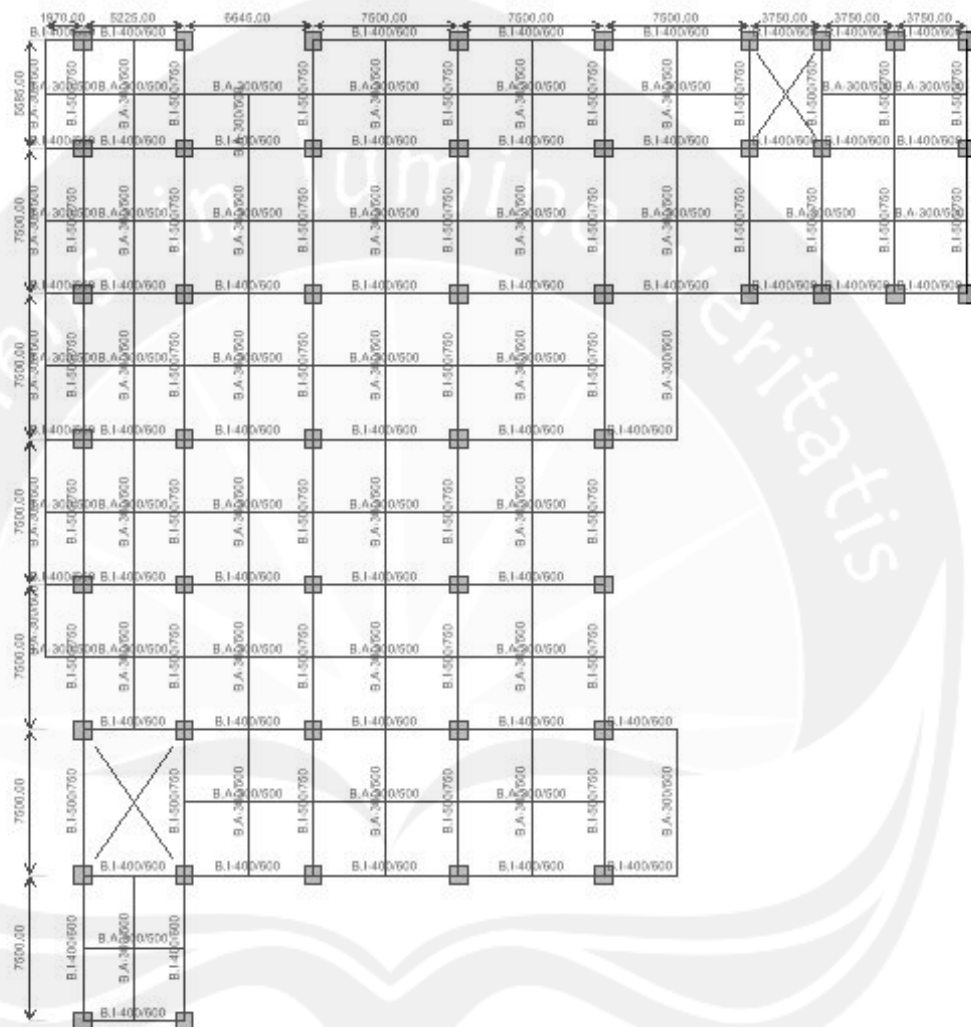


**LAMPIRAN**



**Denah Hotel Arcs - 3 dimensi**

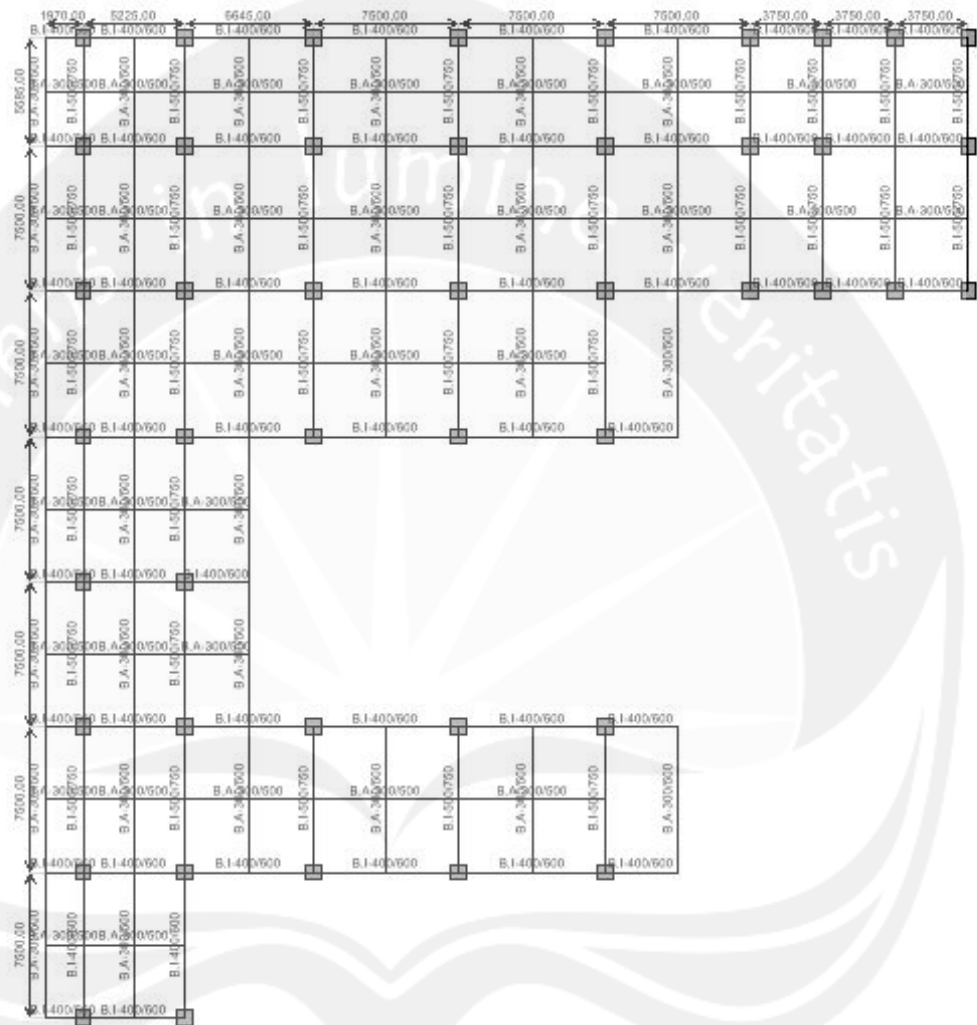




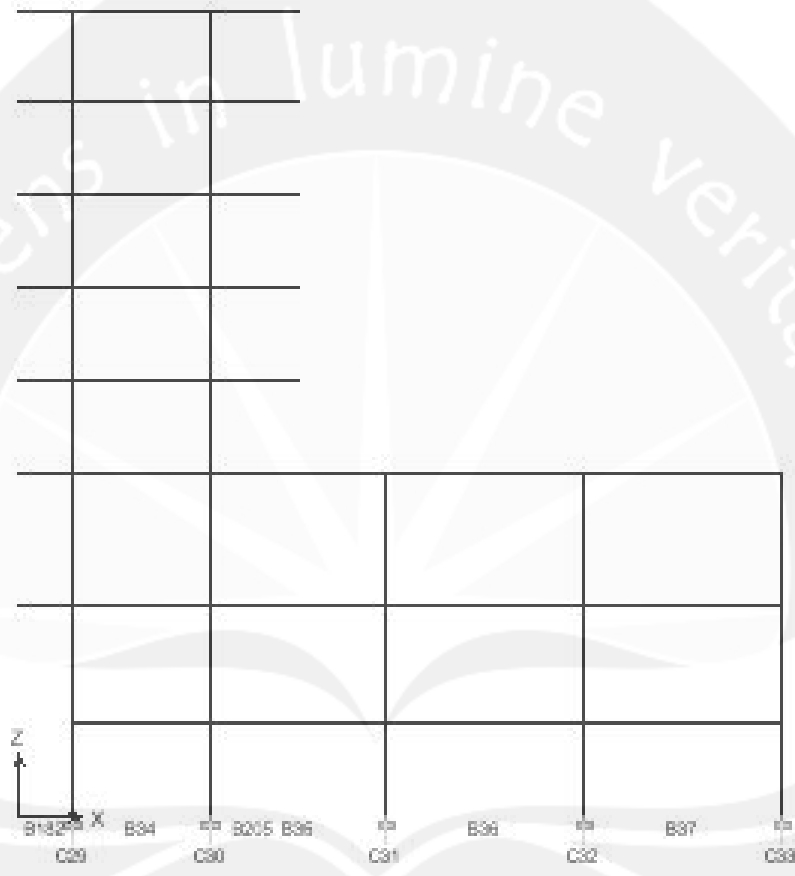
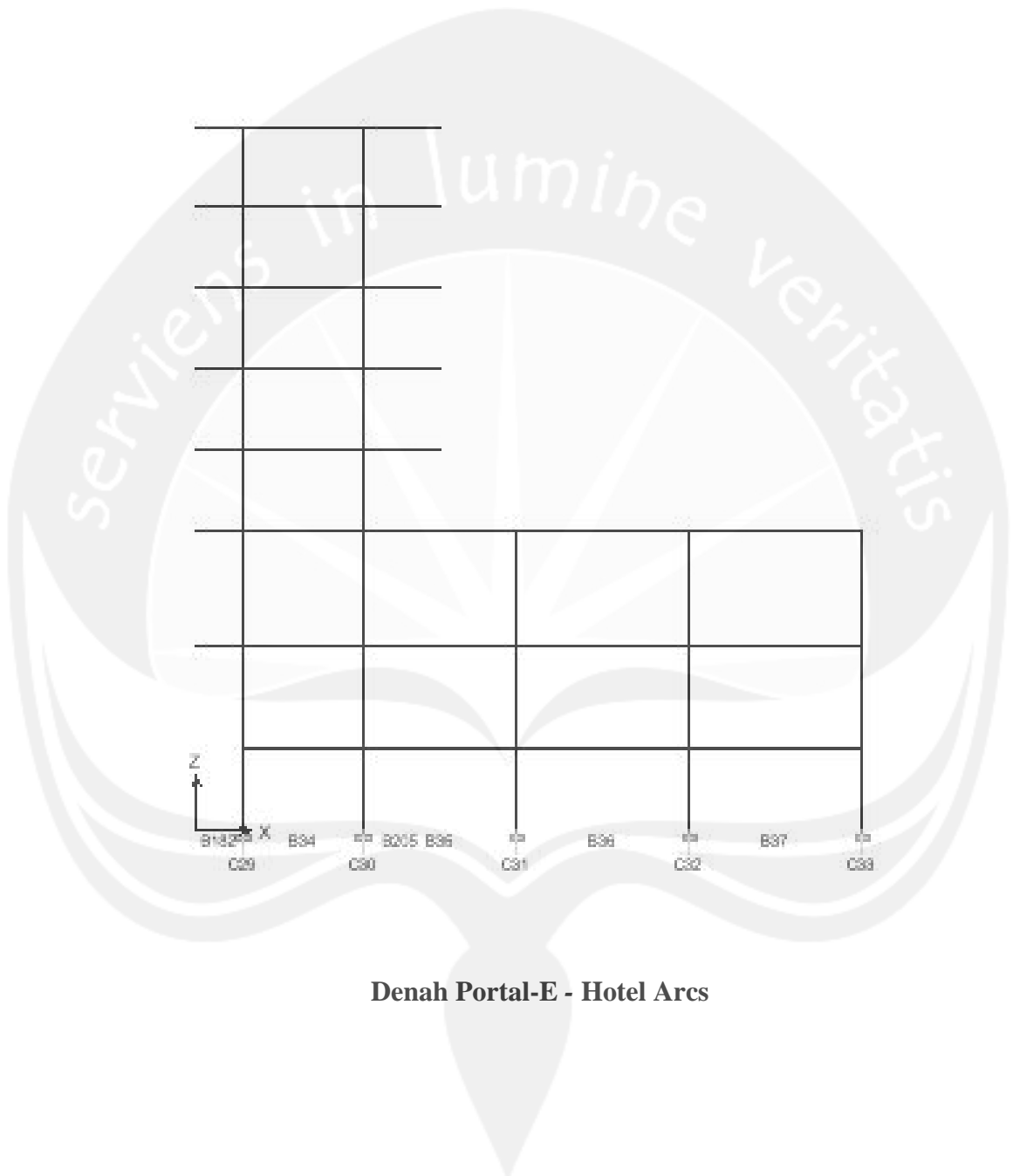
Denah Lt.-2 - Hotel Arcs



