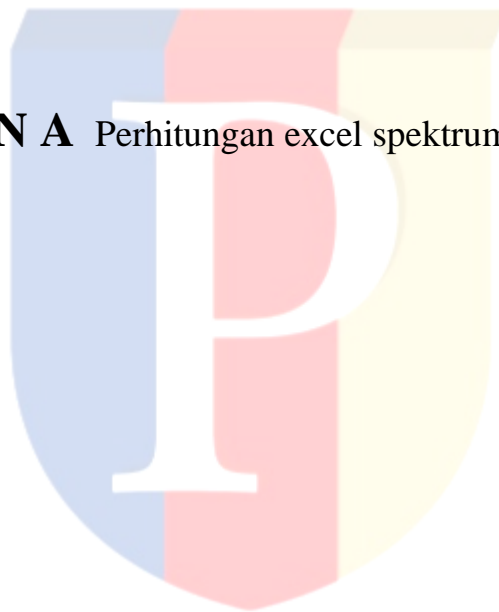


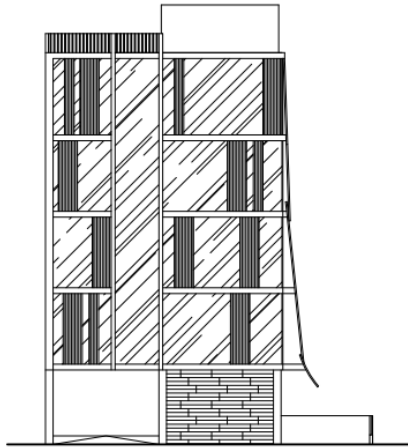
LAMPIRAN A Perhitungan excel spektrum respons desain



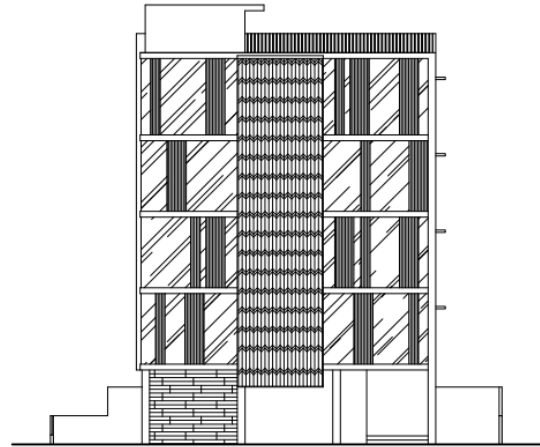
T	T	Sa
detik	detik	(g)
0	0	0.243
T ₀	0.185	0.607
T _s	0.924	0.607
T _s +0.10	1.024	0.548
T _s +0.20	1.124	0.499
T _s +0.30	1.224	0.458
T _s +0.40	1.324	0.424
T _s +0.50	1.424	0.394
T _s +0.60	1.524	0.368
T _s +0.70	1.624	0.345
T _s +0.80	1.724	0.325
T _s +0.90	1.824	0.308
T _s +1.00	1.924	0.292
T _s +1.10	2.024	0.277
T _s +1.20	2.124	0.264
T _s +1.30	2.224	0.252
T _s +1.40	2.324	0.241
T _s +1.50	2.424	0.231
T _s +1.60	2.524	0.222
T _s +1.70	2.624	0.214
T _s +1.80	2.724	0.206
T _s +1.90	2.824	0.199
T _s +2.00	2.924	0.192
T _s +2.10	3.024	0.185
T _s +2.20	3.124	0.180
T _s +2.30	3.224	0.174
T _s +2.40	3.324	0.169
T _s +2.50	3.424	0.164
T _s +2.60	3.524	0.159
T _s +2.70	3.624	0.155
T _s +2.80	3.724	0.151
T _s +2.90	3.824	0.147
4	4	0.140

LAMPIRAN B Gambar Arsitek Gedung Perkantoran 5 Lantai

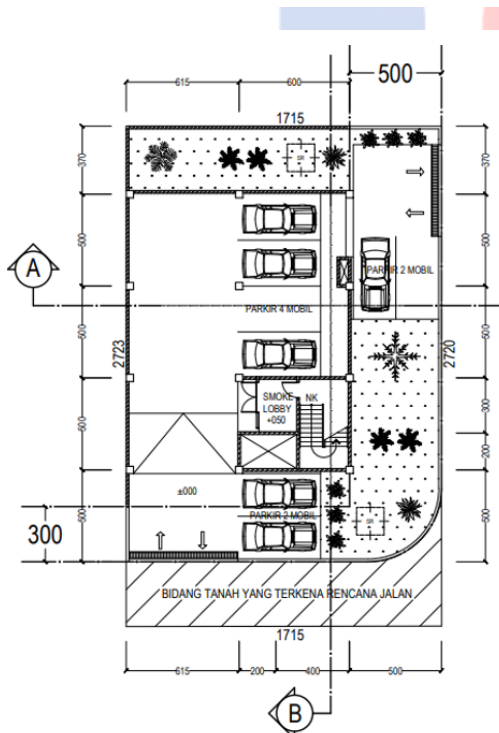




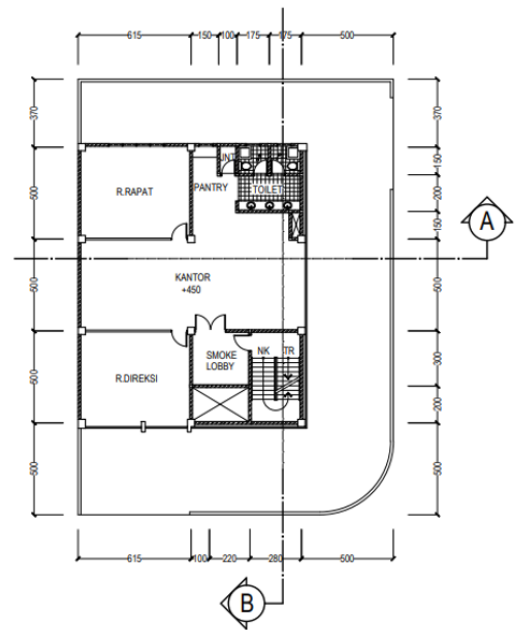

TAMPAK DEPAN
 SKALA 1 : 200



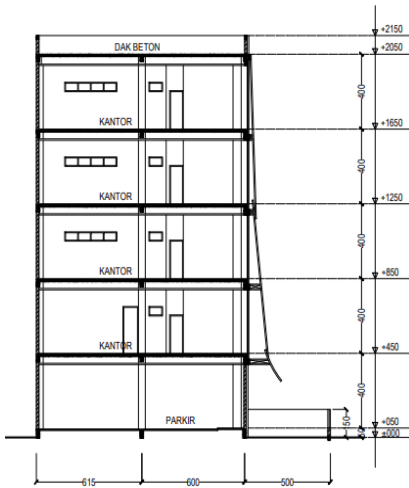
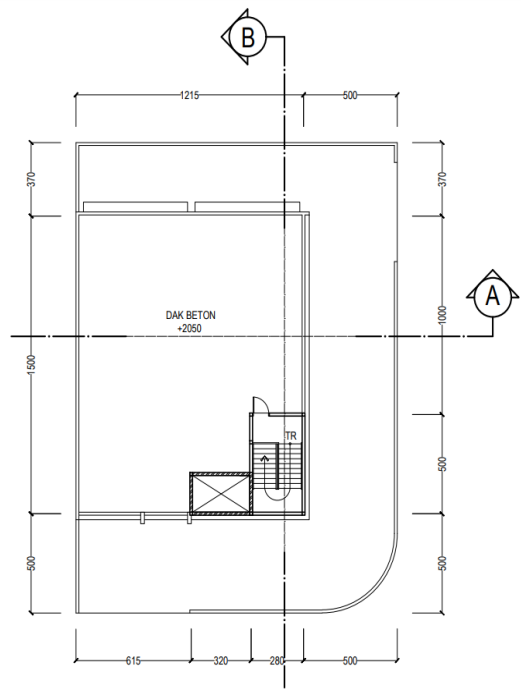
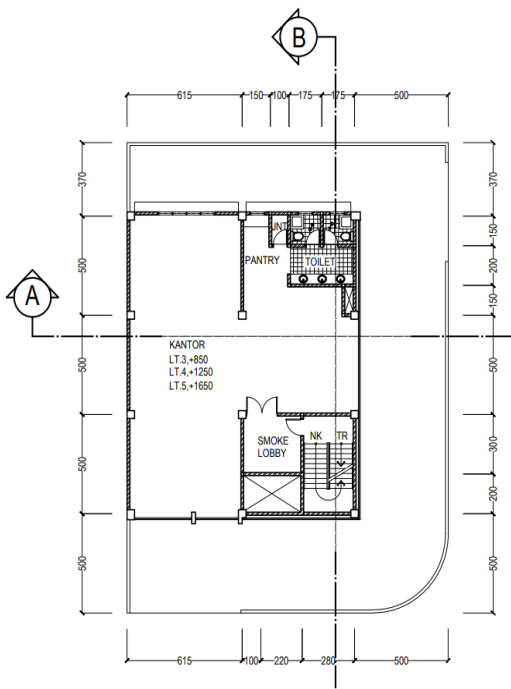

TAMPAK SAMPING
 SKALA 1 : 200



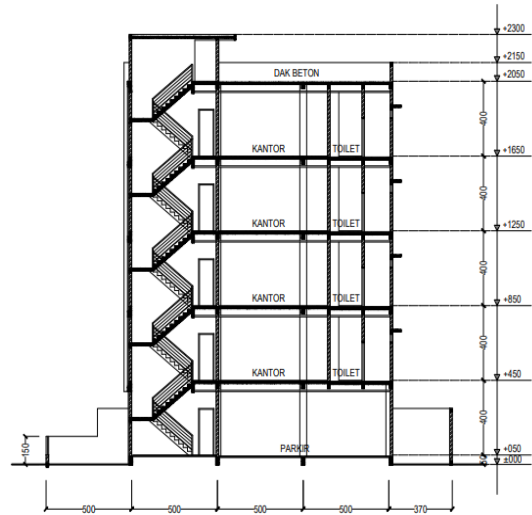

DENAH LT.1
 SKALA 1 : 200




DENAH LT.2
 SKALA 1 : 200



POTONGAN B - B
SKALA 1 : 200



POTONGAN A - A
SKALA 1 : 200

LAMPIRAN C Tabel Perhitungan Momen Pelat 2 Arah



Momen di dalam pelat persegi yang memusupu pada keempat tepinya akibat beban terbagi rata

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



LAMPIRAN D Spesifikasi Tiang Pancang Pabrikasi Adhi Beton



Spun Pile Specification

Outside Diameter (mm)	Wall Thickness (mm)	Class	Concrete Section (cm ²)	Unit Weight (Kg/m)	Length (m)	Bending Moment		Allowed Axial Load (ton)
						crack (ton.m)	ultimate (ton.m)	
300	60	A2	0,452	113	6-13	2,5	3,8	72,6
		A3				3,0	4,5	70,8
		B				3,5	6,3	67,5
		C				4,0	8,0	65,4
350	65	A1	0,582	145	6-15	3,5	5,3	93,1
		A3				4,2	6,3	89,5
		B				5,0	9,0	86,4
		C				6,0	12,0	85,0
400	75	A2	0,766	191	6-16	5,5	8,3	121,1
		A3				6,5	9,8	117,6
		B				7,5	13,5	114,4
		C				9,0	18,0	111,5
450	80	A1	0,930	232	6-16	7,5	11,3	149,5
		A2				8,5	12,8	145,8
		A3				10,0	15,0	143,8
		B				11,0	19,8	139,1
500	90	A1	1,159	290	6-16	12,5	25,0	134,9
		A2				10,5	15,8	185,3
		A3				12,5	18,8	181,7
		B				14,0	21,0	178,2
600	100	A1	1,571	393	6-16	15,0	27,0	174,9
		A2				17,0	34,0	169,0
		A3				17,0	34,0	169,0
		B				17,0	34,0	169,0
800	120	A1	2,564	641	6-18	17,0	25,5	252,7
		A2				19,0	28,5	249,0
		A3				22,0	33,0	243,2
		B				25,0	45,0	238,3
1000	140	A1	3,782	946	6-20	29,0	58,0	229,5
		A2				40,0	60,0	409,5
		A3				46,0	69,0	405,5
		B				51,0	76,5	397,4
1200	150	A1	4,948	1236	6-24	55,0	99,0	380,8
		A2				65,0	117,0	364,5
		A3				75,0	112,5	605,5
		B				84,0	126,0	602,7
1200	150	A1	4,948	1236	6-24	97,0	145,5	586,7
		A2				105,0	189,0	564,9
		A3				120,0	216,0	549,2
		B				120,0	216,0	549,2
1200	150	A1	4,948	1236	6-24	139,0	208,5	777,8
		A2				150,0	225,0	766,7
		A3				170,0	306,0	730,1
		B				200,0	360,0	708,2

LAMPIRAN E Perhitungan Tulangan Utama Keseluruhan Balok Tiap Lantai.



BALOK TULANGAN UTAMA LANTAI 2

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 2 grid A/1-3	Tumpuan Kiri (+)	83.11	83.11	92.3444	390.5	2.0186	0.00506	0.00333	0.00506	390.50	592.673	2.09	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	163.62	163.62	181.8	389	4.0047	0.01066	0.00333	0.01066	389.00	1243.74	3.272	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	66.302	66.302	73.6689	390.5	1.6104	0.00399	0.00333	0.00399	390.50	467.6	1.649	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	74.4	74.4	82.6667	389	1.8210	0.00454	0.00333	0.00454	389.00	529.742	1.394	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	80.8	80.8	89.7778	390.5	1.9625	0.00491	0.00333	0.00491	390.50	575.313	2.029	3	19	850.586211	129.49485	108.2185	Aman
Tumpuan Kanan (-)	160.6	160.6	178.444	389	3.9308	0.01044	0.00333	0.01044	389.00	1217.79	3.204	4	22	1520.53084	216.43693	216.4369	Aman	
B1 Lantai 2 grid A/3-4	Tumpuan Kiri (+)	77.09	79.3	88.1111	389	1.9409	0.00485	0.00333	0.00485	389.00	566.476	1.49	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kiri (-)	158.6	158.6	176.222	389	3.8819	0.01029	0.00333	0.01029	389.00	1200.68	3.159	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	60.08	60.08	66.7556	389	1.4705	0.00363	0.00333	0.00363	389.00	423.8	1.115	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	71.4	71.4	79.3333	389	1.7476	0.00435	0.00333	0.00435	389.00	507.375	1.335	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	77.8	78.49	87.2111	389	1.9211	0.00480	0.00333	0.00480	389.00	560.386	1.474	2	22	760.265422	116.21532	108.2185	Aman
Tumpuan Kanan (-)	156.98	156.98	174.422	389	3.8422	0.01017	0.00333	0.01017	389.00	1186.87	3.122	4	22	1520.53084	216.43693	216.4369	Aman	
B1 Lantai 2 grid A/4-5	Tumpuan Kiri (+)	90.2	90.2	100.222	390.5	2.1908	0.00552	0.00333	0.00552	390.50	646.311	2.28	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	162.76	162.76	180.844	389	3.9837	0.01059	0.00333	0.01059	389.00	1236.33	3.252	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	67.2	67.2	74.6667	390.5	1.6322	0.00405	0.00333	0.00405	390.50	474.228	1.673	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	73.6	73.6	81.7778	389	1.8014	0.00449	0.00333	0.00449	389.00	523.768	1.378	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	83.4	83.4	92.6667	390.5	2.0256	0.00508	0.00333	0.00508	390.50	594.856	2.098	3	19	850.586211	129.49485	108.2185	Aman
Tumpuan Kanan (-)	162.8	162.8	180.889	389	3.9847	0.01060	0.00333	0.01060	389.00	1236.68	3.253	4	22	1520.53084	216.43693	216.4369	Aman	
B1 Lantai 2 grid B/1-2	Tumpuan Kiri (+)	152.64	152.64	169.6	389	3.7360	0.00985	0.00333	0.00985	389.00	1150.08	3.025	4	22	1520.53084	216.43693	108.2185	Aman
	Tumpuan Kiri (-)	187.6	187.6	208.444	389	4.5917	0.01247	0.00333	0.01247	389.00	1455.13	3.828	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	62.78	62.78	69.7556	389	1.5366	0.00380	0.00333	0.00380	389.00	443.618	1.167	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	59.5	59.5	66.1111	389	1.4563	0.00360	0.00333	0.00360	389.00	419.552	1.104	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	70.46	70.46	78.2889	389	1.7246	0.00429	0.00333	0.00429	389.00	500.386	1.316	2	22	760.265422	116.21532	58.10766	Aman
Tumpuan Kanan (-)	70.75	70.75	78.6111	389	1.7317	0.00431	0.00333	0.00431	389.00	502.541	1.322	2	22	760.265422	116.21532	116.2153	Aman	

