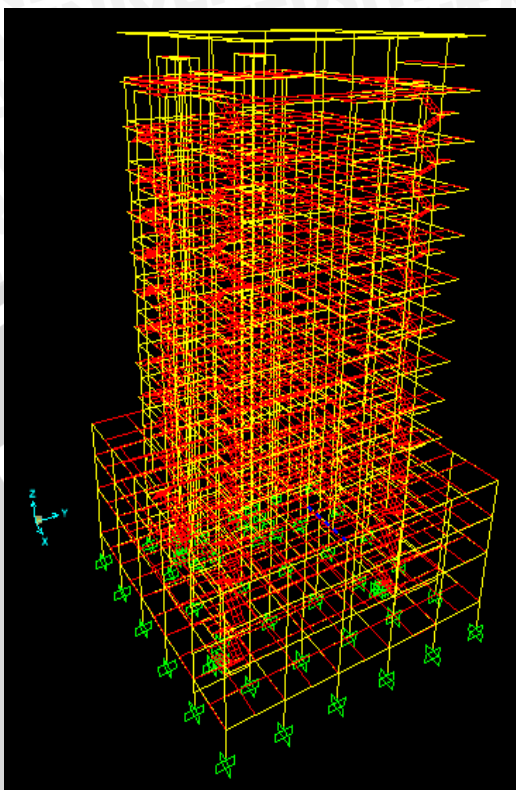
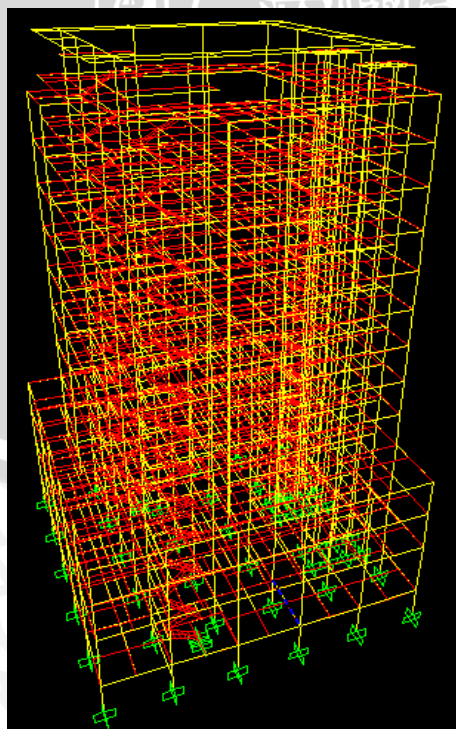


## LAMPIRAN

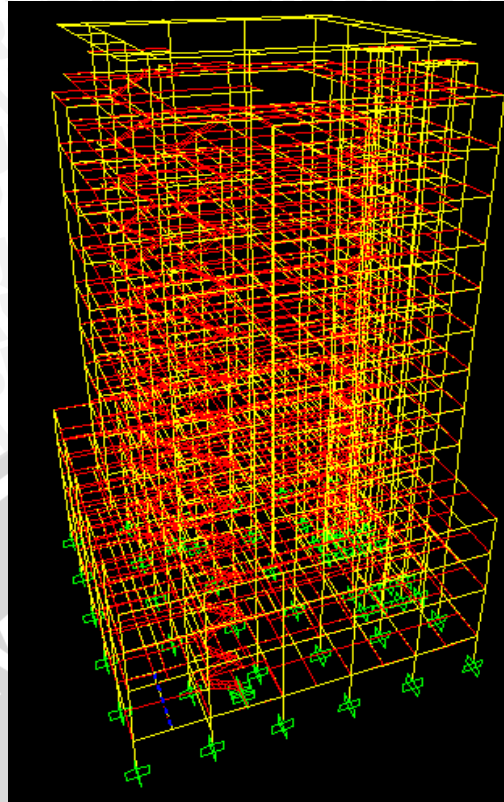
### Gaya-gaya dalam perlu



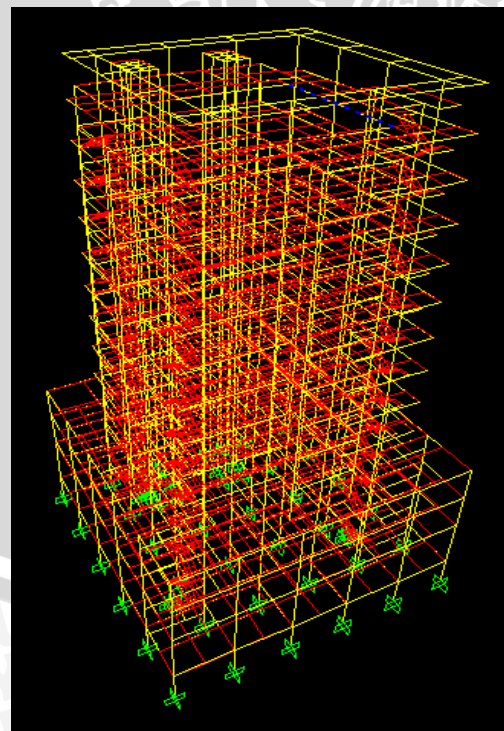
Letak momen maksimum balok B3 pada frame 862



Letak momen maksimum balok B1 pada frame 50

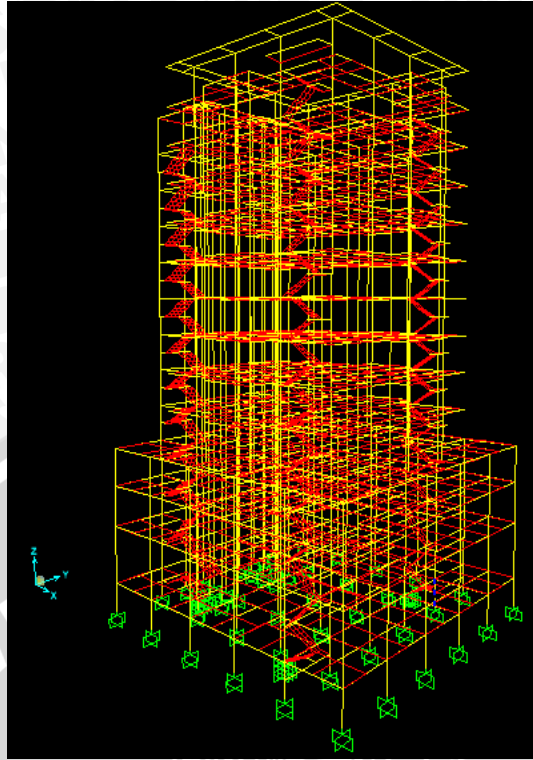


Letak momen maksimum balok B2 pada frame 119

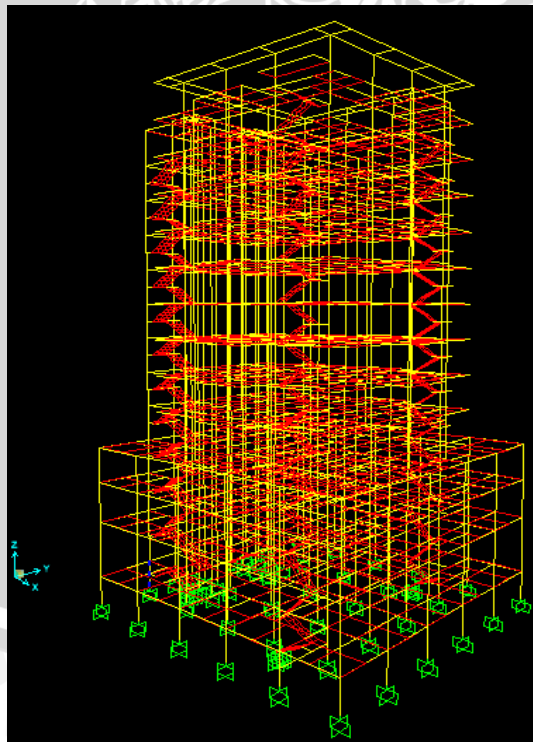


Letak momen maksimum balok B4 balok B2 pada frame 3181



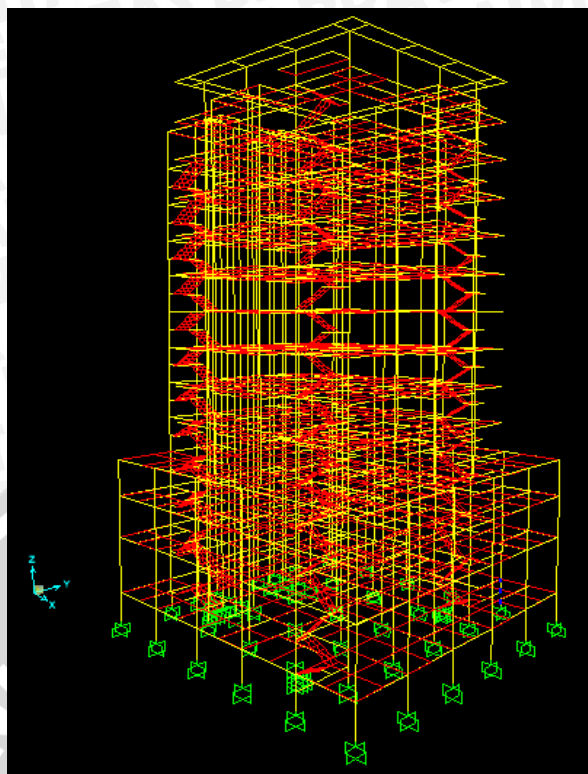


Letak gaya aksial maksimum balok K1 pada frame 194

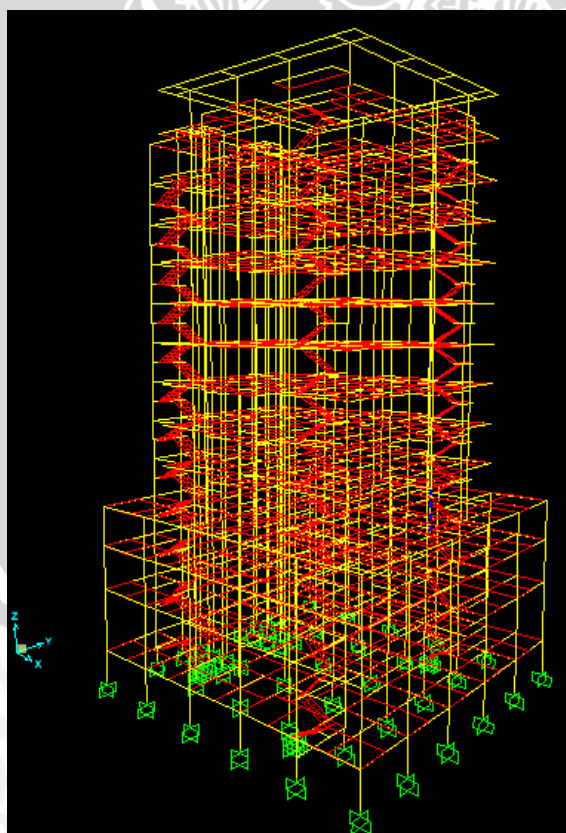


Letak gaya aksial maksimum balok K3 pada frame 172





Letak gaya aksial maksimum balok K4 pada frame 243



Letak gaya aksial maksimum balok K4 pada frame 2782

Tabel Mu maks dari SAP

TABLE: Element Forces - Frames										
Frame	Station	OutputCase	CaseType	StepType	P	V2	V3	T	M2	M3
Text	m	Text	Text	Text	Kgf	Kgf	Kgf	Kgf-m	Kgf-m	Kgf-m
862	4,8	1,2D+1Ex+1L+Nx	Combination	Max	1,62	125059,9	4,44E-11	473,54	4,01E-11	191713,36
857	4,8	1,2D+1Ex+1L+Nx	Combination	Max	1,62	126102,2	4,44E-11	378,47	4,01E-11	191164,98
843	4,8	1,2D+1Ey+1L+Ny	Combination	Max	0	120928,3	1,41	201,77	0,49	187584,88
862	4,8	1,2D+1Ey+1L+Ny	Combination	Max	1,62	114945,7	7,34E-11	499,34	8,35E-11	183113,88
857	4,8	1,2D+1Ey+1L+Ny	Combination	Max	1,62	113918,7	7,34E-11	367,36	8,35E-11	181019,04
839	2,4	1,2D+1Ey+1L+Ny	Combination	Max	0	-60665,8	-1,41	-85,67	0,49	180794,92
843	4,8	1,2D+1Ey+1L+Ny	Combination	Max	41	-35702	43,34	-451,1	507,16	175066,16
834	2,4	1,2D+1Ey+1L+Ny	Combination	Max	0	-55988,3	-1,41	285,63	0,49	172179,82
838	4,8	1,2D+1Ey+1L+Ny	Combination	Max	0	109614,9	1,41	153,65	0,49	171979,49
843	4,8	1,2D+1Ex+1L+Nx	Combination	Max	0	103396,1	1,41	211,5	0,49	171642,06
839	2,4	1,2D+1Ey+1L+Ny	Combination	Max	5	54280,4	396,83	3	482,57	171282,79
839	2,4	1,2D+1Ex+1L+Nx	Combination	Max	0	-80513,4	-1,41	-67,49	0,49	168188,3
862	4,8	1,2D+1Ex+1L+Nx	Combination	Max	8	-38107,3	43,95	971,75	36,57	166268,99
843	4,8	1,2D+1Ex+1L+Nx	Combination	Max	93	-39467,7	21,04	273,25	532,17	165497,95
862	4,8	1,2D+1Ey+1L+Ny	Combination	Max	4	-38249	65,63	893,79	54,77	164724,79
857	4,8	1,2D+1Ex+1L+Nx	Combination	Max	39	-36467,8	36,47	1402,0	36,14	164616,94
857	4,8	1,2D+1Ey+1L+Ny	Combination	Max	4	-37963,1	59,75	1515,6	58,49	164227,4
834	2,4	1,2D+1Ey+1L+Ny	Combination	Max	99	49465,89	64,13	616,24	62,55	164151,17
839	2,4	1,2D+1Ex+1L+Nx	Combination	Max	01	50518,62	375,34	1491,7	443,73	162668,95
838	4,8	1,2D+1Ey+1L+Ny	Combination	Max	96	-31775,2	40,62	1253,9	45,61	162150,73
834	2,4	1,2D+1Ex+1L+Nx	Combination	Max	0	-71567,6	-1,41	265,77	0,49	160535,01
843	4,4	1,2D+1Ey+1L+Ny	Combination	Max	41	-36593	44,77	-451,1	336,7	157600,25
834	2,4	1,2D+1Ex+1L+Nx	Combination	Max	23	47029,93	83,83	654,97	77,97	154956,01
839	2,8	1,2D+1Ey+1L+Ny	Combination	Max	5	55171,35	395,4	1533,7	324,52	153042,8
838	4,8	1,2D+1Ex+1L+Nx	Combination	Max	0	90346,55	1,41	182,59	0,49	152202,67
857	4,8	1,2D+1Ey+1L+Ny	Combination	Min	1,62	89636,22	-9,7E-11	507,87	-8,4E-11	151895,16
862	4,4	1,2D+1Ex+1L+Nx	Combination	Max	23	-38998,3	43,95	971,75	20,06	148409,69
838	4,8	1,2D+1Ex+1L+Nx	Combination	Max	46	-32013,5	49,97	1318,7	53,84	148176,54
857	4,4	1,2D+1Ex+1L+Nx	Combination	Max	82	-37358,8	36,47	1402,0	19,7	147172,36
834	2,8	1,2D+1Ey+1L+Ny	Combination	Max	99	50356,84	62,7	616,24	37,47	146230,63
843	4,4	1,2D+1Ex+1L+Nx	Combination	Max	93	-40358,6	22,48	273,25	347,38	145982,03
862	4,8	1,2D+1Ey+1L+Ny	Combination	Min	1,62	86616,66	-9,7E-11	360,02	-8,4E-11	145851,65
862	4,4	1,2D+1Ey+1L+Ny	Combination	Max	7	-39140	65,63	893,79	30,27	145361,67
838	4,4	1,2D+1Ey+1L+Ny	Combination	Max	96	-32666,2	42,06	1253,9	24,76	145297,48
857	4,8	1,2D+1Ex+1L+Nx	Combination	Min	1,62	81362,94	-4,4E-11	-486,4	-4E-11	144509,05
857	4,4	1,2D+1Ey+1L+Ny	Combination	Max	7	-38854	59,75	1515,6	32,06	144412,67