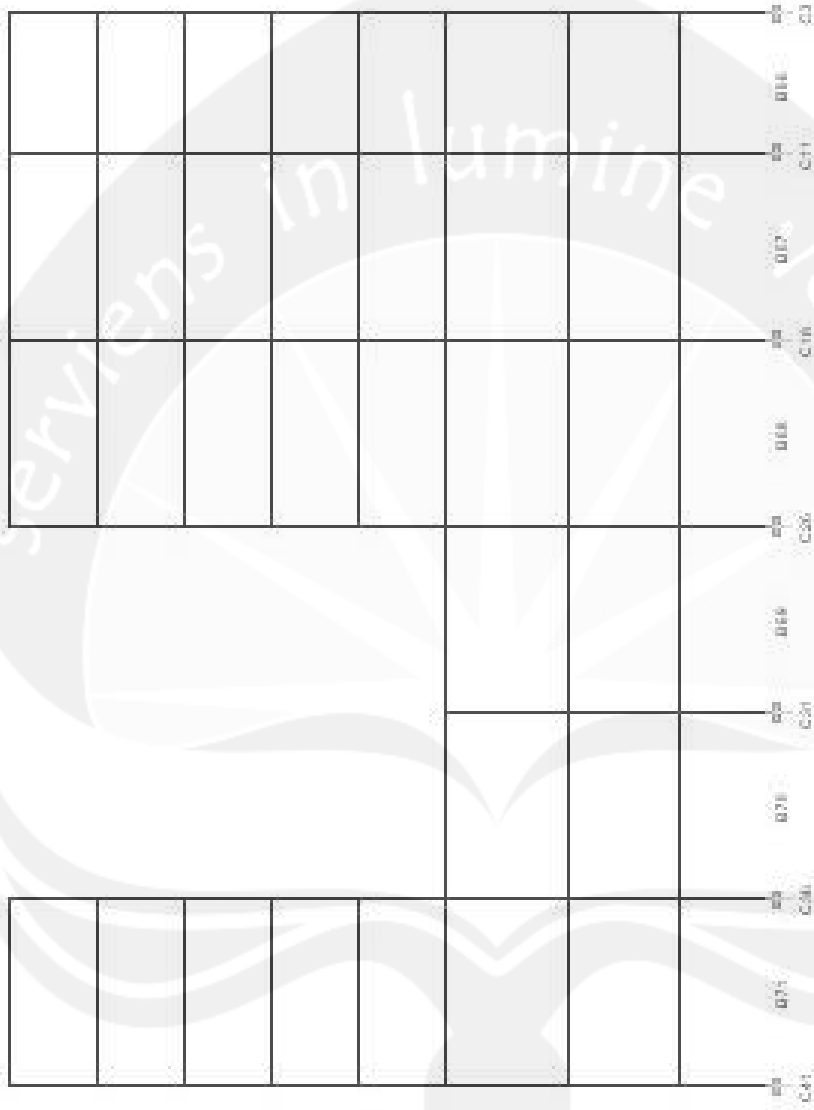




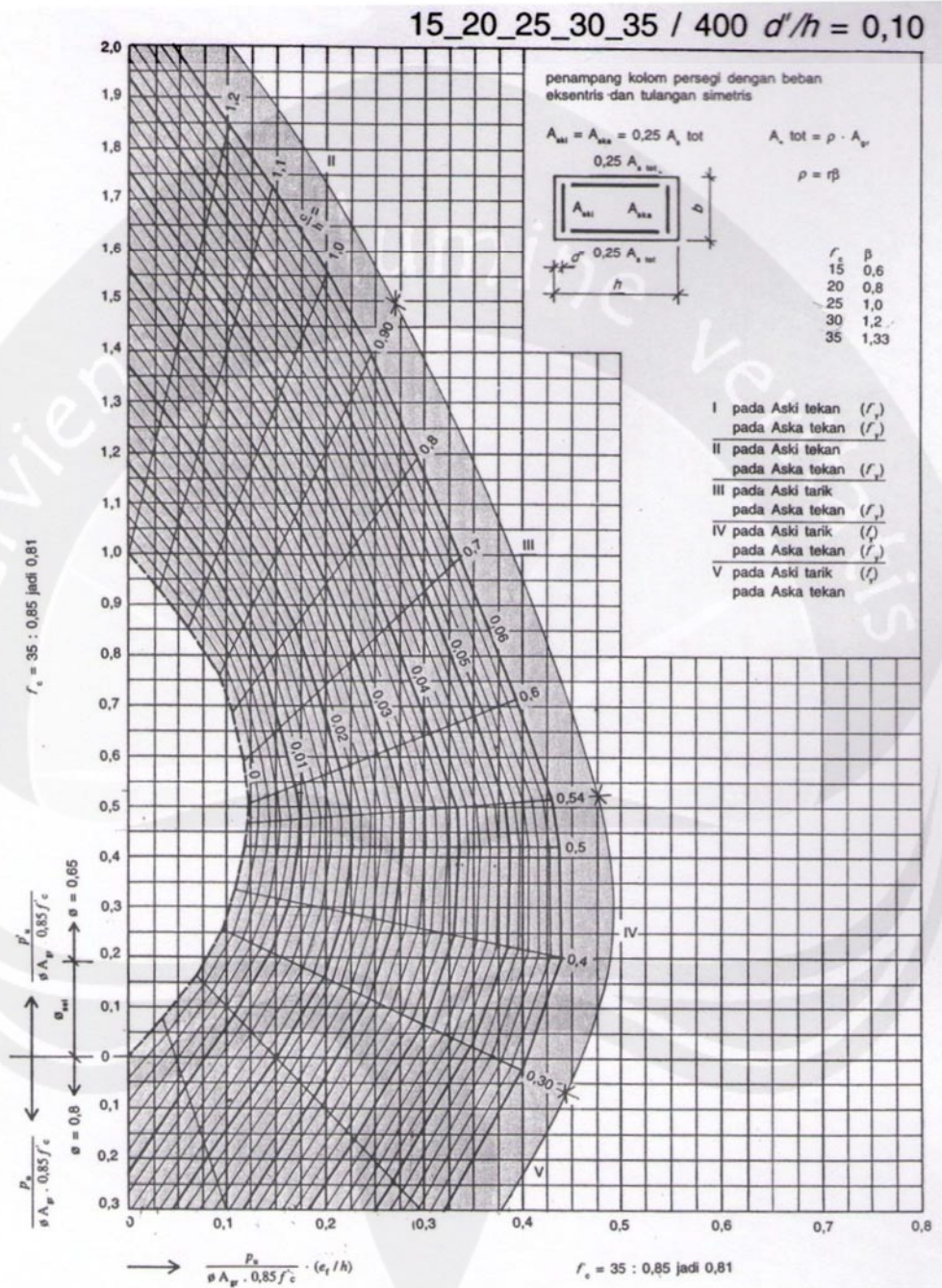
Denah Lt.-4 s/d Lt.7 (Atap) - Hotel Arcs



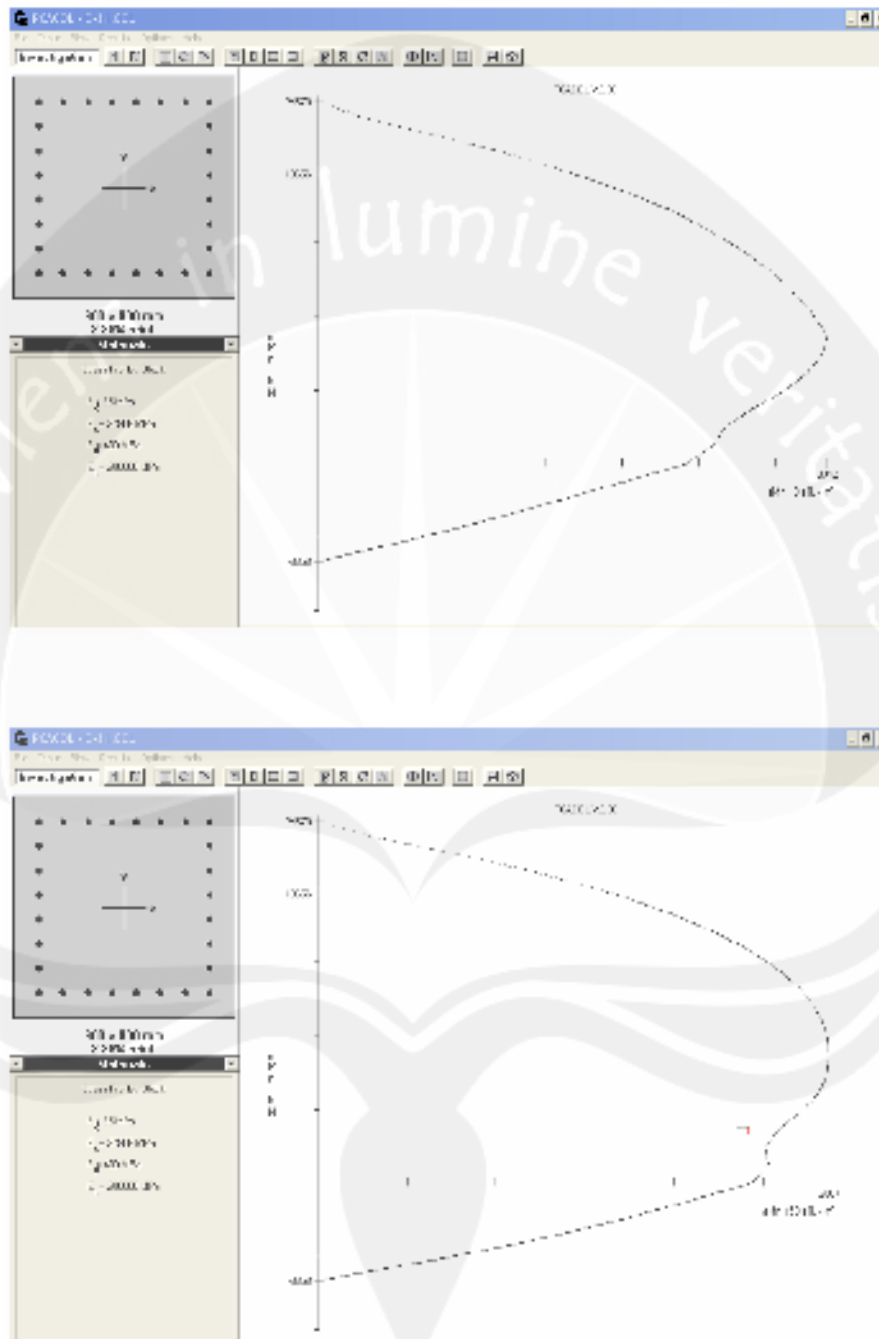
**Denah Portal-E - Hotel Arcs**



Denah Portal-3 - Hotel Arcs



**Diagram Interaksi Kolom menurut Gideon Kusuma dan W.C. Vis**



**Diagram Interaksi Kolom dengan program *PCACOL***

**LOAD COMBINATIONS**

<b>Combo</b>	<b>Type</b>	<b>Case</b>	<b>Factor</b>	<b>CaseType</b>	<b>SortID</b>
UDCON1	ADD	DEAD	1,4	Static	1
UDCON2	ADD	DEAD	1,2	Static	2
UDCON2		LIVE	1,6	Static	3
UDCON3	ADD	DEAD	1,2	Static	4
UDCON3		LIVE	1	Static	5
UDCON3		EX	1	Static	6
UDCON3		EY	1	Static	7
UDCON4	ADD	DEAD	1,2	Static	8
UDCON4		LIVE	1	Static	9
UDCON4		EX	-1	Static	10
UDCON4		EY	1	Static	11
UDCON5	ADD	DEAD	1,2	Static	12
UDCON5		LIVE	1	Static	13
UDCON5		EY	-1	Static	14
UDCON5		EX	-1	Static	15
UDCON6	ADD	DEAD	1,2	Static	16
UDCON6		LIVE	1	Static	17
UDCON6		EY	-1	Static	18
UDCON6		EX	1	Static	19
UDCON7	ADD	DEAD	0,9	Static	20
UDCON7		EX	1	Static	21
UDCON7		EY	1	Static	22
UDCON8	ADD	DEAD	0,9	Static	23
UDCON8		EX	-1	Static	24
UDCON8		EY	1	Static	25
UDCON9	ADD	DEAD	0,9	Static	26
UDCON9		EY	-1	Static	27
UDCON9		EX	-1	Static	28
UDCON10	ADD	DEAD	0,9	Static	29
UDCON10		EY	-1	Static	30
UDCON10		EX	1	Static	31