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 2 grid B/2-3	Tumpuan Kiri (+)	61.17	61.17	67.9667	390.5	1.4857	0.00367	0.00333	0.00367	390.50	430.003	1.517	2	19	567.057474	88.5543	58.10766	Aman
	Tumpuan Kiri (-)	82.4	82.4	91.5556	389	2.0168	0.00505	0.00333	0.00505	389.00	589.846	1.552	2	22	760.265422	116.21532	116.2153	Aman
	Lapangan (+)	68.4	68.4	76	390.5	1.6613	0.00412	0.00333	0.00412	390.50	483.072	1.704	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	64.9	64.9	72.1111	389	1.5885	0.00394	0.00333	0.00394	389.00	459.229	1.208	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	115.77	115.77	128.633	390.5	2.8118	0.00721	0.00333	0.00721	390.50	844.457	2.978	3	19	850.586211	129.49485	108.2185	Aman
B1 Lantai 2 grid B/3-4	Tumpuan Kanan (-)	165.85	165.85	184.278	389	4.0593	0.01082	0.00333	0.01082	389.00	1262.99	3.322	4	22	1520.53084	216.43693	216.4369	Aman
	Tumpuan Kiri (+)	84.0462	84.0462	94.7589	390.5	2.3015	0.00581	0.00333	0.00581	390.50	681.09	2.402	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	189.518	189.518	210.575	389	4.6386	0.01262	0.00333	0.01262	389.00	1472.47	3.874	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	63.946	63.946	71.0511	390.5	1.5531	0.00384	0.00333	0.00384	390.50	450.318	1.588	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	79.8646	79.8646	88.7384	389	1.9548	0.00489	0.00333	0.00489	389.00	570.724	1.501	2	22	760.265422	116.21532	54.10923	Aman
B1 Lantai 2 grid B/4-5	Tumpuan Kanan (+)	82.2577	82.2577	96.5912	390.5	2.3460	0.00593	0.00333	0.00593	390.50	695.134	2.452	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kanan (-)	193.182	193.182	214.647	389	4.7283	0.01290	0.00333	0.01290	389.00	1505.8	3.961	4	22	1520.53084	216.43693	216.4369	Aman
	Tumpuan Kiri (+)	85.911	85.911	98.41	389	2.4087	0.00610	0.00333	0.00610	389.00	712.22	1.874	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	196.82	196.82	218.689	387.5	4.8547	0.01331	0.00333	0.01331	387.50	1547.21	3.152	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	71.54	71.54	79.4889	389	1.7510	0.00436	0.00333	0.00436	389.00	508.417	1.337	2	22	760.265422	116.21532	66.55487	Aman
B1 Lantai 2 grid D/1-3	Lapangan (-)	79.42	79.42	88.2444	387.5	1.9589	0.00490	0.00333	0.00490	387.50	569.81	1.161	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	83.6	83.6	98.41	389	2.4087	0.00610	0.00333	0.00610	389.00	712.22	1.874	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kanan (-)	196.82	196.82	218.689	387.5	4.8547	0.01331	0.00333	0.01331	387.50	1547.21	3.152	4	25	1963.49541	266.21947	266.2195	Aman
	Tumpuan Kiri (+)	97.65	97.65	108.5	389	2.3901	0.00605	0.00333	0.00605	389.00	706.346	1.858	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kiri (-)	181.4	181.4	201.556	389	4.4399	0.01199	0.00333	0.01199	389.00	1399.52	3.682	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 2 grid D/3-4	Lapangan (+)	90.9	90.9	101	389	2.2249	0.00561	0.00333	0.00561	389.00	654.462	1.722	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	95.16	95.16	105.733	389	2.3291	0.00589	0.00333	0.00589	389.00	687.146	1.808	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	113.3	113.3	125.889	389	2.7731	0.00710	0.00333	0.00710	389.00	828.68	2.18	3	22	1140.39813	168.32534	108.2185	Aman
	Tumpuan Kanan (-)	181.4	181.4	201.556	389	4.4399	0.01199	0.00333	0.01199	389.00	1399.52	3.682	4	22	1520.53084	216.43693	216.4369	Aman
	Tumpuan Kiri (+)	103	103	114.444	389	2.5210	0.00641	0.00333	0.00641	389.00	747.84	1.967	2	22	760.265422	116.21532	108.2185	Aman
B1 Lantai 2 grid D/4-5	Tumpuan Kiri (-)	182.75	182.75	203.056	389	4.4730	0.01210	0.00333	0.01210	389.00	1411.57	3.713	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	75.31	75.31	83.6778	389	1.8433	0.00460	0.00333	0.00460	389.00	536.545	1.411	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	87.6	87.6	97.3333	389	2.1441	0.00539	0.00333	0.00539	389.00	629.282	1.655	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	102.042	102.042	113.38	389	2.4976	0.00634	0.00333	0.00634	389.00	740.385	1.948	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kanan (-)	182.75	182.75	203.056	389	4.4730	0.01210	0.00333	0.01210	389.00	1411.57	3.713	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 2 grid D/4-5	Tumpuan Kiri (+)	108.51	108.51	120.567	389	2.6559	0.00678	0.00333	0.00678	389.00	790.926	2.081	3	22	1140.39813	168.32534	108.2185	Aman
	Tumpuan Kiri (-)	187.71	187.71	208.567	389	4.5944	0.01248	0.00333	0.01248	389.00	1456.12	3.831	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	82.6	82.6	91.7778	389	2.0217	0.00507	0.00333	0.00507	389.00	591.358	1.556	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	88.97	88.97	98.8556	389	2.1776	0.00548	0.00333	0.00548	389.00	639.721	1.683	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	104.3	104.3	115.889	389	2.5528	0.00650	0.00333	0.00650	389.00	757.973	1.994	2	22	760.265422	116.21532	108.2185	Aman
B1 Lantai 2 grid 3/B-C	Tumpuan Kanan (-)	187.71	187.71	208.567	389	4.5944	0.01248	0.00333	0.01248	389.00	1456.12	3.831	4	22	1520.53084	216.43693	216.4369	Aman
	Tumpuan Kiri (+)	97.77	97.77	108.633	390.5	2.3747	0.00601	0.00333	0.00601	390.50	704.189	2.484	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	163.15	163.15	181.278	389	3.9932	0.01062	0.00333	0.01062	389.00	1239.69	3.261	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	61.66	61.66	68.5111	390.5	1.4976	0.00370	0.00333	0.00370	390.50	433.584	1.529	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	67.4	67.4	74.8889	389	1.6497	0.00409	0.00333	0.00409	389.00	477.696	1.257	2	22	760.265422	116.21532	54.10923	Aman
B1 Lantai 2 grid 3/C-D	Tumpuan Kanan (+)	57.4	57.4	63.7778	390.5	1.3941	0.00344	0.00333	0.00344	390.50	402.534	1.42	2	19	567.057474	88.5543	58.10766	Aman
	Tumpuan Kanan (-)	86.94	86.94	96.6	389	2.1279	0.00535	0.00333	0.00535	389.00	624.26	1.642	2	22	760.265422	116.21532	116.2153	Aman
	Tumpuan Kiri (+)	62.942	62.942	69.9356	390.5	1.5287	0.00378	0.00333	0.00378	390.50	442.962	1.562	2	19	567.057474	88.5543	58.10766	Aman
	Tumpuan Kiri (-)	86.35	86.35	95.9444	389	2.1135	0.00531	0.00333	0.00531	389.00	619.775	1.63	2	22	760.265422	116.21532	116.2153	Aman
	Lapangan (+)	73.67	73.67	81.8556	390.5	1.7893	0.00446	0.00333	0.00446	390.50	522.082	1.841	2	19	567.057474	88.5543	54.10923	Aman
B1 Lantai 2 grid 3/C-D	Lapangan (-)	63.32	63.32	70.3556	389	1.5498	0.00384	0.00333	0.00384	389.00	447.59	1.177	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	123.75	123.75	137.5	390.5	3.0057	0.00775	0.00333	0.00775	390.50	907.896	3.202	4	19	1134.11495	168.21101	108.2185	Aman
	Tumpuan Kanan (-)	185.04	185.04	205.6	389	4.5290	0.01227	0.00333	0.01227	389.00	1432.09	3.767	4	22	1520.53084	216.43693	216.4369	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 2 grid 1/A-B	Tumpuan Kiri (+)	120.7	125.99	139.989	439	2.0754	0.00521	0.00333	0.00521	512.17	800.451	2.106	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	251.98	251.98	279.978	437.5	4.1793	0.01119	0.00333	0.01119	510.42	1713.09	3.49	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	101.4	101.4	112.667	439	1.6703	0.00415	0.00333	0.00415	512.167	637.169	1.676	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	125.2	125.2	139.111	437.5	2.0765	0.00521	0.00333	0.00521	510.42	798.184	1.626	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	105.03	125.99	139.989	439	2.0754	0.00521	0.00333	0.00521	512.17	800.451	2.106	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	251.98	251.98	279.978	437.5	4.1793	0.01119	0.00333	0.01119	510.42	1713.09	3.49	4	25	1963.49541	307.45288	307.4529	Aman
B2 Lantai 2 grid 3/A-B	Tumpuan Kiri (+)	99.03	142.01	157.789	439	2.3393	0.00592	0.00333	0.00592	512.17	908.915	2.391	3	22	1140.39813	192.2737	154.0608	Aman
	Tumpuan Kiri (-)	284.02	284.02	315.578	435.5	4.7540	0.01299	0.00333	0.01299	508.08	1979.32	2.997	3	29	1981.55957	308.12169	308.1217	Aman
	Lapangan (+)	93.1	93.1	103.444	439	1.5336	0.00379	0.00333	0.00379	512.167	582.892	1.533	2	22	760.265422	132.18089	77.03042	Aman
	Lapangan (-)	114.66	114.66	127.4	435.5	1.9192	0.00480	0.00333	0.00480	508.08	731.179	1.107	2	29	1321.03971	217.48677	77.03042	Aman
	Tumpuan Kanan (+)	98.25	140.076	155.64	439	2.3074	0.00583	0.00333	0.00583	512.17	895.73	2.356	3	22	1140.39813	192.2737	154.0608	Aman
	Tumpuan Kanan (-)	280.152	280.152	311.28	435.5	4.6893	0.01278	0.00333	0.01278	508.08	1947.8	2.949	3	29	1981.55957	308.12169	308.1217	Aman
B2 Lantai 2 grid 4/A-B	Tumpuan Kiri (+)	99.7	142.505	158.339	439	2.3474	0.00594	0.00333	0.00594	512.17	912.294	2.4	3	22	1140.39813	192.2737	183.8238	Aman
	Tumpuan Kiri (-)	285.01	285.01	316.678	437.5	4.7271	0.01290	0.00333	0.01290	510.42	1975.21	4.024	5	25	2454.36926	367.64753	367.6475	Aman
	Lapangan (+)	93.83	93.83	104.256	439	1.5456	0.00382	0.00333	0.00382	512.167	587.649	1.546	2	22	760.265422	132.18089	91.91188	Aman
	Lapangan (-)	117.4	117.4	130.444	437.5	1.9472	0.00487	0.00333	0.00487	510.42	745.799	1.519	2	25	981.747704	167.06129	91.91188	Aman
	Tumpuan Kanan (+)	93.64	144.853	160.948	439	2.3861	0.00604	0.00333	0.00604	512.17	928.343	2.442	3	22	1140.39813	192.2737	183.8238	Aman
	Tumpuan Kanan (-)	289.706	289.706	321.896	437.5	4.8050	0.01315	0.00333	0.01315	510.42	2013.45	4.102	5	25	2454.36926	367.64753	367.6475	Aman
B2 Lantai 2 grid 5/A-B	Tumpuan Kiri (+)	121.7	127.404	141.56	439	2.0987	0.00527	0.00333	0.00527	512.17	809.956	2.131	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	254.808	254.808	283.12	437.5	4.2262	0.01133	0.00333	0.01133	510.42	1735.08	3.535	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	102.84	102.84	114.267	439	1.6940	0.00421	0.00333	0.00421	512.167	646.627	1.701	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	119.98	119.98	133.311	437.5	1.9900	0.00498	0.00333	0.00498	510.42	763.083	1.55	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	109.98	126.6	140.667	439	2.0854	0.00524	0.00333	0.00524	512.17	804.55	2.116	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	253.2	253.2	281.333	437.5	4.1995	0.01125	0.00333	0.01125	510.42	1722.56	3.509	4	25	1963.49541	307.45288	307.4529	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 2 grid 4/B-D	Tumpuan Kiri (+)	99.3	140.42	156.022	439	2.3131	0.00584	0.00333	0.00584	512.17	898.073	2.363	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	280.84	280.84	312.044	437.5	4.6579	0.01268	0.00333	0.01268	510.42	1941.46	3.955	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	97.1	97.1	107.889	439	1.5995	0.00396	0.00333	0.00396	512.167	608.998	1.602	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	117.5	117.5	130.556	437.5	1.9488	0.00487	0.00333	0.00487	510.42	746.468	1.521	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	107.2	139.9	155.444	439	2.3045	0.00582	0.00333	0.00582	512.17	894.531	2.353	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	279.8	279.8	310.889	437.5	4.6407	0.01262	0.00333	0.01262	510.42	1933.08	3.938	4	25	1963.49541	307.45288	307.4529	Aman
B2 Lantai 2 grid 5/B-D	Tumpuan Kiri (+)	118.96	126.48	140.533	439	2.0834	0.00523	0.00333	0.00523	512.17	803.743	2.114	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	252.96	252.96	281.067	437.5	4.1955	0.01124	0.00333	0.01124	510.42	1720.7	3.505	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	104.51	104.51	116.122	439	1.7215	0.00428	0.00333	0.00428	512.167	657.613	1.73	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	121.4	121.4	134.889	437.5	2.0135	0.00505	0.00333	0.00505	510.42	772.614	1.574	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	123.42	125.67	139.633	439	2.0701	0.00520	0.00333	0.00520	512.17	798.301	2.1	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	251.34	251.34	279.267	437.5	4.1686	0.01116	0.00333	0.01116	510.42	1708.12	3.48	4	25	1963.49541	307.45288	307.4529	Aman
B3 Lantai 2 grid 1/B-C	Tumpuan Kiri (+)	72.75	118.875	132.083	339	3.8311	0.01014	0.00333	0.01014	339.00	1030.96	2.712	3	22	1140.39813	144.37698	132.282	Aman
	Tumpuan Kiri (-)	237.75	237.75	264.167	337.5	7.731	0.02	0.00333	0.02419	337.50	2448.99	4.989	5	25	2454.36926	264.56402	264.564	Aman
	Lapangan (+)	84.44	84.44	93.8222	339	2.7214	0.00696	0.00333	0.00696	339.00	707.612	1.861	2	22	760.265422	100.24974	66.14101	Aman
	Lapangan (-)	53.34	59.4375	66.0417	337.5	1.9326	0.00483	0.00333	0.00483	337.50	489.267	0.997	2	25	981.747704	125.82789	66.14101	Aman
	Tumpuan Kanan (+)	49.4	82.725	91.9167	339	2.6661	0.00681	0.00333	0.00681	339.00	692.121	1.821	3	22	1140.39813	144.37698	112.493	Aman
	Tumpuan Kanan (-)	165.45	165.45	183.833	337.5	5.380	0.01505	0.00333	0.01505	337.50	1523.4	3.103	4	25	1963.49541	224.98607	224.9861	Aman
B3 Lantai 2 grid 2/B-C	Tumpuan Kiri (+)	49.98	49.98	55.5333	340.5	1.5966	0.00396	0.00333	0.00396	340.50	404.117	1.425	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	99.66	99.66	110.733	340.5	3.184	0.00825	0.00333	0.00825	340.50	843.066	2.973	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	50.95	50.95	56.6111	340.5	1.6276	0.00404	0.00333	0.00404	340.50	412.3	1.454	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	35.6	35.6	39.5556	340.5	1.1372	0.00278	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	60.31	60.31	67.0111	340.5	1.9266	0.00482	0.00333	0.00482	340.50	491.994	1.735	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	90	90	100	340.5	2.875	0.00738	0.00333	0.00738	340.50	754.295	2.66	3	19	850.586211	111.63254	111.6325	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B3 Lantai 2 grid 1/C-D	Tumpuan Kiri (+)	36.9	79.21	88.0111	339	2.5528	0.00649	0.00333	0.00649	339.00	660.54	1.738	2	22	760.265422	100.24974	89.37034	Aman
	Tumpuan Kiri (-)	158.42	158.42	176.022	337.5	5.151	0.01428	0.00333	0.01428	337.50	1445.8	2.945	3	25	1472.62156	178.74069	178.7407	Aman
	Lapangan (+)	79.86	79.86	88.7333	339	2.5737	0.00655	0.00333	0.00655	339.00	666.363	1.753	2	22	760.265422	100.24974	66.14101	Aman
	Lapangan (-)	54.1	54.1	60.1111	337.5	1.7591	0.00438	0.00333	0.00438	337.50	443.24	0.903	2	25	981.747704	125.82789	66.14101	Aman
	Tumpuan Kanan (+)	78.3	102.38	113.756	339	3.2995	0.00858	0.00333	0.00858	339.00	873.018	2.297	3	22	1140.39813	144.37698	132.282	Aman
	Tumpuan Kanan (-)	204.76	204.76	227.511	337.5	6.658	0.01968	0.00333	0.01968	337.50	1992.51	4.059	5	25	2454.36926	264.56402	264.564	Aman
B3 Lantai 2 Tangga	Tumpuan Kiri (+)	37.84	37.84	42.0444	340.5	1.2088	0.00296	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	40.4	40.4	44.8889	340.5	1.291	0.00317	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	38.91	38.91	43.2333	340.5	1.2430	0.00305	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	25.5	25.5	28.3333	340.5	0.8146	0.00198	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	15.83	15.83	17.5889	340.5	0.5057	0.00122	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	19.78	19.78	21.9778	340.5	0.632	0.00153	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 2 Lift	Tumpuan Kiri (+)	15.872	15.872	17.6356	340.5	0.5070	0.00122	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	17.4	17.4	19.3333	340.5	0.556	0.00134	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	24.09	24.09	26.7667	340.5	0.7696	0.00187	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	13.63	13.63	15.1444	340.5	0.4354	0.00105	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	31.03	31.03	34.4778	340.5	0.9913	0.00242	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	26.4	26.4	29.3333	340.5	0.843	0.00205	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 2 grid C/1-2	Tumpuan Kiri (+)	51.1	51.1	56.7778	340.5	1.6324	0.00405	0.00333	0.00405	340.50	413.566	1.459	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	80.7	80.7	89.6667	340.5	2.578	0.00656	0.00333	0.00656	340.50	670.487	2.365	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	29.9	29.9	33.2222	340.5	0.9552	0.00233	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	26.22	26.22	29.1333	340.5	0.8376	0.00204	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	86.63	86.63	96.2556	340.5	2.7674	0.00709	0.00333	0.00709	340.50	723.743	2.553	3	19	850.586211	111.63254	55.81627	Aman
	Tumpuan Kanan (-)	86.11	86.11	95.6778	340.5	2.751	0.00704	0.00333	0.00704	340.50	719.048	2.536	3	19	850.586211	111.63254	111.6325	Aman
B3 Lantai 2 grid C/2-3	Tumpuan Kiri (+)	45.5	45.5	50.5556	340.5	1.4535	0.00359	0.00333	0.00359	340.50	366.506	1.293	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	85.4	85.4	94.8889	340.5	2.728	0.00698	0.00333	0.00698	340.50	712.645	2.513	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	60	60	66.6667	340.5	1.9167	0.00479	0.00333	0.00479	340.50	489.333	1.726	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	33.5	33.5	37.2222	340.5	1.0702	0.00262	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	52.1	52.1	57.8889	340.5	1.6643	0.00413	0.00333	0.00413	340.50	422.019	1.488	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	81.7	81.7	90.7778	340.5	2.610	0.00665	0.00333	0.00665	340.50	679.424	2.396	3	19	850.586211	111.63254	111.6325	Aman

BALOK TULANGAN UTAMA LANTAI 3

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 3 grid A/1-3	Tumpuan Kiri (+)	92	92	102.222	390.5	2.2345	0.00563	0.00333	0.00563	390.50	660.016	2.328	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	177.91	177.91	197.678	389	4.3545	0.01173	0.00333	0.01173	389.00	1368.52	3.6	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	71.722	71.722	79.6911	390.5	1.7420	0.00433	0.00333	0.00433	390.50	507.6	1.79	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	83.2	83.2	92.4444	389	2.0364	0.00511	0.00333	0.00511	389.00	595.894	1.568	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	93.67	93.67	104.078	390.5	2.2751	0.00574	0.00333	0.00574	390.50	672.762	2.373	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kanan (-)	169.85	169.85	188.722	389	4.1572	0.01112	0.00333	0.01112	389.00	1297.72	3.414	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 3 grid A/3-4	Tumpuan Kiri (+)	90.64	90.64	100.711	389	2.2185	0.00559	0.00333	0.00559	389.00	652.473	1.716	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kiri (-)	171.55	171.55	190.611	389	4.1988	0.01125	0.00333	0.01125	389.00	1312.57	3.453	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	68.2	68.2	75.7778	389	1.6693	0.00414	0.00333	0.00414	389.00	483.619	1.272	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	79.3	79.3	88.1111	389	1.9409	0.00485	0.00333	0.00485	389.00	566.476	1.49	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	91	91	101.111	389	2.2273	0.00561	0.00333	0.00561	389.00	655.226	1.724	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kanan (-)	171.55	171.55	190.611	389	4.1988	0.01125	0.00333	0.01125	389.00	1312.57	3.453	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 3 grid A/4-5	Tumpuan Kiri (+)	93.42	93.42	103.8	390.5	2.2690	0.00573	0.00333	0.00573	390.50	670.852	2.366	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	176.66	176.66	196.289	389	4.3239	0.01163	0.00333	0.01163	389.00	1357.47	3.571	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	71.96	71.96	79.9556	390.5	1.7478	0.00435	0.00333	0.00435	390.50	509.393	1.797	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	82.43	82.43	91.5889	389	2.0175	0.00506	0.00333	0.00506	389.00	590.073	1.552	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	91.87	91.87	102.078	390.5	2.2314	0.00563	0.00333	0.00563	390.50	659.025	2.324	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kanan (-)	176.66	176.66	196.289	389	4.3239	0.01163	0.00333	0.01163	389.00	1357.47	3.571	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 3 grid B/1-2	Tumpuan Kiri (+)	88.3	88.3	98.1111	389	2.1612	0.00544	0.00333	0.00544	389.00	634.613	1.669	2	22	760.265422	116.21532	58.10766	Aman
	Tumpuan Kiri (-)	72.96	72.96	81.0667	389	1.7858	0.00445	0.00333	0.00445	389.00	518.994	1.365	2	22	760.265422	116.21532	116.2153	Aman
	Lapangan (+)	62.67	62.67	69.6333	389	1.5339	0.00379	0.00333	0.00379	389.00	442.809	1.165	2	22	760.265422	116.21532	65.13753	Aman
	Lapangan (-)	65.34	65.34	72.6	389	1.5992	0.00396	0.00333	0.00396	389.00	462.475	1.217	2	22	760.265422	116.21532	65.13753	Aman
	Tumpuan Kanan (+)	157.02	157.02	174.467	389	3.8432	0.01017	0.00333	0.01017	389.00	1187.22	3.123	4	22	1520.53084	216.43693	130.2751	Aman
	Tumpuan Kanan (-)	209.82	209.82	233.133	389	5.1355	0.01423	0.00333	0.01423	389.00	1660.4	4.368	5	22	1900.66356	260.55011	260.5501	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 3 grid B/2-3	Tumpuan Kiri (+)	135.865	135.865	150.961	389	3.3254	0.00866	0.00333	0.00866	389.00	1010.45	2.658	3	22	1140.39813	168.32534	108.2185	Aman
	Tumpuan Kiri (-)	188.272	188.272	209.191	389	4.6081	0.01252	0.00333	0.01252	389.00	1461.2	3.844	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	76.73	76.73	85.2556	389	1.8780	0.00469	0.00333	0.00469	389.00	547.178	1.439	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	73.3	73.3	81.4444	389	1.7941	0.00447	0.00333	0.00447	389.00	521.53	1.372	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	82.09	82.09	91.2111	389	2.0092	0.00503	0.00333	0.00503	389.00	587.505	1.546	2	22	760.265422	116.21532	58.10766	Aman
	Tumpuan Kanan (-)	92.63	92.63	102.922	389	2.2672	0.00572	0.00333	0.00572	389.00	667.71	1.757	2	22	760.265422	116.21532	116.2153	Aman
B1 Lantai 3 grid B/3-4	Tumpuan Kiri (+)	99.432	103.735	115.261	389	2.5390	0.00646	0.00333	0.00646	389.00	753.566	1.982	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	207.47	207.47	230.522	387.5	5.1174	0.01417	0.00333	0.01417	387.50	1647.02	3.355	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	73.11	73.11	81.2333	389	1.7894	0.00446	0.00333	0.00446	389.00	520.113	1.368	2	22	760.265422	116.21532	66.55487	Aman
	Lapangan (-)	86.455	86.455	96.0611	387.5	2.1325	0.00536	0.00333	0.00536	387.50	623.259	1.27	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	95.97	103.735	115.261	389	2.5390	0.00646	0.00333	0.00646	389.00	753.566	1.982	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kanan (-)	207.47	207.47	230.522	387.5	5.1174	0.01417	0.00333	0.01417	387.50	1647.02	3.355	4	25	1963.49541	266.21947	266.2195	Aman
B1 Lantai 3 grid B/4-5	Tumpuan Kiri (+)	95.03	106.27	118.078	389	2.6010	0.00663	0.00333	0.00663	389.00	773.366	2.034	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	212.54	212.54	236.156	387.5	5.2424	0.01458	0.00333	0.01458	387.50	1695.38	3.454	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	75.913	75.913	84.3478	389	1.8580	0.00464	0.00333	0.00464	389.00	541.057	1.423	2	22	760.265422	116.21532	66.55487	Aman
	Lapangan (-)	89.67	89.67	99.6333	387.5	2.2118	0.00557	0.00333	0.00557	387.50	647.868	1.32	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	99.511	102.715	114.128	389	2.5140	0.00639	0.00333	0.00639	389.00	745.621	1.961	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kanan (-)	205.43	205.43	228.256	387.5	5.0671	0.01400	0.00333	0.01400	387.50	1627.72	3.316	4	25	1963.49541	266.21947	266.2195	Aman
B1 Lantai 3 grid D/1-3	Tumpuan Kiri (+)	111.53	111.53	123.922	389	2.7298	0.00698	0.00333	0.00698	389.00	814.697	2.143	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	192.37	192.37	213.744	387.5	4.7449	0.01296	0.00333	0.01296	387.50	1506.18	3.068	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	101.97	101.97	113.3	389	2.4958	0.00634	0.00333	0.00634	389.00	739.825	1.946	2	22	760.265422	116.21532	66.55487	Aman
	Lapangan (-)	105.4	105.4	117.111	387.5	2.5998	0.00662	0.00333	0.00662	387.50	769.976	1.569	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	123.7	123.7	137.444	389	3.0277	0.00781	0.00333	0.00781	389.00	911.633	2.398	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kanan (-)	195.4	195.4	217.111	387.5	4.8197	0.01320	0.00333	0.01320	387.50	1534.08	3.125	4	25	1963.49541	266.21947	266.2195	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 3 grid D/3-4	Tumpuan Kiri (+)	119.14	119.14	132.378	389	2.9160	0.00750	0.00333	0.00750	389.00	875.093	2.302	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	199.451	199.451	221.612	387.5	4.9196	0.01352	0.00333	0.01352	387.50	1571.65	3.202	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	83.84	83.84	93.1556	389	2.0521	0.00515	0.00333	0.00515	389.00	600.738	1.58	2	22	760.265422	116.21532	66.55487	Aman
	Lapangan (-)	97.34	97.34	108.156	387.5	2.4010	0.00608	0.00333	0.00608	387.50	707.048	1.44	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	117.17	117.17	130.189	389	2.8678	0.00736	0.00333	0.00736	389.00	859.389	2.261	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kanan (-)	199.451	199.451	221.612	387.5	4.9196	0.01352	0.00333	0.01352	387.50	1571.65	3.202	4	25	1963.49541	266.21947	266.2195	Aman
B1 Lantai 3 grid D/4-5	Tumpuan Kiri (+)	119.34	119.34	132.6	389	2.9209	0.00751	0.00333	0.00751	389.00	876.69	2.306	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	202.5	202.5	225	387.5	4.9948	0.01376	0.00333	0.01376	387.50	1600.15	3.26	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	89.15	89.15	99.0556	389	2.1820	0.00549	0.00333	0.00549	389.00	641.094	1.686	2	22	760.265422	116.21532	66.55487	Aman
	Lapangan (-)	98.802	98.802	109.78	387.5	2.4370	0.00618	0.00333	0.00618	387.50	718.405	1.464	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	119.66	119.66	132.956	389	2.9288	0.00753	0.00333	0.00753	389.00	879.246	2.313	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kanan (-)	199.25	199.25	221.389	387.5	4.9146	0.01350	0.00333	0.01350	387.50	1569.78	3.198	4	25	1963.49541	266.21947	266.2195	Aman
B1 Lantai 3 grid 3/B-C	Tumpuan Kiri (+)	114.56	114.56	127.289	390.5	2.7824	0.00713	0.00333	0.00713	390.50	834.907	2.945	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	183.25	183.25	203.611	389	4.4852	0.01213	0.00333	0.01213	389.00	1416.04	3.725	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	69.4	69.4	77.1111	390.5	1.6856	0.00419	0.00333	0.00419	390.50	490.452	1.73	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	76.2	76.2	84.6667	389	1.8651	0.00465	0.00333	0.00465	389.00	543.207	1.429	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	77.23	77.23	85.8111	390.5	1.8758	0.00468	0.00333	0.00468	390.50	548.594	1.935	2	19	567.057474	88.5543	58.10766	Aman
	Tumpuan Kanan (-)	94.03	94.03	104.478	389	2.3015	0.00581	0.00333	0.00581	389.00	678.456	1.785	2	22	760.265422	116.21532	116.2153	Aman
B1 Lantai 3 grid 3/C-D	Tumpuan Kiri (+)	77.92	77.92	86.5778	390.5	1.8925	0.00473	0.00333	0.00473	390.50	553.748	1.953	2	19	567.057474	88.5543	58.10766	Aman
	Tumpuan Kiri (-)	84.306	84.306	93.6733	389	2.0635	0.00518	0.00333	0.00518	389.00	604.267	1.59	2	22	760.265422	116.21532	116.2153	Aman
	Lapangan (+)	74.06	74.06	82.2889	390.5	1.7988	0.00448	0.00333	0.00448	390.50	524.98	1.852	2	19	567.057474	88.5543	65.13753	Aman
	Lapangan (-)	71.57	71.57	79.5222	389	1.7517	0.00436	0.00333	0.00436	389.00	508.64	1.338	2	22	760.265422	116.21532	65.13753	Aman
	Tumpuan Kanan (+)	130.054	130.054	144.504	390.5	3.1588	0.00818	0.00333	0.00818	390.50	958.585	3.381	4	19	1134.11495	168.21101	130.2751	Aman
	Tumpuan Kanan (-)	211.74	211.74	235.267	389	5.1825	0.01438	0.00333	0.01438	389.00	1678.61	4.416	5	22	1900.66356	260.55011	260.5501	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 3 grid 1/A-B	Tumpuan Kiri (+)	131.741	137.865	153.183	439	2.2710	0.00573	0.00333	0.00573	512.17	880.687	2.317	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	275.73	275.73	306.367	437.5	4.5732	0.01241	0.00333	0.01241	510.42	1900.38	3.871	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	108.7	108.7	120.778	439	1.7906	0.00446	0.00333	0.00446	512.167	685.249	1.803	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	132.4	132.4	147.111	437.5	2.1959	0.00553	0.00333	0.00553	510.42	846.893	1.725	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	127.93	127.93	142.144	439	2.1073	0.00529	0.00333	0.00529	512.17	813.496	2.14	3	22	1140.39813	192.2737	153.7264	Aman
Tumpuan Kanan (-)	255.1	255.1	283.444	437.5	4.2310	0.01135	0.00333	0.01135	510.42	1737.36	3.539	4	25	1963.49541	307.45288	307.4529	Aman	
B2 Lantai 3 grid 3/A-B	Tumpuan Kiri (+)	111.922	153.675	170.75	439	2.5314	0.00644	0.00333	0.00644	512.17	988.985	2.602	3	22	1140.39813	192.2737	183.8238	Aman
	Tumpuan Kiri (-)	307.35	307.35	341.5	437.5	5.0976	0.01410	0.00333	0.01410	510.42	2159.46	4.399	5	25	2454.36926	367.64753	367.6475	Aman
	Lapangan (+)	100.76	100.76	111.956	439	1.6598	0.00412	0.00333	0.00412	512.167	632.969	1.665	2	22	760.265422	132.18089	91.91188	Aman
	Lapangan (-)	129.53	129.53	143.922	437.5	2.1483	0.00540	0.00333	0.00540	510.42	827.436	1.686	2	25	981.747704	167.06129	91.91188	Aman
	Tumpuan Kanan (+)	116.31	148.46	164.956	439	2.4455	0.00620	0.00333	0.00620	512.17	953.072	2.507	3	22	1140.39813	192.2737	183.8238	Aman
Tumpuan Kanan (-)	296.92	296.92	329.911	437.5	4.9246	0.01354	0.00333	0.01354	510.42	2072.69	4.222	5	25	2454.36926	367.64753	367.6475	Aman	
B2 Lantai 3 grid 4/A-B	Tumpuan Kiri (+)	112.5	155.4	172.667	439	2.5598	0.00651	0.00333	0.00651	512.17	1000.91	2.633	3	22	1140.39813	192.2737	183.8238	Aman
	Tumpuan Kiri (-)	310.8	310.8	345.333	437.5	5.1548	0.01429	0.00333	0.01429	510.42	2188.46	4.458	5	25	2454.36926	367.64753	367.6475	Aman
	Lapangan (+)	101.4	101.4	112.667	439	1.6703	0.00415	0.00333	0.00415	512.167	637.169	1.676	2	22	760.265422	132.18089	91.91188	Aman
	Lapangan (-)	132.24	132.24	146.933	437.5	2.1933	0.00552	0.00333	0.00552	510.42	845.807	1.723	2	25	981.747704	167.06129	91.91188	Aman
	Tumpuan Kanan (+)	116.1	151.06	167.844	439	2.4883	0.00632	0.00333	0.00632	512.17	970.953	2.554	3	22	1140.39813	192.2737	183.8238	Aman
Tumpuan Kanan (-)	302.12	302.12	335.689	437.5	5.0109	0.01382	0.00333	0.01382	510.42	2115.78	4.31	5	25	2454.36926	367.64753	367.6475	Aman	
B2 Lantai 3 grid 5/A-B	Tumpuan Kiri (+)	136.31	139.25	154.722	439	2.2938	0.00579	0.00333	0.00579	512.17	890.107	2.342	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	278.5	278.5	309.444	437.5	4.6191	0.01256	0.00333	0.01256	510.42	1922.61	3.917	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	111.99	111.99	124.433	439	1.8448	0.00460	0.00333	0.00460	512.167	707.026	1.86	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	135.25	135.25	150.278	437.5	2.2432	0.00566	0.00333	0.00566	510.42	866.269	1.76	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	130.99	134.3	149.222	439	2.2123	0.00557	0.00333	0.00557	512.17	856.502	2.253	3	22	1140.39813	192.2737	153.7264	Aman
Tumpuan Kanan (-)	268.6	268.6	298.444	437.5	4.4549	0.01204	0.00333	0.01204	510.42	1843.52	3.756	4	25	1963.49541	307.45288	307.4529	Aman	