Tabel Pu maks dari SAP

TABLE: Element Forces - Frames										
Frame	Station	OutputCase	CaseType	StepType	P	V2	V3	T	M2	M3
Text	m	Text	Text	Text	Kgf	Kgf	Kgf	Kgf-m	Kgf-m	Kgf-m
194	0,5	1,2D+1Ex+1L+Nx	Combination	Min	-1139179	-2433,83	-3440,57	-801,19	-21123,8	-37534,4
194	1,75	1,2D+1Ex+1L+Nx	Combination	Min	-1137155	-2437,2	-3440,57	-801,19	-17348,3	-35099,2
194	1,75	1,2D+1Ex+1L+Nx	Combination	Min	-1114323	-11168,1	-5132,16	-4040,65	-18780	-33343,3
194	3	1,2D+1Ex+1L+Nx	Combination	Min	-1112299	-11171,5	-5132,16	-4040,65	-12354	-27937,7
194	0,5	1,2D+1Ey+1L+Ny	Combination	Min	-1087066	5287,67	-7840,86	-702,39	-38856,6	-26098,1
176	0,5	1,2D+1Ex+1L+Nx	Combination	Min	-1086529	-5072,74	-4660,09	-801,19	-21393,6	-26157
194	1,75	1,2D+1Ey+1L+Ny	Combination	Min	-1085042	5284,3	-7840,86	-702,39	-29375,9	-33551,1
176	1,75	1,2D+1Ex+1L+Nx	Combination	Min	-1084505	-5076,12	-4660,09	-801,19	-16132,3	-20146,1
194	1,75	1,2D+1Ey+1L+Ny	Combination	Min	-1066449	-10217,4	-7707,63	-3533,4	-31881,5	-29592,7
176	1,75	1,2D+1Ex+1L+Nx	Combination	Min	-1065702	-5480,02	-874,51	-3234,61	-17788,5	-12670,8
194	3	1,2D+1Ey+1L+Ny	Combination	Min	-1064425	-10220,7	-7707,63	-3533,4	-22565	-21082,7
176	3	1,2D+1Ex+1L+Nx	Combination	Min	-1063678	-5483,39	-874,51	-3234,61	-16692	-6305,17
176	0,5	1,2D+1Ey+1L+Ny	Combination	Min	-1052797	-1219,77	-9046,96	-702,39	-39126,6	-20161,4
176	1,75	1,2D+1Ey+1L+Ny	Combination	Min	-1050773	-1223,15	-9046,96	-702,39	-28149,1	-18800,1
347	0,5	1,2D+1Ex+1L+Nx	Combination	Min	-1041007	-17503	-8981,35	-3120,28	-22051,9	-42234,6
347	3,5	1,2D+1Ex+1L+Nx	Combination	Min	-1036150	-17511,1	-8981,35	-3120,28	2404,12	-28358,8
176	1,75	1,2D+1Ey+1L+Ny	Combination	Min	-1033907	-4007,15	-3411,12	-2761,39	-30953,8	-10016,3
176	3	1,2D+1Ey+1L+Ny	Combination	Min	-1031883	-4010,53	-3411,12	-2761,39	-27011	-5301,55
329	0,5	1,2D+1Ex+1L+Nx	Combination	Min	-1002138	-2879,14	-6065,35	-3522,79	-17825,2	-17095,2
329	3,5	1,2D+1Ex+1L+Nx	Combination	Min	-997281	-2887,23	-6065,35	-3522,79	-1204,16	-13354,1
347	0,5	1,2D+1Ey+1L+Ny	Combination	Min	-991937	-13652,7	-13859,9	-2587,63	-37072,2	-34183,4
347	3,5	1,2D+1Ey+1L+Ny	Combination	Min	-987079	-13660,8	-13859,9	-2587,63	1912,58	-23612,2
347	3,5	1,2D+1Ex+1L+Nx	Combination	Min	-972883	5272,04	-1643,02	-4192,09	-502,96	12499,56
329	0,5	1,2D+1Ey+1L+Ny	Combination	Min	-969915	-2824,66	-11031,1	-2974,63	-32813,4	-15845,5
347	6,5	1,2D+1Ex+1L+Nx	Combination	Min	-968025	5263,94	-1643,02	-4192,09	-13427,5	-13936,4
329	3,5	1,2D+1Ey+1L+Ny	Combination	Min	-965058	-2832,76	-11031,1	-2974,63	-2022,81	-11636,6
176	0,5	1,2D+1Ey+1L+Ny	Combination	Max	-950281	24017,12	13471,49	594,66	53209,22	25986,31
176	1,75	1,2D+1Ey+1L+Ny	Combination	Max	-948257	24013,74	13471,49	594,66	36411,36	-3900,89
329	3,5	1,2D+1Ex+1L+Nx	Combination	Min	-947611	2148,77	-4616,27	-4075,03	-3390,89	5263,83
194	0,5	1,2D+1Ey+1L+Ny	Combination	Max	-944430	35788,07	14614,33	594,66	53468	40754,45
329	6,5	1,2D+1Ex+1L+Nx	Combination	Min	-942753	2140,67	-4616,27	-4075,03	-8116,17	-16196,1
194	1,75	1,2D+1Ey+1L+Ny	Combination	Max	-942406	35784,7	14614,33	594,66	35227,39	-3269,22
176	1,75	1,2D+1Ey+1L+Ny	Combination	Max	-941120	3739,42	9272,24	3927,48	39646,89	17512,5
194	1,75	1,2D+1Ey+1L+Ny	Combination	Max	-939225	-5066,25	4985,6	3366,86	38875,84	20454,2
176	3	1,2D+1Ey+1L+Ny	Combination	Max	-939096	3736,05	9272,24	3927,48	27800,3	13242,91
188	0,5	1,2D+1Ey+1L+Ny	Combination	Min	-937478	-7152,49	-10020,7	-2132,45	-41410,5	-24276,6
194	3	1,2D+1Ey+1L+Ny	Combination	Max	-937201	-5069,63	4985,6	3366,86	32388,48	31390,52
176	0,5	1,2D+1Ex+1L+Nx	Combination	Max	-937049	33095,24	6750,93	667,11	22856,93	41073,49
188	0,5	1,2D+1Ex+1L+Nx	Combination	Min	-936383	-8811,77	-6568,24	-2411,94	-24038,3	-32742,1
347	3,5	1,2D+1Ey+1L+Ny	Combination	Min	-936364	6873,6	-5912,67	-3743,05	-4792,61	16403,4
188	1,75	1,2D+1Ey+1L+Ny	Combination	Min	-935454	-7155,86	-10020,7	-2132,45	-28991	-15292,8
188	1,75	1,2D+1Ey+1L+Ny	Combination	Min	-935454	-7154,47	-10018,9	-2132,45	-28991	-15292,8



Tabel Vu maks dari SAP

TABLE: Element Forces - Frames										
Frame	Station	OutputCase	CaseType	StepType	P	V2	V3	T	M2	M3
Text	m	Text	Text	Text	Kgf	Kgf	Kgf	Kgf-m	Kgf-m	Kgf-m
857	6,7	1,2D+1Ex+1L+Nx	Combination	Max	-0,94	127636,93	3,765E-11	-378,47	3,42E-11	-9904,96
857	6,225	1,2D+1Ex+1L+Nx	Combination	Max	-0,37	127293,37	3,765E-11	-378,47	1,598E-11	30165,9
857	5,75	1,2D+1Ex+1L+Nx	Combination	Max	0,3	126892,43	3,765E-11	-378,47	1,668E-12	74136,87
862	6,7	1,2D+1Ex+1L+Nx	Combination	Max	-0,94	126594,66	3,765E-11	473,54	3,42E-11	-13023,27
857	5,275	1,2D+1Ex+1L+Nx	Combination	Max	0,98	126485,17	3,765E-11	-378,47	1,94E-11	131658,59
862	6,225	1,2D+1Ex+1L+Nx	Combination	Max	-0,37	126251,09	3,765E-11	473,54	1,598E-11	27954,62
857	4,8	1,2D+1Ex+1L+Nx	Combination	Max	1,62	126102,17	3,765E-11	-378,47	3,728E-11	191164,98
862	5,75	1,2D+1Ex+1L+Nx	Combination	Max	0,3	125850,15	3,765E-11	473,54	1,668E-12	74571,15
862	5,275	1,2D+1Ex+1L+Nx	Combination	Max	0,98	125442,89	3,765E-11	473,54	1,94E-11	132538,68
862	4,8	1,2D+1Ex+1L+Nx	Combination	Max	1,62	125059,89	3,765E-11	473,54	3,728E-11	191713,36
843	6,7	1,2D+1Ey+1L+Ny	Combination	Max	0	122463,05	-1,15	201,77	0,29	1297,75
843	6,225	1,2D+1Ey+1L+Ny	Combination	Max	0	122119,49	-0,57	201,77	-0,13	35586,11
843	5,75	1,2D+1Ey+1L+Ny	Combination	Max	0	121718,55	0,09582	201,77	-0,24	76313,52
843	5,275	1,2D+1Ey+1L+Ny	Combination	Max	0	121311,28	0,77	201,77	-0,03481	130704,9
843	4,8	1,2D+1Ey+1L+Ny	Combination	Max	0	120928,29	1,41	201,77	0,49	187584,88
862	6,7	1,2D+1Ey+1L+Ny	Combination	Max	-0,94	116480,49	7,998E-11	499,34	8,363E-11	-18305,21
862	6,225	1,2D+1Ey+1L+Ny	Combination	Max	-0,37	116136,93	7,998E-11	499,34	4,566E-11	25764,75
862	5,75	1,2D+1Ey+1L+Ny	Combination	Max	0,3	115735,99	7,998E-11	499,34	1,592E-11	74862,58
857	6,7	1,2D+1Ey+1L+Ny	Combination	Max	-0,94	115453,42	7,998E-11	-367,36	8,363E-11	-16439,12
862	5,275	1,2D+1Ey+1L+Ny	Combination	Max	0,98	115328,73	7,998E-11	499,34	5,358E-11	128719,15
857	6,225	1,2D+1Ey+1L+Ny	Combination	Max	-0,37	115109,86	7,998E-11	-367,36	4,566E-11	28224,76
862	4,8	1,2D+1Ey+1L+Ny	Combination	Max	1,62	114945,73	7,998E-11	499,34	9,155E-11	183113,88
857	5,75	1,2D+1Ey+1L+Ny	Combination	Max	0,3	114708,92	7,998E-11	-367,36	1,592E-11	75247,51
857	5,275	1,2D+1Ey+1L+Ny	Combination	Max	0,98	114301,66	7,998E-11	-367,36	5,358E-11	127557,13
857	4,8	1,2D+1Ey+1L+Ny	Combination	Max	1,62	113918,66	7,998E-11	-367,36	9,155E-11	181019,04
838	6,7	1,2D+1Ey+1L+Ny	Combination	Max	0	111149,71	-1,15	-153,65	0,29	310,5
838	6,225	1,2D+1Ey+1L+Ny	Combination	Max	0	110806,14	-0,57	-153,65	-0,13	30219,31
838	5,75	1,2D+1Ey+1L+Ny	Combination	Max	0	110405,2	0,09582	-153,65	-0,24	69873,7
838	5,275	1,2D+1Ey+1L+Ny	Combination	Max	0	109997,94	0,77	-153,65	-0,03481	120375,91
838	4,8	1,2D+1Ey+1L+Ny	Combination	Max	0	109614,94	1,41	-153,65	0,49	171979,49
843	6,7	1,2D+1Ex+1L+Nx	Combination	Max	0	104930,82	-1,15	211,5	0,29	-9736,97
843	6,225	1,2D+1Ex+1L+Nx	Combination	Max	0	104587,26	-0,57	211,5	-0,13	30638,84
843	5,75	1,2D+1Ex+1L+Nx	Combination	Max	0	104186,32	0,09582	211,5	-0,24	74494,31
843	5,275	1,2D+1Ex+1L+Nx	Combination	Max	0	103779,06	0,77	211,5	-0,03481	122713,53
843	4,8	1,2D+1Ex+1L+Nx	Combination	Max	0	103396,06	1,41	211,5	0,49	171642,06
838	6,7	1,2D+1Ex+1L+Nx	Combination	Max	0	91881,31	-1,15	-182,59	0,29	-6160,91
838	6,225	1,2D+1Ex+1L+Nx	Combination	Max	0	91537,75	-0,57	-182,59	-0,13	29315,14
857	6,7	1,2D+1Ey+1L+Ny	Combination	Min	-0,94	91170,98	-7,998E-11	-507,87	-6,044E-11	-40380,82
838	5,75	1,2D+1Ex+1L+Nx	Combination	Max	0	91136,81	0,09582	-182,59	-0,24	67897,46
857	6,225	1,2D+1Ey+1L+Ny	Combination	Min	-0,37	90827,42	-7,998E-11	-507,87	-2,248E-11	12943,98
838	5,275	1,2D+1Ex+1L+Nx	Combination	Max	0	90729,54	0,77	-182,59	-0,03481	109855,74
857	5,75	1,2D+1Ey+1L+Ny	Combination	Min	0,3	90426,48	-7,998E-11	-507,87	7,267E-12	63553,42



### Berat Total Struktur Eksisting

Berat Total Struktur Eksisting beton Betulang	
Lantai	m (kg)
base	1.121.811,41
Lantai 1	1.230.380,83
Lantai 2	1.013.280,86
Lantai 3	1.053.700,27
Lantai 4	947.724,62
Lantai 5	679.347,22
Lantai 6	679.347,22
Lantai 7	679.347,22
Lantai 8	679.347,22
Lantai 9	679.347,22
Lantai 10	679.347,22
Lantai 11	679.347,22
Lantai 12	512.433,22
Lantai 13	469.237,82
Listplank	267.753,60
<b>TOTAL</b>	<b>11.371.753,15</b>

### Beban Atap (terpusat)

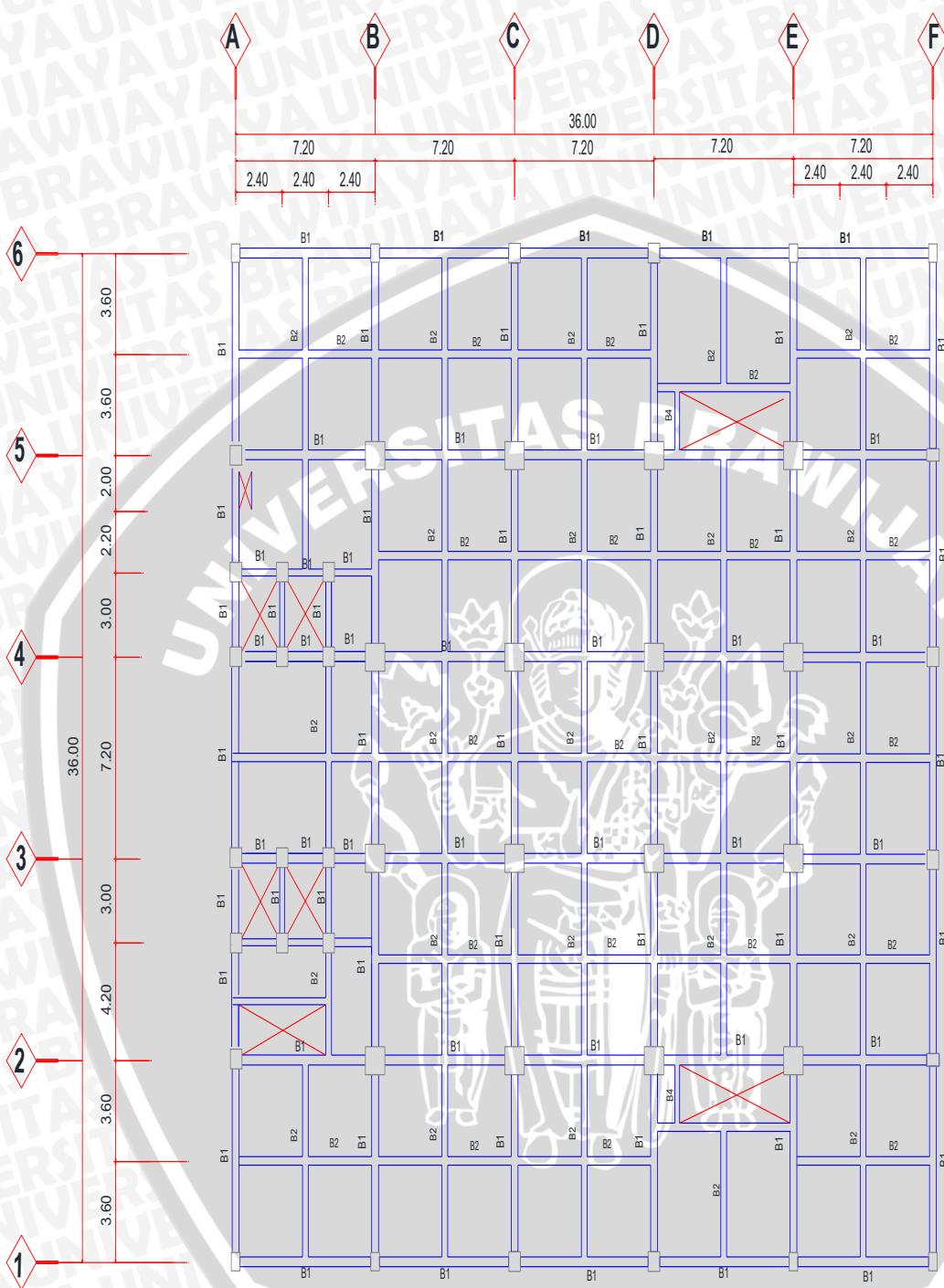
No	Jenis	Bahan	Panjang (m)	Luas (m <sup>2</sup> )	Berat jenis (kg/m <sup>3</sup> )	Jumlah	Berat total (kg)
	<u>Atap Limas</u>						
1	Jurai A	WF 250.125.6.9	4,98	0,0038	7850	4	588,897
2	Jurai B	WF 300.150.6,5.9	13,24	0,0047	7850	4	1944,813
3	Rafter A	WF 250.125.6.9	3,46	0,0038	7850	4	409,153
4	Rafter B	WF 300.150.6,5.9	9,3	0,0047	7850	12	4098,209
5	Rafter C	WF 250.125.6.9	5,8	0,0038	7850	8	1371,728
6	BL 1	WF 300.150.6,5.9	6,8	0,0047	7850	4	998,847
7	BL 2	WF 250.125.6.9				2	
8	TM A	Plat 12 mm	0,012	7,5084	7850	1	707,295
9	TM B	Plat 14 mm	0,014	0,0084	7850	4	3,693
10	TM C	Plat 14 mm	0,014	0,0166	7850	4	7,310
11	Gording	CNP 125.25.20.3,2	187,28	0,0008	7850	4	4590,978
12	Trekstang	Besi D22	2,36			8	56,338
13	Lisplank Beton	Beton 10 cm	0,1	13,5264	2400		3246,336
					Beban(kg/m <sup>2</sup> )		
14	Genteng Keramik	Keramik glazur(natural)		575,7399	50		
	Usuk	Galvalum uk.75-	121,3				