**BEAM FORCES (kNmm)**

Story	Beam	Load	Loc	P	V2	V3	T	M2	M3
LT.3	B35	UDCON1	450	0	-136,227	0	-416,1553	0	-43154,36
LT.3	B35	UDCON1	2365	0	-55,91671	0	-416,1553	0	143728,7
LT.3	B35	UDCON1	6145	0	223,7658	0	-416,1553	0	-286557,8
LT.3	B35	UDCON2	450	0	-147,0728	8,88178E-17	-341,0471	1,41931E-13	-53558,09
LT.3	B35	UDCON2	2365	0	-60,63461	8,88178E-17	-341,0471	-2,81553E-14	149629,7
LT.3	B35	UDCON2	6145	0	234,6673	0	-341,0471	0	-296443,3
LT.3	B35	UDCON3	450	0	57,33809	-7,04992E-15	1799,444	-1,12658E-11	506210,1
LT.3	B35	UDCON3	2365	0	137,1759	-7,04992E-15	1799,444	2,23482E-12	323589,3
LT.3	B35	UDCON3	6145	0	411,3798	0	1799,444	0	-819152,1
LT.3	B35	UDCON4	450	0	-334,6993	7,16094E-15	5171,148	1,14432E-11	-617311,3
LT.3	B35	UDCON4	2365	0	-254,8615	7,16094E-15	5171,148	-2,27002E-12	-49180,31
LT.3	B35	UDCON4	6145	0	19,56577	0	5171,148	0	283084,9
LT.3	B35	UDCON5	450	0	-328,7535	7,16094E-15	-2493,281	1,14432E-11	-600899,8
LT.3	B35	UDCON5	2365	0	-248,9157	7,16094E-15	-2493,281	-2,27002E-12	-44155,13
LT.3	B35	UDCON5	6145	0	25,80373	0	-2493,281	0	264382,3
LT.3	B35	UDCON6	450	0	63,28391	-7,04992E-15	-5864,986	-1,12658E-11	522621,5
LT.3	B35	UDCON6	2365	0	143,1218	-7,04992E-15	-5864,986	2,23482E-12	328614,5
LT.3	B35	UDCON6	6145	0	417,6177	0	-5864,986	0	-837854,8
LT.3	B35	UDCON7	450	0	105,4713	-7,10543E-15	1878,834	-1,13545E-11	525812,9
LT.3	B35	UDCON7	2365	0	157,0993	-7,10543E-15	1878,834	2,25242E-12	276269,3
LT.3	B35	UDCON7	6145	0	336,6375	0	1878,834	0	-725982,9
LT.3	B35	UDCON8	450	0	-286,5661	7,10543E-15	5250,539	1,13545E-11	-597708,4
LT.3	B35	UDCON8	2365	0	-234,9381	7,10543E-15	5250,539	-2,25242E-12	-96500,35
LT.3	B35	UDCON8	6145	0	-55,17655	0	5250,539	0	376254,1
LT.3	B35	UDCON9	450	0	-280,6203	7,10543E-15	-2413,891	1,13545E-11	-581297,1
LT.3	B35	UDCON9	2365	0	-228,9923	7,10543E-15	-2413,891	-2,25242E-12	-91475,17
LT.3	B35	UDCON9	6145	0	-48,93859	0	-2413,891	0	357551,5
LT.3	B35	UDCON10	450	0	111,4171	-7,10543E-15	-5785,595	-1,13545E-11	542224,3
LT.3	B35	UDCON10	2365	0	163,0452	-7,10543E-15	-5785,595	2,25242E-12	281294,4
LT.3	B35	UDCON10	6145	0	342,8754	0	-5785,595	0	-744685,6
LT.2	B35	UDCON1	450	0	-157,69	8,54872E-16	-98,06704	1,04776E-12	-121800,1
LT.2	B35	UDCON1	2365	0	-82,55623	8,54872E-16	-98,06704	-5,89318E-13	111141,2
LT.2	B35	UDCON1	6145	0	185,4912	-3,88578E-16	-98,06704	4,60115E-13	-195940,8
LT.2	B35	UDCON2	450	0	-169,1411	7,32747E-16	-68,84523	8,98082E-13	-132934
LT.2	B35	UDCON2	2365	0	-87,13998	7,32747E-16	-68,84523	-5,05129E-13	116763,1
LT.2	B35	UDCON2	6145	0	196,2556	-3,33067E-16	-68,84523	4,85334E-13	-204529,4
LT.2	B35	UDCON3	450	0	-44,14631	4,28546E-15	-2439,127	1,21172E-10	194203,5
LT.2	B35	UDCON3	2365	0	31,25453	4,28546E-15	-2439,127	1,12965E-10	210173,8
LT.2	B35	UDCON3	6145	0	294,2343	-5,89528E-14	-2439,127	1,62268E-10	-508412,6
LT.2	B35	UDCON4	450	0	-273,5395	-2,81997E-15	-1600,617	1,13455E-10	-452531,6
LT.2	B35	UDCON4	2365	0	-198,1386	-2,81997E-15	-1600,617	1,18855E-10	2726,588
LT.2	B35	UDCON4	6145	0	65,06059	-5,54001E-14	-1600,617	1,59516E-10	141314
LT.2	B35	UDCON5	450	0	-268,6522	-2,81997E-15	2290,028	-1,19376E-10	-438671
LT.2	B35	UDCON5	2365	0	-193,2514	-2,81997E-15	2290,028	-1,13975E-10	7228,057
LT.2	B35	UDCON5	6145	0	70,32957	5,82867E-14	2290,028	-1,61365E-10	126788,8
LT.2	B35	UDCON6	450	0	-39,25904	4,28546E-15	1451,518	-1,11659E-10	208064,1
LT.2	B35	UDCON6	2365	0	36,1418	4,28546E-15	1451,518	-1,19866E-10	214675,2
LT.2	B35	UDCON6	6145	0	299,5033	5,4734E-14	1451,518	-1,58614E-10	-522937,8
LT.2	B35	UDCON7	450	0	10,88082	4,10227E-15	-2427,621	1,20947E-10	238137,2
LT.2	B35	UDCON7	2365	0	59,18109	4,10227E-15	-2427,621	1,13091E-10	172920,8
LT.2	B35	UDCON7	6145	0	231,1967	-5,88696E-14	-2427,621	1,62112E-10	-443562,6
LT.2	B35	UDCON8	450	0	-218,5123	-3,00315E-15	-1589,11	1,13231E-10	-408597,9
LT.2	B35	UDCON8	2365	0	-170,2121	-3,00315E-15	-1589,11	1,18982E-10	-34526,42
LT.2	B35	UDCON8	6145	0	2,022967	-5,53169E-14	-1589,111	1,59361E-10	206163,9
LT.2	B35	UDCON9	450	0	-213,6251	-3,00315E-15	2301,534	-1,196E-10	-394737,3
LT.2	B35	UDCON9	2365	0	-165,3248	-3,00315E-15	2301,534	-1,13849E-10	-30024,95



LT.2	B35	UDCON9	6145	0	7,291952	5,837E-14	2301,534	-1,61521E-10	191638,7
LT.2	B35	UDCON10	450	0	15,76809	4,10227E-15	1463,024	-1,11884E-10	251997,8
LT.2	B35	UDCON10	2365	0	64,06836	4,10227E-15	1463,024	-1,19739E-10	177422,2
LT.2	B35	UDCON10	6145	0	236,4657	5,48173E-14	1463,024	-1,58769E-10	-458087,8
MEZZA	B35	UDCON1	450	0	-170,2731	0	-470,1249	0	-131362
MEZZA	B35	UDCON1	2365	0	-91,6385	0	-470,1249	0	122323,9
MEZZA	B35	UDCON1	6145	0	201,6089	0	-470,1249	0	-215608,4
MEZZA	B35	UDCON2	450	0	-182,9825	0	-548,8666	0	-144067,6
MEZZA	B35	UDCON2	2365	0	-97,98057	0	-548,8666	0	129262,5
MEZZA	B35	UDCON2	6145	0	213,8749	0	-548,8666	9,09495E-14	-226318,2
MEZZA	B35	UDCON3	450	0	-24,64549	-8,88178E-16	-1073,996	3,9968E-13	272759
MEZZA	B35	UDCON3	2365	0	53,75612	-8,88178E-16	-1073,996	2,10054E-12	248511,9
MEZZA	B35	UDCON3	6145	0	343,0524	0	-1073,996	5,68434E-14	-625597,8
MEZZA	B35	UDCON4	450	0	-323,1493	8,88178E-16	575,9849	-3,9968E-13	-563968,9
MEZZA	B35	UDCON4	2365	0	-244,7477	8,88178E-16	575,9849	-2,10054E-12	-16581,14
MEZZA	B35	UDCON4	6145	0	44,03024	0	575,9849	5,68434E-14	232680,6
MEZZA	B35	UDCON5	450	0	-313,5439	8,88178E-16	85,68916	-3,9968E-13	-537290,5
MEZZA	B35	UDCON5	2365	0	-235,1423	8,88178E-16	85,68916	-2,10054E-12	-8297,039
MEZZA	B35	UDCON5	6145	0	53,89703	0	85,6892	5,68434E-14	204094,6
MEZZA	B35	UDCON6	450	0	-15,04009	-8,88178E-16	-1564,291	3,9968E-13	299437,4
MEZZA	B35	UDCON6	2365	0	63,36152	-8,88178E-16	-1564,291	2,10054E-12	256796
MEZZA	B35	UDCON6	6145	0	352,9192	0	-1564,291	5,68434E-14	-654183,8
MEZZA	B35	UDCON7	450	0	34,9879	-8,88178E-16	-882,0656	3,9968E-13	320577,7
MEZZA	B35	UDCON7	2365	0	85,53874	-8,88178E-16	-882,0656	2,10054E-12	207041,3
MEZZA	B35	UDCON7	6145	0	274,1834	0	-882,0656	0	-553451,6
MEZZA	B35	UDCON8	450	0	-263,5159	8,88178E-16	767,915	-3,9968E-13	-516150,2
MEZZA	B35	UDCON8	2365	0	-212,9651	8,88178E-16	767,915	-2,10054E-12	-58051,82
MEZZA	B35	UDCON8	6145	0	-24,83872	0	767,915	0	304826,8
MEZZA	B35	UDCON9	450	0	-253,9105	8,88178E-16	277,6192	-3,9968E-13	-489471,8
MEZZA	B35	UDCON9	2365	0	-203,3597	8,88178E-16	277,6192	-2,10054E-12	-49767,72
MEZZA	B35	UDCON9	6145	0	-14,97193	0	277,6193	0	276240,8
MEZZA	B35	UDCON10	450	0	44,5933	-8,88178E-16	-1372,361	3,9968E-13	347256,1
MEZZA	B35	UDCON10	2365	0	95,14414	-8,88178E-16	-1372,361	2,10054E-12	215325,4
MEZZA	B35	UDCON10	6145	0	284,0502	0	-1372,361	0	-582037,6
LT.3	B36	UDCON1	500	0	-208,3079	-5,34295E-17	-202,69	1,85876E-13	-229060,9
LT.3	B36	UDCON1	3750	0	-76,40053	-5,34295E-17	-202,69	3,59522E-13	225214,4
LT.3	B36	UDCON1	3750	0	72,96825	-6,21725E-16	-202,69	0	224944,3
LT.3	B36	UDCON1	7000	0	204,8757	-6,21725E-16	-202,69	2,02061E-12	-218176,1
LT.3	B36	UDCON2	500	0	-224,3361	-9,02056E-17	-143,9917	1,81527E-13	-248393
LT.3	B36	UDCON2	3750	0	-84,14763	-9,02056E-17	-143,9917	4,74695E-13	240474,2
LT.3	B36	UDCON2	3750	0	78,41898	-4,88498E-16	-143,9917	0	240161,8
LT.3	B36	UDCON2	7000	0	218,6075	-4,88498E-16	-143,9917	1,58762E-12	-230087,3
LT.3	B36	UDCON3	500	0	-58,81956	2,29077E-13	-777,0884	1,22067E-10	250383,3
LT.3	B36	UDCON3	3750	0	71,19706	2,29077E-13	-777,0884	-6,22432E-10	219815,7
LT.3	B36	UDCON3	3750	0	220,8679	6,05072E-16	-777,0885	-2,30102E-10	222350,9
LT.3	B36	UDCON3	7000	0	350,8846	6,05072E-16	-777,0885	-2,32069E-10	-696292,8
LT.3	B36	UDCON4	500	0	-360,4112	2,25524E-13	1599,596	1,16567E-10	-724001,3
LT.3	B36	UDCON4	3750	0	-230,3945	2,25524E-13	1599,596	-6,16385E-10	225603,9
LT.3	B36	UDCON4	3750	0	-80,87953	-1,61538E-15	1599,596	-2,35559E-10	222441,8
LT.3	B36	UDCON4	7000	0	49,13708	-1,61538E-15	1599,596	-2,30309E-10	284477,4
LT.3	B36	UDCON5	500	0	-355,5128	-2,29224E-13	466,7981	-1,2172E-10	-708127,9
LT.3	B36	UDCON5	3750	0	-225,4962	-2,29224E-13	466,7981	6,23256E-10	225557,7
LT.3	B36	UDCON5	3750	0	-75,93606	-1,61538E-15	466,7981	2,30102E-10	222458,4
LT.3	B36	UDCON5	7000	0	54,08056	-1,61538E-15	466,7981	2,35352E-10	268427,7
LT.3	B36	UDCON6	500	0	-53,92124	-2,25671E-13	-1909,886	-1,16221E-10	266256,6
LT.3	B36	UDCON6	3750	0	76,09538	-2,25671E-13	-1909,886	6,1721E-10	219769,5
LT.3	B36	UDCON6	3750	0	225,8114	6,05072E-16	-1909,886	2,35559E-10	222367,5
LT.3	B36	UDCON6	7000	0	355,828	6,05072E-16	-1909,886	2,33593E-10	-712342,5
LT.3	B36	UDCON7	500	0	14,4344	2,29116E-13	-752,244	1,22013E-10	332002,1
LT.3	B36	UDCON7	3750	0	99,23202	2,29116E-13	-752,244	-6,22613E-10	141909,7
LT.3	B36	UDCON7	3750	0	195,3102	7,10543E-16	-752,244	-2,30102E-10	144553,3