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 3 grid 4/B-D	Tumpuan Kiri (+)	122.07	146.855	163.172	439	2.4191	0.00613	0.00333	0.00613	512.17	942.058	2.478	3	22	1140.39813	192.2737	183.8238	Aman
	Tumpuan Kiri (-)	293.71	293.71	326.344	437.5	4.8714	0.01336	0.00333	0.01336	510.42	2046.25	4.169	5	25	2454.36926	367.64753	367.6475	Aman
	Lapangan (+)	103.5	103.5	115	439	1.7049	0.00424	0.00333	0.00424	512.167	650.967	1.712	2	22	760.265422	132.18089	91.91188	Aman
	Lapangan (-)	132.61	132.61	147.344	437.5	2.1994	0.00554	0.00333	0.00554	510.42	848.319	1.728	2	25	981.747704	167.06129	91.91188	Aman
	Tumpuan Kanan (+)	119.87	152.835	169.817	439	2.5176	0.00640	0.00333	0.00640	512.17	983.187	2.586	3	22	1140.39813	192.2737	183.8238	Aman
	Tumpuan Kanan (-)	305.67	305.67	339.633	437.5	5.0697	0.01401	0.00333	0.01401	510.42	2145.39	4.371	5	25	2454.36926	367.64753	367.6475	Aman
B2 Lantai 3 grid 5/B-D	Tumpuan Kiri (+)	140.63	140.63	156.256	439	2.3165	0.00585	0.00333	0.00585	512.17	899.504	2.366	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	268.33	268.33	298.144	437.5	4.4504	0.01203	0.00333	0.01203	510.42	1841.38	3.751	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	113.07	113.07	125.633	439	1.8625	0.00465	0.00333	0.00465	512.167	714.189	1.879	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	135.87	135.87	150.967	437.5	2.2535	0.00568	0.00333	0.00568	510.42	870.491	1.773	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	137.76	137.76	153.067	439	2.2693	0.00573	0.00333	0.00573	512.17	879.974	2.315	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	274.92	274.92	305.467	437.5	4.5597	0.01237	0.00333	0.01237	510.42	1893.89	3.858	4	25	1963.49541	307.45288	307.4529	Aman
B3 Lantai 3 grid 1/B-C	Tumpuan Kiri (+)	91.332	91.332	101.48	339	2.9435	0.00758	0.00333	0.00758	339.00	770.416	2.027	3	22	1140.39813	144.37698	112.493	Aman
	Tumpuan Kiri (-)	162.61	162.61	180.678	337.5	5.287	0.01	0.00333	0.01473	337.50	1491.85	3.039	4	25	1963.49541	224.98607	224.9861	Aman
	Lapangan (+)	62.91	62.91	69.9	339	2.0275	0.00508	0.00333	0.00508	339.00	516.903	1.36	2	22	760.265422	100.24974	56.24652	Aman
	Lapangan (-)	65.92	65.92	73.2444	337.5	2.1434	0.00539	0.00333	0.00539	337.50	545.79	1.112	2	25	981.747704	125.82789	56.24652	Aman
	Tumpuan Kanan (+)	71.52	71.52	79.4667	339	2.3050	0.00582	0.00333	0.00582	339.00	592.21	1.558	2	22	760.265422	100.24974	62.91394	Aman
	Tumpuan Kanan (-)	82.25	82.25	91.3889	337.5	2.674	0.00683	0.00333	0.00683	337.50	691.373	1.408	2	25	981.747704	125.82789	125.8279	Aman
B3 Lantai 3 grid 2/B-C	Tumpuan Kiri (+)	60.61	60.61	67.3444	340.5	1.9362	0.00484	0.00333	0.00484	340.50	494.571	1.744	2	19	567.057474	76.646093	72.1973	Aman
	Tumpuan Kiri (-)	102.84	102.84	114.267	340.5	3.285	0.00854	0.00333	0.00854	340.50	872.691	3.078	4	19	1134.11495	144.39459	144.3946	Aman
	Lapangan (+)	46.3	46.3	51.4444	340.5	1.4791	0.00365	0.00333	0.00365	340.50	373.201	1.316	2	19	567.057474	76.646093	36.09865	Aman
	Lapangan (-)	40.47	40.47	44.9667	340.5	1.2928	0.00318	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	36.09865	Aman
	Tumpuan Kanan (+)	70.34	70.34	78.1556	340.5	2.2470	0.00567	0.00333	0.00567	340.50	578.929	2.042	3	19	850.586211	111.63254	55.81627	Aman
	Tumpuan Kanan (-)	96.853	96.853	107.614	340.5	3.094	0.00800	0.00333	0.00800	340.50	817.085	2.882	3	19	850.586211	111.63254	111.6325	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B3 Lantai 3 grid 1/C-D	Tumpuan Kiri (+)	86.4	86.4	96	339	2.7845	0.00713	0.00333	0.00713	339.00	725.382	1.908	2	22	760.265422	100.24974	50.12487	Aman
	Tumpuan Kiri (-)	78.08	78.08	86.7556	339	2.516	0.00640	0.00333	0.00640	339.00	650.434	1.711	2	22	760.265422	100.24974	100.2497	Aman
	Lapangan (+)	61.51	61.51	68.3444	339	1.9824	0.00496	0.00333	0.00496	339.00	504.773	1.328	2	22	760.265422	100.24974	46.12645	Aman
	Lapangan (-)	72.8	72.8	80.8889	339	2.3462	0.00593	0.00333	0.00593	339.00	603.512	1.588	2	22	760.265422	100.24974	46.12645	Aman
	Tumpuan Kanan (+)	106.7	106.7	118.556	339	3.4388	0.00899	0.00333	0.00899	339.00	913.814	2.404	3	22	1140.39813	144.37698	92.25289	Aman
	Tumpuan Kanan (-)	154.7	154.7	171.889	339	4.986	0.01374	0.00333	0.01374	339.00	1396.86	3.675	4	22	1520.53084	184.50579	184.5058	Aman
B3 Lantai 3 Tangga	Tumpuan Kiri (+)	38.04	38.04	42.2667	340.5	1.2152	0.00298	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	46.5	46.5	51.6667	340.5	1.485	0.00367	0.00333	0.00367	340.50	374.876	1.322	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	39.22	39.22	43.5778	340.5	1.2529	0.00308	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	28.84	28.84	32.0444	340.5	0.9213	0.00224	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	17.9	17.9	19.8889	340.5	0.5718	0.00138	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	18.11	18.11	20.1222	340.5	0.579	0.00140	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 3 Lift	Tumpuan Kiri (+)	19.9	19.9	22.1111	340.5	0.6357	0.00154	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	9.71	9.71	10.7889	340.5	0.310	0.00074	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	24.04	24.04	26.7111	340.5	0.7680	0.00186	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	15.83	15.83	17.5889	340.5	0.5057	0.00122	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	27.07	27.07	30.0778	340.5	0.8647	0.00210	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	37.9	37.9	42.1111	340.5	1.211	0.00297	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 3 grid C/1-2	Tumpuan Kiri (+)	93.4	93.4	103.778	340.5	2.9837	0.00769	0.00333	0.00769	340.50	785.335	2.77	3	19	850.586211	111.63254	55.81627	Aman
	Tumpuan Kiri (-)	98.55	98.55	109.5	340.5	3.148	0.00815	0.00333	0.00815	340.50	832.774	2.937	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	32.14	32.14	35.7111	340.5	1.0267	0.00251	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	28.9	28.9	32.1111	340.5	0.9232	0.00225	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	60.12	60.12	66.8	340.5	1.9205	0.00480	0.00333	0.00480	340.50	490.363	1.729	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	82.15	82.15	91.2778	340.5	2.624	0.00669	0.00333	0.00669	340.50	683.451	2.411	3	19	850.586211	111.63254	111.6325	Aman
B3 Lantai 3 grid C/2-3	Tumpuan Kiri (+)	58.3	58.3	64.7778	340.5	1.8624	0.00465	0.00333	0.00465	340.50	474.766	1.674	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	96.6	96.6	107.333	340.5	3.086	0.00798	0.00333	0.00798	340.50	814.75	2.874	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	67.03	67.03	74.4778	340.5	2.1413	0.00538	0.00333	0.00538	340.50	550.058	1.94	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	39.4	39.4	43.7778	340.5	1.2586	0.00309	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	62.5	62.5	69.4444	340.5	1.9966	0.00500	0.00333	0.00500	340.50	510.837	1.802	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	88.92	88.92	98.8	340.5	2.841	0.00729	0.00333	0.00729	340.50	744.481	2.626	3	19	850.586211	111.63254	111.6325	Aman

BALOK TULANGAN UTAMA LANTAI 4

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 4 grid A/1-3	Tumpuan Kiri (+)	75.78	76.565	85.0722	389	1.8740	0.00468	0.00333	0.00468	389.00	545.941	1.436	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kiri (-)	153.13	153.13	170.144	389	3.7480	0.00989	0.00333	0.00989	389.00	1154.22	3.036	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	63.32	63.32	70.3556	389	1.5498	0.00384	0.00333	0.00384	389.00	447.6	1.177	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	72.3	72.3	80.3333	389	1.7696	0.00441	0.00333	0.00441	389.00	514.075	1.352	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	77.8	80.155	89.0611	389	1.9619	0.00491	0.00333	0.00491	389.00	572.911	1.507	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kanan (-)	160.31	160.31	178.122	389	3.9237	0.01041	0.00333	0.01041	389.00	1215.3	3.197	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 4 grid A/3-4	Tumpuan Kiri (+)	72.3	76.35	84.8333	389	1.8687	0.00466	0.00333	0.00466	389.00	544.33	1.432	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kiri (-)	152.7	152.7	169.667	389	3.7375	0.00986	0.00333	0.00986	389.00	1150.58	3.027	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	57.21	57.21	63.5667	389	1.4003	0.00345	0.00333	0.00345	389.00	402.813	1.06	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	67.64	67.64	75.1556	389	1.6555	0.00411	0.00333	0.00411	389.00	479.472	1.261	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	72.6	76.31	84.7889	389	1.8677	0.00466	0.00333	0.00466	389.00	544.031	1.431	2	22	760.265422	116.21532	108.2185	Aman
	Tumpuan Kanan (-)	152.62	152.62	169.578	389	3.7355	0.00985	0.00333	0.00985	389.00	1149.91	3.025	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 4 grid A/4-5	Tumpuan Kiri (+)	77.12	80.265	89.1833	390.5	1.9495	0.00488	0.00333	0.00488	390.50	571.3	2.015	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	160.53	160.53	178.367	389	3.9291	0.01043	0.00333	0.01043	389.00	1217.19	3.202	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	63.23	63.23	70.2556	390.5	1.5357	0.00380	0.00333	0.00380	390.50	445.071	1.57	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	72.38	72.38	80.4222	389	1.7716	0.00441	0.00333	0.00441	389.00	514.671	1.354	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	76.2	76.715	85.2389	390.5	1.8633	0.00465	0.00333	0.00465	390.50	544.751	1.921	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kanan (-)	153.43	153.43	170.478	389	3.7553	0.00991	0.00333	0.00991	389.00	1156.75	3.043	4	22	1520.53084	216.43693	216.4369	Aman
B1 Lantai 4 grid B/1-2	Tumpuan Kiri (+)	83.1	83.1	92.3333	389	2.0339	0.00510	0.00333	0.00510	389.00	595.138	1.566	2	22	760.265422	116.21532	58.10766	Aman
	Tumpuan Kiri (-)	58.43	58.43	64.9222	389	1.4301	0.00353	0.00333	0.00353	389.00	411.724	1.083	2	22	760.265422	116.21532	116.2153	Aman
	Lapangan (+)	51.9	51.9	57.6667	389	1.2703	0.00312	0.00333	0.00333	389.00	389	1.023	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	54.1	54.1	60.1111	389	1.3241	0.00326	0.00333	0.00333	389.00	389	1.023	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	125.22	125.22	139.133	389	3.0649	0.00792	0.00333	0.00792	389.00	923.873	2.43	3	22	1140.39813	168.32534	108.2185	Aman
	Tumpuan Kanan (-)	184.52	184.52	205.022	389	4.5163	0.01223	0.00333	0.01223	389.00	1427.42	3.755	4	22	1520.53084	216.43693	216.4369	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 4 grid B/2-3	Tumpuan Kiri (+)	110.73	110.73	123.033	389	2.7102	0.00693	0.00333	0.00693	389.00	808.389	2.127	3	22	1140.39813	168.32534	108.2185	Aman
	Tumpuan Kiri (-)	172	172	191.111	389	4.2098	0.01128	0.00333	0.01128	389.00	1316.5	3.463	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	63.6	63.6	70.6667	389	1.5567	0.00385	0.00333	0.00385	389.00	449.651	1.183	2	22	760.265422	116.21532	54.10923	Aman
	Lapangan (-)	61.9	61.9	68.7778	389	1.5151	0.00375	0.00333	0.00375	389.00	437.151	1.15	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	78.83	78.83	87.5889	389	1.9294	0.00482	0.00333	0.00482	389.00	562.941	1.481	2	22	760.265422	116.21532	58.10766	Aman
	Tumpuan Kanan (-)	83.96	83.96	93.2889	389	2.0550	0.00516	0.00333	0.00516	389.00	601.646	1.583	2	22	760.265422	116.21532	116.2153	Aman
B1 Lantai 4 grid B/3-4	Tumpuan Kiri (+)	77	90.35	100.389	390.5	2.1944	0.00553	0.00333	0.00553	390.50	647.452	2.284	3	19	850.586211	129.49485	104.8329	Aman
	Tumpuan Kiri (-)	180.7	180.7	200.778	387.5	4.4571	0.01205	0.00333	0.01205	387.50	1400.36	2.853	3	25	1472.62156	209.66574	209.6657	Aman
	Lapangan (+)	60.31	60.31	67.0111	390.5	1.4648	0.00362	0.00333	0.00362	390.50	423.725	1.494	2	19	567.057474	88.5543	52.41644	Aman
	Lapangan (-)	73.14	73.14	81.2667	387.5	1.8040	0.00450	0.00333	0.00450	387.50	522.547	1.065	2	25	981.747704	146.44459	52.41644	Aman
	Tumpuan Kanan (+)	73.5	92.22	102.467	390.5	2.2399	0.00565	0.00333	0.00565	390.50	661.693	2.334	3	19	850.586211	129.49485	104.8329	Aman
	Tumpuan Kanan (-)	184.44	184.44	204.933	387.5	4.5493	0.01234	0.00333	0.01234	387.50	1434	2.921	3	25	1472.62156	209.66574	209.6657	Aman
B1 Lantai 4 grid B/4-5	Tumpuan Kiri (+)	77.13	96.05	106.722	389	2.3509	0.00595	0.00333	0.00595	389.00	694.001	1.826	3	22	1140.39813	168.32534	133.1097	Aman
	Tumpuan Kiri (-)	192.1	192.1	213.444	387.5	4.7383	0.01294	0.00333	0.01294	387.50	1503.7	3.063	4	25	1963.49541	266.21947	266.2195	Aman
	Lapangan (+)	65.72	65.72	73.0222	389	1.6086	0.00399	0.00333	0.00399	389.00	465.279	1.224	2	22	760.265422	116.21532	66.55487	Aman
	Lapangan (-)	77.3	77.3	85.8889	387.5	1.9067	0.00476	0.00333	0.00476	387.50	553.808	1.128	2	25	981.747704	146.44459	66.55487	Aman
	Tumpuan Kanan (+)	78.11	91.35	101.5	389	2.2359	0.00564	0.00333	0.00564	389.00	657.905	1.731	2	22	760.265422	116.21532	104.8329	Aman
	Tumpuan Kanan (-)	182.7	182.7	203	387.5	4.5064	0.01220	0.00333	0.01220	387.50	1418.32	2.889	3	25	1472.62156	209.66574	209.6657	Aman
B1 Lantai 4 grid D/1-3	Tumpuan Kiri (+)	91.6	91.6	101.778	389	2.2420	0.00565	0.00333	0.00565	389.00	659.818	1.736	2	22	760.265422	116.21532	104.8329	Aman
	Tumpuan Kiri (-)	172.4	172.4	191.556	387.5	4.2524	0.01141	0.00333	0.01141	387.50	1326.6	2.703	3	25	1472.62156	209.66574	209.6657	Aman
	Lapangan (+)	89.32	89.32	99.2444	389	2.1862	0.00550	0.00333	0.00550	389.00	642.391	1.69	2	22	760.265422	116.21532	52.41644	Aman
	Lapangan (-)	94.13	94.13	104.589	387.5	2.3218	0.00587	0.00333	0.00587	387.50	682.198	1.39	2	25	981.747704	146.44459	52.41644	Aman
	Tumpuan Kanan (+)	106.14	106.14	117.933	389	2.5979	0.00662	0.00333	0.00662	389.00	772.349	2.032	3	22	1140.39813	168.32534	104.8329	Aman
	Tumpuan Kanan (-)	177.41	177.41	197.122	387.5	4.3759	0.01179	0.00333	0.01179	387.50	1370.98	2.793	3	25	1472.62156	209.66574	209.6657	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 4 grid D/3-4	Tumpuan Kiri (+)	96.5	96.5	107.222	389	2.3619	0.00598	0.00333	0.00598	389.00	697.47	1.835	2	22	760.265422	116.21532	104.8329	Aman
	Tumpuan Kiri (-)	172.7	172.7	191.889	387.5	4.2598	0.01143	0.00333	0.01143	387.50	1329.24	2.708	3	25	1472.62156	209.66574	209.6657	Aman
	Lapangan (+)	71.4	71.4	79.3333	389	1.7476	0.00435	0.00333	0.00435	389.00	507.375	1.335	2	22	760.265422	116.21532	52.41644	Aman
	Lapangan (-)	83.7	83.7	93	387.5	2.0645	0.00518	0.00333	0.00518	387.50	602.263	1.227	2	25	981.747704	146.44459	52.41644	Aman
	Tumpuan Kanan (+)	94.61	94.61	105.122	389	2.3157	0.00585	0.00333	0.00585	389.00	682.915	1.797	2	22	760.265422	116.21532	104.8329	Aman
	Tumpuan Kanan (-)	176.78	176.78	196.422	387.5	4.3604	0.01175	0.00333	0.01175	387.50	1365.37	2.782	3	25	1472.62156	209.66574	209.6657	Aman
B1 Lantai 4 grid D/4-5	Tumpuan Kiri (+)	101	101	112.222	389	2.4721	0.00627	0.00333	0.00627	389.00	732.289	1.926	2	22	760.265422	116.21532	104.8329	Aman
	Tumpuan Kiri (-)	182.7	182.7	203	387.5	4.5064	0.01220	0.00333	0.01220	387.50	1418.32	2.889	3	25	1472.62156	209.66574	209.6657	Aman
	Lapangan (+)	78.24	78.24	86.9333	389	1.9150	0.00479	0.00333	0.00479	389.00	558.508	1.469	2	22	760.265422	116.21532	52.41644	Aman
	Lapangan (-)	86.54	86.54	96.1556	387.5	2.1346	0.00537	0.00333	0.00537	387.50	623.908	1.271	2	25	981.747704	146.44459	52.41644	Aman
	Tumpuan Kanan (+)	98.3	98.3	109.222	389	2.4060	0.00610	0.00333	0.00610	389.00	711.369	1.871	2	22	760.265422	116.21532	104.8329	Aman
	Tumpuan Kanan (-)	177	177	196.667	387.5	4.3658	0.01176	0.00333	0.01176	387.50	1367.33	2.786	3	25	1472.62156	209.66574	209.6657	Aman
B1 Lantai 4 grid 3/B-C	Tumpuan Kiri (+)	88.8	88.8	98.6667	390.5	2.1568	0.00543	0.00333	0.00543	390.50	635.676	2.242	3	19	850.586211	129.49485	108.2185	Aman
	Tumpuan Kiri (-)	171.1	171.1	190.111	389	4.1878	0.01121	0.00333	0.01121	389.00	1308.63	3.443	4	22	1520.53084	216.43693	216.4369	Aman
	Lapangan (+)	54.9	54.9	61	390.5	1.3334	0.00328	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	54.10923	Aman
	Lapangan (-)	66.34	66.34	73.7111	389	1.6237	0.00403	0.00333	0.00403	389.00	469.859	1.236	2	22	760.265422	116.21532	54.10923	Aman
	Tumpuan Kanan (+)	73.56	73.56	81.7333	390.5	1.7866	0.00445	0.00333	0.00445	390.50	521.265	1.838	2	19	567.057474	88.5543	58.10766	Aman
	Tumpuan Kanan (-)	82.16	82.16	91.2889	389	2.0109	0.00504	0.00333	0.00504	389.00	588.033	1.547	2	22	760.265422	116.21532	116.2153	Aman
B1 Lantai 4 grid 3/C-D	Tumpuan Kiri (+)	73.84	73.84	82.0444	389	1.8073	0.00450	0.00333	0.00450	389.00	525.56	1.383	2	22	760.265422	116.21532	58.10766	Aman
	Tumpuan Kiri (-)	70.74	70.74	78.6	389	1.7314	0.00431	0.00333	0.00431	389.00	502.467	1.322	2	22	760.265422	116.21532	116.2153	Aman
	Lapangan (+)	63.12	63.12	70.1333	389	1.5449	0.00382	0.00333	0.00382	389.00	446.119	1.174	2	22	760.265422	116.21532	65.13753	Aman
	Lapangan (-)	60.89	60.89	67.6556	389	1.4903	0.00368	0.00333	0.00368	389.00	429.738	1.13	2	22	760.265422	116.21532	65.13753	Aman
	Tumpuan Kanan (+)	106.11	106.11	117.9	389	2.5971	0.00662	0.00333	0.00662	389.00	772.114	2.031	3	22	1140.39813	168.32534	130.2751	Aman
	Tumpuan Kanan (-)	191.9	191.9	213.222	389	4.6969	0.01280	0.00333	0.01280	389.00	1494.11	3.93	5	22	1900.66356	260.55011	260.5501	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai			Mn Terpasang	Cek Mn Terpasang	Keterangan	
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan				As Terpasang
B2 Lantai 4 grid 1/A-B	Tumpuan Kiri (+)	108.46	123.2	136.889	439	2.0294	0.00509	0.00333	0.00509	512.17	781.733	2.056	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	246.4	246.4	273.778	437.5	4.0867	0.01091	0.00333	0.01091	510.42	1669.92	3.402	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	94.15	94.15	104.611	439	1.5509	0.00384	0.00333	0.00384	512.167	589.736	1.551	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	113.27	113.27	125.856	437.5	1.8787	0.00469	0.00333	0.00469	510.42	718.219	1.463	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	99.7	114.915	127.683	439	1.8929	0.00473	0.00333	0.00473	512.17	726.442	1.911	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	229.83	229.83	255.367	437.5	3.8119	0.01008	0.00333	0.01008	510.42	1543.51	3.144	4	25	1963.49541	307.45288	307.4529	Aman
B2 Lantai 4 grid 3/A-B	Tumpuan Kiri (+)	88.9	138.155	153.506	439	2.2758	0.00574	0.00333	0.00574	512.17	882.659	2.322	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	276.31	276.31	307.011	437.5	4.5828	0.01244	0.00333	0.01244	510.42	1905.02	3.881	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	87.05	87.05	96.7222	439	1.4339	0.00354	0.00333	0.00354	512.167	543.586	1.43	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	109.74	109.74	121.933	437.5	1.8201	0.00454	0.00333	0.00454	510.42	694.732	1.415	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	87.21	132.805	147.561	439	2.1876	0.00551	0.00333	0.00551	512.17	846.385	2.227	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	265.61	265.61	295.122	437.5	4.4053	0.01188	0.00333	0.01188	510.42	1819.85	3.707	4	25	1963.49541	307.45288	307.4529	Aman
B2 Lantai 4 grid 4/A-B	Tumpuan Kiri (+)	89.6	140.01	155.567	439	2.3063	0.00583	0.00333	0.00583	512.17	895.281	2.355	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	280.02	280.02	311.133	437.5	4.6443	0.01264	0.00333	0.01264	510.42	1934.85	3.942	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	87.86	87.86	97.6222	439	1.4473	0.00357	0.00333	0.00357	512.167	548.836	1.444	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	112.8	112.8	125.333	437.5	1.8709	0.00467	0.00333	0.00467	510.42	715.088	1.457	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	86.14	136.16	151.289	439	2.2429	0.00566	0.00333	0.00566	512.17	869.11	2.286	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	272.32	272.32	302.578	437.5	4.5166	0.01223	0.00333	0.01223	510.42	1873.12	3.816	4	25	1963.49541	307.45288	307.4529	Aman
B2 Lantai 4 grid 5/A-B	Tumpuan Kiri (+)	113.52	125.36	139.289	439	2.0650	0.00518	0.00333	0.00518	512.17	796.22	2.095	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	250.72	250.72	278.578	437.5	4.1584	0.01112	0.00333	0.01112	510.42	1703.31	3.47	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	98.06	98.06	108.956	439	1.6153	0.00400	0.00333	0.00400	512.167	615.278	1.619	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	117.3	117.3	130.333	437.5	1.9455	0.00487	0.00333	0.00487	510.42	745.13	1.52	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	103.14	120.65	134.056	439	1.9874	0.00498	0.00333	0.00498	512.17	764.669	2.012	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	241.3	241.3	268.111	437.5	4.0021	0.01065	0.00333	0.01065	510.42	1630.73	3.322	4	25	1963.49541	307.45288	307.4529	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 4 grid 4/B-D	Tumpuan Kiri (+)	90.9	132.3	147	439	2.1793	0.00549	0.00333	0.00549	512.17	842.97	2.218	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	264.6	264.6	294	437.5	4.3886	0.01183	0.00333	0.01183	510.42	1811.87	3.691	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	90.54	90.54	100.6	439	1.4914	0.00369	0.00333	0.00369	512.167	566.234	1.49	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	113.55	113.55	126.167	437.5	1.8833	0.00470	0.00333	0.00470	510.42	720.086	1.467	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	96.303	136.815	152.017	439	2.2537	0.00569	0.00333	0.00569	512.17	873.555	2.298	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	273.63	273.63	304.033	437.5	4.5383	0.01230	0.00333	0.01230	510.42	1883.57	3.837	4	25	1963.49541	307.45288	307.4529	Aman
B2 Lantai 4 grid 5/B-D	Tumpuan Kiri (+)	111.09	120.36	133.733	439	1.9826	0.00496	0.00333	0.00496	512.17	762.731	2.006	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kiri (-)	240.72	240.72	267.467	437.5	3.9925	0.01062	0.00333	0.01062	510.42	1626.29	3.313	4	25	1963.49541	307.45288	307.4529	Aman
	Lapangan (+)	99.41	99.41	110.456	439	1.6375	0.00406	0.00333	0.00406	512.167	624.118	1.642	2	22	760.265422	132.18089	76.86322	Aman
	Lapangan (-)	117.78	117.78	130.867	437.5	1.9535	0.00489	0.00333	0.00489	510.42	748.342	1.525	2	25	981.747704	167.06129	76.86322	Aman
	Tumpuan Kanan (+)	115.3	123.325	137.028	439	2.0315	0.00509	0.00333	0.00509	512.17	782.57	2.059	3	22	1140.39813	192.2737	153.7264	Aman
	Tumpuan Kanan (-)	246.65	246.65	274.056	437.5	4.0909	0.01092	0.00333	0.01092	510.42	1671.85	3.406	4	25	1963.49541	307.45288	307.4529	Aman
B3 Lantai 4 grid 1/B-C	Tumpuan Kiri (+)	74.3	74.3	82.5556	340.5	2.3735	0.00601	0.00333	0.00601	340.50	613.709	2.165	3	19	850.586211	111.63254	92.25289	Aman
	Tumpuan Kiri (-)	147.22	147.22	163.578	339	4.745	0.01	0.00333	0.01296	339.00	1317.57	3.466	4	22	1520.53084	184.50579	184.5058	Aman
	Lapangan (+)	53.44	53.44	59.3778	340.5	1.7071	0.00424	0.00333	0.00424	340.50	433.37	1.528	2	19	567.057474	76.646093	46.12645	Aman
	Lapangan (-)	56.34	56.34	62.6	339	1.8157	0.00453	0.00333	0.00453	339.00	460.253	1.211	2	22	760.265422	100.24974	46.12645	Aman
	Tumpuan Kanan (+)	64.62	64.62	71.8	340.5	2.0643	0.00518	0.00333	0.00518	340.50	529.151	1.866	2	19	567.057474	76.646093	50.12487	Aman
	Tumpuan Kanan (-)	73.42	73.42	81.5778	339	2.366	0.00599	0.00333	0.00599	339.00	608.997	1.602	2	22	760.265422	100.24974	100.2497	Aman
B3 Lantai 4 grid 2/B-C	Tumpuan Kiri (+)	54.65	54.65	60.7222	340.5	1.7458	0.00434	0.00333	0.00434	340.50	443.642	1.565	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	96.43	96.43	107.144	340.5	3.080	0.00796	0.00333	0.00796	340.50	813.183	2.868	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	42.65	42.65	47.3889	340.5	1.3625	0.00336	0.00333	0.00336	340.50	342.732	1.209	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	35.92	35.92	39.9111	340.5	1.1475	0.00281	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	63.15	63.15	70.1667	340.5	2.0173	0.00506	0.00333	0.00506	340.50	516.445	1.821	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	89.82	89.82	99.8	340.5	2.869	0.00737	0.00333	0.00737	340.50	752.658	2.655	3	19	850.586211	111.63254	111.6325	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B3 Lantai 4 grid 1/C-D	Tumpuan Kiri (+)	79.74	79.74	88.6	339	2.5699	0.00654	0.00333	0.00654	339.00	665.287	1.75	2	22	760.265422	100.24974	50.12487	Aman
	Tumpuan Kiri (-)	70.5	70.5	78.3333	339	2.272	0.00573	0.00333	0.00573	339.00	583.224	1.534	2	22	760.265422	100.24974	100.2497	Aman
	Lapangan (+)	54.3	54.3	60.3333	339	1.7500	0.00435	0.00333	0.00435	339.00	442.801	1.165	2	22	760.265422	100.24974	46.12645	Aman
	Lapangan (-)	64.2	64.2	71.3333	339	2.0691	0.00519	0.00333	0.00519	339.00	528.108	1.389	2	22	760.265422	100.24974	46.12645	Aman
	Tumpuan Kanan (+)	93.3	93.3	103.667	339	3.0069	0.00775	0.00333	0.00775	339.00	788.516	2.074	3	22	1140.39813	144.37698	92.25289	Aman
	Tumpuan Kanan (-)	139.8	139.8	155.333	339	4.506	0.01220	0.00333	0.01220	339.00	1240.51	3.263	4	22	1520.53084	184.50579	184.5058	Aman
B3 Lantai 4 Tangga	Tumpuan Kiri (+)	33.3	33.3	37	340.5	1.0638	0.00260	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	42.3	42.3	47	340.5	1.351	0.00333	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	34.6	34.6	38.4444	340.5	1.1053	0.00270	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	23.83	23.83	26.4778	340.5	0.7612	0.00185	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	17.82	17.82	19.8	340.5	0.5693	0.00137	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	15.61	15.61	17.3444	340.5	0.499	0.00120	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 4 Lift	Tumpuan Kiri (+)	18.51	18.51	20.5667	340.5	0.5913	0.00143	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	7.7	7.7	8.55556	340.5	0.246	0.00059	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	21.3	21.3	23.6667	340.5	0.6804	0.00165	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	13.1	13.1	14.5556	340.5	0.4185	0.00101	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	21.92	21.92	24.3556	340.5	0.7002	0.00170	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	33.72	33.72	37.4667	340.5	1.077	0.00263	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 4 grid C/1-2	Tumpuan Kiri (+)	54	54	60	340.5	1.7250	0.00429	0.00333	0.00429	340.50	438.121	1.545	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	71.91	71.91	79.9	340.5	2.297	0.00580	0.00333	0.00580	340.50	592.686	2.09	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	28.8	28.8	32	340.5	0.9200	0.00224	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	26.7	26.7	29.6667	340.5	0.8529	0.00207	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	82.21	82.21	91.3444	340.5	2.6262	0.00670	0.00333	0.00670	340.50	683.988	2.412	3	19	850.586211	111.63254	55.81627	Aman
	Tumpuan Kanan (-)	92.2	92.2	102.444	340.5	2.945	0.00758	0.00333	0.00758	340.50	774.354	2.731	3	19	850.586211	111.63254	111.6325	Aman
B3 Lantai 4 grid C/2-3	Tumpuan Kiri (+)	59.3	59.3	65.8889	340.5	1.8943	0.00473	0.00333	0.00473	340.50	483.329	1.705	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	84.6	84.6	94	340.5	2.703	0.00691	0.00333	0.00691	340.50	705.441	2.488	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	64.1	64.1	71.2222	340.5	2.0477	0.00514	0.00333	0.00514	340.50	524.652	1.85	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	34.8	34.8	38.6667	340.5	1.1117	0.00272	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	54.6	54.6	60.6667	340.5	1.7442	0.00434	0.00333	0.00434	340.50	443.217	1.563	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	94.2	94.2	104.667	340.5	3.009	0.00776	0.00333	0.00776	340.50	792.67	2.796	3	19	850.586211	111.63254	111.6325	Aman