		0,6mm					28786,995
	Reng	Galvalum uk 45-0,6mm	458,88				
	<u>Atap hias rangka</u>						
16	Rangka UNP 120	UNP 120 (r.luar)	69,8	0,0017	7850	4	3725,924
		UNP 120 (r.dalam)	11,01	0,0017	7850	26	3820,140
17	Bracing atap hias	siku 70.70.7	24,18	0,00094	7850	4	713,697
18	Cladding GRC	5cm + waterproofing	491,4864			13	6389,323
19	Rangka puncak atap	siku 70.70.7	15,48	0,0017	7850	4	826,322
20	Bracing puncak atap	siku 50.50.5	12,4	0,0005	7850	4	186,893
21	Pipa Schdl	diameter 3"	6,64	0,0046	7850	1	237,584
	TOTAL						62710,474
8	Baut	M16					6271,047
							68981,521
Beban pertumpuan							5748,460

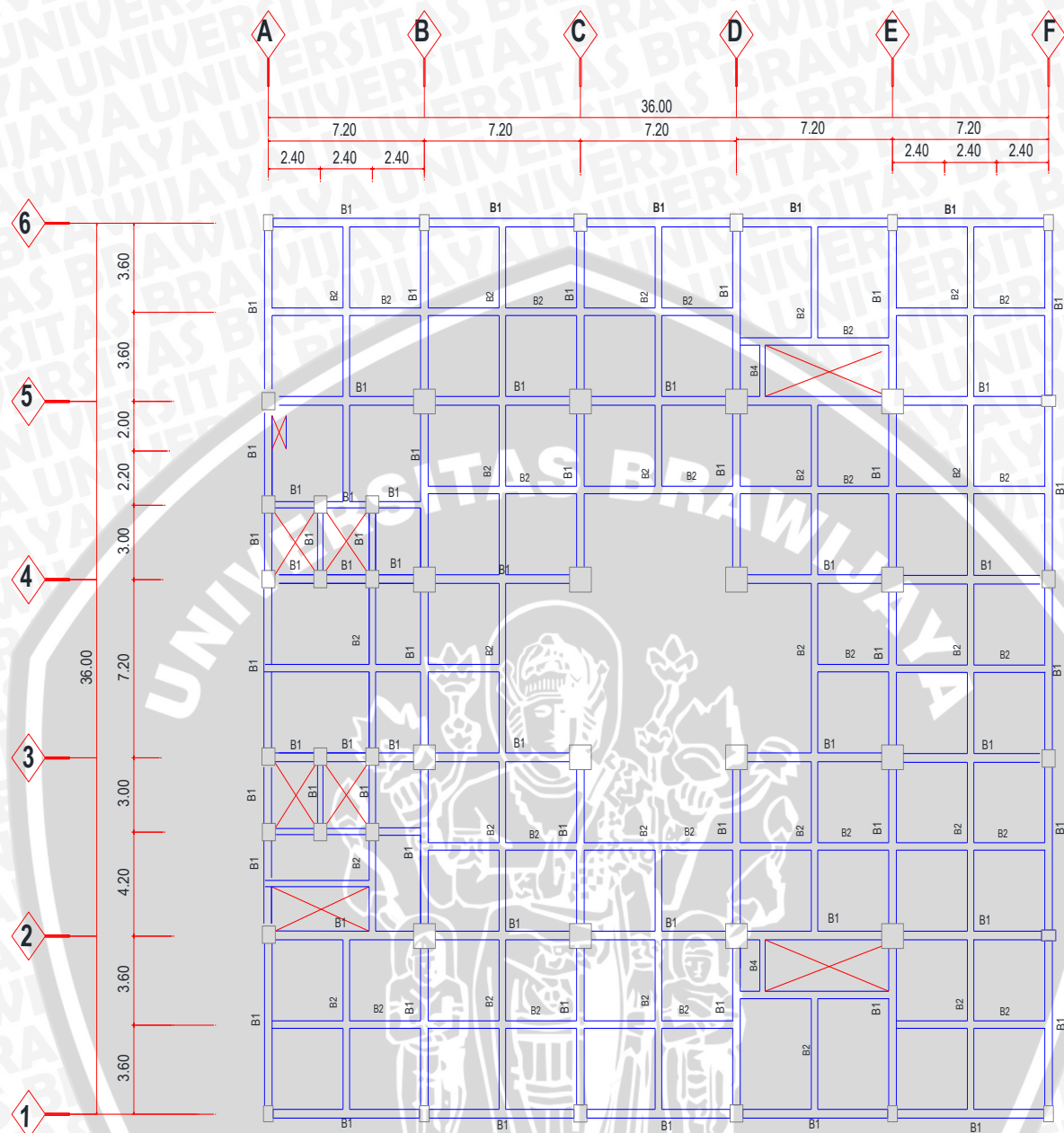


### DENAH BALOK DESAIN



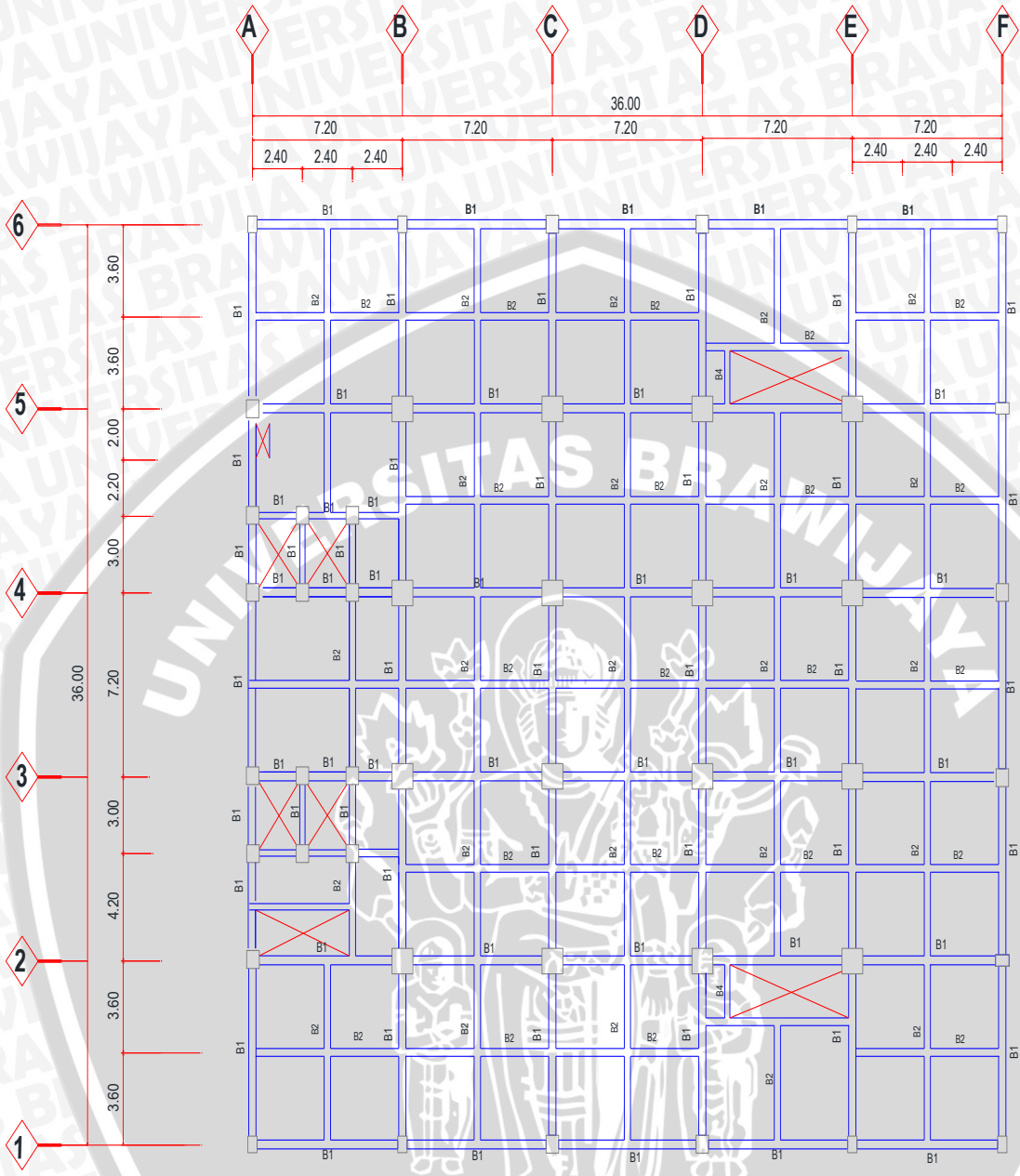