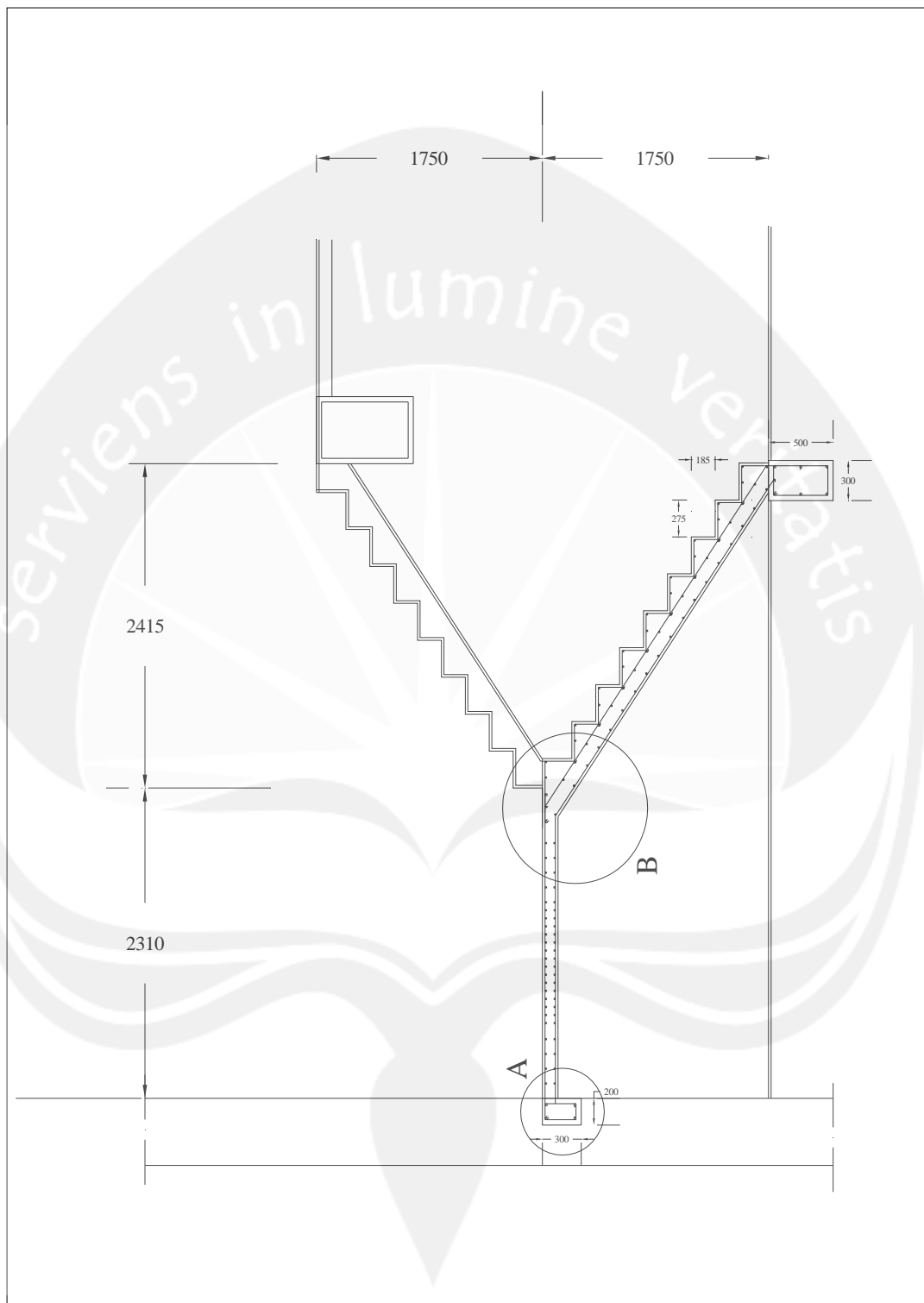
LT.3	B36	UDCON7	7000	0	280,1078	7,10543E-16	-752,244	-2,32411E-10	-622616,3
LT.3	B36	UDCON8	500	0	-287,1572	2,25563E-13	1624,441	1,16514E-10	-642382,4
LT.3	B36	UDCON8	3750	0	-202,3596	2,25563E-13	1624,441	-6,16566E-10	147697,9
LT.3	B36	UDCON8	3750	0	-106,4373	-1,5099E-15	1624,441	-2,35559E-10	144644,2
LT.3	B36	UDCON8	7000	0	-21,63969	-1,5099E-15	1624,441	-2,30652E-10	358153,9
LT.3	B36	UDCON9	500	0	-282,2589	-2,29184E-13	491,6425	-1,21774E-10	-626509
LT.3	B36	UDCON9	3750	0	-197,4613	-2,29184E-13	491,6425	6,23075E-10	147651,7
LT.3	B36	UDCON9	3750	0	-101,4938	-1,5099E-15	491,6426	2,30102E-10	144660,8
LT.3	B36	UDCON9	7000	0	-16,69622	-1,5099E-15	491,6426	2,35009E-10	342104,2
LT.3	B36	UDCON10	500	0	19,33272	-2,25632E-13	-1885,042	-1,16275E-10	347875,5
LT.3	B36	UDCON10	3750	0	104,1303	-2,25632E-13	-1885,042	6,17028E-10	141863,5
LT.3	B36	UDCON10	3750	0	200,2536	7,10543E-16	-1885,042	2,35559E-10	144569,9
LT.3	B36	UDCON10	7000	0	285,0512	7,10543E-16	-1885,042	2,3325E-10	-638666
LT.2	B36	UDCON1	500	0	-194,8652	1,55431E-16	-136,7577	-7,77156E-14	-206445,2
LT.2	B36	UDCON1	3750	0	-71,743	1,55431E-16	-136,7577	-5,82867E-13	218417,1
LT.2	B36	UDCON1	3750	0	73,04938	-3,10862E-16	-136,7577	-6,36646E-13	218194,3
LT.2	B36	UDCON1	7000	0	196,1716	-3,10862E-16	-136,7577	3,73657E-13	-210913,9
LT.2	B36	UDCON2	500	0	-210,5299	1,33227E-16	-110,9775	-6,66134E-14	-223819,1
LT.2	B36	UDCON2	3750	0	-77,8716	1,33227E-16	-110,9775	-4,996E-13	232414,4
LT.2	B36	UDCON2	3750	0	77,88074	-2,22045E-16	-110,9775	-4,54747E-13	232139,9
LT.2	B36	UDCON2	7000	0	210,539	-2,22045E-16	-110,9775	2,66898E-13	-224123,3
LT.2	B36	UDCON3	500	0	-104,3032	1,33227E-16	-331,7428	5,85958E-11	83579,18
LT.2	B36	UDCON3	3750	0	18,18322	1,33227E-16	-331,7428	5,81628E-11	213070,1
LT.2	B36	UDCON3	3750	0	162,029	-3,21965E-16	-331,7428	-9,43601E-13	217307,1
LT.2	B36	UDCON3	7000	0	284,5154	-3,21965E-16	-331,7428	1,02784E-13	-497873,4
LT.2	B36	UDCON4	500	0	-287,9836	1,33227E-16	722,5354	5,76863E-11	-508592,2
LT.2	B36	UDCON4	3750	0	-165,4972	1,33227E-16	722,5354	5,72533E-11	217860
LT.2	B36	UDCON4	3750	0	-21,64143	-1,55431E-16	722,5353	-3,41061E-14	213020,1
LT.2	B36	UDCON4	7000	0	100,845	-1,55431E-16	722,5353	4,71045E-13	94768,39
LT.2	B36	UDCON5	500	0	-284,1297	1,33227E-16	105,1052	-5,8729E-11	-496067,9
LT.2	B36	UDCON5	3750	0	-161,6432	1,33227E-16	105,1052	-5,9162E-11	217858,9
LT.2	B36	UDCON5	3750	0	-17,71775	-1,55431E-16	105,1053	-3,41061E-14	213135,5
LT.2	B36	UDCON5	7000	0	104,7687	-1,55431E-16	105,1053	4,71045E-13	82131,84
LT.2	B36	UDCON6	500	0	-100,4493	1,33227E-16	-949,1729	-5,78195E-11	96103,47
LT.2	B36	UDCON6	3750	0	22,03718	1,33227E-16	-949,1729	-5,82525E-11	213069
LT.2	B36	UDCON6	3750	0	165,9527	-3,21965E-16	-949,1729	-9,43601E-13	217422,5
LT.2	B36	UDCON6	7000	0	288,4391	-3,21965E-16	-949,1729	1,02784E-13	-510510
LT.2	B36	UDCON7	500	0	-35,35726	9,99201E-17	-306,3397	5,86125E-11	157108,7
LT.2	B36	UDCON7	3750	0	43,79272	9,99201E-17	-306,3397	5,82877E-11	138016,6
LT.2	B36	UDCON7	3750	0	136,8337	-2,83107E-16	-306,3398	-8,6402E-13	142353,5
LT.2	B36	UDCON7	7000	0	215,9837	-2,83107E-16	-306,3398	5,60774E-14	-425590,1
LT.2	B36	UDCON8	500	0	-219,0377	9,99201E-17	747,9385	5,7703E-11	-435062,6
LT.2	B36	UDCON8	3750	0	-139,8877	9,99201E-17	747,9385	5,73782E-11	142806,5
LT.2	B36	UDCON8	3750	0	-46,83674	-1,16573E-16	747,9384	4,54747E-14	138066,5
LT.2	B36	UDCON8	7000	0	32,31324	-1,16573E-16	747,9384	4,24338E-13	167051,7
LT.2	B36	UDCON9	500	0	-215,1837	9,99201E-17	130,5083	-5,87124E-11	-422538,3
LT.2	B36	UDCON9	3750	0	-136,0337	9,99201E-17	130,5083	-5,90371E-11	142805,5
LT.2	B36	UDCON9	3750	0	-42,91306	-1,16573E-16	130,5084	4,54747E-14	138181,9
LT.2	B36	UDCON9	7000	0	36,23692	-1,16573E-16	130,5084	4,24338E-13	154415,2
LT.2	B36	UDCON10	500	0	-31,5033	9,99201E-17	-923,7698	-5,78029E-11	169633
LT.2	B36	UDCON10	3750	0	47,64668	9,99201E-17	-923,7698	-5,81276E-11	138015,5
LT.2	B36	UDCON10	3750	0	140,7574	-2,83107E-16	-923,7698	-8,6402E-13	142469
LT.2	B36	UDCON10	7000	0	219,9073	-2,83107E-16	-923,7698	5,60774E-14	-438226,7
MEZZA	B36	UDCON1	500	0	-210,2253	0	-331,5309	0	-223142
MEZZA	B36	UDCON1	3750	0	-81,16169	0	-331,5309	0	241986
MEZZA	B36	UDCON1	3750	0	84,65865	0	-331,5309	-6,36646E-13	241697,5
MEZZA	B36	UDCON1	7000	0	213,7223	0	-331,5309	-6,36646E-13	-234795,6
MEZZA	B36	UDCON2	500	0	-227,5122	-4,44089E-17	-298,8261	2,22045E-14	-243137,1
MEZZA	B36	UDCON2	3750	0	-89,76123	-4,44089E-17	-298,8261	1,66534E-13	260013,3
MEZZA	B36	UDCON2	3750	0	91,92773	0	-298,8261	-5,45697E-13	259673,6
MEZZA	B36	UDCON2	7000	0	229,6787	0	-298,8261	-5,45697E-13	-250518