BALOK TULANGAN UTAMA LANTAI 5

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai			Mn Terpasang	Cek Mn Terpasang	Keterangan	
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan				As Terpasang
B1 Lantai 5 grid A/1-3	Tumpuan Kiri (+)	31	55.455	61.6167	390.5	1.3469	0.00332	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kiri (-)	110.91	110.91	123.233	390.5	2.6938	0.00688	0.00333	0.00688	390.50	806.206	2.843	3	19	850.586211	129.49485	129.4949	Aman
	Lapangan (+)	44.4	44.4	49.3333	390.5	1.0784	0.00264	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Lapangan (-)	42.6	42.6	47.3333	390.5	1.0347	0.00253	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Tumpuan Kanan (+)	40	55.45	61.6111	390.5	1.3468	0.00332	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kanan (-)	110.9	110.9	123.222	390.5	2.6936	0.00688	0.00333	0.00688	390.50	806.127	2.843	3	19	850.586211	129.49485	129.4949	Aman
B1 Lantai 5 grid A/3-4	Tumpuan Kiri (+)	30	54.765	60.85	390.5	1.3301	0.00327	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kiri (-)	109.53	109.53	121.7	390.5	2.6603	0.00679	0.00333	0.00679	390.50	795.396	2.805	3	19	850.586211	129.49485	129.4949	Aman
	Lapangan (+)	35.6	35.6	39.5556	390.5	0.8647	0.00210	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Lapangan (-)	41.3	41.3	45.8889	390.5	1.0031	0.00245	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Tumpuan Kanan (+)	30.5	54.1	60.1111	390.5	1.3140	0.00323	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kanan (-)	108.2	108.2	120.222	390.5	2.6280	0.00670	0.00333	0.00670	390.50	785	2.769	3	19	850.586211	129.49485	129.4949	Aman
B1 Lantai 5 grid A/4-5	Tumpuan Kiri (+)	39.41	56.3	62.5556	390.5	1.3674	0.00337	0.00333	0.00337	390.50	394.544	1.392	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kiri (-)	112.6	112.6	125.111	390.5	2.7348	0.00700	0.00333	0.00700	390.50	819.475	2.89	3	19	850.586211	129.49485	129.4949	Aman
	Lapangan (+)	44.4	44.4	49.3333	390.5	1.0784	0.00264	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Lapangan (-)	43.3	43.3	48.1111	390.5	1.0517	0.00257	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Tumpuan Kanan (+)	32.5	54.955	61.0611	390.5	1.3348	0.00328	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kanan (-)	109.91	109.91	122.122	390.5	2.6695	0.00681	0.00333	0.00681	390.50	798.371	2.816	3	19	850.586211	129.49485	129.4949	Aman
B1 Lantai 5 grid B/1-2	Tumpuan Kiri (+)	58.8	58.8	65.3333	390.5	1.4281	0.00352	0.00333	0.00352	390.50	412.719	1.456	2	19	567.057474	88.5543	64.74743	Aman
	Tumpuan Kiri (-)	106.33	106.33	118.144	390.5	2.5826	0.00658	0.00333	0.00658	390.50	770.418	2.717	3	19	850.586211	129.49485	129.4949	Aman
	Lapangan (+)	28.3	28.3	31.4444	390.5	0.6874	0.00166	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Lapangan (-)	26.4	26.5825	29.5361	390.5	0.6456	0.00156	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	32.37371	Aman
	Tumpuan Kanan (+)	50.4	50.4	56	390.5	1.2241	0.00300	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	44.27715	Aman
	Tumpuan Kanan (-)	31.4	31.4	34.8889	390.5	0.7626	0.00185	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	88.5543	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai			Mn Terpasang	Cek Mn Terpasang	Keterangan	
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan				As Terpasang
B1 Lantai 5 grid B/2-3	Tumpuan Kiri (+)	54.6	54.6	60.6667	390.5	1.3261	0.00326	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	44.27715	Aman
	Tumpuan Kiri (-)	65.51	65.51	72.7889	390.5	1.5911	0.00394	0.00333	0.00394	390.50	461.797	1.629	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	36.22	36.22	40.2444	390.5	0.8797	0.00214	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	33.68	33.68	37.4222	390.5	0.8180	0.00199	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	54.92	58.85	65.3889	390.5	1.4294	0.00353	0.00333	0.00353	390.50	413.083	1.457	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kanan (-)	117.7	117.7	130.778	390.5	2.8587	0.00734	0.00333	0.00734	390.50	859.727	3.032	4	19	1134.11495	168.21101	168.211	Aman
B1 Lantai 5 grid B/3-4	Tumpuan Kiri (+)	31.3	66.475	73.8611	390.5	1.6146	0.00400	0.00333	0.00400	390.50	468.892	1.654	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kiri (-)	132.95	132.95	147.722	390.5	3.2291	0.00838	0.00333	0.00838	390.50	982.045	3.464	4	19	1134.11495	168.21101	168.211	Aman
	Lapangan (+)	46.83	46.83	52.0333	390.5	1.1374	0.00278	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	42.7	42.7	47.4444	390.5	1.0371	0.00253	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	30.5	64.835	72.0389	390.5	1.5747	0.00390	0.00333	0.00390	390.50	456.84	1.611	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kanan (-)	129.67	129.67	144.078	390.5	3.1494	0.00816	0.00333	0.00816	390.50	955.482	3.37	4	19	1134.11495	168.21101	168.211	Aman
B1 Lantai 5 grid B/4-5	Tumpuan Kiri (+)	40.84	68.05	75.6111	390.5	1.6528	0.00410	0.00333	0.00410	390.50	480.491	1.695	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kiri (-)	136.1	136.1	151.222	390.5	3.3056	0.00860	0.00333	0.00860	390.50	1007.69	3.554	4	19	1134.11495	168.21101	168.211	Aman
	Lapangan (+)	57.34	57.34	63.7111	390.5	1.3927	0.00343	0.00333	0.00343	390.50	402.098	1.418	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	45.2	45.2	50.2222	390.5	1.0978	0.00269	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	31.3	66.45	73.8333	390.5	1.6139	0.00400	0.00333	0.00400	390.50	468.708	1.653	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kanan (-)	132.9	132.9	147.667	390.5	3.2279	0.00838	0.00333	0.00838	390.50	981.639	3.462	4	19	1134.11495	168.21101	168.211	Aman
B1 Lantai 5 grid D/1-3	Tumpuan Kiri (+)	55.8	60.5	67.2222	390.5	1.4694	0.00363	0.00333	0.00363	390.50	425.111	1.499	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kiri (-)	121	121	134.444	390.5	2.9389	0.00756	0.00333	0.00756	390.50	885.944	3.125	4	19	1134.11495	168.21101	168.211	Aman
	Lapangan (+)	54.75	54.75	60.8333	390.5	1.3298	0.00327	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	58.1	58.1	64.5556	390.5	1.4111	0.00348	0.00333	0.00348	390.50	407.624	1.438	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	55.7	60.75	67.5	390.5	1.4755	0.00364	0.00333	0.00364	390.50	426.936	1.506	3	19	850.586211	129.49485	84.1055	Aman
	Tumpuan Kanan (-)	121.5	121.5	135	390.5	2.9510	0.00760	0.00333	0.00760	390.50	889.929	3.139	4	19	1134.11495	168.21101	168.211	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai 5 grid D/3-4	Tumpuan Kiri (+)	42.24	59.8	66.4444	390.5	1.4524	0.00359	0.00333	0.00359	390.50	420.005	1.481	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kiri (-)	119.6	119.6	132.889	390.5	2.9049	0.00747	0.00333	0.00747	390.50	874.805	3.085	4	19	1134.11495	168.21101	168.211	Aman
	Lapangan (+)	38.4	38.4	42.6667	390.5	0.9327	0.00227	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	51.1	51.1	56.7778	390.5	1.2411	0.00305	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	39.9	61.2	68	390.5	1.4864	0.00367	0.00333	0.00367	390.50	430.223	1.517	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kanan (-)	122.4	122.4	136	390.5	2.9729	0.00766	0.00333	0.00766	390.50	897.108	3.164	4	19	1134.11495	168.21101	168.211	Aman
B1 Lantai 5 grid D/4-5	Tumpuan Kiri (+)	50.2	62.6	69.5556	390.5	1.5204	0.00376	0.00333	0.00376	390.50	440.459	1.553	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kiri (-)	125.2	125.2	139.111	390.5	3.0409	0.00785	0.00333	0.00785	390.50	919.51	3.243	4	19	1134.11495	168.21101	168.211	Aman
	Lapangan (+)	50.4	50.4	56	390.5	1.2241	0.00300	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	51.6	51.6	57.3333	390.5	1.2533	0.00308	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	43.3	61.41	68.2333	390.5	1.4915	0.00369	0.00333	0.00369	390.50	431.757	1.523	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kanan (-)	122.82	122.82	136.467	390.5	2.9831	0.00769	0.00333	0.00769	390.50	900.462	3.176	4	19	1134.11495	168.21101	168.211	Aman
B1 Lantai 5 grid 3/B-C	Tumpuan Kiri (+)	35.65	63.05	70.0556	390.5	1.5314	0.00379	0.00333	0.00379	390.50	443.753	1.565	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kiri (-)	126.1	126.1	140.111	390.5	3.0627	0.00791	0.00333	0.00791	390.50	926.732	3.269	4	19	1134.11495	168.21101	168.211	Aman
	Lapangan (+)	33.3	33.3	37	390.5	0.8088	0.00196	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	42.5	42.5	47.2222	390.5	1.0322	0.00252	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	50	50	55.5556	390.5	1.2144	0.00298	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	44.27715	Aman
	Tumpuan Kanan (-)	60.3	60.3	67	390.5	1.4646	0.00362	0.00333	0.00362	390.50	423.652	1.494	2	19	567.057474	88.5543	88.5543	Aman
B1 Lantai 5 grid 3/C-D	Tumpuan Kiri (+)	47.3	47.3	52.5556	390.5	1.1488	0.00281	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	44.27715	Aman
	Tumpuan Kiri (-)	45.3	45.3	50.3333	390.5	1.1003	0.00269	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	39.08	39.08	43.4222	390.5	0.9492	0.00231	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Lapangan (-)	30.94	31.225	34.6944	390.5	0.7584	0.00184	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	42.05275	Aman
	Tumpuan Kanan (+)	50.1	62.45	69.3889	390.5	1.5168	0.00375	0.00333	0.00375	390.50	439.361	1.55	2	19	567.057474	88.5543	84.1055	Aman
	Tumpuan Kanan (-)	124.9	124.9	138.778	390.5	3.0336	0.00783	0.00333	0.00783	390.50	917.105	3.235	4	19	1134.11495	168.21101	168.211	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 5 grid 1/A-B	Tumpuan Kiri (+)	54.7	85.425	94.9167	440.5	1.3976	0.00344	0.00333	0.00344	513.92	531.116	1.873	2	19	567.057474	100.46251	96.13685	Aman
	Tumpuan Kiri (-)	170.85	170.85	189.833	439	2.8143	0.00722	0.00333	0.00722	512.17	1108.63	2.916	3	22	1140.39813	192.2737	192.2737	Aman
	Lapangan (+)	73.09	73.09	81.2111	440.5	1.1958	0.00293	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	48.06842	Aman
	Lapangan (-)	63.2	63.2	70.2222	439	1.0411	0.00254	0.00333	0.00333	512.17	512.167	1.347	2	22	760.265422	132.18089	48.06842	Aman
	Tumpuan Kanan (+)	47	80.35	89.2778	440.5	1.3146	0.00323	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	96.13685	Aman
	Tumpuan Kanan (-)	160.7	160.7	178.556	439	2.6471	0.00675	0.00333	0.00675	512.17	1037.66	2.73	3	22	1140.39813	192.2737	192.2737	Aman
B2 Lantai 5 grid 3/A-B	Tumpuan Kiri (+)	50.61	99	110	439	1.6308	0.00404	0.00333	0.00404	512.17	621.432	1.635	2	22	760.265422	132.18089	124.184	Aman
	Tumpuan Kiri (-)	198	198	220	439	3.2616	0.00848	0.00333	0.00848	512.17	1302.26	3.426	4	22	1520.53084	248.36808	248.3681	Aman
	Lapangan (+)	91.44	91.44	101.6	439	1.5062	0.00372	0.00333	0.00372	512.167	572.086	1.505	2	22	760.265422	132.18089	62.09202	Aman
	Lapangan (-)	59.64	59.64	66.2667	439	0.9824	0.00240	0.00333	0.00333	512.17	512.167	1.347	2	22	760.265422	132.18089	62.09202	Aman
	Tumpuan Kanan (+)	38.4	96.6	107.333	439	1.5912	0.00394	0.00333	0.00394	512.17	605.73	1.593	2	22	760.265422	132.18089	124.184	Aman
	Tumpuan Kanan (-)	193.2	193.2	214.667	439	3.1825	0.00825	0.00333	0.00825	512.17	1267.61	3.335	4	22	1520.53084	248.36808	248.3681	Aman
B2 Lantai 5 grid 4/A-B	Tumpuan Kiri (+)	51.65	100.25	111.389	439	1.6514	0.00410	0.00333	0.00410	512.17	629.624	1.656	2	22	760.265422	132.18089	124.184	Aman
	Tumpuan Kiri (-)	200.5	200.5	222.778	439	3.3027	0.00859	0.00333	0.00859	512.17	1320.39	3.473	4	22	1520.53084	248.36808	248.3681	Aman
	Lapangan (+)	91.2	91.2	101.333	439	1.5023	0.00371	0.00333	0.00371	512.167	570.525	1.501	2	22	760.265422	132.18089	62.09202	Aman
	Lapangan (-)	66.6	66.6	74	439	1.0971	0.00268	0.00333	0.00333	512.17	512.167	1.347	2	22	760.265422	132.18089	62.09202	Aman
	Tumpuan Kanan (+)	35.6	104.3	115.889	439	1.7181	0.00427	0.00333	0.00427	512.17	656.23	1.726	2	22	760.265422	132.18089	124.184	Aman
	Tumpuan Kanan (-)	208.6	208.6	231.778	439	3.4362	0.00898	0.00333	0.00898	512.17	1379.45	3.629	4	22	1520.53084	248.36808	248.3681	Aman
B2 Lantai 5 grid 5/A-B	Tumpuan Kiri (+)	59	87.025	96.6944	439	1.4335	0.00354	0.00333	0.00354	512.17	543.424	1.43	2	22	760.265422	132.18089	120.2954	Aman
	Tumpuan Kiri (-)	174.05	174.05	193.389	437.5	2.8867	0.00742	0.00333	0.00742	510.42	1135.7	2.314	3	25	1472.62156	240.5908	240.5908	Aman
	Lapangan (+)	75.67	75.67	84.0778	439	1.2465	0.00306	0.00333	0.00333	512.167	512.167	1.347	2	22	760.265422	132.18089	60.1477	Aman
	Lapangan (-)	68.4	68.4	76	437.5	1.1345	0.00278	0.00333	0.00333	510.42	510.417	1.04	2	25	981.747704	167.06129	60.1477	Aman
	Tumpuan Kanan (+)	42.92	88.85	98.7222	439	1.4636	0.00361	0.00333	0.00361	512.17	555.258	1.461	2	22	760.265422	132.18089	120.2954	Aman
	Tumpuan Kanan (-)	177.7	177.7	197.444	437.5	2.9473	0.00759	0.00333	0.00759	510.42	1161.61	2.366	3	25	1472.62156	240.5908	240.5908	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai 5 grid 4/B-D	Tumpuan Kiri (+)	35.9	100.88	112.089	439	1.6617	0.00412	0.00333	0.00412	512.17	633.756	1.667	2	22	760.265422	132.18089	120.2954	Aman
	Tumpuan Kiri (-)	201.76	201.76	224.178	437.5	3.3463	0.00872	0.00333	0.00872	510.42	1335.04	2.72	3	25	1472.62156	240.5908	240.5908	Aman
	Lapangan (+)	88.4	88.4	98.2222	439	1.4562	0.00359	0.00333	0.00359	512.167	552.338	1.453	2	22	760.265422	132.18089	60.1477	Aman
	Lapangan (-)	66.75	66.75	74.1667	437.5	1.1071	0.00271	0.00333	0.00333	510.42	510.417	1.04	2	25	981.747704	167.06129	60.1477	Aman
	Tumpuan Kanan (+)	56.2	95.95	106.611	439	1.5805	0.00391	0.00333	0.00391	512.17	601.483	1.582	2	22	760.265422	132.18089	120.2954	Aman
	Tumpuan Kanan (-)	191.9	191.9	213.222	437.5	3.1828	0.00825	0.00333	0.00825	510.42	1263.41	2.574	3	25	1472.62156	240.5908	240.5908	Aman
B2 Lantai 5 grid 5/B-D	Tumpuan Kiri (+)	44.1	87.86	97.6222	439	1.4473	0.00357	0.00333	0.00357	512.17	548.836	1.444	2	22	760.265422	132.18089	120.2954	Aman
	Tumpuan Kiri (-)	175.72	175.72	195.244	437.5	2.9144	0.00749	0.00333	0.00749	510.42	1147.54	2.338	3	25	1472.62156	240.5908	240.5908	Aman
	Lapangan (+)	72.9	72.9	81	439	1.2008	0.00294	0.00333	0.00333	512.167	512.167	1.347	2	22	760.265422	132.18089	60.1477	Aman
	Lapangan (-)	68.8	68.8	76.4444	437.5	1.1411	0.00279	0.00333	0.00333	510.42	510.417	1.04	2	25	981.747704	167.06129	60.1477	Aman
	Tumpuan Kanan (+)	62	84.75	94.1667	439	1.3960	0.00344	0.00333	0.00344	512.17	528.699	1.391	2	22	760.265422	132.18089	120.2954	Aman
	Tumpuan Kanan (-)	169.5	169.5	188.333	437.5	2.8113	0.00721	0.00333	0.00721	510.42	1103.54	2.248	3	25	1472.62156	240.5908	240.5908	Aman
B3 Lantai 5 grid 1/B-C	Tumpuan Kiri (+)	43	43	47.7778	340.5	1.3736	0.00338	0.00333	0.00338	340.50	345.645	1.219	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	51.6	51.6	57.3333	340.5	1.648	0.00	0.00333	0.00409	340.50	417.791	1.474	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	28.3	28.3	31.4444	340.5	0.9040	0.00220	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	35.4	35.4	39.3333	340.5	1.1309	0.00277	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	31.67	55	61.1111	340.5	1.7570	0.00437	0.00333	0.00437	340.50	446.618	1.575	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	110	110	122.222	340.5	3.514	0.00920	0.00333	0.00920	340.50	940.151	3.316	3	19	850.586211	111.63254	111.6325	Aman
B3 Lantai 5 grid 2/B-C	Tumpuan Kiri (+)	32.3	37.8	42	340.5	1.2075	0.00296	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	75.6	75.6	84	340.5	2.415	0.00612	0.00333	0.00612	340.50	625.184	2.205	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	30.4	30.4	33.7778	340.5	0.9711	0.00237	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	20.4	20.4	22.6667	340.5	0.6517	0.00158	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	39.4	39.4	43.7778	340.5	1.2586	0.00309	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	66.1	66.1	73.4444	340.5	2.112	0.00531	0.00333	0.00531	340.50	541.979	1.912	2	19	567.057474	76.646093	76.64609	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B3 Lantai 5 grid 1/C-D	Tumpuan Kiri (+)	51.2	51.2	56.8889	340.5	1.6356	0.00406	0.00333	0.00406	340.50	414.411	1.462	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kiri (-)	96.7	96.7	107.444	340.5	3.089	0.00799	0.00333	0.00799	340.50	815.673	2.877	3	19	850.586211	111.63254	111.6325	Aman
	Lapangan (+)	30.83	30.83	34.2556	340.5	0.9849	0.00240	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	39.8	39.8	44.2222	340.5	1.2714	0.00312	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	56.9	56.9	63.2222	340.5	1.8177	0.00453	0.00333	0.00453	340.50	462.804	1.632	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	46.7	46.7	51.8889	340.5	1.492	0.00369	0.00333	0.00369	340.50	376.551	1.328	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 5 Tangga	Tumpuan Kiri (+)	22.6	22.6	25.1111	340.5	0.7220	0.00175	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	27.8	27.8	30.8889	340.5	0.888	0.00216	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	25	25	27.7778	340.5	0.7986	0.00194	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	10.5	10.5	11.6667	340.5	0.3354	0.00081	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	16	16	17.7778	340.5	0.5111	0.00123	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	11.3	11.3	12.5556	340.5	0.361	0.00087	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 5 Lift	Tumpuan Kiri (+)	14.5	14.5	16.1111	340.5	0.4632	0.00112	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	3.1	3.1	3.44444	340.5	0.099	0.00024	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	15.82	15.82	17.5778	340.5	0.5054	0.00122	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	6.1	6.1	6.77778	340.5	0.1949	0.00047	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	15	15	16.6667	340.5	0.4792	0.00115	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	20.8	20.8	23.1111	340.5	0.664	0.00161	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 5 grid C/1-2	Tumpuan Kiri (+)	31.2	31.2	34.6667	340.5	0.9967	0.00243	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	46.9	46.9	52.1111	340.5	1.498	0.00370	0.00333	0.00370	340.50	378.228	1.334	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	19.1	19.1	21.2222	340.5	0.6101	0.00147	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Lapangan (-)	17.4	17.4	19.3333	340.5	0.5558	0.00134	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	50.5	50.5	56.1111	340.5	1.6132	0.00400	0.00333	0.00400	340.50	408.502	1.441	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kanan (-)	62.1	62.1	69	340.5	1.984	0.00497	0.00333	0.00497	340.50	507.39	1.79	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai 5 grid C/2-3	Tumpuan Kiri (+)	40.9	40.9	45.4444	340.5	1.3065	0.00321	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	38.32305	Aman
	Tumpuan Kiri (-)	65.5	65.5	72.7778	340.5	2.092	0.00525	0.00333	0.00525	340.50	536.774	1.893	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	49.7	49.7	55.2222	340.5	1.5877	0.00393	0.00333	0.00393	340.50	401.758	1.417	2	19	567.057474	76.646093	27.90814	Aman
	Lapangan (-)	21.8	21.8	24.2222	340.5	0.6964	0.00169	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	27.90814	Aman
	Tumpuan Kanan (+)	35.9	38.15	42.3889	340.5	1.2187	0.00299	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	55.81627	Aman
	Tumpuan Kanan (-)	76.3	76.3	84.7778	340.5	2.437	0.00618	0.00333	0.00618	340.50	631.376	2.227	3	19	850.586211	111.63254	111.6325	Aman