RENCANA BALOK LT 1



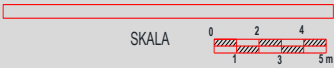


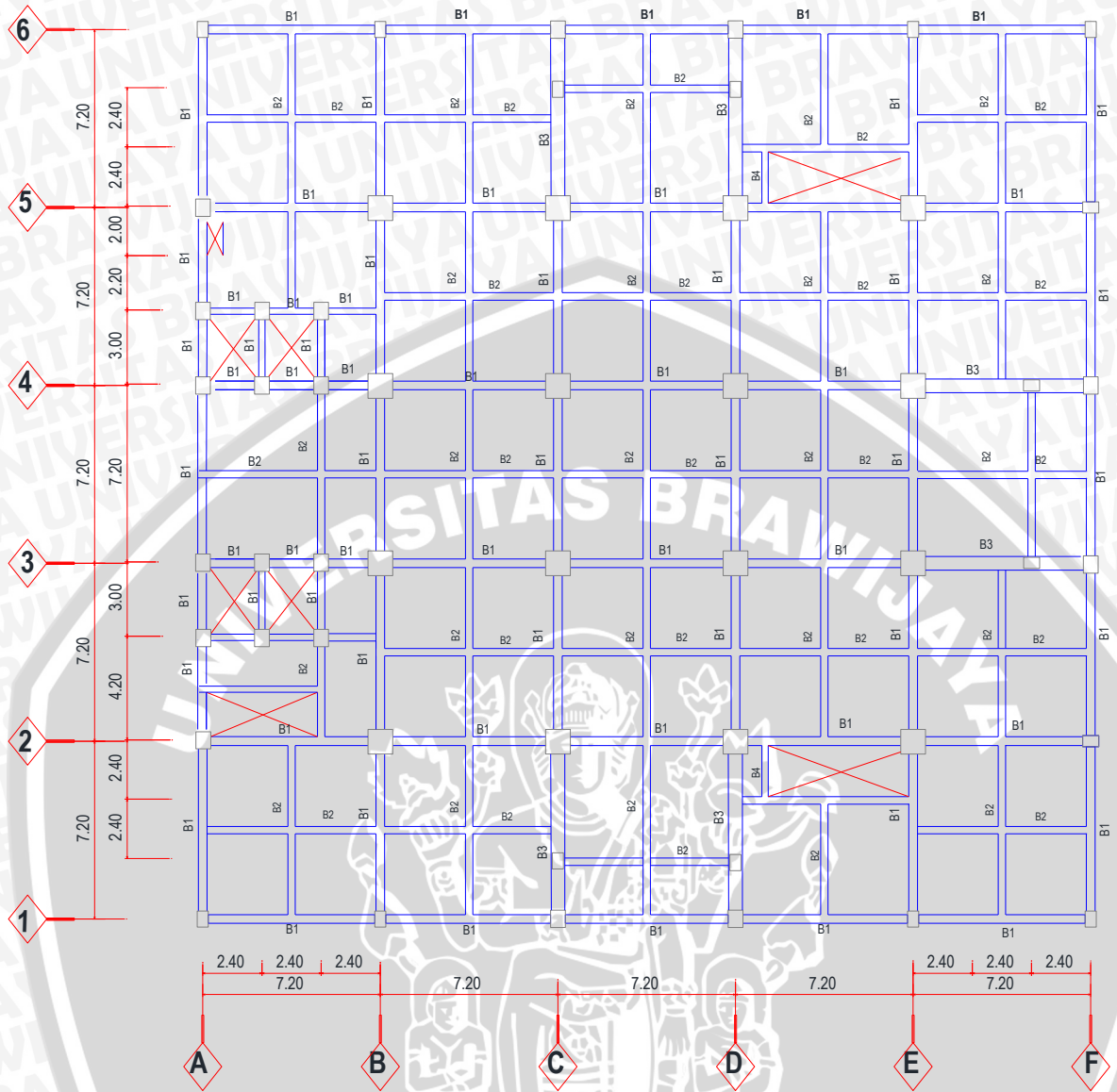
RENCANA BALOK LT 2





RENCANA BALOK LT 3

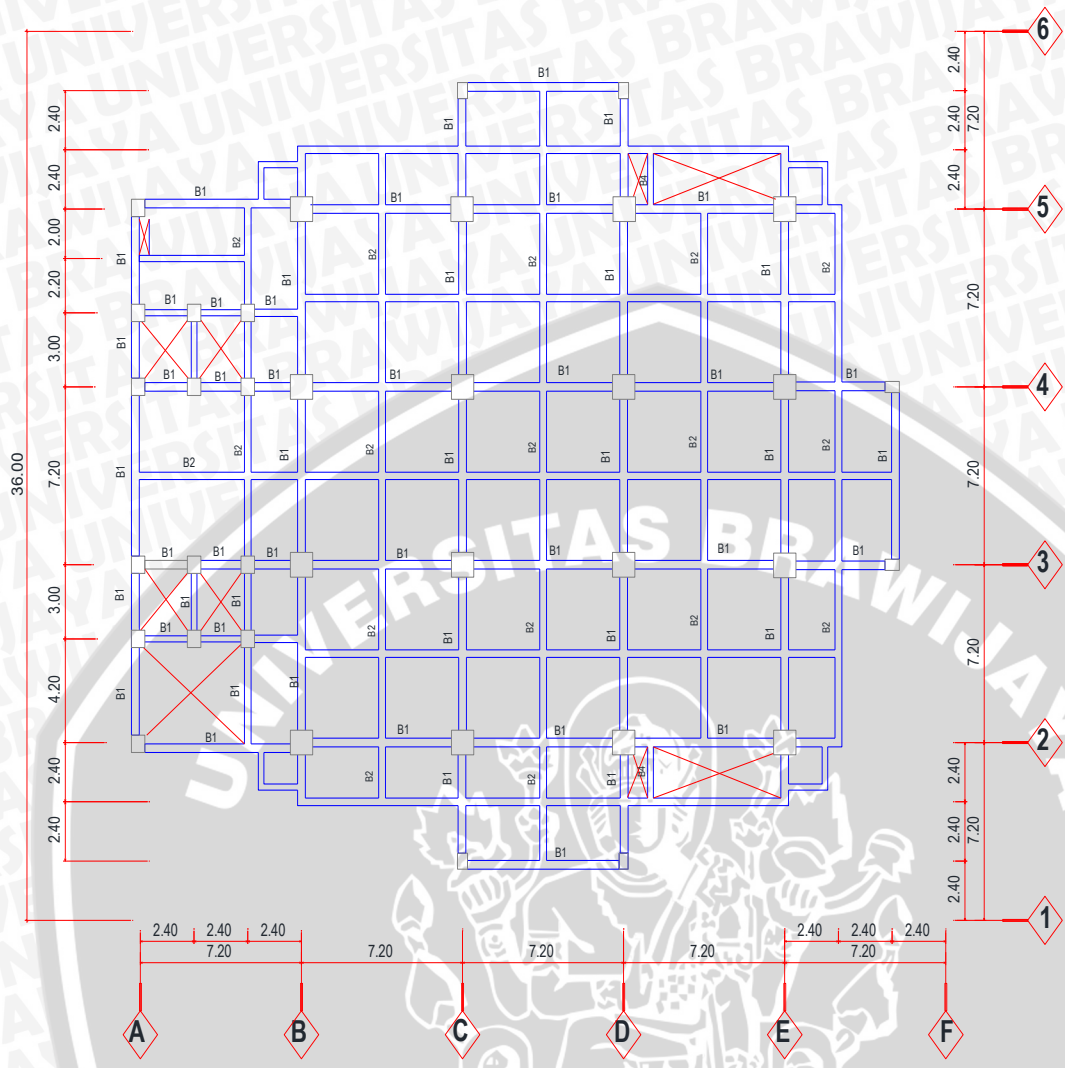




### RENCANA BALOK LT 4

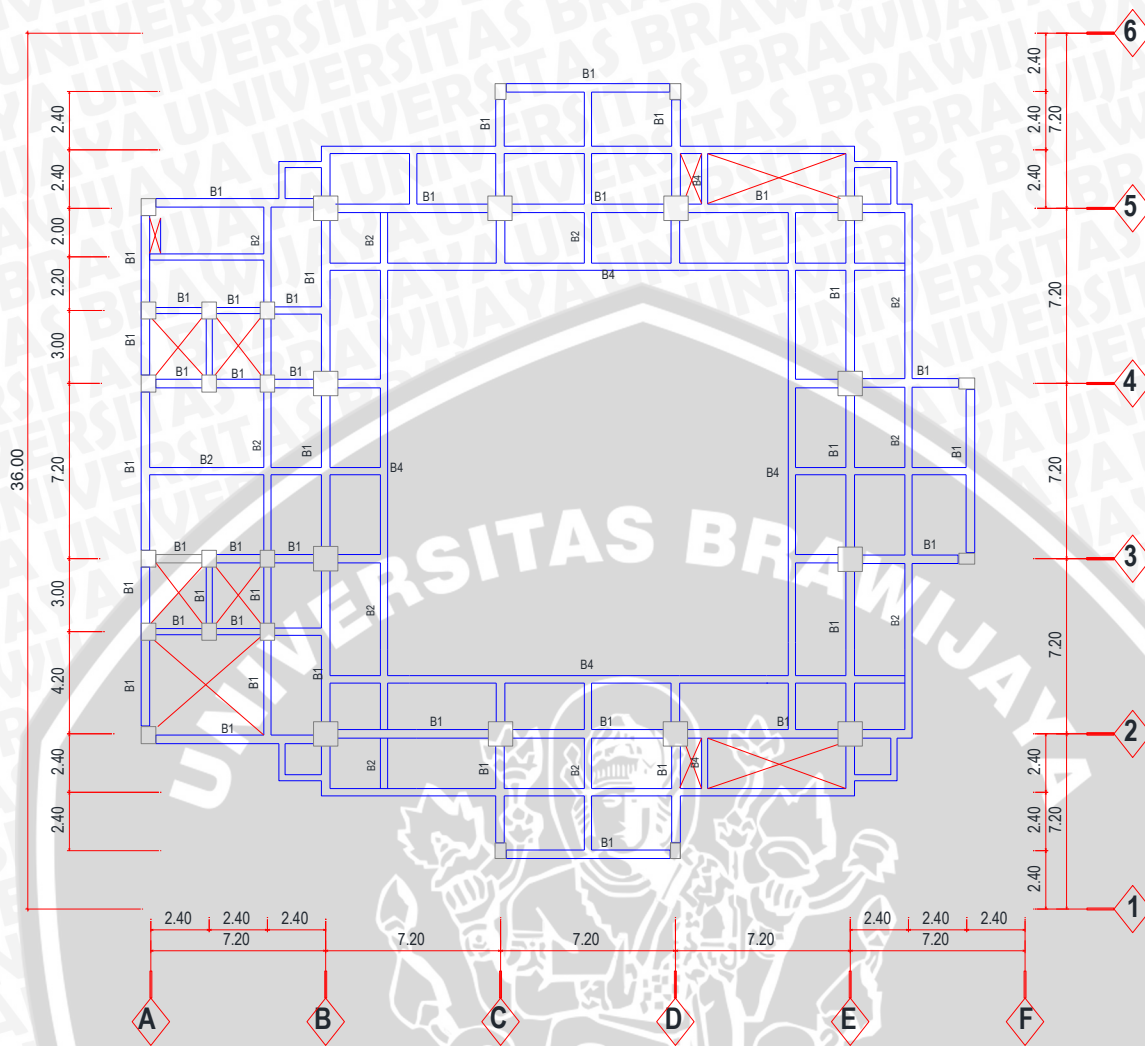
SKALA 0 2 4 5m





### RENCANA BALOK LT 5 s/d 12

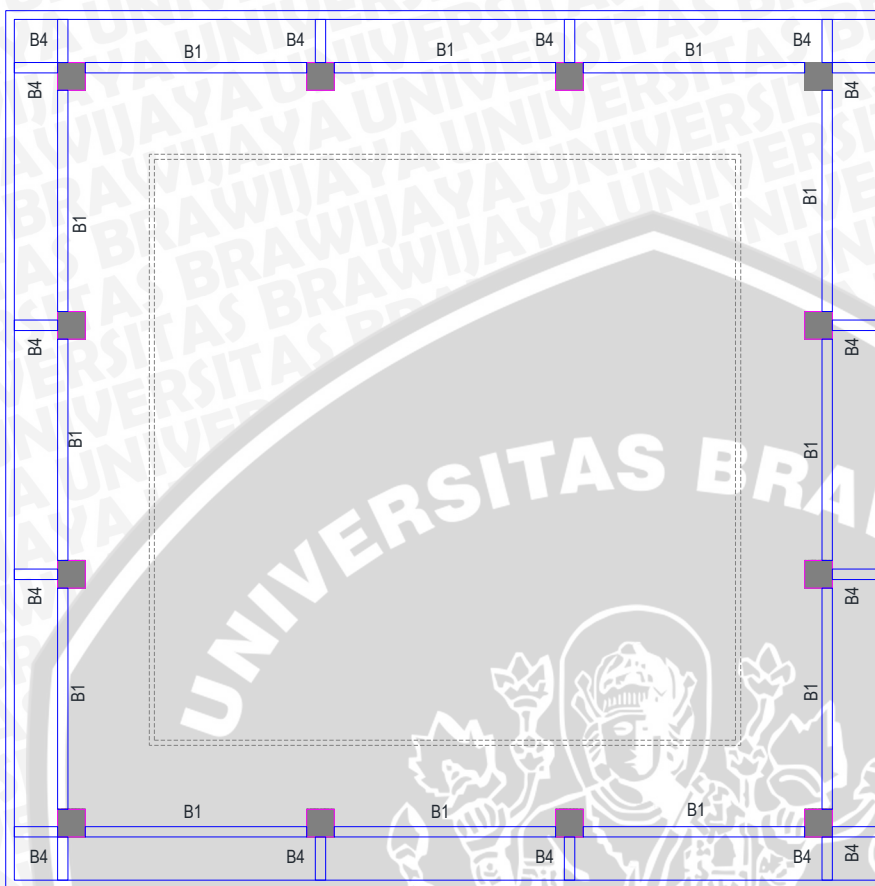




### RENCANA BALOK LT 13

SKALA 0 2 4 5m

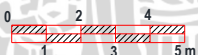




# RENCANA BALOK RING

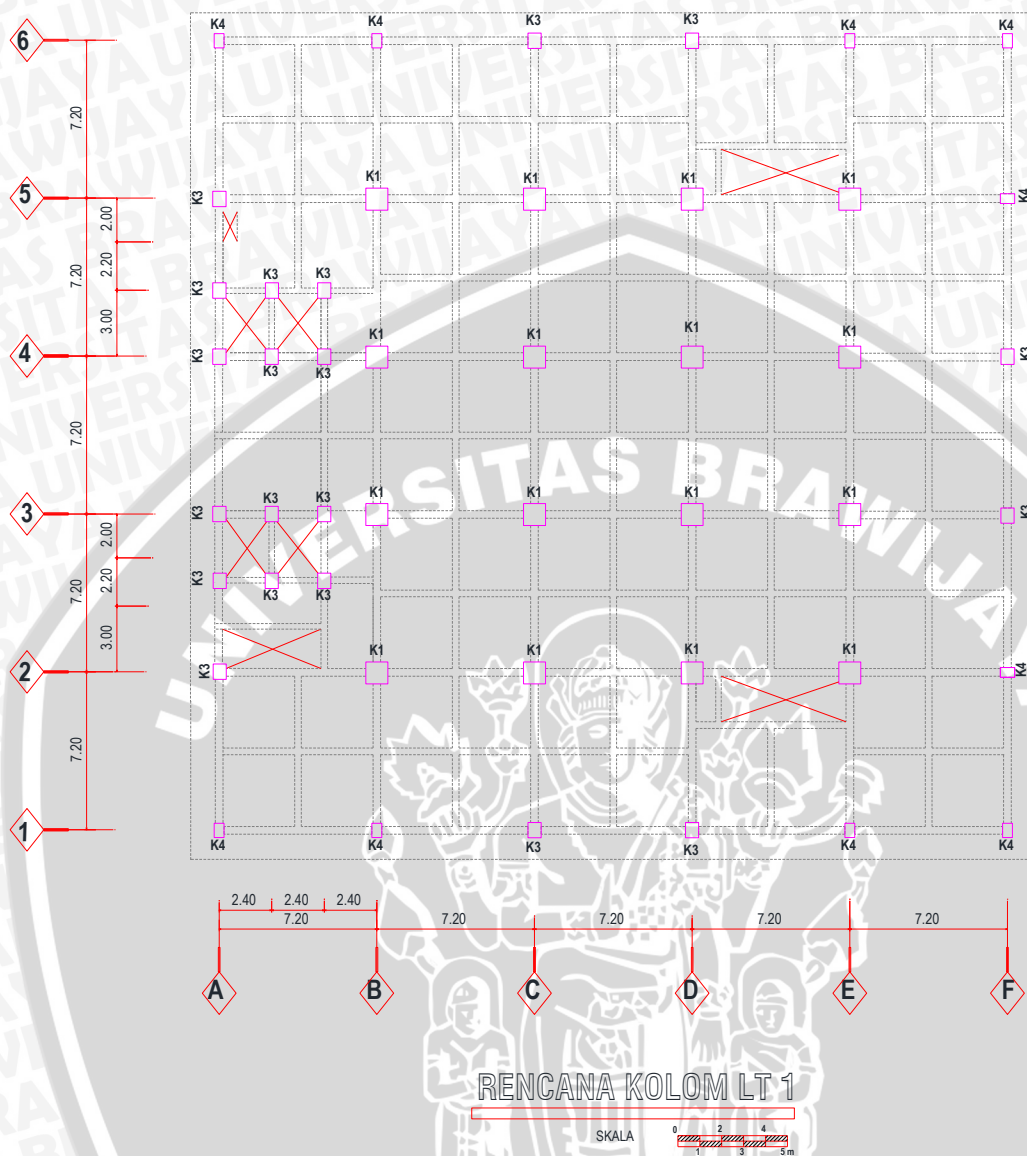


SKALA





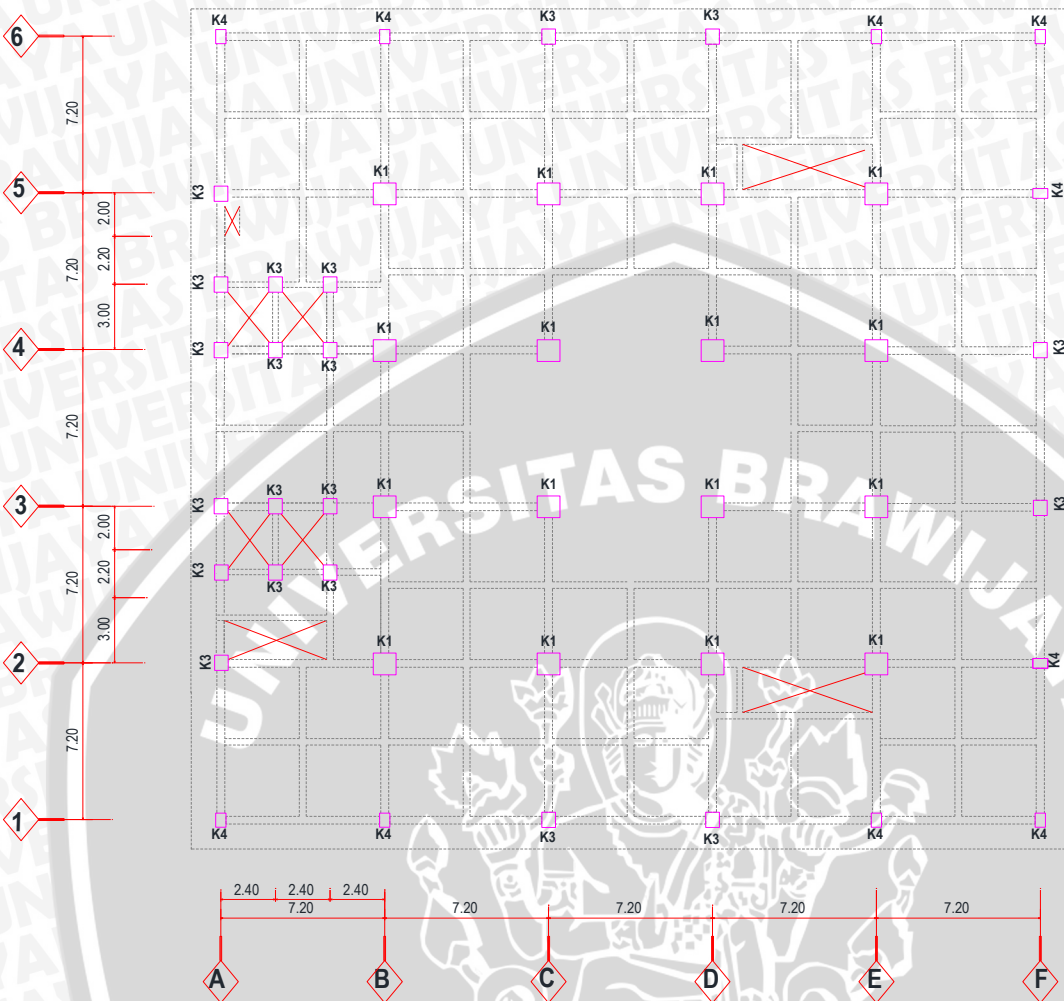
### DENAH KOLOM DESAIN



RENCANA KOLOM LT 1

SKALA 0 2 4 5m

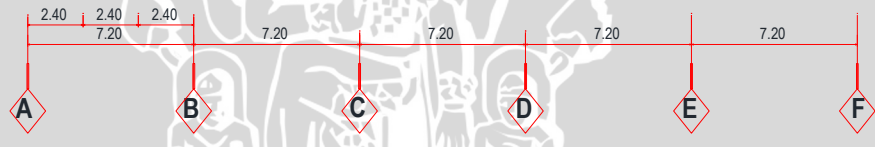
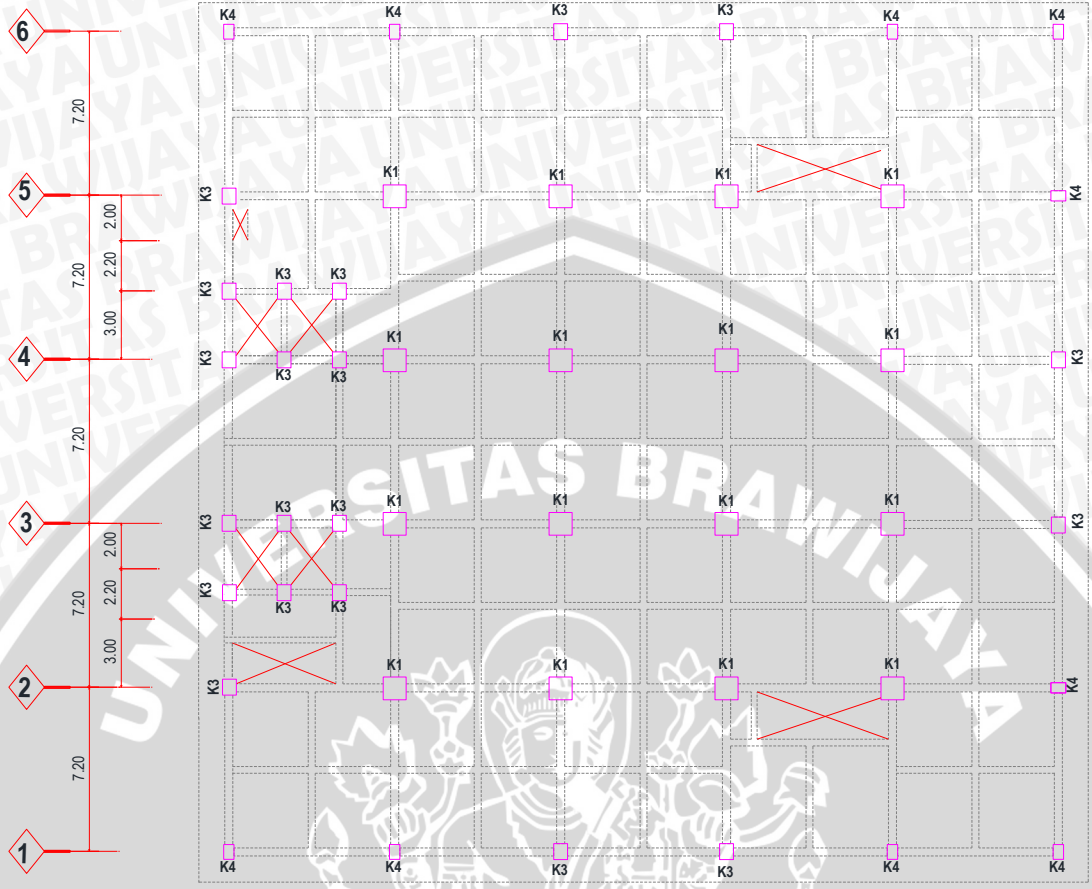