MEZZA	B36	UDCON3	500	0	-90,64423	-2,77556E-17	-191,4279	1,38778E-14	161578
MEZZA	B36	UDCON3	3750	0	36,93488	-2,77556E-17	-191,4279	1,04083E-13	238401,6
MEZZA	B36	UDCON3	3750	0	203,9192	2,83888E-14	-191,428	-5,45697E-13	241343,1
MEZZA	B36	UDCON3	7000	0	331,4983	2,83888E-14	-191,428	-9,28091E-11	-618256,3
MEZZA	B36	UDCON4	500	0	-337,1108	-2,77556E-17	1482,008	1,38778E-14	-635511,9
MEZZA	B36	UDCON4	3750	0	-209,5317	-2,77556E-17	1482,008	1,04083E-13	242328,1
MEZZA	B36	UDCON4	3750	0	-42,78637	2,84547E-14	1482,007	-5,45697E-13	238572
MEZZA	B36	UDCON4	7000	0	84,79276	2,84547E-14	1482,007	-9,30234E-11	180765,7
MEZZA	B36	UDCON5	500	0	-328,8909	-2,77556E-17	-395,2317	1,38778E-14	-608947,8
MEZZA	B36	UDCON5	3750	0	-201,3118	-2,77556E-17	-395,2317	1,04083E-13	242177,5
MEZZA	B36	UDCON5	3750	0	-34,58614	-2,83888E-14	-395,2316	-5,45697E-13	238625,8
MEZZA	B36	UDCON5	7000	0	92,99298	-2,83888E-14	-395,2316	9,17177E-11	154168,8
MEZZA	B36	UDCON6	500	0	-82,42433	-2,77556E-17	-2068,667	1,38778E-14	188142,1
MEZZA	B36	UDCON6	3750	0	45,15478	-2,77556E-17	-2068,667	1,04083E-13	238251
MEZZA	B36	UDCON6	3750	0	212,1194	-2,84547E-14	-2068,667	-5,45697E-13	241397
MEZZA	B36	UDCON6	7000	0	339,6985	-2,84547E-14	-2068,667	9,1932E-11	-644853,2
MEZZA	B36	UDCON7	500	0	-16,02153	0	-111,2252	0	241814,5
MEZZA	B36	UDCON7	3750	0	66,94797	0	-111,2252	0	153674,5
MEZZA	B36	UDCON7	3750	0	173,6761	2,83888E-14	-111,2252	-4,09273E-13	156735,6
MEZZA	B36	UDCON7	7000	0	256,6456	2,83888E-14	-111,2252	-9,26727E-11	-537152,6
MEZZA	B36	UDCON8	500	0	-262,4881	0	1562,21	0	-555275,4
MEZZA	B36	UDCON8	3750	0	-179,5186	0	1562,21	0	157601
MEZZA	B36	UDCON8	3750	0	-73,02949	2,84547E-14	1562,21	-4,09273E-13	153964,5
MEZZA	B36	UDCON8	7000	0	9,940006	2,84547E-14	1562,21	-9,2887E-11	261869,4
MEZZA	B36	UDCON9	500	0	-254,2682	0	-315,0289	0	-528711,3
MEZZA	B36	UDCON9	3750	0	-171,2987	0	-315,0289	0	157450,4
MEZZA	B36	UDCON9	3750	0	-64,82926	-2,83888E-14	-315,0288	-4,09273E-13	154018,3
MEZZA	B36	UDCON9	7000	0	18,14023	-2,83888E-14	-315,0288	9,18542E-11	235272,5
MEZZA	B36	UDCON10	500	0	-7,801628	0	-1988,464	0	268378,6
MEZZA	B36	UDCON10	3750	0	75,16787	0	-1988,464	0	153523,9
MEZZA	B36	UDCON10	3750	0	181,8763	-2,84547E-14	-1988,464	-4,09273E-13	156789,5
MEZZA	B36	UDCON10	7000	0	264,8458	-2,84547E-14	-1988,464	9,20684E-11	-563749,4
MEZZA	B169	UDCON1	0	0	-92,67366	0	-458,9545	0	-116997,3
MEZZA	B169	UDCON2	0	0	-98,3812	0	-541,5148	0	-122078,1
MEZZA	B169	UDCON3	0	0	-85,24744	0	-6919,941	0	-89835,77
MEZZA	B169	UDCON4	0	0	-98,10441	0	-7311,078	0	-141312,3
MEZZA	B169	UDCON5	0	0	-97,30499	0	5948,005	0	-137974,4
MEZZA	B169	UDCON6	0	0	-84,44801	0	6339,142	0	-86497,8
MEZZA	B169	UDCON7	0	0	-53,54715	0	-6729,015	0	-51143,23
MEZZA	B169	UDCON8	0	0	-66,40412	0	-7120,152	0	-102619,8
MEZZA	B169	UDCON9	0	0	-65,6047	0	6138,931	0	-99281,85
MEZZA	B169	UDCON10	0	0	-52,74773	0	6530,067	0	-47805,27

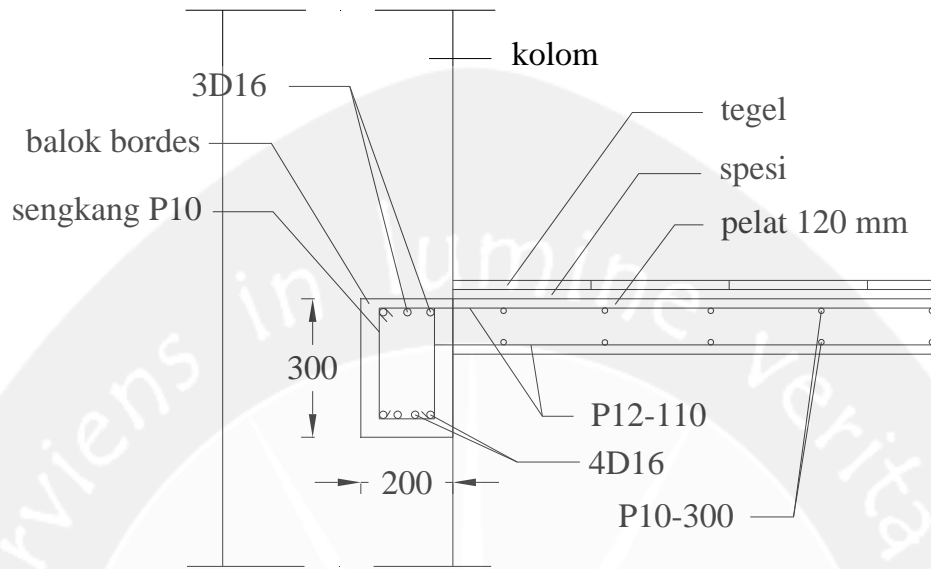
**COLUMN FORCES (kNmm)**

Story	Column	Load	Loc	P	V2	V3	T	M2	M3
LT.3	C31	UDCON1	0	-1295,69	8,600163	-6,85938	2787,903	-19590,7	-9831,87
LT.3	C31	UDCON1	2125	-1225,59	8,600163	-6,85938	2787,903	-5014,47	-28107,2
LT.3	C31	UDCON1	4250	-1155,5	8,600163	-6,85938	2787,903	9561,719	-46382,6
LT.3	C31	UDCON2	0	-1341,18	3,299041	-6,9861	2200,828	-20177,3	-21129,4
LT.3	C31	UDCON2	2125	-1281,1	3,299041	-6,9861	2200,828	-5331,88	-28139,8
LT.3	C31	UDCON2	4250	-1221,01	3,299041	-6,9861	2200,828	9513,574	-35150,3
LT.3	C31	UDCON3	0	-1303,47	392,5433	370,8048	9051,08	753141,9	640080,4
LT.3	C31	UDCON3	2125	-1243,39	392,5433	370,8048	9051,08	-34818,2	-194074
LT.3	C31	UDCON3	4250	-1183,31	392,5433	370,8048	9051,08	-822778	-1028228
LT.3	C31	UDCON4	0	-1204,34	-391,9188	387,9987	-15719,1	793622,1	-674948
LT.3	C31	UDCON4	2125	-1144,26	-391,9188	387,9987	-15719,1	-30875	157879,5
LT.3	C31	UDCON4	4250	-1084,18	-391,9188	387,9987	-15719,1	-855372	990706,9
LT.3	C31	UDCON5	0	-1205,94	-382,8908	-383,947	-4507,82	-790958	-672813
LT.3	C31	UDCON5	2125	-1145,86	-382,8908	-383,947	-4507,82	24929,76	140830,3
LT.3	C31	UDCON5	4250	-1085,78	-382,8908	-383,947	-4507,82	840817,1	954473,3
LT.3	C31	UDCON6	0	-1305,07	401,5713	-401,141	20262,33	-831438	642215,7
LT.3	C31	UDCON6	2125	-1244,99	401,5713	-401,141	20262,33	20986,6	-211123
LT.3	C31	UDCON6	4250	-1184,91	401,5713	-401,141	20262,33	873411	-1064462
LT.3	C31	UDCON7	0	-881,705	393,2457	372,9663	8571,674	759455,8	650126,1
LT.3	C31	UDCON7	2125	-836,643	393,2457	372,9663	8571,674	-33097,6	-185521
LT.3	C31	UDCON7	4250	-791,581	393,2457	372,9663	8571,674	-825651	-1021168
LT.3	C31	UDCON8	0	-782,577	-391,2163	390,1602	-16198,5	799935,9	-664902
LT.3	C31	UDCON8	2125	-737,515	-391,2163	390,1602	-16198,5	-29154,4	166432,4
LT.3	C31	UDCON8	4250	-692,454	-391,2163	390,1602	-16198,5	-858245	997767,1
LT.3	C31	UDCON9	0	-784,179	-382,1884	-381,786	-4987,23	-784644	-662767
LT.3	C31	UDCON9	2125	-739,117	-382,1884	-381,786	-4987,23	26650,39	149383,2
LT.3	C31	UDCON9	4250	-694,056	-382,1884	-381,786	-4987,23	837944,6	961533,5
LT.3	C31	UDCON10	0	-883,306	402,2737	-398,979	19782,93	-825124	652261,3
LT.3	C31	UDCON10	2125	-838,245	402,2737	-398,979	19782,93	22707,23	-202570
LT.3	C31	UDCON10	4250	-793,183	402,2737	-398,979	19782,93	870538,4	-1057402
LT.2	C31	UDCON1	0	-2539,06	-6,381304	1,573378	3171,261	-3429,65	-10179
LT.2	C31	UDCON1	1875	-2477,21	-6,381304	1,573378	3171,261	-6379,73	1785,942
LT.2	C31	UDCON1	3750	-2415,36	-6,381304	1,573378	3171,261	-9329,81	13750,89
LT.2	C31	UDCON2	0	-2627,79	-9,885575	1,883479	2770,991	-2910,64	-22312,1
LT.2	C31	UDCON2	1875	-2574,78	-9,885575	1,883479	2770,991	-6442,16	-3776,65
LT.2	C31	UDCON2	3750	-2521,77	-9,885575	1,883479	2770,991	-9973,68	14758,81
LT.2	C31	UDCON3	0	-2533,23	293,2723	313,9549	4016,423	837769	1151118
LT.2	C31	UDCON3	1875	-2480,22	293,2723	313,9549	4016,423	249103,7	601232,4
LT.2	C31	UDCON3	3750	-2427,21	293,2723	313,9549	4016,423	-339562	51346,72
LT.2	C31	UDCON4	0	-2380,26	-327,9564	320,7111	-14026,3	862513,2	-1232509
LT.2	C31	UDCON4	1875	-2327,25	-327,9564	320,7111	-14026,3	261179,9	-617591
LT.2	C31	UDCON4	3750	-2274,23	-327,9564	320,7111	-14026,3	-340153	-2672,85
LT.2	C31	UDCON5	0	-2383,76	-309,7316	-310,589	1485,984	-843612	-1185552
LT.2	C31	UDCON5	1875	-2330,75	-309,7316	-310,589	1485,984	-261258	-604805