BALOK TULANGAN UTAMA LANTAI ATAP

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai Atap Grid A/1-3	Tumpuan Kiri (+)	11.67	22.05	24.5	392	0.5315	0.00128	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	44.1	44.1	49	392	1.0629	0.00260	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	20.9	20.9	23.2222	392	0.5037	0.00121	0.00333	0.00333	392.00	392.0	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Lapangan (-)	16	16	17.7778	392	0.3856	0.00093	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Tumpuan Kanan (+)	16.5	22.275	24.75	392	0.5369	0.00129	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kanan (-)	44.55	44.55	49.5	392	1.0738	0.00262	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
B1 Lantai Atap Grid A/3-4	Tumpuan Kiri (+)	11.4	22.45	24.9444	392	0.5411	0.00131	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	44.9	44.9	49.8889	392	1.0822	0.00265	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	16.1	16.1	17.8889	392	0.3881	0.00093	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Lapangan (-)	16.5	16.5	18.3333	392	0.3977	0.00096	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Tumpuan Kanan (+)	11.8	21.875	24.3056	392	0.5272	0.00127	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kanan (-)	43.75	43.75	48.6111	392	1.0545	0.00258	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
B1 Lantai Atap Grid A/4-5	Tumpuan Kiri (+)	15.95	22.85	25.3889	392	0.5507	0.00133	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	45.7	45.7	50.7778	392	1.1015	0.00269	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	20.8	20.8	23.1111	392	0.5013	0.00121	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Lapangan (-)	16.2	16.2	18	392	0.3905	0.00094	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Tumpuan Kanan (+)	12.4	21.1	23.4444	392	0.5086	0.00123	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kanan (-)	42.2	42.2	46.8889	392	1.0171	0.00248	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
B1 Lantai Atap Grid B/1-2	Tumpuan Kiri (+)	16.7	16.7	18.5556	392	0.4025	0.00097	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	6	6	6.66667	392	0.1446	0.00035	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	17.1	17.1	19	392	0.4122	0.00099	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Lapangan (-)	8.2	10.325	11.4722	392	0.2489	0.00060	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Tumpuan Kanan (+)	15.92	20.65	22.9444	392	0.4977	0.00120	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kanan (-)	41.3	41.3	45.8889	392	0.9954	0.00243	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai Atap Grid B/2-3	Tumpuan Kiri (+)	14.6	30.53	33.9222	392	0.7359	0.00178	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kiri (-)	61.06	61.06	67.8444	390.5	1.4830	0.00366	0.00333	0.00366	390.50	429.2	1.514	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	26.85	26.85	29.8333	392	0.6472	0.00157	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	22.13857	Aman
	Lapangan (-)	10.67	15.265	16.9611	390.5	0.3708	0.00089	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	22.13857	Aman
	Tumpuan Kanan (+)	28.45	28.45	31.6111	392	0.6857	0.00166	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kanan (-)	34.5	34.5	38.3333	390.5	0.8379	0.00204	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	88.5543	Aman
B1 Lantai Atap Grid B/3-4	Tumpuan Kiri (+)	13.3	29.8	33.1111	392	0.7183	0.00174	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kiri (-)	59.6	59.6	66.2222	390.5	1.4476	0.00357	0.00333	0.00357	390.50	418.547	1.476	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	25.3	25.3	28.1111	392	0.6098	0.00147	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	22.13857	Aman
	Lapangan (-)	18.95	18.95	21.0556	390.5	0.4603	0.00111	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	22.13857	Aman
	Tumpuan Kanan (+)	10.7	31.885	35.4278	392	0.7685	0.00186	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kanan (-)	63.77	63.77	70.8556	390.5	1.5489	0.00383	0.00333	0.00383	390.50	449.028	1.584	2	19	567.057474	88.5543	88.5543	Aman
B1 Lantai Atap Grid B/4-5	Tumpuan Kiri (+)	17.5	29.95	33.2778	392	0.7219	0.00175	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kiri (-)	59.9	59.9	66.5556	390.5	1.4549	0.00359	0.00333	0.00359	390.50	420.734	1.484	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	31.4	31.4	34.8889	392	0.7568	0.00184	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	22.13857	Aman
	Lapangan (-)	15.9	15.9	17.6667	390.5	0.3862	0.00093	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	22.13857	Aman
	Tumpuan Kanan (+)	12.3	28.155	31.2833	392	0.6786	0.00164	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kanan (-)	56.31	56.31	62.5667	390.5	1.3677	0.00337	0.00333	0.00337	390.50	394.617	1.392	2	19	567.057474	88.5543	88.5543	Aman
B1 Lantai Atap Grid D/1-3	Tumpuan Kiri (+)	24.3	24.3	27	392	0.5857	0.00141	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	41.9	41.9	46.5556	392	1.0099	0.00246	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	23.4	23.4	26	392	0.5640	0.00136	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	23.56869	Aman
	Lapangan (-)	25.91	25.91	28.7889	392	0.6245	0.00151	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	23.56869	Aman
	Tumpuan Kanan (+)	23.4	23.76	26.4	392	0.5727	0.00138	0.00333	0.00333	392.00	392	1.95	3	16	603.185789	94.27477	31.98423	Aman
	Tumpuan Kanan (-)	47.52	47.52	52.8	392	1.1454	0.00280	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B1 Lantai Atap Grid D/3-4	Tumpuan Kiri (+)	15.3	24.65	27.3889	392	0.5941	0.00143	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	49.3	49.3	54.7778	392	1.1883	0.00291	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	17.97	17.97	19.9667	392	0.4331	0.00104	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Lapangan (-)	19.15	19.15	21.2778	392	0.4616	0.00111	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Tumpuan Kanan (+)	16.6	24.15	26.8333	392	0.5821	0.00141	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kanan (-)	48.3	48.3	53.6667	392	1.1642	0.00285	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
B1 Lantai Atap Grid D/4-5	Tumpuan Kiri (+)	19.92	25.3	28.1111	392	0.6098	0.00147	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kiri (-)	50.6	50.6	56.2222	392	1.2196	0.00299	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
	Lapangan (+)	22.3	22.3	24.7778	392	0.5375	0.00130	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Lapangan (-)	19.7	19.7	21.8889	392	0.4748	0.00114	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	15.99211	Aman
	Tumpuan Kanan (+)	14.87	23.82	26.4667	392	0.5741	0.00139	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	31.98423	Aman
	Tumpuan Kanan (-)	47.64	47.64	52.9333	392	1.1482	0.00281	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	63.96846	Aman
B1 Lantai Atap Grid 3/B-C	Tumpuan Kiri (+)	8.6	35.28	39.2	392	0.8503	0.00207	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kiri (-)	70.56	70.56	78.4	390.5	1.7138	0.00426	0.00333	0.00426	390.50	499.027	1.76	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	24.2	24.2	26.8889	392	0.5833	0.00141	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	22.13857	Aman
	Lapangan (-)	17.61	17.64	19.6	390.5	0.4284	0.00103	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	22.13857	Aman
	Tumpuan Kanan (+)	25.6	25.6	28.4444	392	0.6170	0.00149	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kanan (-)	26.51	26.51	29.4556	390.5	0.6439	0.00156	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	88.5543	Aman
B1 Lantai Atap Grid 3/C-D	Tumpuan Kiri (+)	22.44	22.44	24.9333	392	0.5409	0.00130	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kiri (-)	10.98	10.98	12.2	390.5	0.2667	0.00064	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	88.5543	Aman
	Lapangan (+)	23.08	23.08	25.6444	392	0.5563	0.00134	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	22.13857	Aman
	Lapangan (-)	18.4	18.4	20.4444	390.5	0.4469	0.00108	0.00333	0.00333	390.50	390.5	1.377	2	19	567.057474	88.5543	25.11563	Aman
	Tumpuan Kanan (+)	16.3	28.85	32.0556	392	0.6954	0.00168	0.00333	0.00333	392.00	392	1.95	2	16	402.12386	63.968455	44.27715	Aman
	Tumpuan Kanan (-)	57.7	57.7	64.1111	390.5	1.4014	0.00345	0.00333	0.00345	390.50	404.715	1.427	2	19	567.057474	88.5543	88.5543	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai			Mn Terpasang	Cek Mn Terpasang	Keterangan	
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan				As Terpasang
B2 Lantai Atap Grid 1/A-B	Tumpuan Kiri (+)	23.6	35.055	38.95	440.5	0.5735	0.00138	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	50.23125	Aman
	Tumpuan Kiri (-)	70.11	70.11	77.9	440.5	1.1470	0.00281	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	100.4625	Aman
	Lapangan (+)	34.4	34.4	38.2222	440.5	0.5628	0.00136	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	25.11563	Aman
	Lapangan (-)	28.5	28.5	31.6667	440.5	0.4663	0.00112	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	25.11563	Aman
	Tumpuan Kanan (+)	15.83	36.6	40.6667	440.5	0.5988	0.00145	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	50.23125	Aman
	Tumpuan Kanan (-)	73.2	73.2	81.3333	440.5	1.1976	0.00294	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	100.4625	Aman
B2 Lantai Atap Grid 3/A-B	Tumpuan Kiri (+)	23.4	43.9	48.7778	440.5	0.7182	0.00174	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	66.09044	Aman
	Tumpuan Kiri (-)	87.8	87.8	97.5556	439	1.4463	0.00357	0.00333	0.00357	512.17	548.447	1.443	2	22	760.265422	132.18089	132.1809	Aman
	Lapangan (+)	56.14	56.14	62.3778	440.5	0.9185	0.00224	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	33.04522	Aman
	Lapangan (-)	25.6	25.6	28.4444	439	0.4217	0.00101	0.00333	0.00333	512.17	512.167	1.347	2	22	760.265422	132.18089	33.04522	Aman
	Tumpuan Kanan (+)	11.8	47.1	52.3333	440.5	0.7706	0.00187	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	66.09044	Aman
	Tumpuan Kanan (-)	94.2	94.2	104.667	439	1.5517	0.00384	0.00333	0.00384	512.17	590.062	1.552	2	22	760.265422	132.18089	132.1809	Aman
B2 Lantai Atap Grid 4/A-B	Tumpuan Kiri (+)	22.95	44.95	49.9444	440.5	0.7354	0.00178	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	66.09044	Aman
	Tumpuan Kiri (-)	89.9	89.9	99.8889	439	1.4809	0.00366	0.00333	0.00366	512.17	562.075	1.479	2	22	760.265422	132.18089	132.1809	Aman
	Lapangan (+)	55.1	55.1	61.2222	440.5	0.9015	0.00219	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	33.04522	Aman
	Lapangan (-)	25.8	25.8	28.6667	439	0.4250	0.00102	0.00333	0.00333	512.17	512.167	1.347	2	22	760.265422	132.18089	33.04522	Aman
	Tumpuan Kanan (+)	10	47.975	53.3056	440.5	0.7849	0.00190	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	66.09044	Aman
	Tumpuan Kanan (-)	95.95	95.95	106.611	439	1.5805	0.00391	0.00333	0.00391	512.17	601.483	1.582	2	22	760.265422	132.18089	132.1809	Aman
B2 Lantai Atap Grid 5/A-B	Tumpuan Kiri (+)	24.3	36.25	40.2778	440.5	0.5931	0.00143	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	50.23125	Aman
	Tumpuan Kiri (-)	72.5	72.5	80.5556	440.5	1.1861	0.00291	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	100.4625	Aman
	Lapangan (+)	35.9	35.9	39.8889	440.5	0.5873	0.00142	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	25.11563	Aman
	Lapangan (-)	25.1	25.1	27.8889	440.5	0.4106	0.00099	0.00333	0.00333	513.92	513.917	1.81	2	19	567.057474	100.46251	25.11563	Aman
	Tumpuan Kanan (+)	15	36.51	40.5667	440.5	0.5973	0.00144	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	50.23125	Aman
	Tumpuan Kanan (-)	73.02	73.02	81.1333	440.5	1.1946	0.00293	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	100.4625	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B2 Lantai Atap Grid 4/B-D	Tumpuan Kiri (+)	10.5	46.55	51.7222	440.5	0.7616	0.00185	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	66.09044	Aman
	Tumpuan Kiri (-)	93.1	93.1	103.444	439	1.5336	0.00379	0.00333	0.00379	512.17	582.892	1.533	2	22	760.265422	132.18089	132.1809	Aman
	Lapangan (+)	50.3	50.3	55.8889	440.5	0.8229	0.00200	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	33.04522	Aman
	Lapangan (-)	26.7	26.7	29.6667	439	0.4398	0.00106	0.00333	0.00333	512.17	512.167	1.347	2	22	760.265422	132.18089	33.04522	Aman
	Tumpuan Kanan (+)	24.8	42.7	47.4444	440.5	0.6986	0.00169	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	66.09044	Aman
	Tumpuan Kanan (-)	85.4	85.4	94.8889	439	1.4068	0.00347	0.00333	0.00347	512.17	532.903	1.402	2	22	760.265422	132.18089	132.1809	Aman
B2 Lantai Atap Grid 5/B-D	Tumpuan Kiri (+)	15.5	35.71	39.6778	440.5	0.5842	0.00141	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	50.23125	Aman
	Tumpuan Kiri (-)	71.42	71.42	79.3556	440.5	1.1685	0.00286	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	100.4625	Aman
	Lapangan (+)	35.23	35.23	39.1444	440.5	0.5764	0.00139	0.00333	0.00333	513.917	513.917	1.813	2	19	567.057474	100.46251	25.11563	Aman
	Lapangan (-)	25.6	25.6	28.4444	440.5	0.4188	0.00101	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	25.11563	Aman
	Tumpuan Kanan (+)	25.2	35.1	39	440.5	0.5743	0.00139	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	50.23125	Aman
	Tumpuan Kanan (-)	70.2	70.2	78	440.5	1.1485	0.00281	0.00333	0.00333	513.92	513.917	1.813	2	19	567.057474	100.46251	100.4625	Aman
B3 Lantai Atap Grid 1/B-C	Tumpuan Kiri (+)	12.1	28.35	31.5	342	0.8977	0.00218	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	38.32305	Aman
	Tumpuan Kiri (-)	56.7	56.7	63	340.5	1.811	0.00	0.00333	0.00451	340.50	461.097	1.626	2	19	567.057474	76.646093	76.64609	Aman
	Lapangan (+)	19	19	21.1111	342	0.6016	0.00145	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	19.16152	Aman
	Lapangan (-)	13.7	14.175	15.75	340.5	0.4528	0.00109	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	19.16152	Aman
	Tumpuan Kanan (+)	19.2	19.2	21.3333	342	0.6080	0.00147	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	38.32305	Aman
	Tumpuan Kanan (-)	21.82	21.82	24.2444	340.5	0.697	0.00169	0.00333	0.00333	340.50	340.5	1.201	2	19	567.057474	76.646093	76.64609	Aman
B3 Lantai Atap Grid 2/B-C	Tumpuan Kiri (+)	9.8	13.5	15	342	0.4275	0.00103	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kiri (-)	27	27	30	342	0.855	0.00208	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
	Lapangan (+)	14.8	14.8	16.4444	342	0.4686	0.00113	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Lapangan (-)	6.74	6.75	7.5	342	0.2137	0.00051	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Tumpuan Kanan (+)	13.3	13.3	14.7778	342	0.4211	0.00101	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kanan (-)	21.3	21.3	23.6667	342	0.674	0.00163	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman

Nama Balok	Lokasi	MU (kN)	Cek MU	Mn (kN)	d	Rn	Rasio Tulangan			As min	As	Tulangan Terpakai				Mn Terpasang	Cek Mn Terpasang	Keterangan
							ρ	ρ min	ρ pakai			n	Jumlah Tulangan	Diameter Tulangan	As Terpasang			
B3 Lantai Atap Grid 1/C-D	Tumpuan Kiri (+)	18.4	18.4	20.4444	342	0.5826	0.00141	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kiri (-)	15.3	15.3	17	342	0.484	0.00117	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
	Lapangan (+)	13	13	14.4444	342	0.4116	0.00099	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Lapangan (-)	16.44	16.44	18.2667	342	0.5206	0.00126	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Tumpuan Kanan (+)	14.3	24.3	27	342	0.7695	0.00187	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kanan (-)	48.6	48.6	54	342	1.539	0.00381	0.00333	0.00381	342.00	390.638	1.943	2	16	402.12386	55.523854	55.52385	Aman
B3 Lantai Atap Tangga	Tumpuan Kiri (+)	15.5	15.5	17.2222	342	0.4908	0.00118	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kiri (-)	4.2	4.2	4.66667	342	0.133	0.00032	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
	Lapangan (+)	16.8	16.8	18.6667	342	0.5320	0.00128	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Lapangan (-)	4.2	4.2	4.66667	342	0.1330	0.00032	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Tumpuan Kanan (+)	10.1	10.1	11.2222	342	0.3198	0.00077	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kanan (-)	13.3	13.3	14.7778	342	0.421	0.00101	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
B3 Lantai Atap Lift	Tumpuan Kiri (+)	7.13	7.13	7.92222	342	0.2258	0.00054	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kiri (-)	4.3	4.3	4.77778	342	0.136	0.00033	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
	Lapangan (+)	7.3	7.3	8.11111	342	0.2312	0.00055	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Lapangan (-)	3	3	3.33333	342	0.0950	0.00023	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Tumpuan Kanan (+)	6.5	6.5	7.22222	342	0.2058	0.00049	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kanan (-)	7	7	7.77778	342	0.222	0.00053	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
B3 Lantai Atap Grid C/1-2	Tumpuan Kiri (+)	11.3	11.3	12.5556	342	0.3578	0.00086	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kiri (-)	17.8	17.8	19.7778	342	0.564	0.00136	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
	Lapangan (+)	7.6	7.6	8.44444	342	0.2407	0.00058	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Lapangan (-)	6.9	6.9	7.66667	342	0.2185	0.00052	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Tumpuan Kanan (+)	7.1	8.9	9.88889	342	0.2818	0.00068	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kanan (-)	17.8	17.8	19.7778	342	0.564	0.00136	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
B3 Lantai Atap Grid C/2-3	Tumpuan Kiri (+)	25.4	25.4	28.2222	342	0.8043	0.00195	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kiri (-)	27.1	27.1	30.1111	342	0.858	0.00209	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman
	Lapangan (+)	25.4	25.4	28.2222	342	0.8043	0.00195	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Lapangan (-)	12.7	12.7	14.1111	342	0.4021	0.00097	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	13.88096	Aman
	Tumpuan Kanan (+)	15.3	19.35	21.5	342	0.6127	0.00148	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	27.76193	Aman
	Tumpuan Kanan (-)	38.7	38.7	43	342	1.225	0.00301	0.00333	0.00333	342.00	342	1.701	2	16	402.12386	55.523854	55.52385	Aman

Perhitungan Tulangan Sengkang Keseluruhan Balok Tiap Lantai.