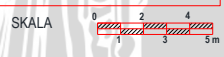
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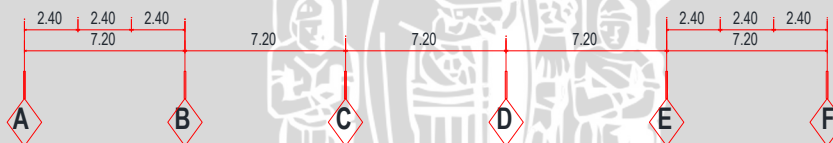
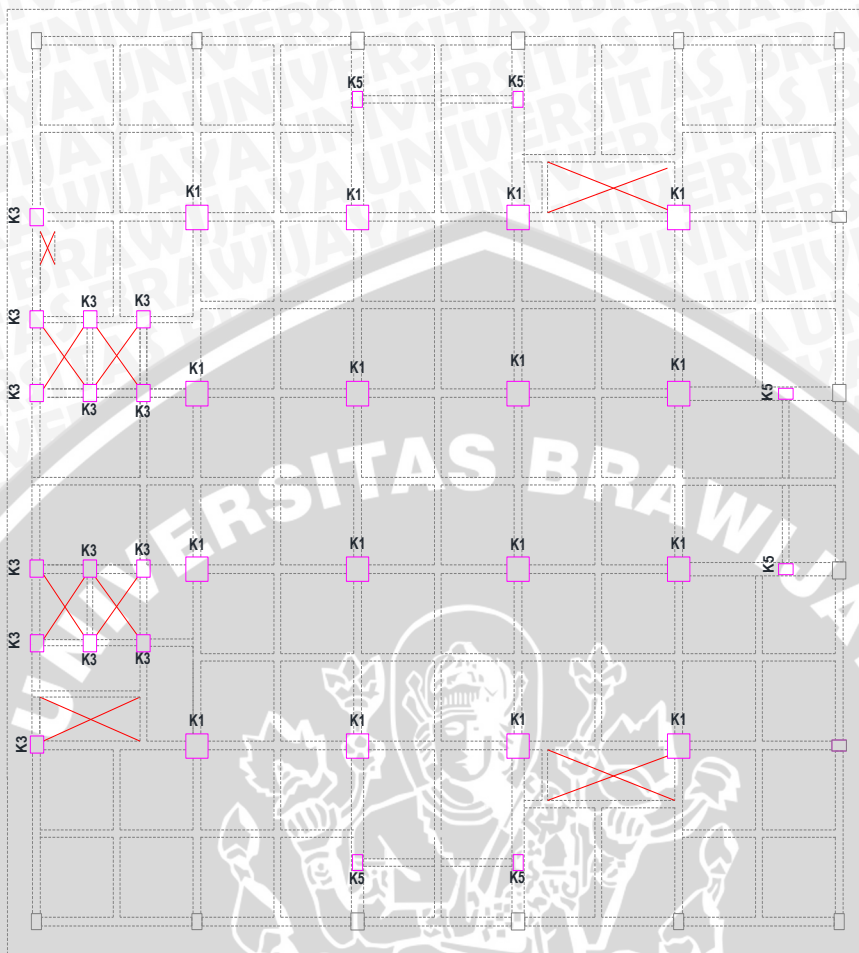
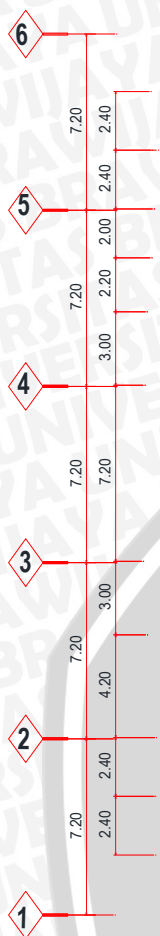
SKALA



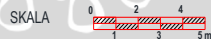


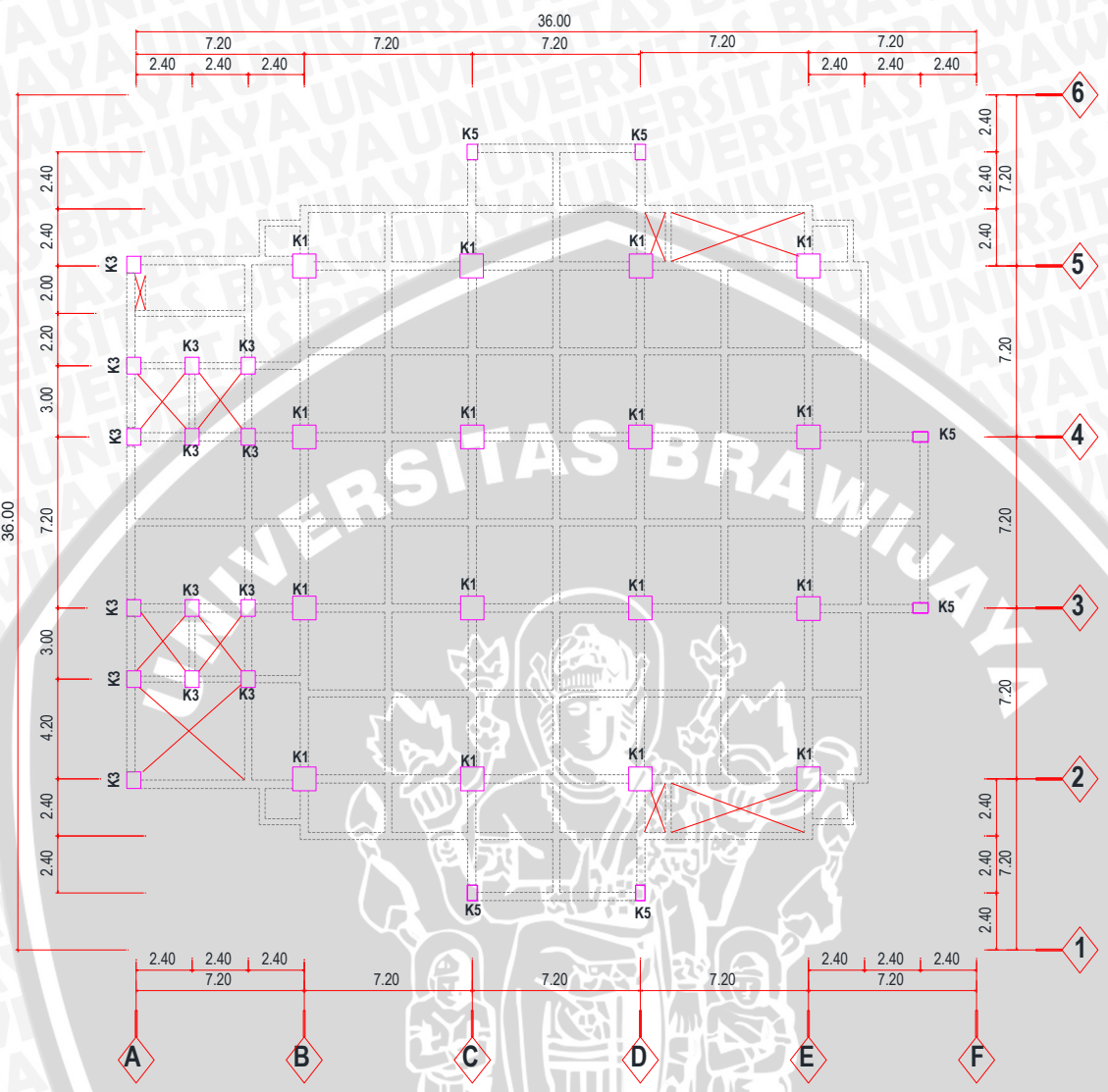
### RENCANA KOLOM LT 3





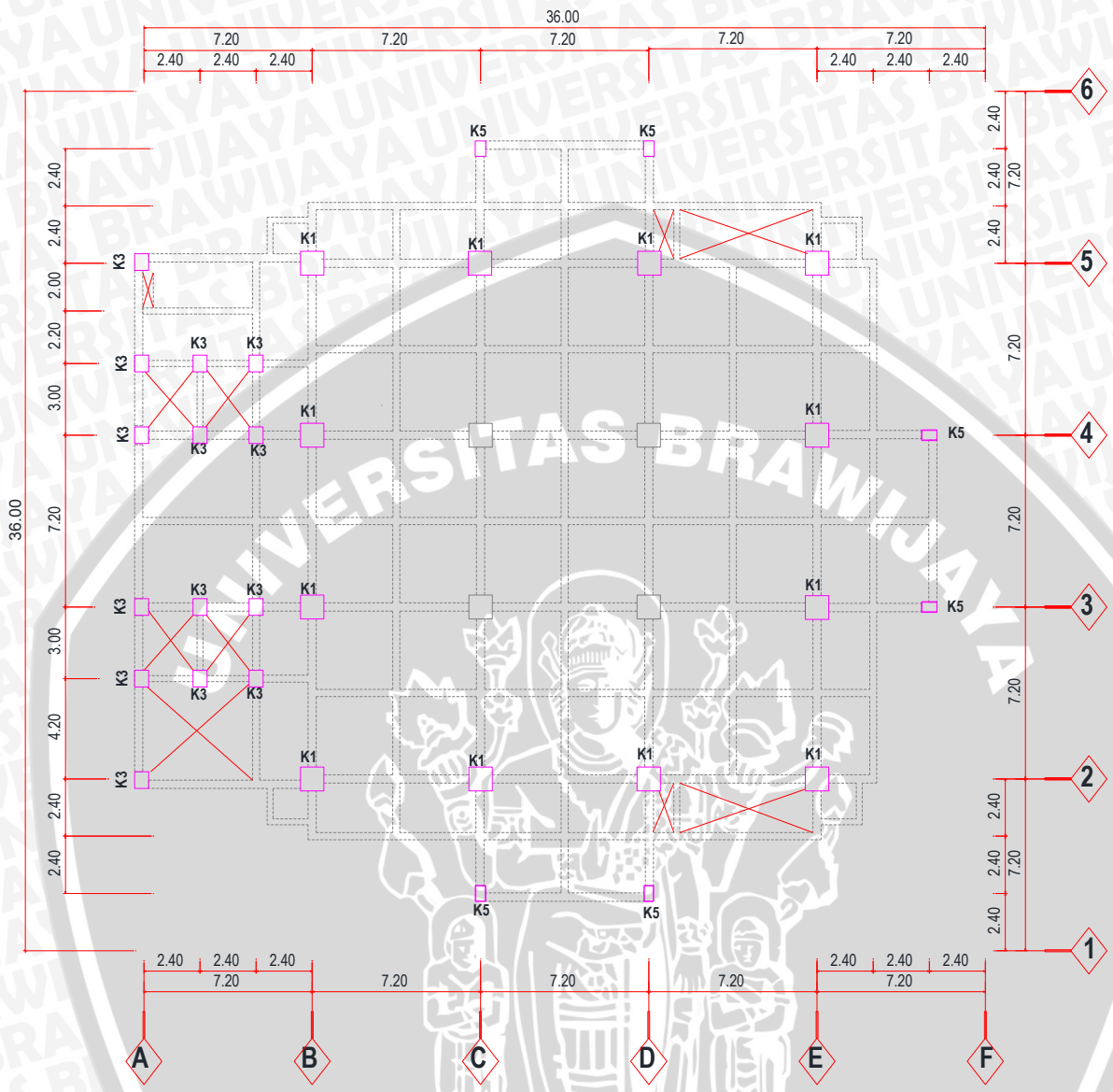
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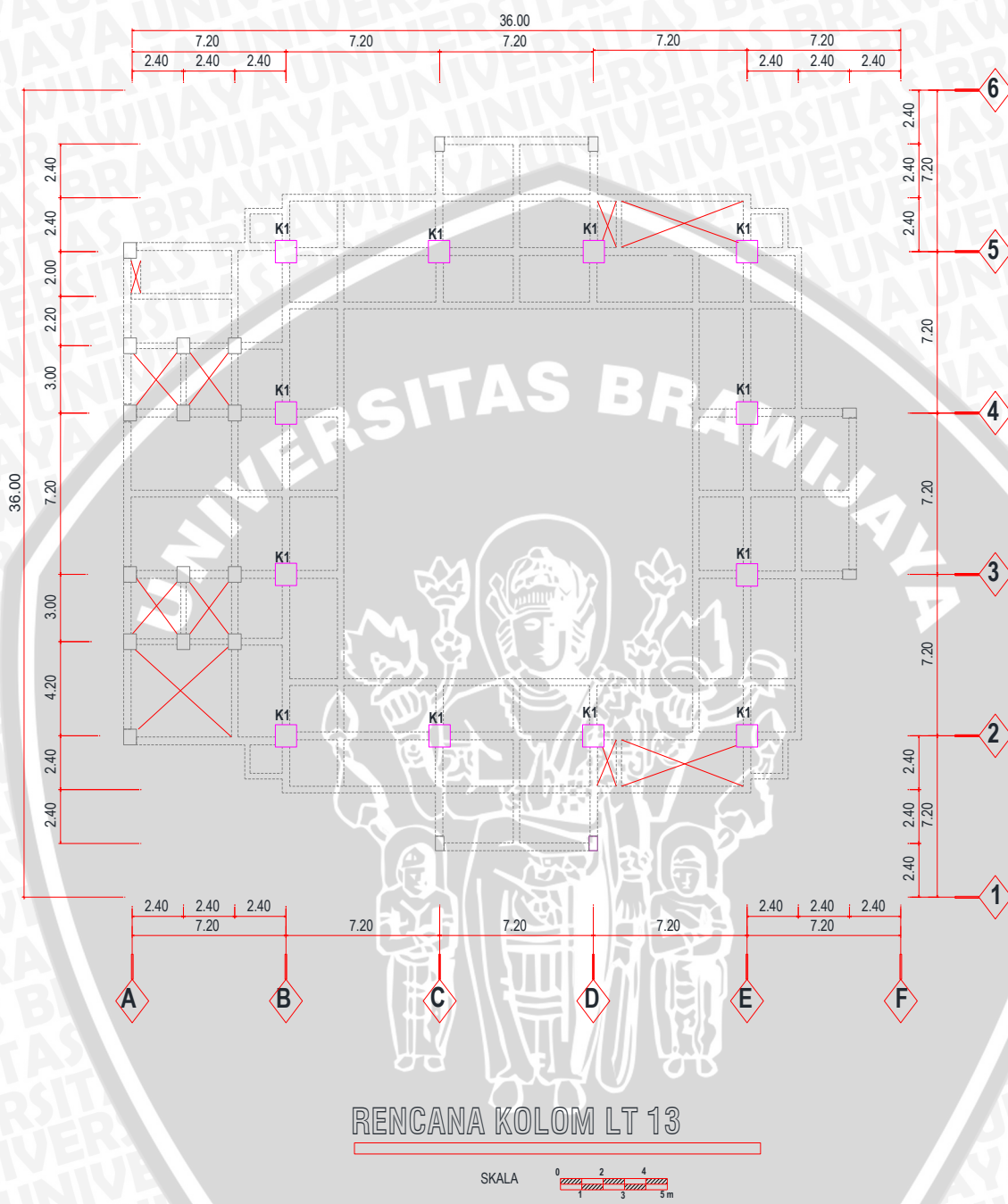
RENCANA KOLOM LT 4 s/d 11