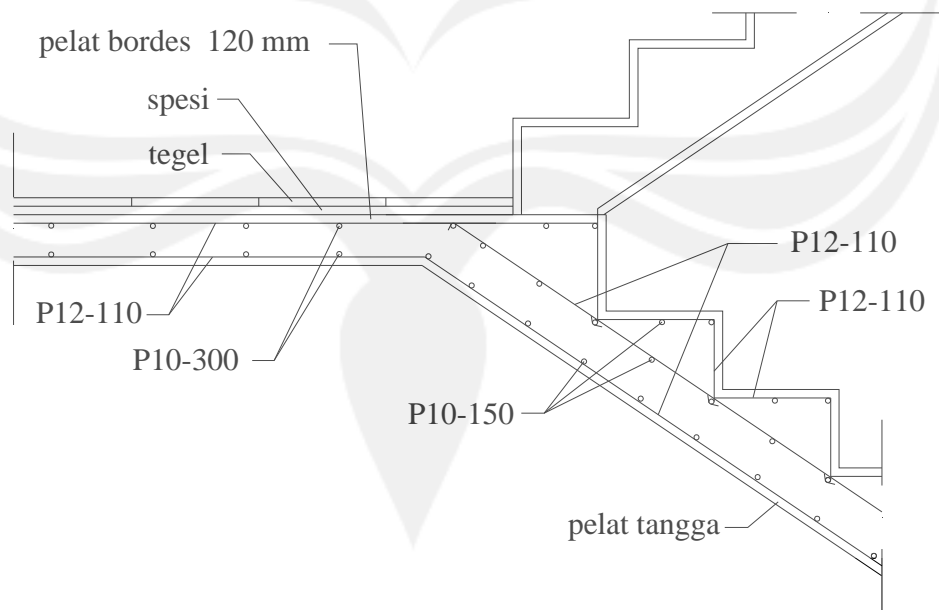
LT.2	C31	UDCON5	3750	-2277,73	-309,7316	-310,589	1485,984	321096,8	-24058,4
LT.2	C31	UDCON6	0	-2536,73	311,4971	-317,345	19528,73	-868356	1198076
LT.2	C31	UDCON6	1875	-2483,72	311,4971	-317,345	19528,73	-273334	614018,4
LT.2	C31	UDCON6	3750	-2430,71	311,4971	-317,345	19528,73	321688,6	29961,21
LT.2	C31	UDCON7	0	-1706,99	297,3997	313,2834	3303,887	838485,8	1161791
LT.2	C31	UDCON7	1875	-1667,23	297,3997	313,2834	3303,887	251079,4	604166,8
LT.2	C31	UDCON7	3750	-1627,47	297,3997	313,2834	3303,887	-336327	46542,39
LT.2	C31	UDCON8	0	-1554,01	-323,829	320,0396	-14738,9	863229,9	-1221836
LT.2	C31	UDCON8	1875	-1514,25	-323,829	320,0396	-14738,9	263155,6	-614657
LT.2	C31	UDCON8	3750	-1474,49	-323,829	320,0396	-14738,9	-336919	-7477,18
LT.2	C31	UDCON9	0	-1557,51	-305,6042	-311,261	773,4485	-842895	-1174879
LT.2	C31	UDCON9	1875	-1517,75	-305,6042	-311,261	773,4485	-259282	-601871
LT.2	C31	UDCON9	3750	-1477,99	-305,6042	-311,261	773,4485	324331,5	-28862,7
LT.2	C31	UDCON10	0	-1710,49	315,6245	-318,017	18816,19	-867640	1208749
LT.2	C31	UDCON10	1875	-1670,73	315,6245	-318,017	18816,19	-271358	616952,8
LT.2	C31	UDCON10	3750	-1630,97	315,6245	-318,017	18816,19	324923,3	25156,89
MEZZA	C31	UDCON1	0	-3647,62	2,082873	6,449382	1508,824	16577,63	16198,88
MEZZA	C31	UDCON1	1375	-3602,26	2,082873	6,449382	1508,824	7709,731	13334,93
MEZZA	C31	UDCON1	2750	-3556,91	2,082873	6,449382	1508,824	-1158,17	10470,98
MEZZA	C31	UDCON2	0	-3795,44	-0,838135	6,960803	1366,656	18394,97	7496,19
MEZZA	C31	UDCON2	1375	-3756,57	-0,838135	6,960803	1366,656	8823,871	8648,626
MEZZA	C31	UDCON2	2750	-3717,69	-0,838135	6,960803	1366,656	-747,233	9801,062
MEZZA	C31	UDCON3	0	-3645,52	328,9466	375,5402	159,2943	1665345	1356319
MEZZA	C31	UDCON3	1375	-3606,64	328,9466	375,5402	159,2943	1148977	904017,7
MEZZA	C31	UDCON3	2750	-3567,77	328,9466	375,5402	159,2943	632609,1	451716,1
MEZZA	C31	UDCON4	0	-3438,11	-370,6436	385,2603	-7604,85	1710683	-1463156
MEZZA	C31	UDCON4	1375	-3399,23	-370,6436	385,2603	-7604,85	1180950	-953521
MEZZA	C31	UDCON4	2750	-3360,36	-370,6436	385,2603	-7604,85	651217,3	-443886
MEZZA	C31	UDCON5	0	-3443,68	-328,6553	-362,693	2518,984	-1631694	-1336536
MEZZA	C31	UDCON5	1375	-3404,81	-328,6553	-362,693	2518,984	-1132991	-884634
MEZZA	C31	UDCON5	2750	-3365,93	-328,6553	-362,693	2518,984	-634288	-432733
MEZZA	C31	UDCON6	0	-3651,09	370,9349	-372,413	10283,13	-1677033	1482940
MEZZA	C31	UDCON6	1375	-3612,21	370,9349	-372,413	10283,13	-1164964	972904,6
MEZZA	C31	UDCON6	2750	-3573,34	370,9349	-372,413	10283,13	-652896	462869,1
MEZZA	C31	UDCON7	0	-2445,82	330,1399	373,2627	-209,886	1659176	1356841
MEZZA	C31	UDCON7	1375	-2416,66	330,1399	373,2627	-209,886	1145940	902898,6
MEZZA	C31	UDCON7	2750	-2387,5	330,1399	373,2627	-209,886	632703,8	448956,1
MEZZA	C31	UDCON8	0	-2238,41	-369,4502	382,9828	-7974,03	1704515	-1462635
MEZZA	C31	UDCON8	1375	-2209,25	-369,4502	382,9828	-7974,03	1177914	-954641
MEZZA	C31	UDCON8	2750	-2180,09	-369,4502	382,9828	-7974,03	651312,1	-446646
MEZZA	C31	UDCON9	0	-2243,98	-327,4619	-364,971	2149,803	-1637862	-1336014
MEZZA	C31	UDCON9	1375	-2214,82	-327,4619	-364,971	2149,803	-1136028	-885754
MEZZA	C31	UDCON9	2750	-2185,66	-327,4619	-364,971	2149,803	-634193	-435493
MEZZA	C31	UDCON10	0	-2451,39	372,1282	-374,691	9913,946	-1683201	1483462
MEZZA	C31	UDCON10	1375	-2422,23	372,1282	-374,691	9913,946	-1168001	971785,4
MEZZA	C31	UDCON10	2750	-2393,07	372,1282	-374,691	9913,946	-652801	460109,1



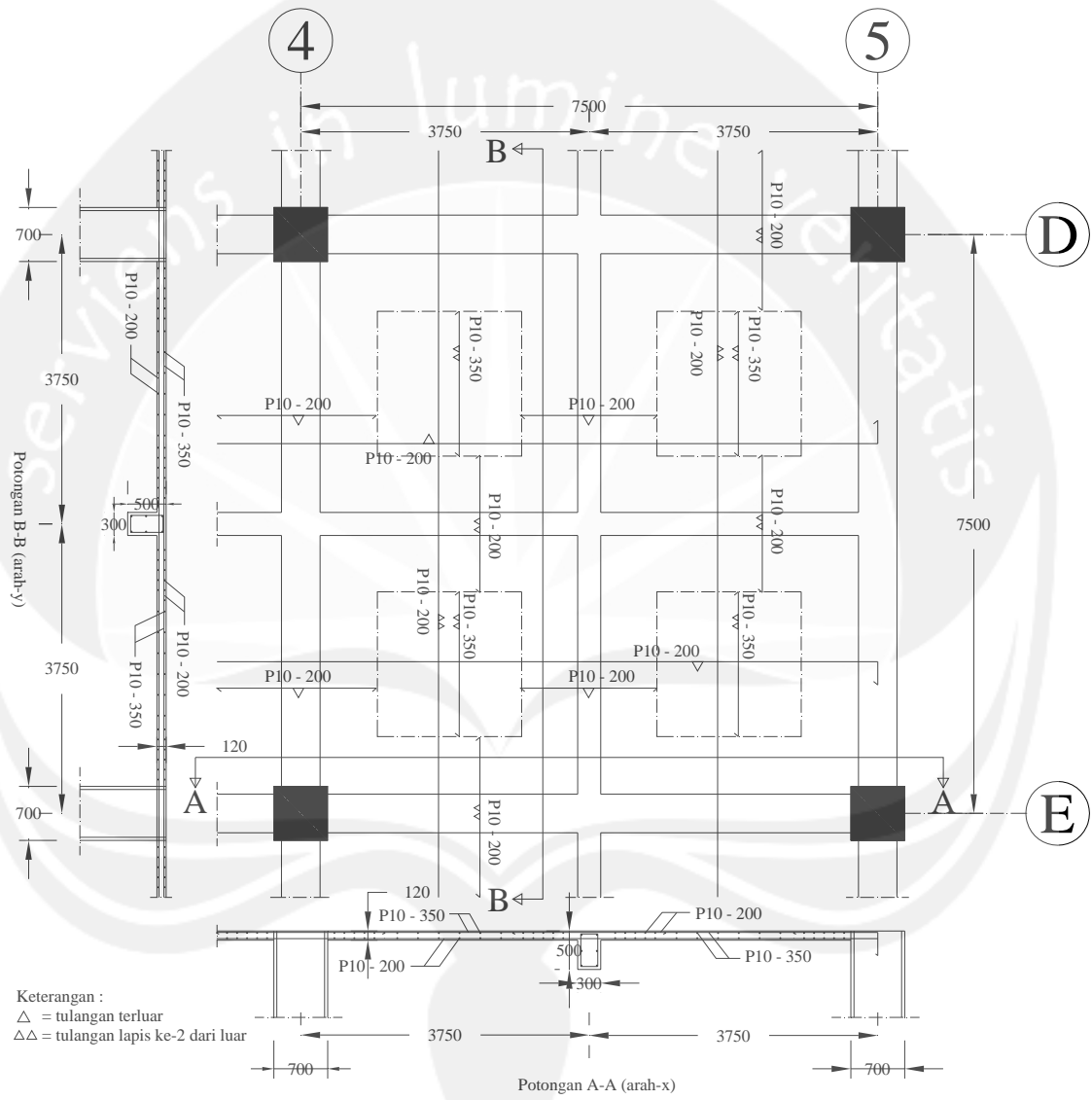
**Penulangan Tangga tipe – 1**  
**Skala 1:50**