BALOK TULANGAN SENKANG LANTAI 2

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 2 grid A/1-3	Tumpuan Kiri (+)	850.586211	125.22	70.0483	260.55	158.74	125.22	70.048	260.55	158.74	95.293	95.293	40.94145566	149.6451866	149.6451866	40.9414557	0	199.53	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	850.586211																												
B1 Lantai 2 grid A/3-4	Tumpuan Kiri (+)	760.2654222	125.22	62.6101	260.55	142.77	125.22	62.61	260.55	142.77	91.664	91.664	37.50190498	145.8254759	145.8254759	37.501905	0	194.43	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	760.2654222																												
B1 Lantai 2 grid A/4-5	Tumpuan Kiri (+)	850.586211	125.22	70.0483	260.55	158.74	125.22	70.048	260.55	158.74	95.293	95.293	41.13153566	149.4551066	149.4551066	41.1315357	0	199.27	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	850.586211																												
B1 Lantai 2 grid B/1-2	Tumpuan Kiri (+)	1520.530844	62.61	125.22	142.77	260.55	125.22	62.61	260.55	142.77	183.33	183.33	172.2289499	194.4258118	194.4258118	172.22895	0	259.23	389	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	760.2654222																												
B1 Lantai 2 grid B/2-3	Tumpuan Kiri (+)	567.057474	125.22	46.6989	260.55	109.30	62.6101	70.048	142.77	158.74	154.11	125.63	99.94352022	208.2670911	179.7912166	71.4676457	0	277.69	390.5	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	760.2654222																												
	Tumpuan Kanan (+)	850.586211																												
B1 Lantai 2 grid B/3-4	Tumpuan Kiri (+)	850.586211	125.22	70.0483	260.55	158.74	125.22	70.048	260.55	158.74	95.293	95.293	41.13153566	149.4551066	149.4551066	41.1315357	0	199.27	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	850.586211																												
B1 Lantai 2 grid B/4-5	Tumpuan Kiri (+)	1140.398133	161.7	93.9151	316.11	204.78	161.7	93.915	316.11	204.78	118.38	118.38	64.22222887	172.5457998	172.5457998	64.2222289	0	230.06	389	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1963.495408																												
	Tumpuan Kanan (+)	1140.398133																												
B1 Lantai 2 grid D/1-3	Tumpuan Kiri (+)	760.2654222	125.22	62.6101	260.55	142.77	125.22	93.915	260.55	204.78	91.664	105.76	56.78290738	126.5444735	140.6385094	70.8769433	0	187.52	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	1140.398133																												
B1 Lantai 2 grid D/3-4	Tumpuan Kiri (+)	760.2654222	125.22	62.6101	260.55	142.77	125.22	62.61	260.55	142.77	91.664	91.664	37.50190498	145.8254759	145.8254759	37.501905	0	194.43	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	760.2654222																												

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Vs1	Vs2	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S
													Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 2 grid D/4-5	Tumpuan Kiri (+)	1140.398133	125.22	93.9151	260.55	204.78	125.22	62.61	260.55	142.77	105.76	91.664	51.59594089	159.9195118	145.8254759	37.501905	0	213.23	389	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	760.2654222																												
	Tumpuan Kanan (-)	1520.530844																												
B1 Lantai 2 grid 3/B-C	Tumpuan Kiri (+)	850.586211	62.61	70.0483	142.77	158.74	125.22	46.699	260.55	109.30	115.97	142.25	83.96093737	147.9703202	174.2557428	110.24636	0	232.34	390.5	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1520.530844																												
	Tumpuan Kanan (+)	567.057474																												
	Tumpuan Kanan (-)	760.2654222																												
B1 Lantai 2 grid 3/C-D	Tumpuan Kiri (+)	567.057474	125.22	46.6989	260.55	109.30	62.6101	93.398	142.77	204.70	168.11	157.94	141.0339862	195.1957716	185.0231162	130.861331	0	260.26	390.5	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	760.2654222																												
	Tumpuan Kanan (+)	1134.114948																												
	Tumpuan Kanan (-)	1520.530844																												
B2 Lantai 2 grid 1/A-B	Tumpuan Kiri (+)	1140.398133	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	108.53	108.53	21.1750741	195.8940677	195.8940677	21.1750741	0	261.19	512.17	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.495408																												
	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kanan (-)	1963.495408																												
B2 Lantai 2 grid 3/A-B	Tumpuan Kiri (+)	1140.398133	163.19	93.9151	368.18	234.72	163.187	93.915	368.18	234.72	108.63	108.63	21.27019332	195.9891869	195.9891869	21.27019333	0	261.32	512.17	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1981.559566																												
	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kanan (-)	1981.559566																												
B2 Lantai 2 grid 4/A-B	Tumpuan Kiri (+)	1140.398133	202.12	93.9151	433.51	234.72	202.125	93.915	433.51	234.72	120.4	120.4	33.04304716	207.7620407	207.7620407	33.0430472	0	277.02	512.17	AMAN	3	10	235.62	150	100	3	10	235.62	150	100
	Tumpuan Kiri (-)	2454.369261																												
	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kanan (-)	2454.369261																												
B2 Lantai 2 grid 5/A-B	Tumpuan Kiri (+)	1140.398133	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	108.53	108.53	21.1750741	195.8940677	195.8940677	21.1750741	0	261.19	512.17	AMAN	3	10	235.62	150	100	3	10	235.62	150	100
	Tumpuan Kiri (-)	1963.495408																												
	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kanan (-)	1963.495408																												
B2 Lantai 2 grid 4/B-D	Tumpuan Kiri (+)	1140.398133	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	111.55	111.55	26.55099078	196.5478494	196.5478494	26.5509908	0	262.06	512.17	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.495408																												
	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kanan (-)	1963.495408																												
B2 Lantai 2 grid 5/B-D	Tumpuan Kiri (+)	1140.398133	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	111.55	111.55	26.55099078	196.5478494	196.5478494	26.5509908	0	262.06	512.17	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.495408																												
	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kanan (-)	1963.495408																												

Nama Balok	As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan					
		a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S	
												Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan															
B3 Lantai 2 grid 1/B-C	Tumpuan Kiri (+)	1140.398133																												
	Tumpuan Kiri (-)	2454.369261	161.7	93.9151	264.56	174.85	202.125	93.915	304.66	174.85	154.18	168.25	131.5865752	176.7730441	190.841947	145.655478	0	254.46	339	AMAN	3	10	235.62	125	75	3	10	235.62	125	75
	Tumpuan Kanan (+)	1140.398133																												
B3 Lantai 2 grid 2/B-C	Tumpuan Kanan (-)	1963.495408																												
	Tumpuan Kiri (+)	567.057474	70.048	46.6989	136.41	94.42	70.0483	46.699	136.41	94.42	80.993	80.993	44.30059393	117.6853596	117.6853596	44.3005939	0	156.91	340.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kanan (+)	567.057474																												
B3 Lantai 2 grid 1/C-D	Tumpuan Kanan (-)	850.586211																												
	Tumpuan Kiri (+)	760.2654222	202.12	62.6101	304.66	122.81	121.275	93.915	214.05	174.85	174.48	158.73	155.0567484	193.9012568	178.1562263	139.311718	0	258.54	339	AMAN	3	10	235.62	125	75	3	10	235.62	125	75
	Tumpuan Kiri (-)	1472.621556																												
B3 Lantai 2 Tangga	Tumpuan Kanan (+)	1140.398133																												
	Tumpuan Kiri (+)	567.057474	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	77.075	77.075	57.65314739	96.49765579	96.49765579	57.6531474	0	128.66	340.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kanan (-)	2454.369261																												
B3 Lantai 2 grid BC/1-3	Tumpuan Kiri (+)	567.057474																												
	Tumpuan Kiri (-)	567.057474	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	114.45	114.45	98.81320977	130.0773768	130.0773768	98.8132098	0	173.44	340.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kanan (+)	567.057474																												
B3 Lantai 2 grid C/1-2	Tumpuan Kanan (-)	567.057474																												
	Tumpuan Kiri (+)	567.057474	70.048	46.6989	136.41	94.42	70.0483	70.048	136.41	136.41	139.9	165.35	117.7892512	162.0046686	187.4563352	143.240918	0	249.94	340.5	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kanan (+)	850.586211																												
B3 Lantai 2 grid C/2-3	Tumpuan Kiri (-)	850.586211																												
	Tumpuan Kiri (+)	567.057474	70.048	46.6989	136.41	94.42	70.0483	46.699	136.41	94.42	87.106	87.106	67.54973542	106.6615731	106.6615731	67.5497354	0	142.22	340.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kanan (+)	567.057474																												
	Tumpuan Kanan (-)	850.586211																												

BALOK TULANGAN SENKANG LANTAI 3

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 3 grid A/1-3	Tumpuan Kiri (+)	850.58621	125.22	70.0483	260.55	158.74	125.22	70.048	260.55	158.74	95.293	95.293	41.13153566	149.4551066					AMAN	2	10	157.08	125	75	2	10	157.08	125	75	
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 3 grid A/3-4	Tumpuan Kiri (+)	760.26542	125.22	62.6101	260.55	142.77	125.22	62.61	260.55	142.77	91.664	91.664	37.50190498	145.8254759					AMAN	2	10	157.08	125	75	2	10	157.08	125	75	
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 3 grid A/4-5	Tumpuan Kiri (+)	850.58621	125.22	70.0483	260.55	158.74	125.22	70.048	260.55	158.74	95.293	95.293	41.13153566	149.4551066					AMAN	2	10	157.08	125	75	2	10	157.08	125	75	
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 3 grid B/1-2	Tumpuan Kiri (+)	760.26542	156.53	62.6101	310.07	142.77	62.6101	125.22	142.77	260.55	205.84	183.33	194.7374418	216.9343037					AMAN	3	10	235.62	125	75	3	10	235.62	125	75	
	Tumpuan Kiri (-)	760.26542																												
	Tumpuan Kanan (+)	1520.5308																												
	Tumpuan Kanan (-)	1900.6636																												
B1 Lantai 3 grid B/2-3	Tumpuan Kiri (+)	1140.3981	62.61	93.9151	142.77	204.78	125.22	62.61	260.55	142.77	144.81	168.05	90.65238865	198.9759596					AMAN	2	10	157.08	75	75	2	10	157.08	75	75	
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	760.26542																												
B1 Lantai 3 grid B/3-4	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	205.68	161.7	93.915	316.11	205.68	118.59	118.59	64.42633422	172.7499051					AMAN	2	10	157.08	100	75	2	10	157.08	100	75	
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid B/4-5	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	205.68	161.7	93.915	316.11	205.68	118.59	118.59	64.42633422	172.7499051					AMAN	2	10	157.08	100	75	2	10	157.08	100	75	
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid D/1-3	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	204.78	161.7	93.915	316.11	204.78	118.38	118.38	83.50323127	153.2647974					AMAN	2	10	157.08	125	75	2	10	157.08	125	75	
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid D/3-4	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	204.78	161.7	93.915	316.11	204.78	118.38	118.38	64.22222887	172.5457998					AMAN	2	10	157.08	100	75	2	10	157.08	100	75	
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Senkang	Av	S	Cek S	n	Diameter Senkang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 3 grid B/4-5	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	205.68	161.7	93.915	316.11	205.68	118.59	118.59	64.42633422	172.7499051				AMAN	2	10	157.08	100	75	2	10	157.08	100	75		
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid D/1-3	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	204.78	161.7	93.915	316.11	204.78	118.38	118.38	83.50323127	153.2647974				AMAN	2	10	157.08	125	75	2	10	157.08	125	75		
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid D/3-4	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	204.78	161.7	93.915	316.11	204.78	118.38	118.38	64.22222887	172.5457998				AMAN	2	10	157.08	100	75	2	10	157.08	100	75		
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid D/4-5	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	316.11	204.78	161.7	93.915	316.11	204.78	118.38	118.38	64.22222887	172.5457998				AMAN	2	10	157.08	100	75	2	10	157.08	100	75		
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B1 Lantai 3 grid 3/B-C	Tumpuan Kiri (+)	850.58621	62.61	70.0483	142.77	158.74	125.22	46.699	260.55	109.30	115.97	142.25	83.96093737	147.9703202				AMAN	2	10	157.08	100	75	2	10	157.08	100	75		
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	760.26542																												
B1 Lantai 3 grid 3/C-D	Tumpuan Kiri (+)	567.05747	156.53	46.6989	310.07	109.30	62.6101	93.398	142.77	204.70	190.62	157.94	163.5424781	217.7042635				AMAN	3	10	235.62	125	75	3	10	235.62	125	75		
	Tumpuan Kiri (-)	760.26542																												
	Tumpuan Kanan (+)	1134.1149																												
	Tumpuan Kanan (-)	1900.6636																												
B2 Lantai 3 grid 1/A-B	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	108.53	108.53	23.09498327	193.9741585				AMAN	2	10	157.08	100	100	2	10	157.08	100	100		
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B2 Lantai 3 grid 3/A-B	Tumpuan Kiri (+)	1140.3981	202.12	93.9151	433.51	234.72	202.125	93.915	433.51	234.72	120.4	120.4	34.96295633	205.8421316				AMAN	3	10	235.62	150	100	3	10	235.62	150	100		
	Tumpuan Kiri (-)	2454.3693																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	2454.3693																												
B2 Lantai 3 grid 4/A-B	Tumpuan Kiri (+)	1140.3981	202.12	93.9151	433.51	234.72	202.125	93.915	433.51	234.72	120.4	120.4	34.96295633	205.8421316				AMAN	3	10	235.62	150	100	3	10	235.62	150	100		
	Tumpuan Kiri (-)	2454.3693																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	2454.3693																												

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Senekang	Av	S	Cek S	n	Diameter Senekang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B2 Lantai 3 grid 4/B-D	Tumpuan Kiri (+)	1140.3981	202.12	93.9151	433.51	234.72	202.125	93.915	433.51	234.72	123.75	123.75	40.61664948	206.8774687	206.8774687	40.6166495	0	275.84	439	AMAN	3	10	235.62	150	100	3	10	235.62	150	100
	Tumpuan Kiri (-)	2454.3693																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	2454.3693																												
B2 Lantai 3 grid 5/B-D	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	111.55	111.55	28.4190105	194.6798297	194.6798297	28.4190105	0	259.57	439	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B3 Lantai 3 grid 1/B-C	Tumpuan Kiri (+)	1140.3981	80.85	93.9151	153.12	174.85	161.7	62.61	264.56	122.81	115.08	135.92	92.4826086	137.6690776	158.5150531	113.328584	0	211.35	339	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	981.7477																												
B3 Lantai 3 grid 2/B-C	Tumpuan Kiri (+)	567.05747	70.048	46.6989	136.41	94.42	93.3977	70.048	174.93	136.41	80.993	109.24	44.30059993	117.6853596	145.9361938	72.5514281	0	194.58	340.5	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	850.58621																												
B3 Lantai 3 grid 1/C-D	Tumpuan Kiri (+)	760.26542	125.22	62.6101	220.64	122.81	62.6101	93.915	122.81	174.85	140.18	121.49	120.7611482	159.6056566	140.9167846	102.072276	0	212.81	339	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	760.26542																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1520.5308																												
B3 Lantai 3 Tangga	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	77.075	77.075	57.65314739	96.49765579	96.49765579	57.6531474	0	128.66	340.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 3 Lift	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	114.45	114.45	98.81320977	130.0773768	130.0773768	98.8132098	0	173.44	340.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 3 grid C/1-2	Tumpuan Kiri (+)	850.58621	70.048	70.0483	136.41	136.41	70.0483	46.699	136.41	94.42	165.35	139.9	143.2409178	187.4563352	162.0046686	117.789251	0	249.94	340.5	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												
B3 Lantai 3 grid C/2-3	Tumpuan Kiri (+)	567.05747	70.048	46.6989	136.41	94.42	70.0483	46.699	136.41	94.42	87.106	87.106	67.54973542	106.6615731	106.6615731	67.5497354	0	142.22	340.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												

BALOK TULANGAN SENKANG LANTAI 4

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 4 grid A/1-3	Tumpuan Kiri (+)	760.26542	125.22	62.6101	260.55	142.77	125.22	62.61	260.55	142.77	91.664	91.664	37.50190498	145.8254759	145.8254759	37.501905	0	194.43	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 4 grid A/3-4	Tumpuan Kiri (+)	760.26542	125.22	62.6101	260.55	142.77	125.22	62.61	260.55	142.77	91.664	91.664	37.50190498	145.8254759	145.8254759	37.501905	0	194.43	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 4 grid A/4-5	Tumpuan Kiri (+)	850.58621	125.22	70.0483	260.55	158.74	125.22	70.048	260.55	158.74	95.293	95.293	41.13153566	149.4551066	149.4551066	41.1315357	0	199.27	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 4 grid B/1-2	Tumpuan Kiri (+)	760.26542	125.22	62.6101	260.55	142.77	62.6101	93.915	142.77	204.78	183.33	157.98	172.2289499	194.4258118	169.07753	146.880668	0	259.23	389	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	760.26542																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1520.5308																												
B1 Lantai 4 grid B/2-3	Tumpuan Kiri (+)	1140.3981	62.61	93.9151	142.77	204.78	125.22	62.61	260.55	142.77	144.81	168.05	90.65238865	198.9759596	222.2118846	113.888314	0	296.28	389	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	760.26542																												
B1 Lantai 4 grid B/3-4	Tumpuan Kiri (+)	850.58621	121.27	70.0483	252.71	158.74	121.275	70.048	252.71	158.74	93.511	93.511	39.34880894	147.6723798	147.6723798	39.3488089	0	196.9	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1472.6216																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid B/4-5	Tumpuan Kiri (+)	850.58621	121.27	70.0483	252.71	158.74	161.7	70.048	316.11	158.74	93.511	107.92	39.34880894	147.6723798	162.0813945	53.7578236	0	216.11	390.5	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid D/1-3	Tumpuan Kiri (+)	760.26542	121.27	62.6101	252.71	142.77	121.275	93.915	252.71	204.78	89.881	103.97	55.00018067	124.7617468	138.8557827	69.0942166	0	185.14	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1472.6216																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid D/3-4	Tumpuan Kiri (+)	760.26542	121.27	62.6101	252.71	142.77	121.275	62.61	252.71	142.77	89.881	89.881	35.71917827	144.0427492	144.0427492	35.7191783	0	192.06	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1472.6216																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1472.6216																												

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 4 grid B/4-5	Tumpuan Kiri (+)	850.58621	121.27	70.0483	252.71	158.74	161.7	70.048	316.11	158.74	93.511	107.92	39.34880894	147.6723798	162.0813945	53.7578236	0	216.11	390.5	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid D/1-3	Tumpuan Kiri (+)	760.26542	121.27	62.6101	252.71	142.77	121.275	93.915	252.71	204.78	89.881	103.97	55.00018067	124.7617468	138.8557827	69.0942166	0	185.14	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1472.6216																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid D/3-4	Tumpuan Kiri (+)	760.26542	121.27	62.6101	252.71	142.77	121.275	62.61	252.71	142.77	89.881	89.881	35.71917827	144.0427492	144.0427492	35.7191783	0	192.06	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1472.6216																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid D/4-5	Tumpuan Kiri (+)	760.26542	121.27	62.6101	252.71	142.77	121.275	62.61	252.71	142.77	89.881	89.881	35.71917827	144.0427492	144.0427492	35.7191783	0	192.06	389	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	1472.6216																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1472.6216																												
B1 Lantai 4 grid 3/B-C	Tumpuan Kiri (+)	850.58621	62.61	70.0483	142.77	158.74	125.22	46.699	260.55	109.30	115.97	142.25	83.96093737	147.9703202	174.2557428	110.24636	0	232.34	390.5	AMAN	2	10	157.08	100	75	2	10	157.08	100	75
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	760.26542																												
B1 Lantai 4 grid 3/C-D	Tumpuan Kiri (+)	567.05747	156.53	46.6989	310.07	109.30	62.6101	70.048	142.77	158.74	190.62	137.05	163.5424781	217.7042635	164.1311813	109.969396	0	290.27	390.5	AMAN	3	10	235.62	125	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	760.26542																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1900.6636																												
B2 Lantai 4 grid 1/A-B	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	108.53	108.53	23.09498327	193.9741585	193.9741585	23.0949833	0	258.63	439	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B2 Lantai 4 grid 3/A-B	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	108.53	108.53	23.09498327	193.9741585	193.9741585	23.0949833	0	258.63	439	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												
B2 Lantai 4 grid 4/A-B	Tumpuan Kiri (+)	1140.3981	161.7	93.9151	367.65	234.72	161.7	93.915	367.65	234.72	108.53	108.53	23.09498327	193.9741585	193.9741585	23.0949833	0	258.63	439	AMAN	2	10	157.08	100	100	2	10	157.08	100	100
	Tumpuan Kiri (-)	1963.4954																												
	Tumpuan Kanan (+)	1140.3981																												
	Tumpuan Kanan (-)	1963.4954																												

BALOK TULANGAN SENKANG LANTAI 5

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Senggang	Av	S	Cek S	n	Diameter Senggang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 5 grid A/1-3	Tumpuan Kiri (+)	567.05747	70.048	46.6989	158.74	109.30	70.0483	46.699	158.74	109.30	60.919	60.919	51.92766625	69.91012035	69.91012035	51.9276662	0	93.213	390.5	AMAN	2	10	157.08	275	75	2	10	157.08	275	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												
B1 Lantai 5 grid A/3-4	Tumpuan Kiri (+)	567.05747	70.048	46.6989	158.74	109.30	70.0483	46.699	158.74	109.30	60.919	60.919	51.92766625	69.91012035	69.91012035	51.9276662	0	93.213	390.5	AMAN	2	10	157.08	275	75	2	10	157.08	275	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												
B1 Lantai 5 grid A/4-5	Tumpuan Kiri (+)	567.05747	70.048	46.6989	158.74	109.30	70.0483	46.699	158.74	109.30	60.919	60.919	51.92766625	69.91012035	69.91012035	51.9276662	0	93.213	390.5	AMAN	2	10	157.08	275	75	2	10	157.08	275	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												
B1 Lantai 5 grid B/1-2	Tumpuan Kiri (+)	567.05747	46.699	46.6989	109.30	109.30	70.0483	46.699	158.74	109.30	156.15	191.46	153.2857631	159.007453	194.3202239	188.598534	0	259.09	390.5	AMAN	2	10	157.08	75	75	2	10	157.08	75	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B1 Lantai 5 grid B/2-3	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	46.6989	46.699	109.30	109.30	130.84	91.086	121.844351	139.8268051	100.0767484	82.0942943	0	186.44	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid B/3-4	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	46.699	204.70	109.30	71.365	71.365	62.37363372	80.35608783	80.35608783	62.3736337	0	107.14	390.5	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid B/4-5	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	46.699	204.70	109.30	71.365	71.365	62.37363372	80.35608783	80.35608783	62.3736337	0	107.14	390.5	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid D/1-3	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	70.048	204.70	158.74	71.365	82.601	62.37363372	80.35608783	91.59196948	73.6095154	0	122.12	390.5	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid D/3-4	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	46.699	204.70	109.30	71.365	71.365	62.37363372	80.35608783	80.35608783	62.3736337	0	107.14	390.5	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B1 Lantai 5 grid B/4-5	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	46.699	204.70	109.30	71.365	71.365	62.37363372	80.35608783	80.35608783	62.3736337	0	107.14	390.5	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid D/1-3	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	70.048	204.70	158.74	71.365	82.601	62.37363372	80.35608783	91.59196948	73.6095154	0	122.12	390.5	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	850.58621																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid D/3-4	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	46.699	204.70	109.30	71.365	71.365	62.37363372	80.35608783	80.35608783	62.3736337	0	107.14	390.5	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid D/4-5	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	93.3977	46.699	204.70	109.30	71.365	71.365	62.37363372	80.35608783	80.35608783	62.3736337	0	107.14	390.5	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B1 Lantai 5 grid 3/B-C	Tumpuan Kiri (+)	567.05747	46.699	46.6989	109.30	109.30	93.3977	46.699	204.70	109.30	84.079	120.77	78.76594499	89.3919406	126.0843007	115.458305	0	168.11	390.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	1134.1149																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B1 Lantai 5 grid 3/C-D	Tumpuan Kiri (+)	567.05747	93.398	46.6989	204.70	109.30	46.6989	46.699	109.30	109.30	142.73	99.366	138.234108	147.2253351	103.8616368	94.8704098	0	196.3	390.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1134.1149																												
B2 Lantai 5 grid 1/A-B	Tumpuan Kiri (+)	567.05747	93.915	46.6989	234.72	124.19	93.9151	46.699	234.72	124.19	64.668	64.668	53.3267613	76.00917501	76.00917501	53.3267613	0	101.35	440.5	AMAN	2	10	157.08	275	100	2	10	157.08	275	100
	Tumpuan Kiri (-)	1140.3981																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	1140.3981																												
B2 Lantai 5 grid 3/A-B	Tumpuan Kiri (+)	760.26542	125.22	62.6101	300.46	162.73	125.22	62.61	300.46	162.73	83.458	83.458	72.11665619	94.7990699	94.7990699	72.1166562	0	126.4	439	AMAN	2	10	157.08	225	100	2	10	157.08	225	100
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1520.5308																												
B2 Lantai 5 grid 4/A-B	Tumpuan Kiri (+)	760.26542	125.22	62.6101	300.46	162.73	125.22	62.61	300.46	162.73	83.458	83.458	72.11665619	94.7990699	94.7990699	72.1166562	0	126.4	439	AMAN	2	10	157.08	225	100	2	10	157.08	225	100
	Tumpuan Kiri (-)	1520.5308																												
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1520.5308																												