RENCANA KOLOM LT 12

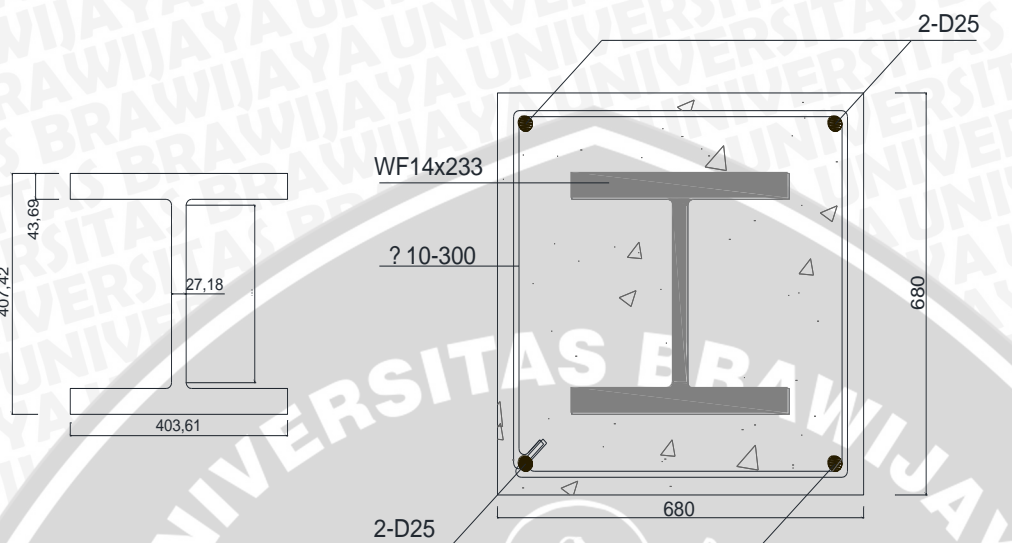




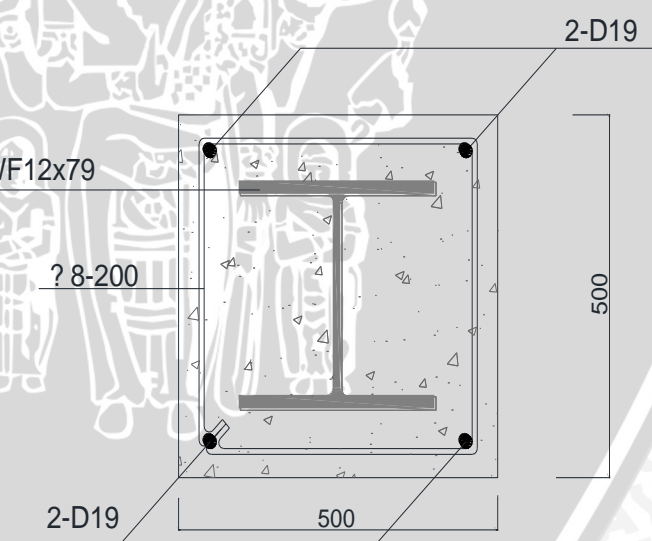
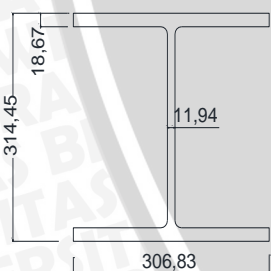
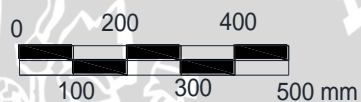
RENCANA KOLOM LT 13

SKALA 1:300

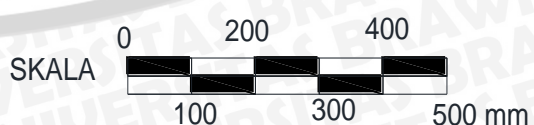
### DETAIL KOLOM KOMPOSIT



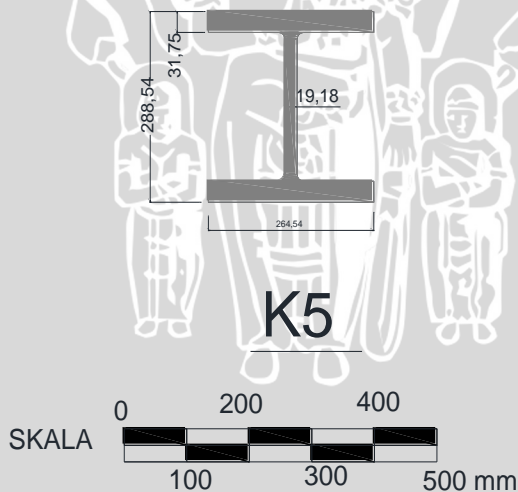
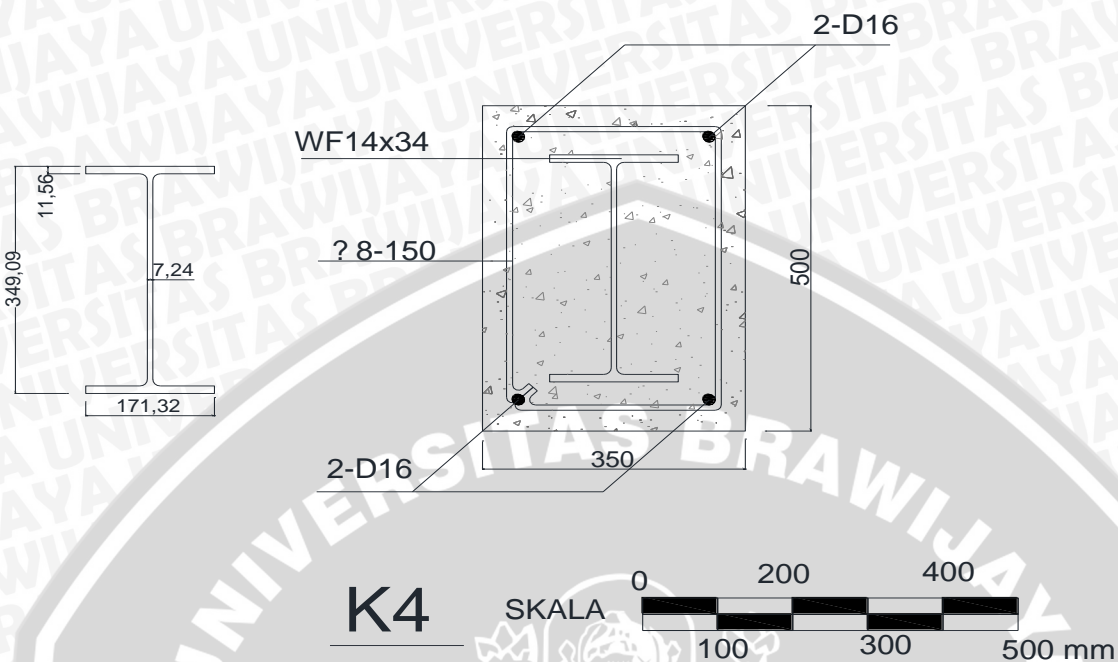
**K1**



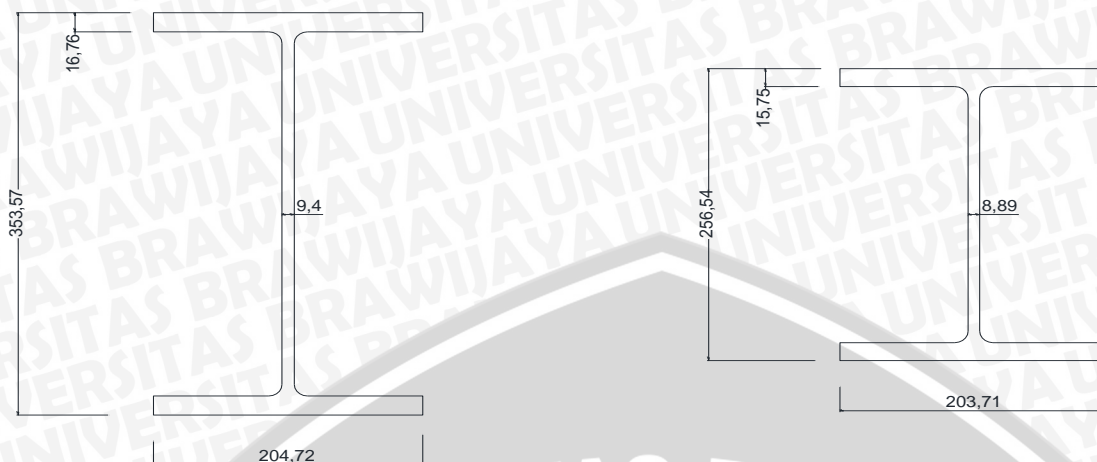
**K3**







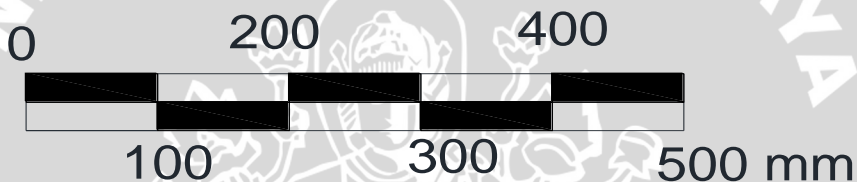
### DETAIL BALOK

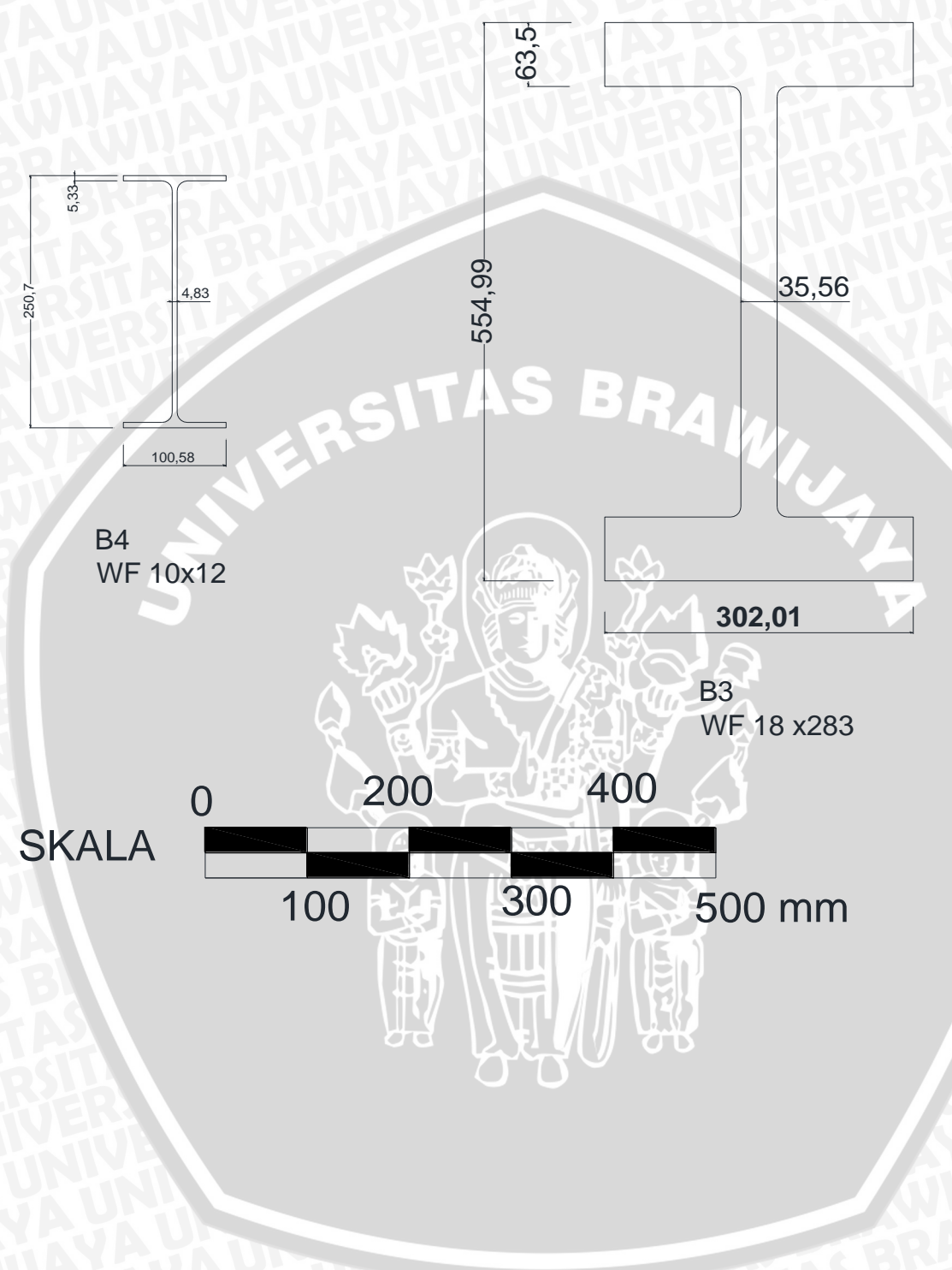


B1  
WF 14x53

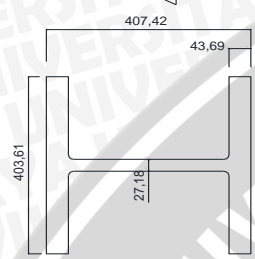
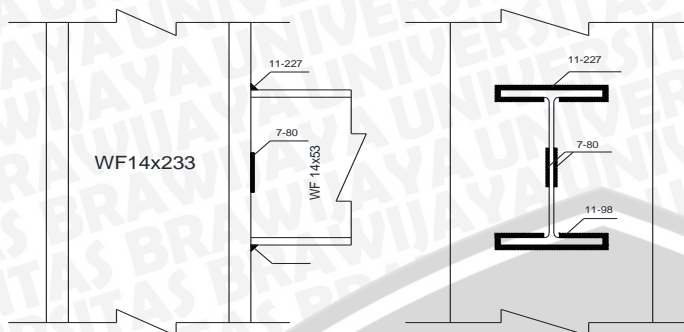
B2  
WF 10x45

SKALA

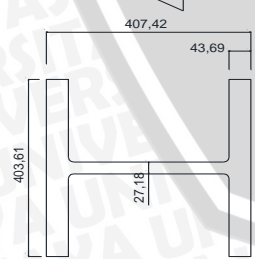
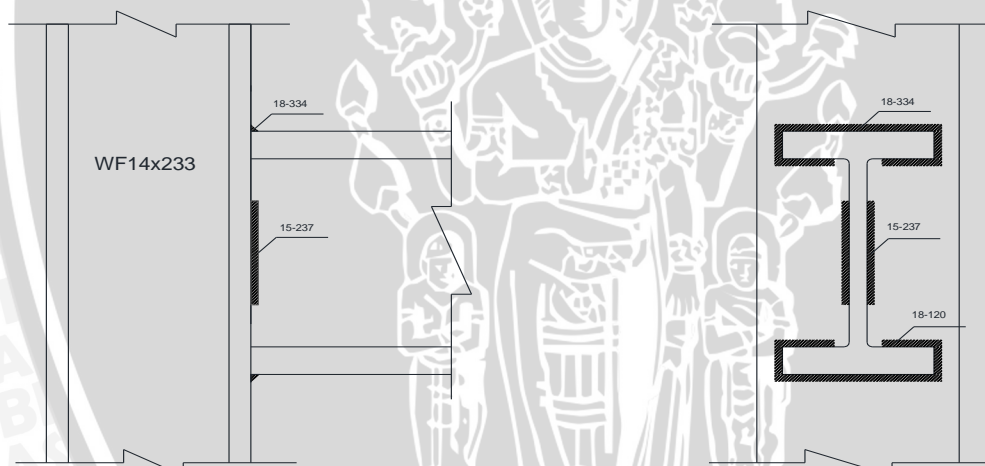