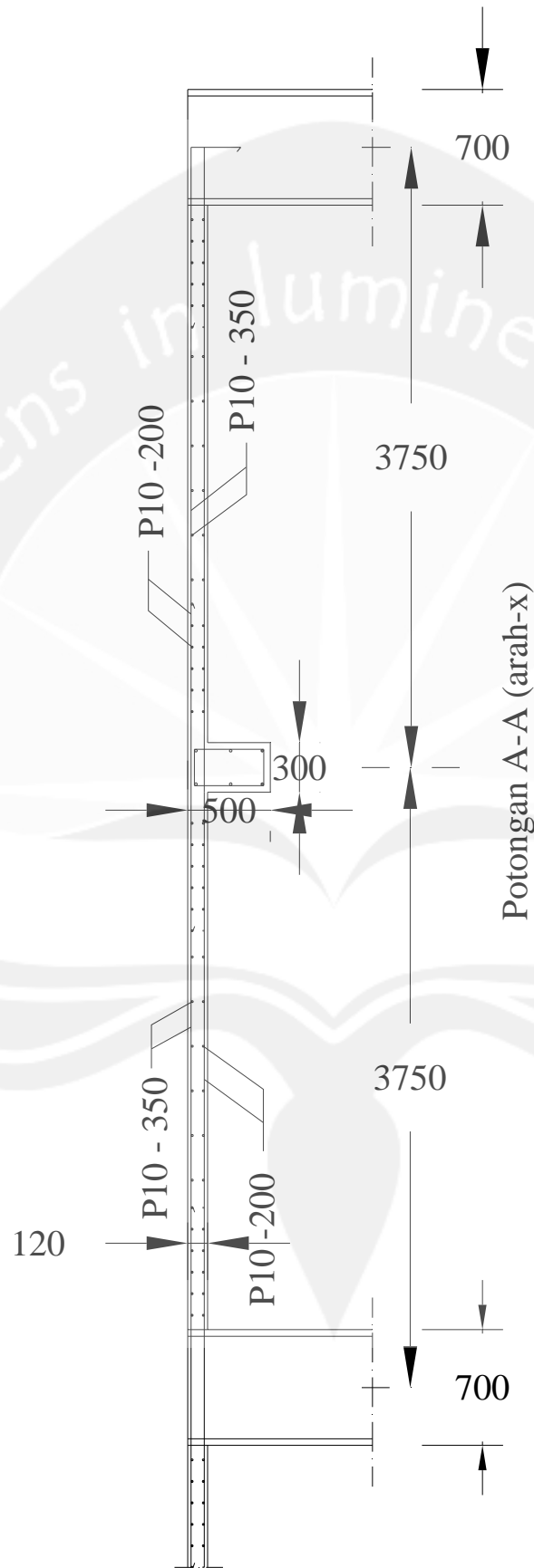
**Detil – A Penulangan pelat dan balok bordes**



**Detil – B Penulangan pelat tangga**

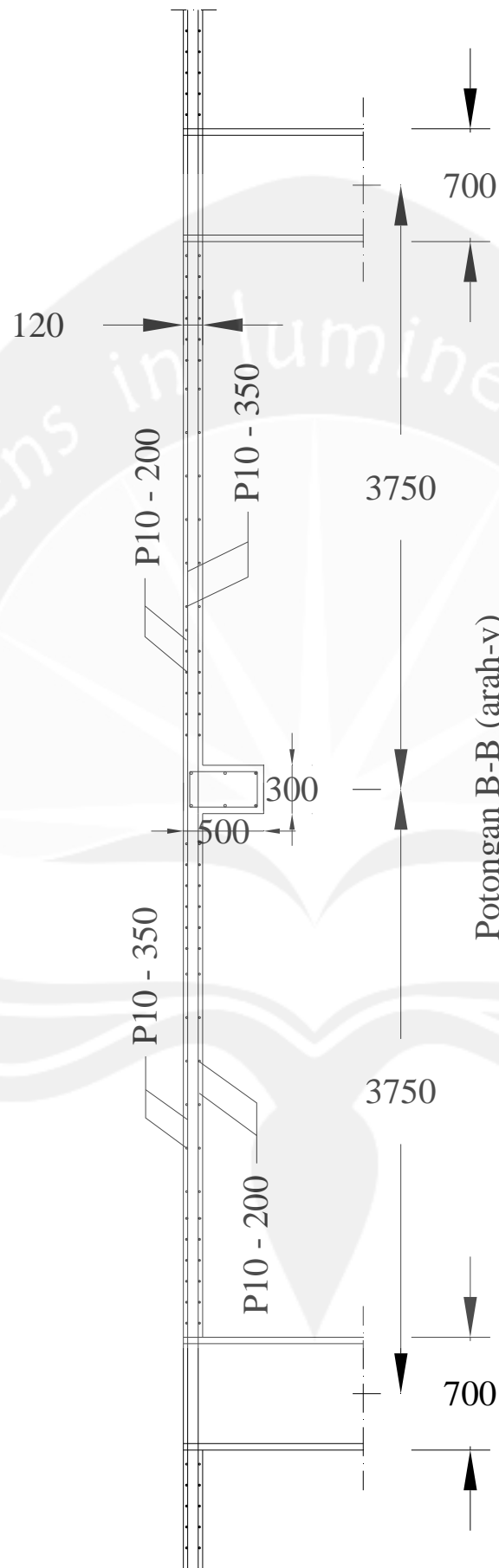


**Penulangan Pelat Atap  
 Skala 1:100**



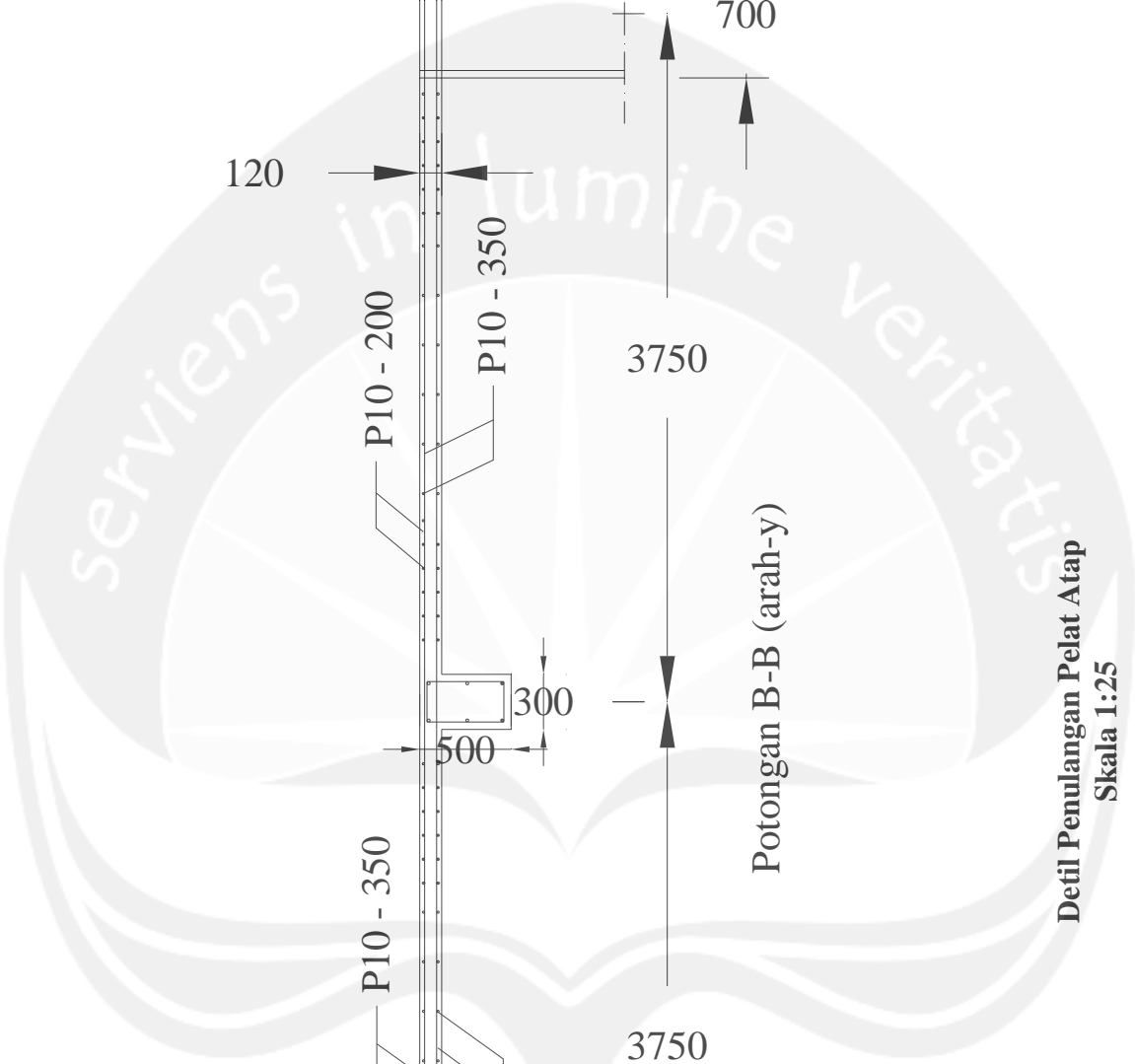
Detail Penulangan Pelat Atap  
Skala 1:25