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Senggang	Av	S	Cek S	n	Diameter Senggang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B2 Lantai 5 grid 4/B-D	Tumpuan Kanan (-)	1472.6216																												
	Tumpuan Kiri (+)	760.26542																												
	Tumpuan Kiri (-)	1472.6216	121.27	62.6101	291.36	162.73	121.275	62.61	291.36	162.73	84.091	84.091	73.05596476	95.12534026	95.12534026	73.0559648	0	126.83	439	AMAN	2	10	157.08	225	100	2	10	157.08	225	100
	Tumpuan Kanan (+)	760.26542																												
B2 Lantai 5 grid 5/B-D	Tumpuan Kiri (-)	1472.6216	121.27	62.6101	291.36	162.73	121.275	62.61	291.36	162.73	84.091	84.091	73.05596476	95.12534026	95.12534026	73.0559648	0	126.83	439	AMAN	2	10	157.08	225	100	2	10	157.08	225	100
	Tumpuan Kanan (+)	760.26542																												
	Tumpuan Kanan (-)	1472.6216																												
	Tumpuan Kiri (+)	760.26542																												
B3 Lantai 5 grid 1/B-C	Tumpuan Kiri (+)	567.05747	70.048	46.6989	136.41	94.42	46.6989	46.699	94.42	94.42	80.993	66.258	75.16911379	86.81683975	72.08166434	60.4339384	0	115.76	340.5	AMAN	2	10	157.08	175	75	2	10	157.08	175	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												
B3 Lantai 5 grid 2/B-C	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	70.0483	46.699	136.41	94.42	66.258	80.993	60.43393839	72.08166434	86.81683975	75.1691138	0	115.76	340.5	AMAN	2	10	157.08	175	75	2	10	157.08	175	75
	Tumpuan Kiri (-)	850.58621																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 5 grid 1/C-D	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	70.0483	46.699	136.41	94.42	77.075	94.216	72.06892289	82.08188029	99.22279862	89.2098412	0	132.3	340.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 5 Tangga	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	77.075	77.075	72.06892289	82.08188029	82.08188029	72.0689229	0	109.44	340.5	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 5 Lift	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	114.45	114.45	108.5217933	120.3687933	120.3687933	108.521793	0	160.49	340.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 5 grid C/1-2	Tumpuan Kiri (+)	567.05747	46.699	46.6989	94.42	94.42	46.6989	46.699	94.42	94.42	114.45	114.45	108.5217933	120.3687933	120.3687933	108.521793	0	160.49	340.5	AMAN	2	10	157.08	125	75	2	10	157.08	125	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	567.05747																												
B3 Lantai 5 grid C/2-3	Tumpuan Kiri (+)	567.05747	70.048	46.6989	136.41	94.42	46.6989	46.699	94.42	94.42	87.106	71.258	67.54973542	106.6615731	90.81430899	51.7024713	0	142.22	340.5	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	567.05747																												
	Tumpuan Kanan (+)	567.05747																												
	Tumpuan Kanan (-)	850.58621																												

BALOK TULANGAN SENGGKANG LANTAI ATAP

Nama Balok	As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri				Tumpuan Kanan						
		a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Senggang	Av	S	Cek S	n	Diameter Senggang	Av	S	Cek S	
										Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan															
B1 Lantai Atap grid A/1-3	Tumpuan Kiri (+)	402.12386																												
	Tumpuan Kiri (-)	402.12386	33.116	33.1161	79.26	79.26	33.1161	33.116	79.26	79.26	36.028	36.028	-12.14989958	84.20575322	84.20575322	-12.1499	0	112.27	392	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kanan (+)	402.12386																												
B1 Lantai Atap grid A/3-4	Tumpuan Kanan (-)	402.12386																												
	Tumpuan Kiri (+)	402.12386	33.116	33.1161	79.26	79.26	33.1161	33.116	79.26	79.26	36.028	36.028	-12.14989958	84.20575322	84.20575322	-12.1499	0	112.27	392	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	402.12386																												
B1 Lantai Atap grid A/4-5	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kiri (+)	402.12386	33.116	33.1161	79.26	79.26	33.1161	33.116	79.26	79.26	36.028	36.028	-12.14989958	84.20575322	84.20575322	-12.1499	0	112.27	392	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	402.12386																												
B1 Lantai Atap grid B/1-2	Tumpuan Kanan (-)	402.12386																												
	Tumpuan Kiri (-)	402.12386	33.116	33.1161	79.26	79.26	33.1161	33.116	79.26	79.26	113.23	113.23	103.8261411	122.6351131	122.6351131	103.826141	0	163.51	392	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (+)	402.12386																												
B1 Lantai Atap grid B/2-3	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kiri (-)	567.057474	46.699	33.1161	109.30	79.26	46.6989	33.116	109.30	79.26	78.568	78.568	30.39053386	126.7461867	126.7461867	30.3905339	0	168.99	392	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kanan (-)	567.057474																												
B1 Lantai Atap grid B/3-4	Tumpuan Kiri (+)	402.12386																												
	Tumpuan Kiri (-)	567.057474	46.699	33.1161	109.30	79.26	46.6989	33.116	109.30	79.26	42.855	42.855	-5.322357165	91.03329563	91.03329563	-5.3223572	0	121.38	392	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kanan (+)	402.12386																												
B1 Lantai Atap grid B/4-5	Tumpuan Kanan (-)	567.057474																												
	Tumpuan Kiri (+)	402.12386	46.699	33.1161	109.30	79.26	46.6989	33.116	109.30	79.26	42.855	42.855	-5.322357165	91.03329563	91.03329563	-5.3223572	0	121.38	392	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kiri (-)	567.057474																												
B1 Lantai Atap grid D/1-3	Tumpuan Kanan (+)	603.185789																												
	Tumpuan Kiri (-)	402.12386	33.116	33.1161	79.26	79.26	33.1161	49.674	79.26	116.27	36.028	44.439	6.470970817	65.58488282	73.99601486	14.8821029	0	98.661	392	AMAN	2	10	157.08	250	75	2	10	157.08	250	75
	Tumpuan Kanan (-)	402.12386																												
B1 Lantai Atap grid D/3-4	Tumpuan Kiri (+)	402.12386																												
	Tumpuan Kiri (-)	402.12386	33.116	33.1161	79.26	79.26	33.1161	33.116	79.26	79.26	36.028	36.028	-12.14989958	84.20575322	84.20575322	-12.1499	0	112.27	392	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												

Nama Balok	As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan																
		a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Sengkang	Av	S	Cek S	n	Diameter Sengkang	Av	S	Cek S												
										Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan																										
B1 Lantai Atap grid D/4-5	Tumpuan Kiri (+)	402.12386																																							
	Tumpuan Kiri (-)	402.12386	33.116	33.116	79.26	79.26	33.116	33.116	79.26	79.26	36.028	36.028	-12.14989958	84.20575322	84.20575322	-12.1499	0	112.27	392	AMAN	2	10	157.08	225	75	2	10	157.08	225	75											
	Tumpuan Kanan (+)	402.12386																																							
B1 Lantai Atap grid 3/B-C	Tumpuan Kiri (+)	402.12386																																							
	Tumpuan Kiri (-)	567.057474	46.699	33.116	109.30	79.26	46.6989	33.116	109.30	79.26	72.525	72.525	44.05592464	100.9933558	100.9933558	44.0559246	0	134.66	392	AMAN	2	10	157.08	175	75	2	10	157.08	175	75											
	Tumpuan Kanan (+)	402.12386																																							
B1 Lantai Atap grid 3/C-D	Tumpuan Kiri (+)	402.12386																																							
	Tumpuan Kiri (-)	567.057474	46.699	33.116	109.30	79.26	46.6989	33.116	109.30	79.26	85.711	85.711	61.62202527	109.7998517	109.7998517	61.6220253	0	146.4	392	AMAN	2	10	157.08	175	75	2	10	157.08	175	75											
	Tumpuan Kanan (+)	402.12386																																							
B2 Lantai Atap grid 1/A-B	Tumpuan Kiri (+)	567.057474																																							
	Tumpuan Kiri (-)	567.057474	46.699	46.6989	124.19	124.19	46.6989	46.699	124.19	124.19	44.752	44.752	-32.99828963	122.5030711	122.5030711	-32.99829	0	163.34	513.92	AMAN	2	10	157.08	175	100	2	10	157.08	175	100											
	Tumpuan Kanan (+)	567.057474																																							
B2 Lantai Atap grid 3/A-B	Tumpuan Kiri (+)	567.057474																																							
	Tumpuan Kiri (-)	760.265422	62.61	46.6989	162.73	124.19	62.6101	46.699	162.73	124.19	51.696	51.696	-26.0542873	129.4470735	129.4470735	-26.054287	0	172.6	513.92	AMAN	2	10	157.08	150	100	2	10	157.08	150	100											
	Tumpuan Kanan (+)	567.057474																																							
B2 Lantai Atap grid 4/A-B	Tumpuan Kiri (+)	567.057474																																							
	Tumpuan Kiri (-)	760.265422	62.61	46.6989	162.73	124.19	62.6101	46.699	162.73	124.19	51.696	51.696	-26.0542873	129.4470735	129.4470735	-26.054287	0	172.6	513.92	AMAN	2	10	157.08	150	100	2	10	157.08	150	100											
	Tumpuan Kanan (+)	567.057474																																							
B2 Lantai Atap grid 5/A-B	Tumpuan Kiri (+)	567.057474																																							
	Tumpuan Kiri (-)	567.057474	46.699	46.6989	124.19	124.19	46.6989	46.699	124.19	124.19	44.752	44.752	-32.99828963	122.5030711	122.5030711	-32.99829	0	163.34	513.92	AMAN	2	10	157.08	175	100	2	10	157.08	175	100											
	Tumpuan Kanan (+)	567.057474																																							
B2 Lantai Atap grid 4/B-D	Tumpuan Kiri (+)	567.057474																																							
	Tumpuan Kiri (-)	760.265422	62.61	46.6989	162.73	124.19	62.6101	46.699	162.73	124.19	53.132	53.132	-22.51690664	128.7817146	128.7817146	-22.516907	0	171.71	513.92	AMAN	2	10	157.08	150	100	2	10	157.08	150	100											
	Tumpuan Kanan (+)	567.057474																																							
B2 Lantai Atap grid 5/B-D	Tumpuan Kiri (+)	567.057474																																							
	Tumpuan Kiri (-)	567.057474	46.699	46.6989	124.19	124.19	46.6989	46.699	124.19	124.19	45.996	45.996	-29.65379793	121.6448234	121.6448234	-29.653798	0	162.19	513.92	AMAN	2	10	157.08	175	100	2	10	157.08	175	100											
	Tumpuan Kanan (+)	567.057474																																							

Nama Balok		As Terpasang	Struktur Bergoyang Ke Kanan				Struktur Bergoyang Ke Kiri				Vs		Ve				Vc	Vs	Vs Max	Cek Vs	Tumpuan Kiri					Tumpuan Kanan				
			a1	a2	Mpr1	Mpr2	a3	a4	Mpr3	Mpr4	Kanan	Kiri	Struktur Bergoyang ke Kanan		Struktur Bergoyang ke Kiri						n	Diameter Senggang	Av	S	Cek S	n	Diameter Senggang	Av	S	Cek S
											Vs1	Vs2	Ve Kiri	Ve Kanan	Ve Kiri	Ve Kanan														
B3 Lantai Atap grid 1/B-C	Tumpuan Kiri (+)	402.12386	46.699	33.1161	94.42	68.71	46.6989	33.116	94.42	68.71	57.236	57.236	38.09131302	76.38100602	76.38100602	38.091313	0	101.84	342	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kiri (-)	567.057474																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	567.057474																												
B3 Lantai Atap grid 2/B-C	Tumpuan Kiri (+)	402.12386	33.116	33.1161	68.71	68.71	33.1161	33.116	68.71	68.71	48.215	48.215	15.47049261	80.95854273	80.95854273	15.4704926	0	107.94	342	AMAN	2	10	157.08	200	75	2	10	157.08	200	75
	Tumpuan Kiri (-)	402.12386																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												
B3 Lantai Atap grid 1/C-D	Tumpuan Kiri (+)	402.12386	33.116	33.1161	68.71	68.71	33.1161	33.116	68.71	68.71	56.086	56.086	39.62842516	72.54412616	72.54412616	39.6284252	0	96.726	342	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	402.12386																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												
B3 Lantai Atap Tangga	Tumpuan Kiri (+)	402.12386	33.116	33.1161	68.71	68.71	33.1161	33.116	68.71	68.71	56.086	56.086	39.62842516	72.54412616	72.54412616	39.6284252	0	96.726	342	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	402.12386																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												
B3 Lantai Atap Lift	Tumpuan Kiri (+)	402.12386	33.116	33.1161	68.71	68.71	33.1161	33.116	68.71	68.71	83.28	83.28	67.64753793	98.91170493	98.91170493	67.6475379	0	131.88	342	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	402.12386																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												
B3 Lantai Atap grid C/1-2	Tumpuan Kiri (+)	402.12386	33.116	33.1161	68.71	68.71	33.1161	33.116	68.71	68.71	83.28	83.28	61.17191274	105.3873301	105.3873301	61.1719127	0	140.52	342	AMAN	2	10	157.08	150	75	2	10	157.08	150	75
	Tumpuan Kiri (-)	402.12386																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												
B3 Lantai Atap grid C/2-3	Tumpuan Kiri (+)	402.12386	33.116	33.1161	68.71	68.71	33.1161	33.116	68.71	68.71	51.853	51.853	34.2938655	69.41283289	69.41283289	34.2938655	0	92.55	342	AMAN	2	10	157.08	225	75	2	10	157.08	225	75
	Tumpuan Kiri (-)	402.12386																												
	Tumpuan Kanan (+)	402.12386																												
	Tumpuan Kanan (-)	402.12386																												

LAMPIRAN F Perhitungan Tulangan Utama Kolom Tiap Lantai



TULANGAN UTAMA KOLOM LANTAI 1-5 GRID A

Nama Kolom	Lokasi	Pu		eMC			eMB Goyang Kanan			Cek	eMB Goyang Kiri			Cek	p	As	As Terpasang	p terpasang
		Pu 1	Pu 2	Mc 1	Mc 2	eMc	Mc 1	Mc 2	eMb		Mc 1	Mc 2	eMb					
K1 Lantai 1 Grid A-1	Atas	818	665	564	537	1101	124.6651		124.6651	OKE	194.6675		194.6675	OKE	0.01	3600	3927	0.010908333
	Bawah	858		567		567				OKE				OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid A-1	Atas	624	466	523	492	1015	119.4851		119.4851	OKE	184.4495		184.4495	OKE	0.01	3600	3927	0.010908333
	Bawah	665	818	537	564	1101	124.6651		124.6651	OKE	194.6675		194.6675	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid A-1	Atas	425	246	482	444	926	108.2185		108.2185	OKE	184.4495		184.4495	OKE	0.01	3600	3927	0.010908333
	Bawah	466	624	491	523	1014	119.4851		119.4851	OKE	184.4495		184.4495	OKE	0.01	2025	3927	0.010908333
K2 Lantai 4 Grid A-1	Atas	269	93	199	174	373	84.1055		84.1055	OKE	119.4851		119.4851	OKE	0.01	2025	2268	0.011201135
	Bawah	246	425	198	224	422	108.2185		108.2185	OKE	184.4495		184.4495	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid A-1	Atas	70		168		168	61.73124		61.73124	OKE	61.73124		61.73124	OKE	0.01	2025	2268	0.011201135
	Bawah	93	269	174	199	373	84.1055		84.1055	OKE	119.4851		119.4851	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid A-3	Atas	1316	1052	651	604	1255	194.6675	113.3275	307.995	OKE	124.6651	194.6675	319.3326	OKE	0.01	3600	3927	0.010908333
	Bawah	1357		655		655				OKE				OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid A-3	Atas	1011	746	602	551	1153	108.2185	184.4495	292.668	OKE	119.4851	184.4495	303.9346	OKE	0.01	3600	3927	0.010908333
	Bawah	1052	1316	604	651	1255	194.6675	113.3275	307.995	OKE	124.6651	194.6675	319.3326	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid A-3	Atas	705	441	545	487	1032	184.4495	92.22477	276.6743	OKE	108.2185	184.4495	292.668	OKE	0.01	3600	3927	0.010908333
	Bawah	746	1011	551	602	1153	108.2185	184.4495	292.668	OKE	119.4851	184.4495	303.9346	OKE	0.01	2025	3927	0.010908333
K2 Lantai 4 Grid A-3	Atas	418	154	222	182	404	119.4851	84.1055	203.5906	OKE	84.1055	119.4851	203.5906	OKE	0.01	2025	2268	0.011201135
	Bawah	441	705	227	258	485	184.4495	92.22477	276.6743	OKE	108.2185	184.4495	292.668	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid A-3	Atas	131		180		180	61.73124	61.73124	123.4625	OKE	61.73124	61.73124	123.4625	OKE	0.01	2025	2268	0.011201135
	Bawah	154	418	182	222	404	119.4851	84.1055	203.5906	OKE	84.1055	119.4851	203.5906	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid A-4	Atas	1318	1054	651	608	1259	194.6675	124.6651	319.3326	OKE	113.3275	194.6675	307.995	OKE	0.01	3600	3927	0.010908333
	Bawah	1359		654		654				OKE				OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid A-4	Atas	1013	747	602	549	1151	184.4495	119.4851	303.9346	OKE	108.2185	184.4495	292.668	OKE	0.01	3600	3927	0.010908333
	Bawah	1054	1318	608	651	1259	119.4851	84.1055	203.5906	OKE	113.3275	194.6675	307.995	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid A-4	Atas	706	441	545	487	1032	184.4495	119.4851	303.9346	OKE	108.2185	184.4495	292.668	OKE	0.01	3600	3927	0.010908333
	Bawah	747	1013	549	602	1151	184.4495	119.4851	303.9346	OKE	108.2185	184.4495	292.668	OKE	0.01	2025	3927	0.010908333
K2 Lantai 4 Grid A-4	Atas	418	155	223	182	405	119.4851	84.1055	203.5906	OKE	84.1055	119.4851	203.5906	OKE	0.01	2025	2268	0.011201135
	Bawah	441	706	227	258	485	184.4495	119.4851	303.9346	OKE	108.2185	184.4495	292.668	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid A-4	Atas	132		179		179	61.73124	61.73124	123.4625	OKE	61.73124	61.73124	123.4625	OKE	0.01	2025	2268	0.011201135
	Bawah	155	418	182	223	405	119.4851	84.1055	203.5906	OKE	84.1055	119.4851	203.5906	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid A-5	Atas	816	663	564	534	1098	194.6675		194.6675	OKE	124.6651		124.6651	OKE	0.01	3600	3927	0.010908333
	Bawah	857		570		570				OKE			0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid A-5	Atas	623	466	525	492	1017	184.4495		184.4495	OKE	119.4851		119.4851	OKE	0.01	3600	3927	0.010908333
	Bawah	663	816	534	564	1098	194.6675		194.6675	OKE	124.6651		124.6651	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid A-5	Atas	425	269	486	445	931	184.4495		184.4495	OKE	119.4851		119.4851	OKE	0.01	3600	3927	0.010908333
	Bawah	466	623	492	525	1017	184.4495		184.4495	OKE	119.4851		119.4851	OKE	0.01	2025	3927	0.010908333
K2 Lantai 4 Grid A-5	Atas	246	94	198	170	368	119.4851		119.4851	OKE	84.1055		84.1055	OKE	0.01	2025	2268	0.011201135
	Bawah	269	425	199	225	424	184.4495		184.4495	OKE	119.4851		119.4851	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid A-5	Atas	71		168		168	61.73124		61.73124	OKE	61.73124		61.73124	OKE	0.01	2025	2268	0.011201135
	Bawah	94	246	170	198	368	119.4851		119.4851	OKE	84.1055		84.1055	OKE	0.01	2025	2268	0.011201135

TULANGAN UTAMA KOLOM LANTAI 1-5 GRID B

Nama Kolom	Lokasi	Pu		eMC			eMB Goyang Kanan			Cek	eMB Goyang Kiri			Cek	p	As	As Terpasang	p terpasang
		Pu 1	Pu 2	Mc 1	Mc 2	eMc	Mb 1	Mb 2	eMb		Mb 1	Mb 2	eMb					
K1 Lantai 1 Grid B-1	Atas	1306	932	649	584	1233	184.4495		184.4495	OKE	108.2185		108.2185	OKE	0.01	3600	3927	0.010908333
	Bawah	1346		653		653				OKE			0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid B-1	Atas	892	680	583	539	1122	108.2185		108.2185	OKE	210.5698		210.5698	OKE	0.01	3600	3927	0.010908333
	Bawah	932	1306	587	649	1236	184.4495		184.4495	OKE	108.2185		108.2185	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid B-1	Atas	640	420	529	482	1011	108.2185		108.2185	OKE	184.4495		184.4495	OKE	0.01	3600	3927	0.010908333
	Bawah	680	892	539	583	1122	108.2185		108.2185	OKE	210.5698		210.5698	OKE	0.01	2025	3927	0.010908333
K2 Lantai 4 Grid B-1	Atas	397	183	217	186	403	84.1055		84.1055	OKE	84.1055		84.1055	OKE	0.01	2025	2268	0.011201135
	Bawah	420	640	222	252	474	108.2185		108.2185	OKE	184.4495		184.4495	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid B-1	Atas	160		184		184	61.73124		61.73124	OKE	61.73124		61.73124	OKE	0.01	2025	2268	0.011201135
	Bawah	183	397	186	217	403	84.1055		84.1055	OKE	84.1055		84.1055	OKE	0.01	2025	2268	0.011201135
K3 Lantai 1 Grid B-2	Atas	689	522	138	148	286	108.2185	84.1055	192.324	OKE	108.2185	108.2185	216.4369	OKE	0.02	2450	3041	0.02482449
	Bawah	703		138		138				OKE				OKE	0.02	2450	3041	0.02482449
K3 Lantai 2 Grid B-2	Atas	508	390	149	153	302	108.2185	84.1055	192.324	OKE	108.2185	108.2185	216.4369	OKE	0.02	2450	3041	0.02482449
	Bawah	522	689	148	139	287	108.2185	84.1055	192.324	OKE	108.2185	108.2185	216.4369	OKE	0.02	2450	3041	0.02482449
K3 Lantai 3 Grid B-2	Atas	376	259	154	157	311	108.5891	84.1055	192.6946	OKE	87.55888	108.2185	195.7774	OKE	0.02	2450	3041	0.02482449
	Bawah	390	508	153	149	302	108.2185	84.1055	192.324	OKE	108.2185	108.2185	216.4369	OKE	0.02	2450	3041	0.02482449
K3 Lantai 4 Grid B-2	Atas	245	118	157	155	312	84.1055	84.1055	168.211	OKE	84.1055	84.1055	168.211	OKE	0.02	2450	3041	0.02482449
	Bawah	259	376	157	154	311	108.5891	84.1055	192.6946	OKE	84.1055	87.55888	171.6644	OKE	0.02	2450	3041	0.02482449
K3 Lantai 5 Grid B-2	Atas	104		155		155	61.73124	61.73124	123.4625	OKE	61.73124	61.73124	123.4625	OKE	0.02	2450	3041	0.02482449
	Bawah	118	245	155	157	312	84.1055	84.1055	168.211	OKE	84.1055	84.1055	168.211	OKE	0.02	2450	3041	0.02482449
K1 Lantai 1 Grid B-3	Atas	1816	1468	659	667	1326	184.4495	119.4851	303.9346	OKE	124.6651	194.6675	319.3326	OKE	0.01	3600	3927	0.010908333
	Bawah	1857		655		655				OKE				OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid B-3	Atas	1427	1079	660	616	1276	108.2185	119.4851	227.7035	OKE	108.2185	212.8801	321.0985	OKE	0.01	3600	3927	0.010908333
	Bawah	1468	1816	667	659	1326	184.4495	119.4851	303.9346	OKE	124.6651	194.6675	319.3326	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid B-3	Atas	1038	668	603	529	1132	108.2185	119.4851	227.7035	OKE	108.2185	179.6623	287.8808	OKE	0.01	3600	3927	0.010908333
	Bawah	1079	1427	616	660	1276	108.2185	119.4851	227.7035	OKE	108.2185	212.8801	321.0985	OKE	0.01	3600	3927	0.010908333
K2 Lantai 4 Grid B-3	Atas	645	274	252	202	454	150.4158	84.1055	234.5213	OKE	84.1055	150.4158	234.5213	OKE	0.01	2025	2268	0.011201135
	Bawah	668	1038	255	256	511	108.2185	119.4851	227.7035	OKE	108.2185	179.6623	287.8808	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid B-3	Atas	251		198		198	84.1055	61.73124	145.8367	OKE	61.73124	84.1055	145.8367	OKE	0.01	2025	2268	0.011201135
	Bawah	274	645	202	252	454	150.4158	84.1055	234.5213	OKE	84.1055	150.4158	234.5213	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid B-4	Atas	2224	1760	565	672	1237	194.6675	124.6651	319.3326	OKE	124.6651	227.3118	351.9769	OKE	0.01	3600	3927	0.010908333
	Bawah	2265		562		562				OKE				OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid B-4	Atas	1720	1267	677	644	1321	212.8801	119.4851	332.3651	OKE	119.4851	212.8801	332.3651	OKE	0.01	3600	3927	0.010908333
	Bawah	1760	2224	672	565	1237	194.6675	184.5	379.1675	OKE	124.6651	227.3118	351.9769	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid B-4	Atas	1227	772	637	552	1189	179.6623	119.4851	299.1474	OKE	119.4851	212.8801	332.3651	OKE	0.01	3600	3927	0.010908333
	Bawah	1267	1720	644	677	1321	212.8801	119.4851	332.3651	OKE	119.4851	212.8801	332.3651	OKE	0.01	3600	3927	0.010908333
K2 Lantai 4 Grid B-4	Atas	749	283	262	201	463	150.4158	84.1055	234.5213	OKE	84.1055	150.4158	234.5213	OKE	0.01	2025	2268	0.011201135
	Bawah	772	1227	264	230	494	179.6623	119.4851	299.1474	OKE	119.4851	212.8801	332.3651	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid B-4	Atas	260		199		199	84.1055	61.73124	145.8367	OKE	61.73124	84.1055	145.8367	OKE	0.01	2025	2268	0.011201135
	Bawah	283	749	201	262	463	150.4158	84.1055	234.5213	OKE	84.1055	150.4158	234.5213	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid B-5	Atas	1380	1103	657	616	1273	227.3118		227.3118	OKE	124.6651		124.6651	OKE	0.01	3600	3927	0.010908333
	Bawah	1420		661		661				OKE				OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid B-5	Atas	1063	787	612	557	1169	212.8801		212.8801	OKE	119.4851		119.4851	OKE	0.01	3600	3927	0.010908333
	Bawah	1103	1380	616	657	1273	227.3118		227.3118	OKE	124.6651		124.6651	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid B-5	Atas	746	468	553	489	1042	179.6623		179.6623	OKE	119.4851		119.4851	OKE	0.01	3600	3927	0.010908333
	Bawah	787	1063	557	612	1169	212.8801		212.8801	OKE	119.4851		119.4851	OKE	0.01	3600	3927	0.010908333
K2 Lantai 4 Grid B-5	Atas	445	165	227	185	412	150.4158		150.4158	OKE	84.1055		84.1055	OKE	0.01	2025	2268	0.011201135
	Bawah	468	746	229	262	491	179.6623		179.6623	OKE	119.4851		119.4851	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid B-5	Atas	142		181		181	84.1055		84.1055	OKE	61.73124		61.73124	OKE	0.01	2025	2268	0.011201135
	Bawah	165	445	185	227	412	150.4158		150.4158	OKE	84.1055		84.1055	OKE	0.01	2025	2268	0.011201135