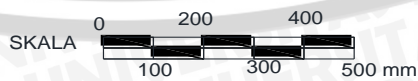
### SAMBUNGAN BALOK KOLOM B-C 2 & E-F 3



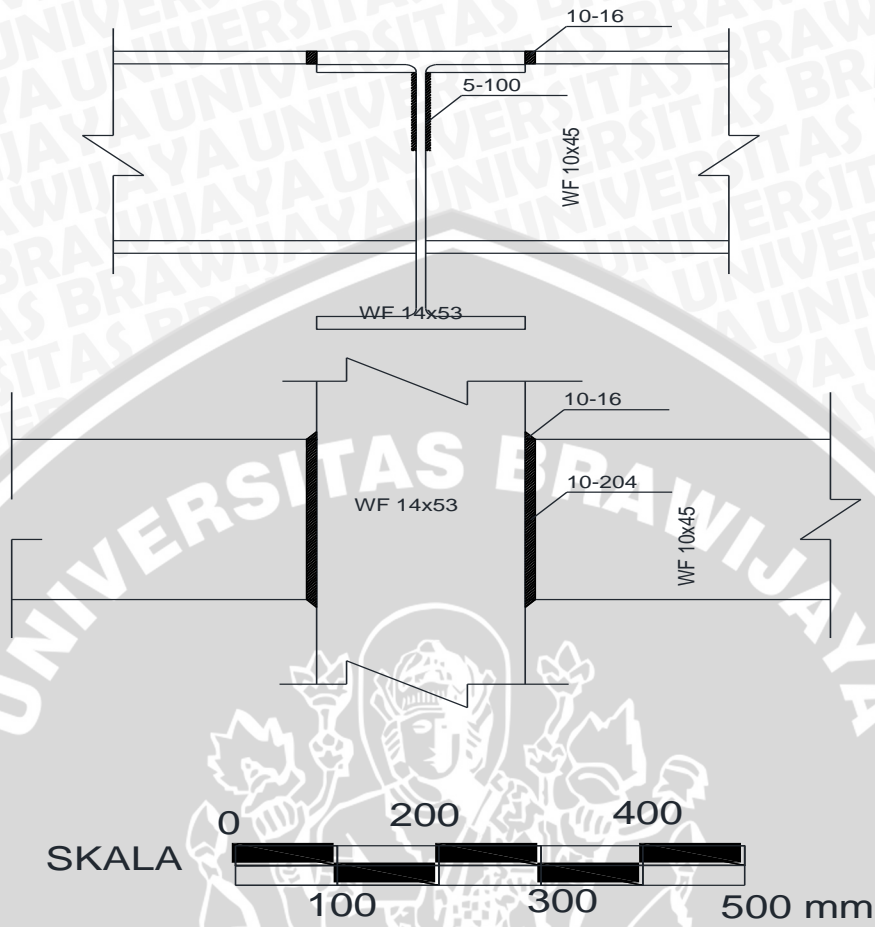
K1 & B1



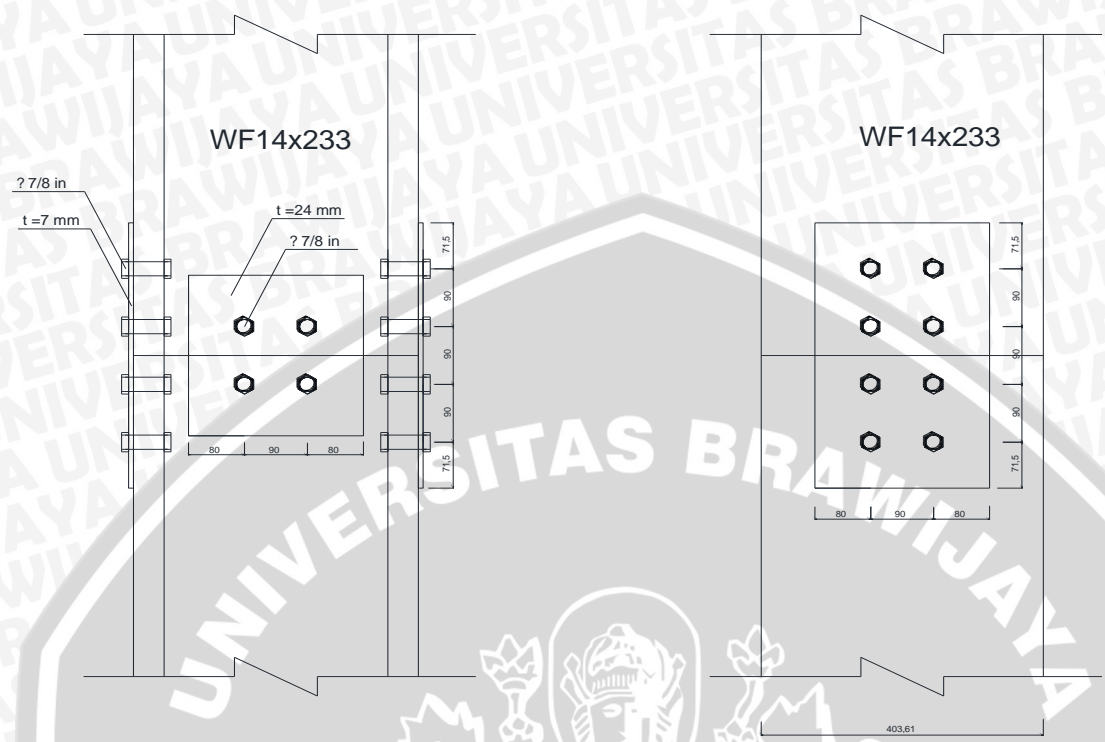
K1 & B3



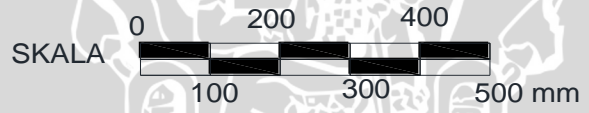
### SAMBUNGAN BALOK ANAK-BALOK INDUK



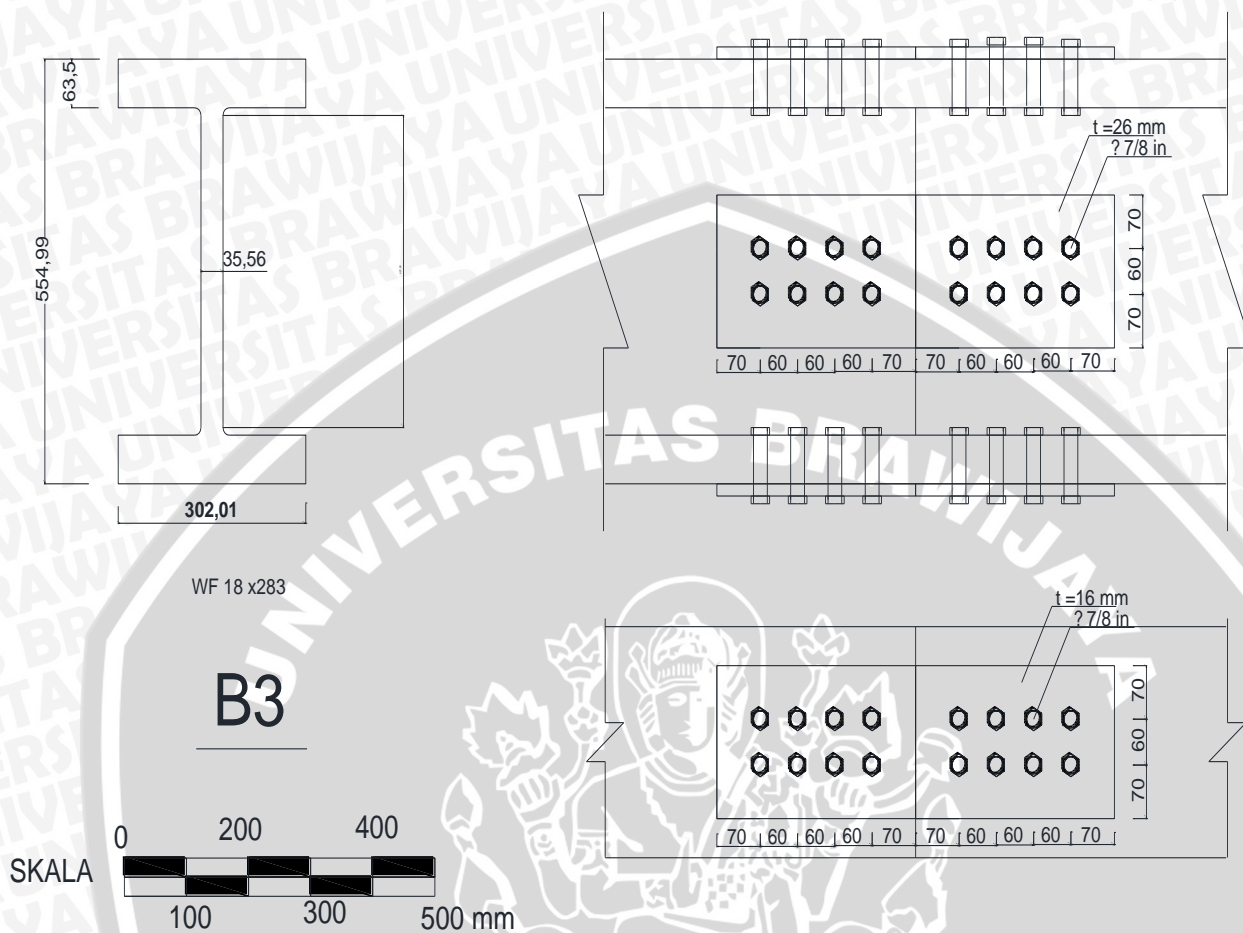
### SAMBUNGAN ANTAR KOLOM



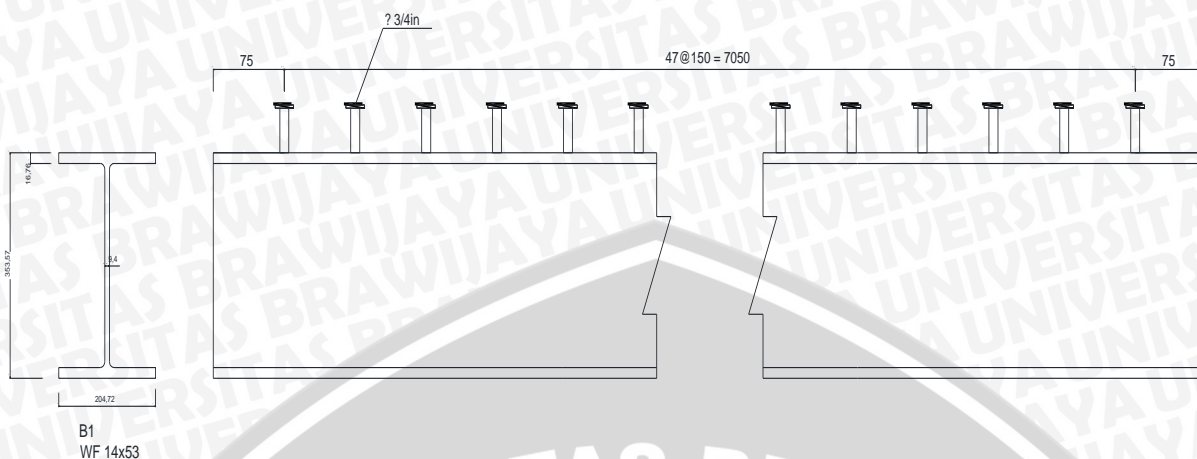
K1



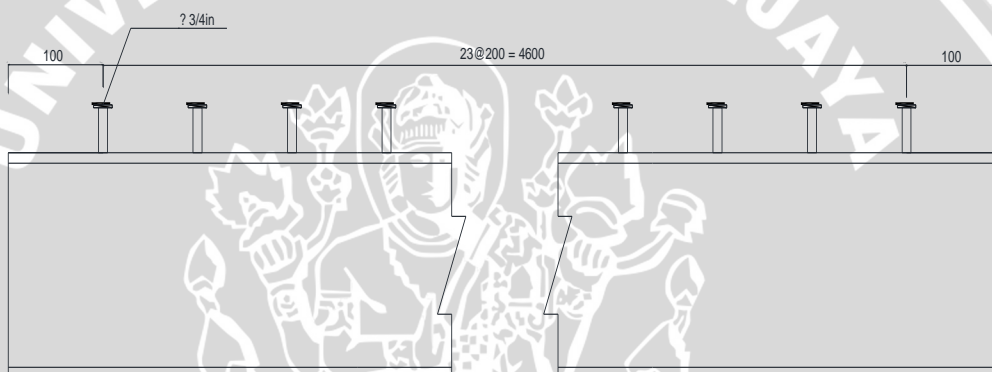
### SAMBUNGAN ANTAR BALOK



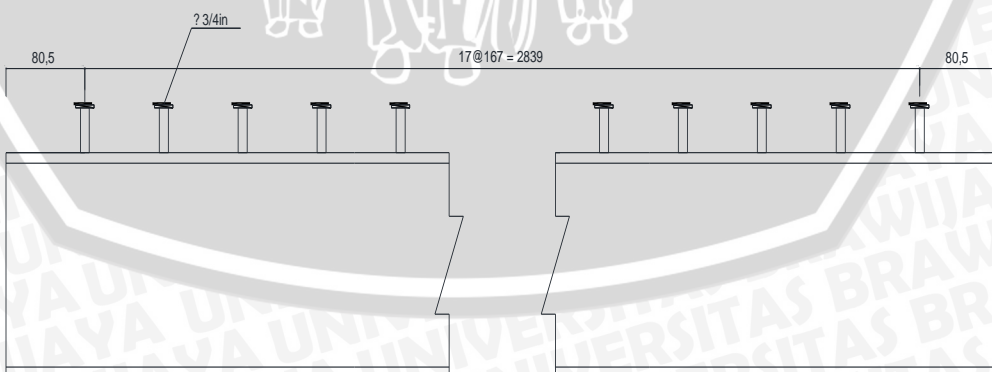
## PENHUBUNG GESER PADA BALOK KOMPOSIT



### PENHUBUNG GESER BALOK B1 BENTANG 7200 MM

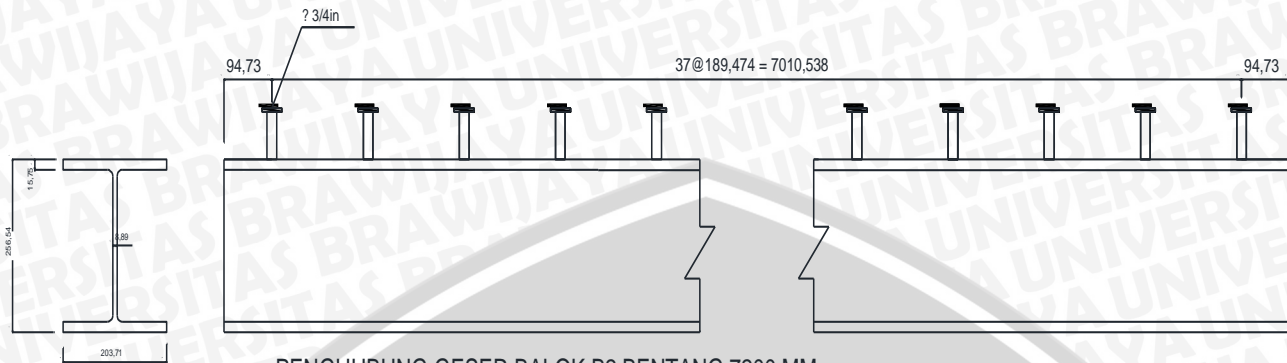


### PENHUBUNG GESER BALOK B1 BENTANG 4800 MM



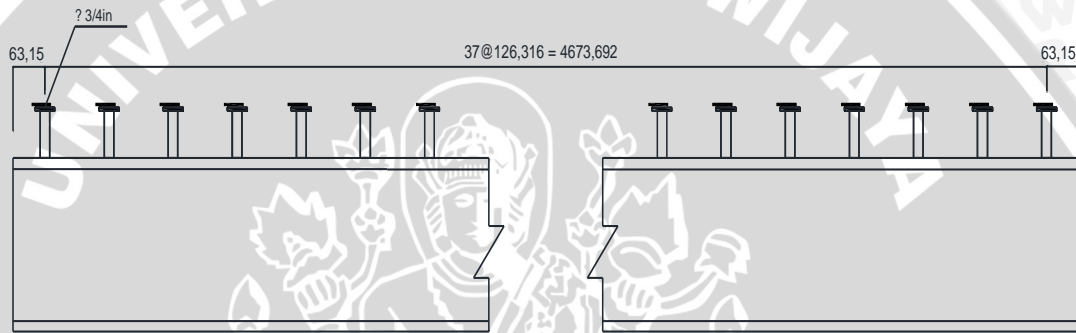
### PENHUBUNG GESER BALOK B1 BENTANG 3000 MM



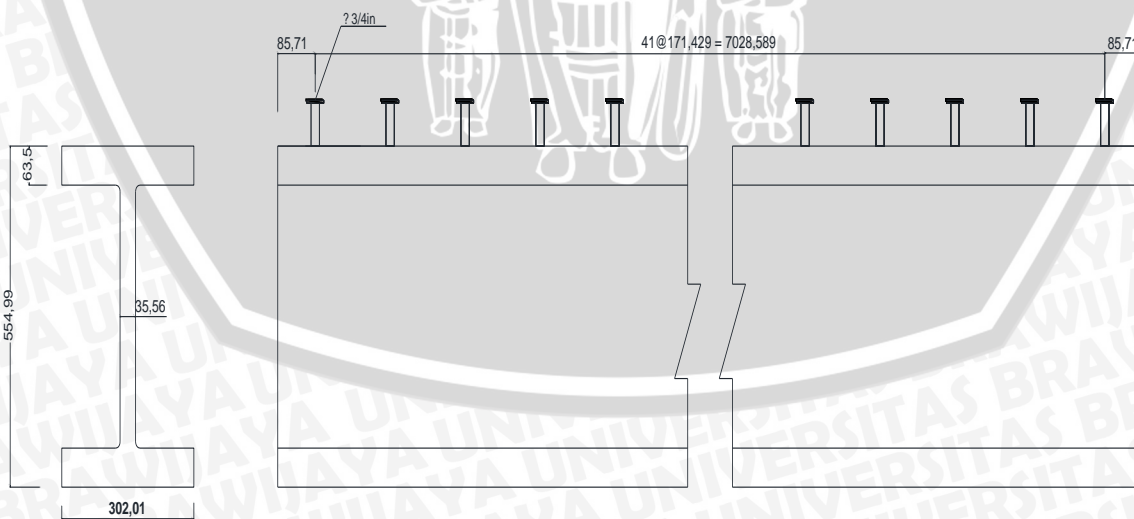


PENHUBUNG GESER BALOK B2 BENTANG 7200 MM

B2  
WF 10x45

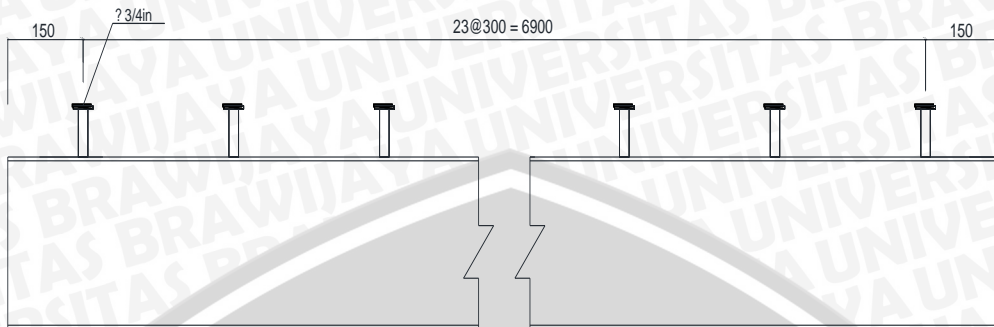
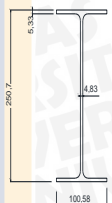