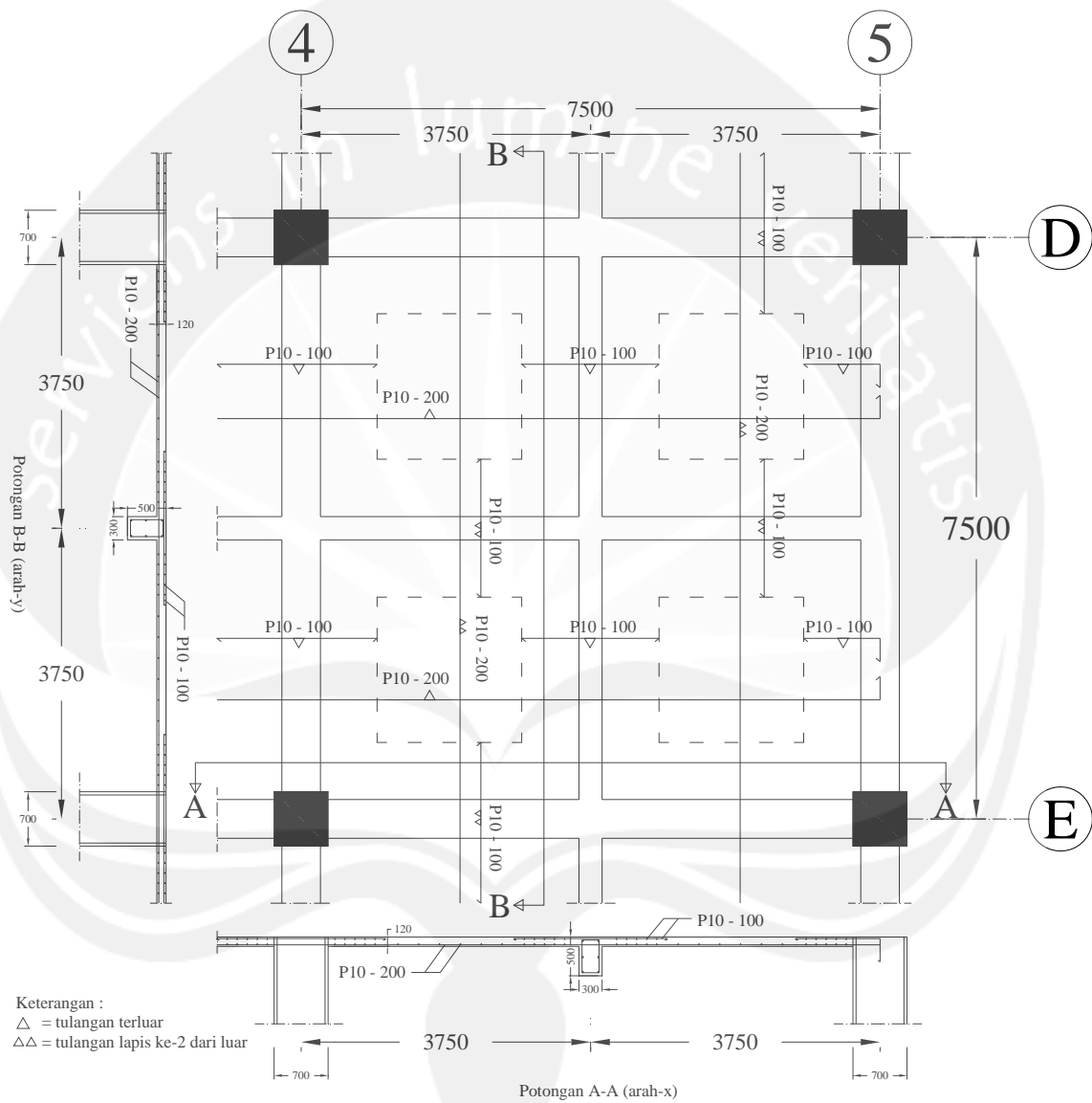




Potongan B-B (arah-y)

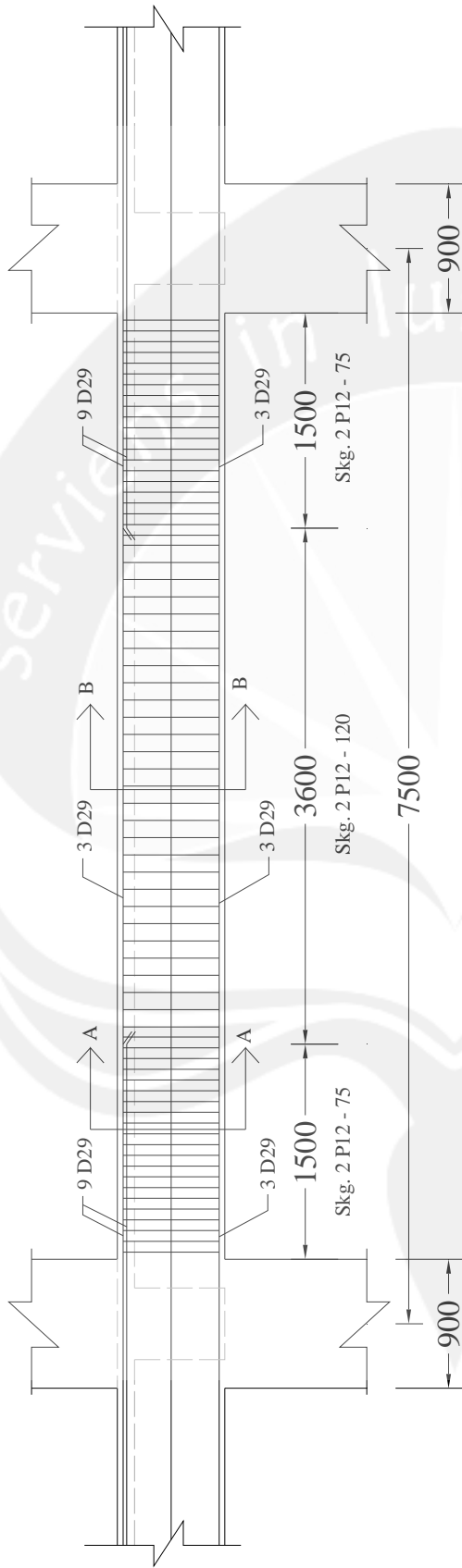
Detail Penulangan Pelat Atap  
Skala 1:25



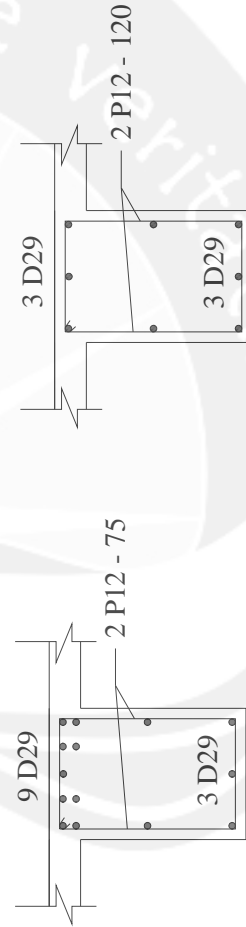


**Penulangan Pelat Lantai**  
**Skala 1:100**



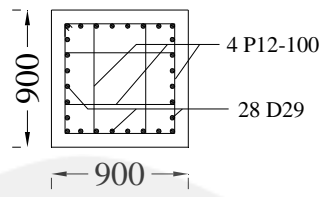


**Gambar Penulangan Balok**  
(satuan dalam mm)

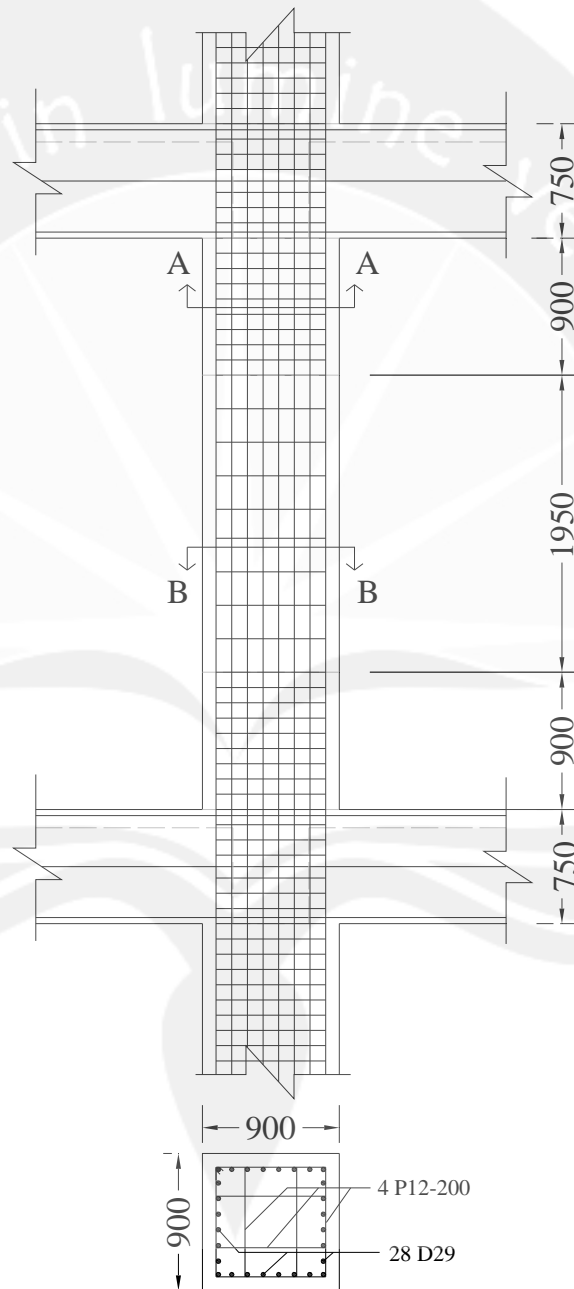


**Detail Potongan A-A**  
B.I - 500/750

**Detail Potongan B-B**  
B.I - 500/750



Detil Potongan A-A



Detil Potongan B-B

## Gambar Penulangan Kolom

(satuan dalam mm)



4.2.b Pelat – Umum

Tabel Momen yang menentukan per meter lebar dalam jalur tengah pada pelat dua arah akibat beban terbagi rata

Skema	Penyaluran beban berdasarkan 'metode amplop' kali $w_u$ lantai $l_x$	Momen per meter panjang	$\frac{l_y}{l_x}$							
			1,0	1,2	1,4	1,6	1,8	2,0	2,5	3,0
I		$m_{lx} = 0,001 w_u l_x^2 x$	41	54	67	79	87	97	110	117
		$m_{ly} = 0,001 w_u l_y^2 x$	41	35	31	28	26	25	24	23
		$m_{lix} = \frac{1}{2} m_{lx}$								
		$m_{liy} = \frac{1}{2} m_{ly}$								
II		$m_{lx} = 0,001 w_u l_x^2 x$	25	34	42	49	53	58	62	65
		$m_{ly} = 0,001 w_u l_y^2 x$	25	22	18	15	15	15	14	14
		$m_{lx} = -0,001 w_u l_x^2 x$	51	63	72	78	81	82	83	83
		$m_{ly} = -0,001 w_u l_y^2 x$	51	54	55	54	54	53	51	49
III		$m_{lx} = 0,001 w_u l_x^2 x$	30	41	52	61	67	72	80	83
		$m_{ly} = 0,001 w_u l_y^2 x$	30	27	23	22	20	19	19	19
		$m_{lx} = -0,001 w_u l_x^2 x$	68	84	97	106	113	117	122	124
		$m_{ly} = -0,001 w_u l_y^2 x$	68	74	77	77	77	76	73	71
IV		$m_{lx} = 0,001 w_u l_x^2 x$	24	36	49	63	74	85	103	113
		$m_{ly} = 0,001 w_u l_y^2 x$	33	33	32	29	27	24	21	20
		$m_{lx} = -0,001 w_u l_x^2 x$	69	85	97	105	110	112	112	112
		$m_{lix} = \frac{1}{2} m_{lx}$								
V		$m_{lx} = 0,001 w_u l_x^2 x$	33	40	47	52	55	58	62	65
		$m_{ly} = 0,001 w_u l_y^2 x$	24	20	18	17	17	17	16	16
		$m_{lx} = -0,001 w_u l_x^2 x$	69	76	80	82	83	83	83	83
		$m_{liy} = \frac{1}{2} m_{ly}$								
VI		$m_{lx} = 0,001 w_u l_x^2 x$	31	45	58	71	81	91	106	115
		$m_{ly} = 0,001 w_u l_y^2 x$	39	37	34	30	27	25	24	23
		$m_{lx} = -0,001 w_u l_x^2 x$	91	102	108	111	113	114	114	114
		$m_{lix} = \frac{1}{2} m_{lx}$								
VII		$m_{lx} = 0,001 w_u l_x^2 x$	39	47	57	64	70	75	81	84
		$m_{ly} = 0,001 w_u l_y^2 x$	31	25	23	21	20	19	19	19
		$m_{lx} = -0,001 w_u l_x^2 x$	91	98	107	113	118	120	124	124
		$m_{liy} = \frac{1}{2} m_{ly}$								
VIII		$m_{lx} = 0,001 w_u l_x^2 x$	25	36	47	57	64	70	79	83
		$m_{ly} = 0,001 w_u l_y^2 x$	28	27	23	20	18	17	16	16
		$m_{lx} = -0,001 w_u l_x^2 x$	54	72	88	100	108	114	121	124
		$m_{liy} = \frac{1}{2} m_{ly}$	60	69	74	76	76	76	73	71
IX		$m_{lx} = 0,001 w_u l_x^2 x$	28	37	45	50	54	58	62	65
		$m_{ly} = 0,001 w_u l_y^2 x$	25	21	19	18	17	17	16	16
		$m_{lx} = -0,001 w_u l_x^2 x$	60	70	76	80	82	83	83	83
		$m_{liy} = \frac{1}{2} m_{ly}$	54	55	55	54	53	53	51	49

— = terletak bebas  
 == = menerus pada tumpuan