PENHUBUNG GESER BALOK B2 BENTANG 4800 MM



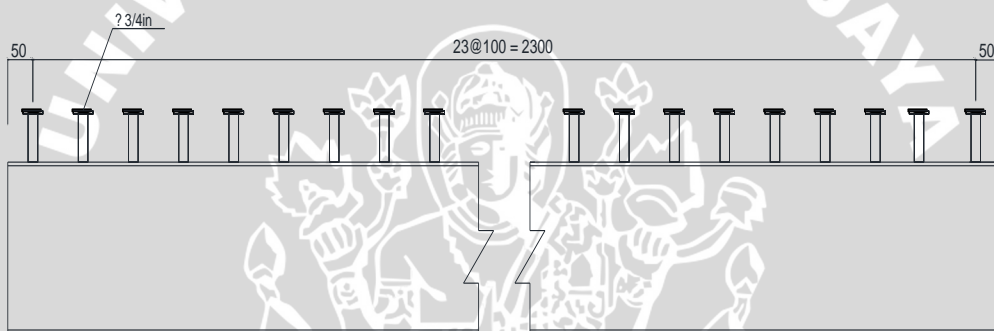
PENHUBUNG GESER BALOK B3 BENTANG 7200 MM

B3  
WF 18 x283

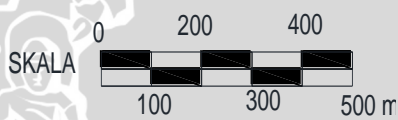


B4  
WF 10x12

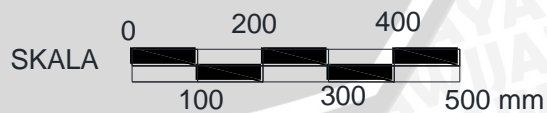
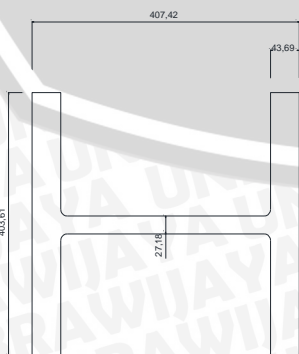
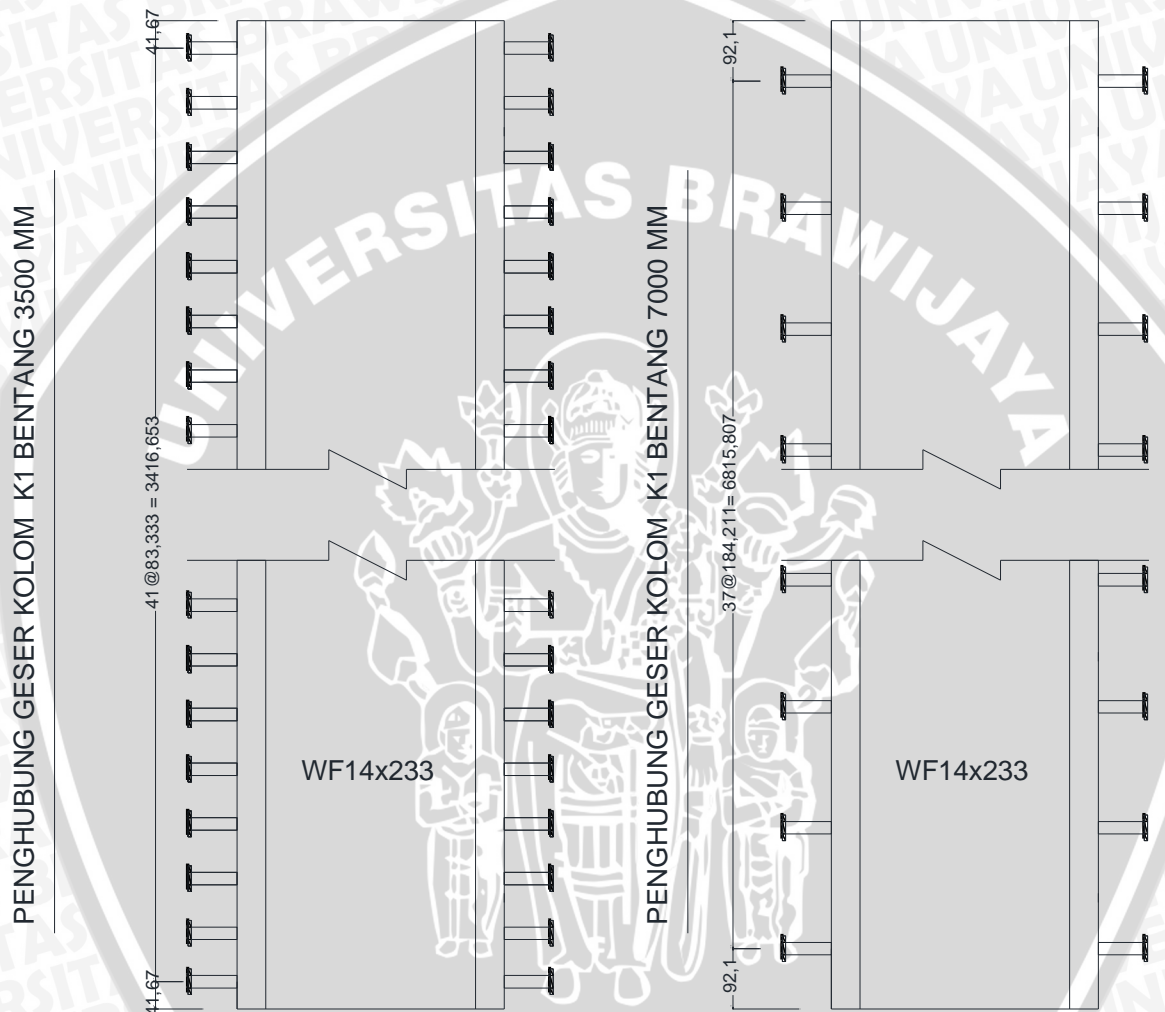
PENHUBUNG GESER BALOK B4 BENTANG 7200 MM



PENHUBUNG GESER BALOK B4 BENTANG 2400 MM



### PENGHUBUNG GESER PADA KOLOM KOMPOSIT

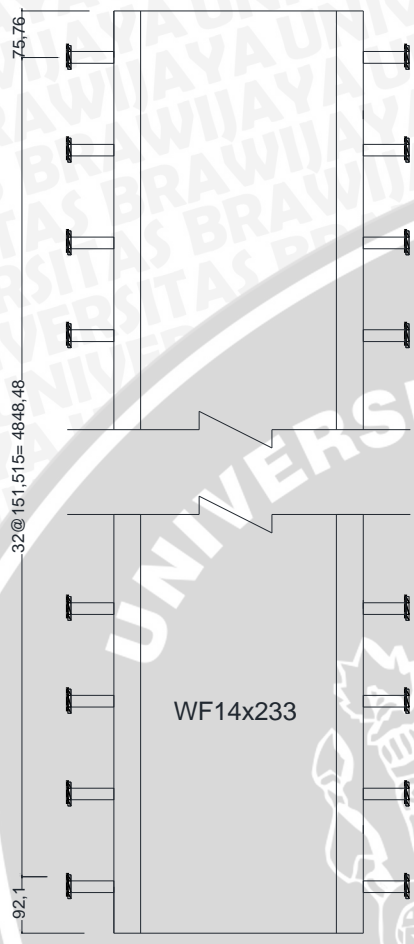


K1

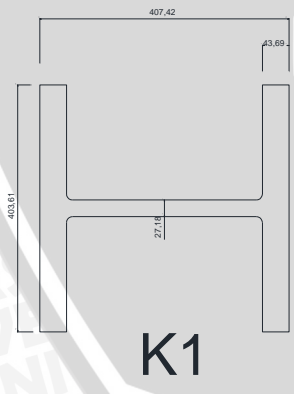
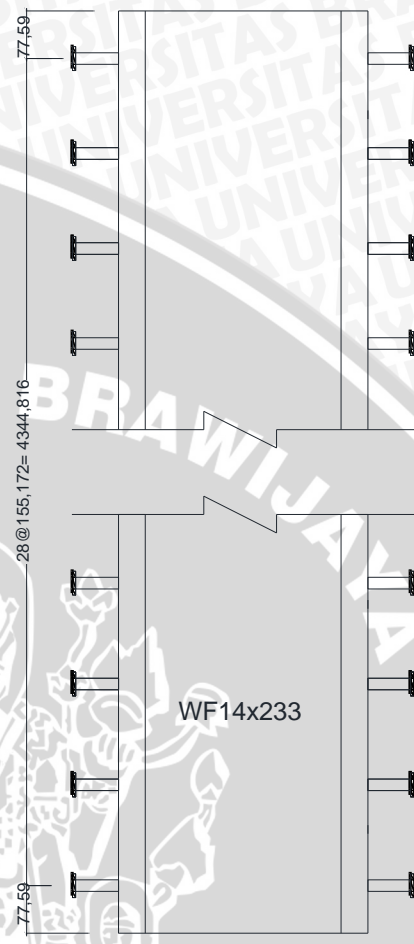




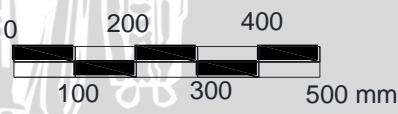
PENGHUBUNG GESER KOLOM K1 BENTANG 5000 MM



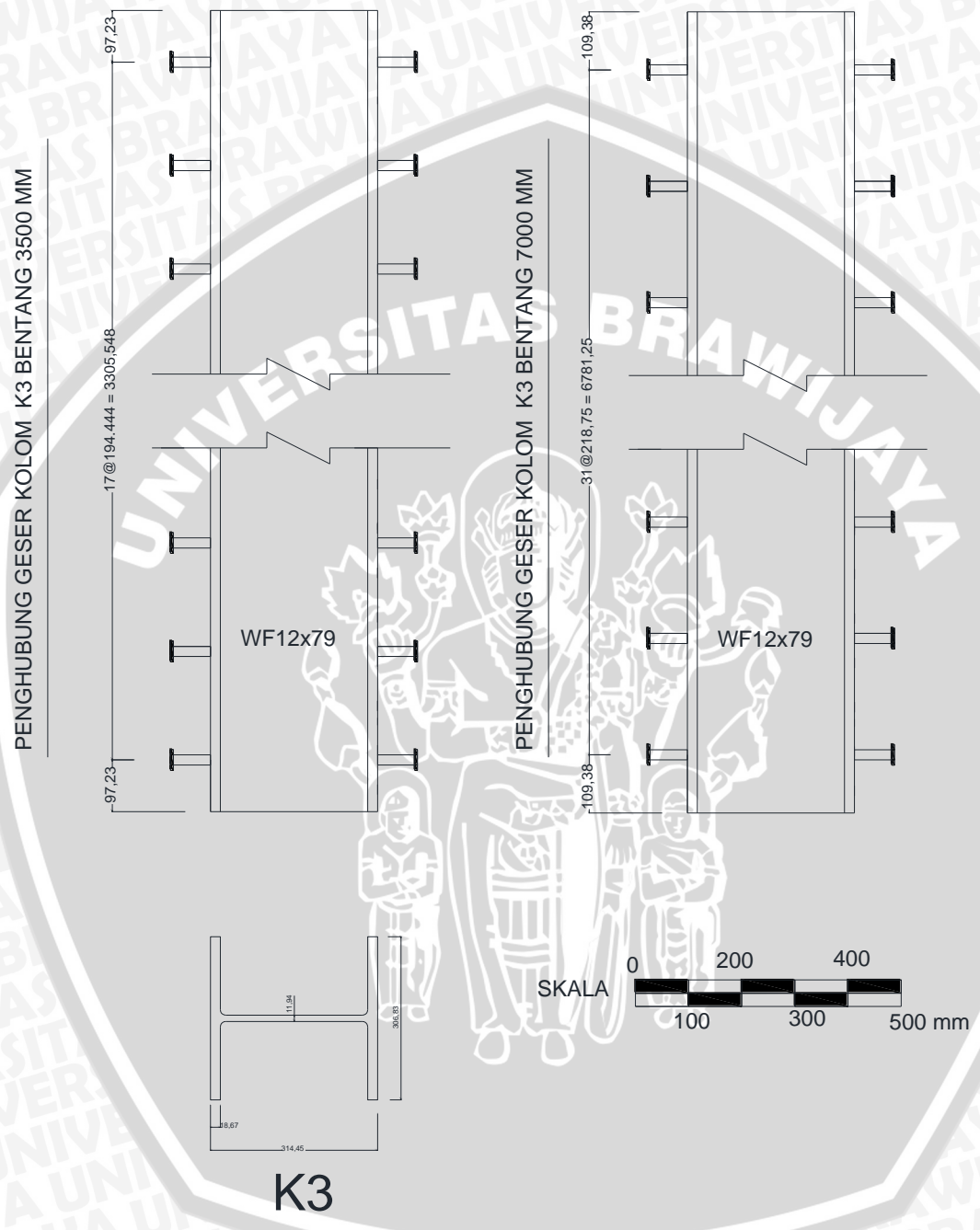
PENGHUBUNG GESER KOLOM K1 BENTANG 4500 MM



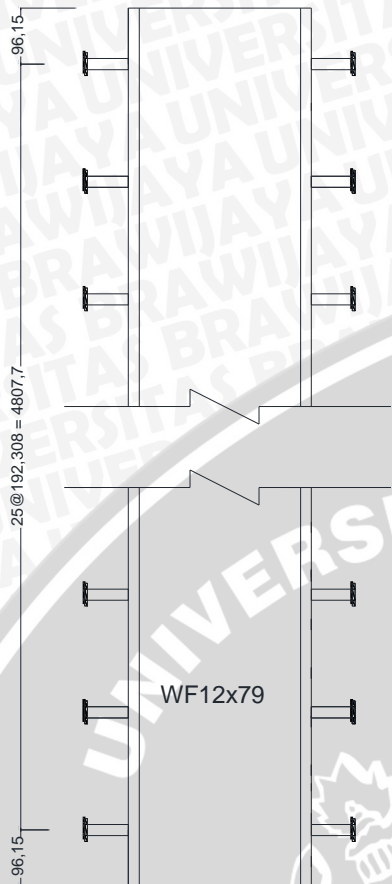
SKALA



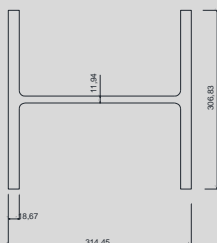
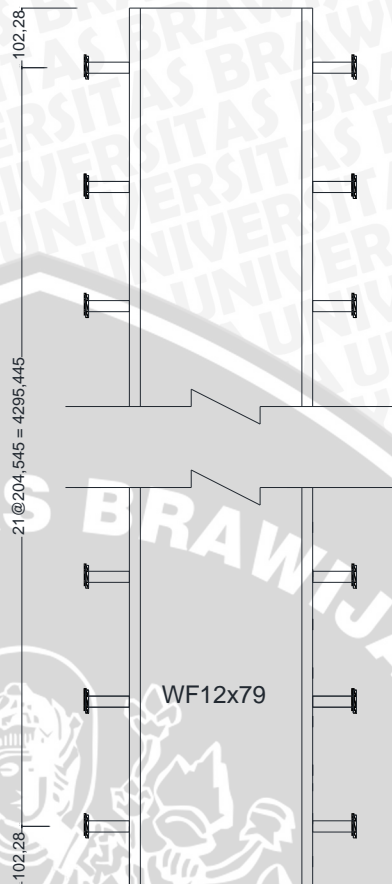
K1



PENGHUBUNG GESER KOLOM K3 BENTANG 5000 MM



PENGHUBUNG GESER KOLOM K3 BENTANG 4500 MM



K3

SKALA