TULANGAN UTAMA KOLOM LANTAI 1-5 GRID C

Nama Kolom	Lokasi	Pu		εMC			εMB Goyang Kanan			Cek	εMB Goyang Kiri			Cek	p	As	As Terpasang	p terpasang
		Pu 1	Pu 2	Mc 1	Mc 2	εMc	Mb 1	Mb 2	εMb		Mb 1	Mb 2	εMb					
K3 Lantai 1 Grid C-1	Atas	739	334	115	117	232	72.1973		72.1973	OKE	101.6227	0	101.6227	OKE	0.01	1225	1521	0.012412497
	Bawah	725		116		116			0	OKE			0	OKE	0.01	1225	1521	0.012412497
K3 Lantai 2 Grid C-1	Atas	320	251	116	108	224	101.6227		101.6227	OKE	101.6227		101.6227	OKE	0.01	1225	1521	0.012412497
	Bawah	334	739	117	115	232	72.1973		72.1973	OKE	101.6227	0	101.6227	OKE	0.01	1225	1521	0.012412497
K3 Lantai 3 Grid C-1	Atas	238	168	106	97	203	72.1973		72.1973	OKE	101.6227		101.6227	OKE	0.01	1225	1521	0.012412497
	Bawah	251	320	108	116	224	101.6227		101.6227	OKE	101.6227	0	101.6227	OKE	0.01	1225	1521	0.012412497
K3 Lantai 4 Grid C-1	Atas	154	84	96	89	185	72.1973		72.1973	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497
	Bawah	168	238	97	106	203	72.1973		72.1973	OKE	101.6227	0	101.6227	OKE	0.01	1225	1521	0.012412497
K3 Lantai 5 Grid C-1	Atas	70		87		87	53.28664		53.28664	OKE	53.28664		53.28664	OKE	0.01	1225	1521	0.012412497
	Bawah	84	154	89	96	185	72.1973		72.1973	OKE	72.1973	0	72.1973	OKE	0.01	1225	1521	0.012412497
K3 Lantai 1 Grid C-2	Atas	645	506	140	148	288	101.6227	72.1973	173.82	OKE	101.6227	101.6227	203.2455	OKE	0.02	2450	3041	0.02482449
	Bawah	659		140		140			0	OKE				OKE	0.02	2450	3041	0.02482449
K3 Lantai 2 Grid C-2	Atas	493	373	148	154	302	101.6227	72.1973	173.82	OKE	72.1973	101.6227	173.82	OKE	0.02	2450	3041	0.02482449
	Bawah	506	645	148	140	288	101.6227	72.1973	173.82	OKE	101.6227	101.6227	203.2455	OKE	0.02	2450	3041	0.02482449
K3 Lantai 3 Grid C-2	Atas	359	232	155	157	312	101.6227	72.1973	173.82	OKE	101.6227	101.6227	203.2455	OKE	0.02	2450	3041	0.02482449
	Bawah	373	493	154	149	303	101.6227	72.1973	173.82	OKE	72.1973	101.6227	173.82	OKE	0.02	2450	3041	0.02482449
K3 Lantai 4 Grid C-2	Atas	219	94	158	153	311	72.1973	72.1973	144.3946	OKE	72.1973	72.1973	144.3946	OKE	0.02	2450	3041	0.02482449
	Bawah	232	359	157	155	312	101.6227	72.1973	173.82	OKE	101.6227	101.6227	203.2455	OKE	0.02	2450	3041	0.02482449
K3 Lantai 5 Grid C-2	Atas	81		152		152	53.28664	53.28664	106.5733	OKE	53.28664	53.28664	106.5733	OKE	0.02	2450	3041	0.02482449
	Bawah	94	219	153	158	311	72.1973	72.1973	144.3946	OKE	72.1973	72.1973	144.3946	OKE	0.02	2450	3041	0.02482449
K3 Lantai 1 Grid C-3	Atas	782	607	114	125	239	108.5891		108.5891	OKE	76.8415		76.8415	OKE	0.01	1225	1521	0.012412497
	Bawah	796		114		114			0	OKE			0	OKE	0.01	1225	1521	0.012412497
K3 Lantai 2 Grid C-3	Atas	593	447	126	128	254	101.6227		101.6227	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497
	Bawah	607	782	125	114	239	108.5891		108.5891	OKE	76.8415		76.8415	OKE	0.01	1225	1521	0.012412497
K3 Lantai 3 Grid C-3	Atas	433	288	126	111	237	101.6227		101.6227	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497
	Bawah	447	593	128	126	254	101.6227		101.6227	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497
K3 Lantai 4 Grid C-3	Atas	274	127	110	93	203	101.6227		101.6227	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497
	Bawah	288	433	111	126	237	101.6227		101.6227	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497
K3 Lantai 5 Grid C-3	Atas	113		92		92	53.28664		53.28664	OKE	53.28664		53.28664	OKE	0.01	1225	1521	0.012412497
	Bawah	127	274	93	110	203	101.6227		101.6227	OKE	72.1973		72.1973	OKE	0.01	1225	1521	0.012412497

TULANGAN UTAMA KOLOM LANTAI 1-5 GRID C

Nama Kolom	Lokasi	Pu		εMC			εMB Goyang Kanan			Cek	εMB Goyang Kiri			Cek	p	As	As Terpasang	p terpasang
		Pu 1	Pu 2	Mc 1	Mc 2	εMc	Mb 1	Mb 2	εMb		Mb 1	Mb 2	εMb					
K1 Lantai 1 Grid D-1	Atas	626	412	525	480	1005	113.3275		113.3275	OKE	194.6675		194.6675	OKE	0.01	3600	3927	0.010908333
	Bawah	667		533		533			0	OKE			0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid D-1	Atas	371	292	466	453	919	150.3324		150.3324	OKE	212.8801		212.8801	OKE	0.01	3600	3927	0.010908333
	Bawah	412	626	480	525	1005	113.3275		113.3275	OKE	194.6675		194.6675	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid D-1	Atas	251	171	441	426	867	108.2185		108.2185	OKE	179.6623		179.6623	OKE	0.01	3600	3927	0.010908333
	Bawah	292	371	453	466	919	150.3324		150.3324	OKE	212.8801		212.8801	OKE	0.01	2025	3927	0.010908333
K2 Lantai 4 Grid D-1	Atas	148	68	181	166	347	84.1055		84.1055	OKE	150.4158		150.4158	OKE	0.01	2025	2268	0.011201135
	Bawah	171	251	185	199	384	108.2185		108.2185	OKE	179.6623		179.6623	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid D-1	Atas	45		164		164	61.73124		61.73124	OKE	61.73124		61.73124	OKE	0.01	2025	2268	0.011201135
	Bawah	68	148	166	181	347	84.1055		84.1055	OKE	150.4158		150.4158	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid D-3	Atas	1131	920	620	584	1204	194.6675	113.3275	307.995	OKE	157.9959	194.6675	352.6634	OKE	0.01	1225	3927	0.010908333
	Bawah	1172		631		631			0	OKE			0	OKE	0.01	1225	3927	0.010908333
K1 Lantai 2 Grid D-3	Atas	880	655	578	528	1106	212.8801	150.3324	363.2125	OKE	150.3324	212.8801	363.2125	OKE	0.01	1225	3927	0.010908333
	Bawah	920	1131	584	620	1204	194.6675	113.3275	307.995	OKE	157.9959	194.6675	352.6634	OKE	0.01	1225	3927	0.010908333
K1 Lantai 3 Grid D-3	Atas	615	386	520	476	996	179.6623	108.2185	287.8808	OKE	150.3324	179.6623	329.9948	OKE	0.01	1225	3927	0.010908333
	Bawah	655	880	528	578	1106	212.8801	150.3324	363.2125	OKE	150.3324	212.8801	363.2125	OKE	0.01	1225	3927	0.010908333
K2 Lantai 4 Grid D-3	Atas	363	139	215	181	396	150.4158	84.1055	234.5213	OKE	119.4851	150.4158	269.9009	OKE	0.01	1225	2268	0.011201135
	Bawah	386	615	218	250	468	179.6623	108.2185	287.8808	OKE	150.3324	179.6623	329.9948	OKE	0.01	1225	2268	0.011201135
K2 Lantai 5 Grid D-3	Atas	116		177		177	61.73124		123.4625	OKE			0	OKE	0.01	1225	2268	0.011201135
	Bawah	139	363	181	215	396	150.4158	84.1055	234.5213	OKE	119.4851	150.4158	269.9009	OKE	0.01	1225	2268	0.011201135
K1 Lantai 1 Grid D-4	Atas	1287	1029	645	603	1248	194.6675	157.9959	352.6634	OKE	0	0	0	OKE	0.01	3600	3927	0.010908333
	Bawah	1328		653		653			0	OKE			0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid D-4	Atas	988	729	594	543	1137	212.8801	150.3324	363.2125	OKE			0	OKE	0.01	3600	3927	0.010908333
	Bawah	1029	1287	603	645	1248	194.6675	157.9959	352.6634	OKE	0	0	0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid D-4	Atas	688	430	534	484	1018	179.6623	108.2185	287.8808	OKE			0	OKE	0.01	3600	3927	0.010908333
	Bawah	729	988	543	594	1137	212.8801	150.3324	363.2125	OKE	0	0	0	OKE	0.01	3600	3927	0.010908333
K2 Lantai 4 Grid D-4	Atas	407	151	222	183	405	150.4158	84.1055	234.5213	OKE			0	OKE	0.01	2025	2268	0.011201135
	Bawah	430	688	224	258	482	179.6623	108.2185	287.8808	OKE	0	0	0	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid D-4	Atas	129		176		176	61.73124		123.4625	OKE			0	OKE	0.01	2025	2268	0.011201135
	Bawah	151	407	183	222	405	150.4158	84.1055	234.5213	OKE	0	0	0	OKE	0.01	2025	2268	0.011201135
K1 Lantai 1 Grid D-5	Atas	804	653	562	530	1092	194.6675		194.6675	OKE	0	0	0	OKE	0.01	3600	3927	0.010908333
	Bawah	845		568		568			0	OKE			0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 2 Grid D-5	Atas	613	458	521	490	1011	212.8801		212.8801	OKE			0	OKE	0.01	3600	3927	0.010908333
	Bawah	653	804	530	562	1092	194.6675		194.6675	OKE	0	0	0	OKE	0.01	3600	3927	0.010908333
K1 Lantai 3 Grid D-5	Atas	418	264	482	449	931	179.6623		179.6623	OKE			0	OKE	0.01	3600	3927	0.010908333
	Bawah	458	613	490	521	1011	212.8801		212.8801	OKE	0	0	0	OKE	0.01	3600	3927	0.010908333
K2 Lantai 4 Grid D-5	Atas	242	92	198	172	370	150.4158		150.4158	OKE			0	OKE	0.01	2025	2268	0.011201135
	Bawah	264	418	198	223	421	179.6623		179.6623	OKE	0	0	0	OKE	0.01	2025	2268	0.011201135
K2 Lantai 5 Grid D-5	Atas	69		166		166	61.73124		61.73124	OKE			0	OKE	0.01	2025	2268	0.011201135
	Bawah	92	242	172	198	370	150.4158		150.4158	OKE	0	0	0	OKE	0.01	2025	2268	0.011201135

TULANGAN SENGGANG KOLOM

Nama Kolom	Lokasi	Pu	Mpr Kolom	Ash	Ash Pakai	Diameter Sengkang	Kaki Sengkang	Io	Ve	Struktur Bergoyang Ke Kanan					Struktur Bergoyang Ke Kiri					Vc	Cek S Desain	Vs	Cek	Area Lapangan			
										Mpr1 Balok	Mpr 2 Balok	E Mnb	k	Mpr Kolom Balok	Vu	Mpr1 Balok	Mpr 2 Balok	E Mnb	k					Mpr Kolom Balok	Vu	S max	S Pakai
K1 Lantai 1 Grid A-1	Atas	818	700	307.692308	398.1968688	13	3	600	396.2028169	158.74		158.74	0.5	79	22	260.55		260.55	0.5	130	37	286474.3	100	802.7649	OKE	150	150
	Bawah	858	707										0						0								
K1 Lantai 2 Grid A-1	Atas	624	663	307.692308	398.1968688	13	3	600	375.715493	158.74		158.74	0.5	79	45	260.55		260.55	0.5	130	73	277100	100	802.7649	OKE	150	150
	Bawah	665	671										0.5	79					0.5	130							
K1 Lantai 3 Grid A-1	Atas	425	623	307.692308	398.1968688	13	3	600	353.3690141	142.77		142.77	0.76	108	51	260.55		260.55	0.76	198	92	267434.3	100	802.7649	OKE	150	150
	Bawah	466	631										0.5	71					0.5	130							
K2 Lantai 4 Grid A-1	Atas	269	256	316.602317	398.1968688	13	3	450	143.1323944	109.30		109.30	0.5	55	23	158.74		158.74	0.5	79	33	150765.7	100	602.0737	OKE	150	150
	Bawah	246	252										0.24	26					0.24	38							
K2 Lantai 5 Grid A-1	Atas	70	225	316.602317	398.1968688	13	3	450	128.0225352	79.26		79.26	1.0	79	33	79.26		79.26	1.0	79	33	0	100	602.0737	OKE	150	150
	Bawah	93	229										0.5	40					0.5	40							
K1 Lantai 1 Grid A-3	Atas	1316	763	307.692308	398.1968688	13	3	600	430.9830986	260.55	142.77	403.32	0.5	202	57	158.74	260.55	419.29	0.5	210	59	310711.4	100	802.7649	OKE	150	150
	Bawah	1357	767										0						0								
K1 Lantai 2 Grid A-3	Atas	1011	729	307.692308	398.1968688	13	3	600	411.7915493	260.55	142.77	403.32	0.5	202	114	158.74	260.55	419.29	0.5	210	118	295897.1	100	802.7649	OKE	150	150
	Bawah	1052	733										0.5	202					0.5	210							
K1 Lantai 3 Grid A-3	Atas	705	679	307.692308	398.1968688	13	3	600	384.4478873	260.55	142.77	403.32	0.76	306	143	142.77	260.55	403.32	0.76	306	143	281034.3	100	802.7649	OKE	150	150
	Bawah	746	686										0.5	202					0.5	202							
K2 Lantai 4 Grid A-3	Atas	418	277	316.602317	398.1968688	13	3	450	156.8140845	158.74	109.3	268.04	0.5	134	56	109.3	158.74	268.04	0.5	134	56	159120	100	602.0737	OKE	150	150
	Bawah	441	280										0.24	64					0.24	64							
K2 Lantai 5 Grid A-3	Atas	131	235	316.602317	398.1968688	13	3	450	133.3690141	79.26	79.26	158.52	1.0	159	67	79.26	79.26	158.52	1.0	159	67	145180	100	602.0737	OKE	150	150
	Bawah	154	239										0.5	79					0.5	79							
K1 Lantai 1 Grid A-4	Atas	1318	763	307.692308	398.1968688	13	3	600	431.1042254	260.55	158.74	419.29	0.5	210	59	142.77	260.55	403.32	0.5	202	57	310808.6	100	802.7649	OKE	150	150
	Bawah	1359	767										0						0								
K1 Lantai 2 Grid A-4	Atas	1013	729	307.692308	398.1968688	13	3	600	411.9211268	260.55	158.74	419.29	0.5	210	118	142.77	260.55	403.32	0.5	202	114	295994.3	100	802.7649	OKE	150	150
	Bawah	1054	733										0.5	210					0.5	202							
K1 Lantai 3 Grid A-4	Atas	706	679	307.692308	398.1968688	13	3	600	384.5521127	260.55	158.74	419.29	0.76	319	149	142.77	260.55	403.32	0.76	306	143	281082.9	100	802.7649	OKE	150	150
	Bawah	747	686										0.5	210					0.5	202							
K2 Lantai 4 Grid A-4	Atas	418	277	316.602317	398.1968688	13	3	450	156.9014085	158.74	109.3	268.04	0.5	134	56	109.3	158.74	268.04	0.5	134	56	159120	100	602.0737	OKE	150	150
	Bawah	441	280										0.24	64					0.24	64							
K2 Lantai 5 Grid A-4	Atas	132	235	316.602317	398.1968688	13	3	450	133.4591549	79.26	79.26	158.52	1.0	159	67	79.26	79.26	158.52	1.0	159	67	145228.6	100	602.0737	OKE	150	150
	Bawah	155	239										0.5	79					0.5	79							
K1 Lantai 1 Grid A-5	Atas	816	699	307.692308	398.1968688	13	3	600	396.0478873	260.55		260.55	0.5	130	37	158.74		158.74	0.5	79	22	286425.7	100	802.7649	OKE	150	150
	Bawah	857	707										0						0								
K1 Lantai 2 Grid A-5	Atas	623	663	307.692308	398.1968688	13	3	600	375.5521127	260.55		260.55	0.5	130	73	158.74		158.74	0.5	79	45	277002.9	100	802.7649	OKE	150	150
	Bawah	663	670										0.5	130					0.5	79							
K1 Lantai 3 Grid A-5	Atas	425	623	307.692308	398.1968688	13	3	600	353.3690141	260.55		260.55	0.76	198	92	158.74		158.74	0.76	121	56	267434.3	100	802.7649	OKE	150	150
	Bawah	466	631										0.5	130					0.5	79							
K2 Lantai 4 Grid A-5	Atas	246	252	316.602317	398.1968688	13	3	450	143.0985915	158.74		158.74	0.5	79	33	109.3		109.30	0.5	55	23	150765.7	100	602.0737	OKE	150	150
	Bawah	269	256										0.24	38					0.24	26							
K2 Lantai 5 Grid A-5	Atas	71	226	316.602317	398.1968688	13	3	450	128.1070423	79.26		79.26	1.0	79	33	79.26		79.26	1.0	79	33	0	100	602.0737	OKE	150	150
	Bawah	94	229										0.5	40					0.5	40							

Nama Kolom	Lokasi	Pu	Mpr Kolom	Ash	Ash Pakai	Diameter Sengkang	Kaki Sengkang	Io	Ve	Struktur Bergoyang Ke Kanan					Struktur Bergoyang Ke Kiri					Vc	Cek S Desain	Vs	Cek	Area Lapangan			
										Mpr1 Balok	Mpr 2 Balok	E Mnb	k	Mpr Kolom Balok	Vu	Mpr1 Balok	Mpr 2 Balok	E Mnb	k					Mpr Kolom Balok	Vu	S max	S Pakai
K1 Lantai 1 Grid B-1	Atas	1306	762	307.692308	398.1968688	13	3	600	430.3323944	142.77		142.77	0.5	71	20	260.55		260.55	0.5	130	37	310177.1	100	802.7649	OKE	150	150
	Bawah	1346	766										0	0					0	0							
K1 Lantai 2 Grid B-1	Atas	892	713	307.692308	398.1968688	13	3	600	403.5577465	142.77		142.77	0.5	71	40	310.07		310.07	0.5	155	87	290068.6	100	802.7649	OKE	150	150
	Bawah	932	720										0.5	71					0.5	155							
K1 Lantai 3 Grid B-1	Atas	640	666	307.692308	398.1968688	13	3	600	377.4028169	142.77		142.77	0.76	108	51	260.55		260.55	0.76	198	92	277828.6	100	802.7649	OKE	150	150
	Bawah	680	674										0.5	71					0.5	130							
K2 Lantai 4 Grid B-1	Atas	397	274	316.602317	398.1968688	13	3	450	155.2056338	109.3		109.30	0.5	55	23	109.3		109.30	0.5	55	23	158100	100	602.0737	OKE	150	150
	Bawah	420	277										0.24	26					0.24	26							
K2 Lantai 5 Grid B-1	Atas	160	239	316.602317	398.1968688	13	3	450	135.8732394	79.26		79.26	1.0	79	33	79.26		79.26	1.0	79	33	0	100	602.0737	OKE	150	150
	Bawah	183	243										0.5	40					0.5	40							
K3 Lantai 1 Grid B-2	Atas	689	139	108.482143	157.0796327	10	2	450	77.97183099	260.55	109.3	369.85	0.5	185	52	142.77	260.55	403.32	0.5	202	57	117445.7	75	246.3009	OKE	150	150
	Bawah	703	138										0	0					0	0							
K3 Lantai 2 Grid B-2	Atas	508	143	108.482143	157.0796327	10	2	450	80.49577465	310.07	142.77	452.84	0.5	226	128	142.77	204.78	347.55	0.5	174	98	108654.3	75	246.3009	OKE	150	150
	Bawah	522	143										0.5	226					0.5	174							
K3 Lantai 3 Grid B-2	Atas	376	160	108.482143	157.0796327	10	2	450	89.26478873	260.55	142.77	403.32	0.50	202	114	142.77	204.78	347.55	0.50	174	98	102242.9	75	246.3009	OKE	150	150
	Bawah	390	157										0.5	202					0.5	174							
K3 Lantai 4 Grid B-2	Atas	245	176	108.482143	157.0796327	10	2	450	98.72957746	109.3	109.3	218.60	0.5	109	62	109.3	204.78	314.08	0.5	157	88	95880	75	246.3009	OKE	150	150
	Bawah	259	175										0.50	109					0.50	157							
K3 Lantai 5 Grid B-2	Atas	104	188	108.482143	157.0796327	10	2	450	105.7915493	79.26	79.26	158.52	1.0	159	67	79.26	109.3	188.56	1.0	189	80	89031.43	75	246.3009	OKE	150	150
	Bawah	118	187										0.5	79					0.5	94							
K1 Lantai 1 Grid B-3	Atas	1816	779	307.692308	398.1968688	13	3	600	436.7408451	260.55	158.74	419.29	0.5	210	59	109.3	260.55	369.85	0.5	185	52	334997.1	100	802.7649	OKE	150	150
	Bawah	1857	771										0	0					0	0							
K1 Lantai 2 Grid B-3	Atas	1427	775	307.692308	398.1968688	13	3	600	437.7915493	204.78	158.74	363.52	0.5	182	102	142.77	316.11	458.88	0.5	229	129	316102.9	100	802.7649	OKE	150	150
	Bawah	1468	779										0.5	182					0.5	229							
K1 Lantai 3 Grid B-3	Atas	1038	732	307.692308	398.1968688	13	3	600	413.515493	204.78	158.74	363.52	0.76	276	129	142.77	252.71	395.48	0.76	300	140	297208.6	100	802.7649	OKE	150	150
	Bawah	1079	736										0.5	182					0.5	198							
K2 Lantai 4 Grid B-3	Atas	645	299	316.602317	398.1968688	13	3	450	168.9070423	204.78	109.3	314.08	0.5	157	66	109.3	204.7	314.00	0.5	157	65	170145.7	100	602.0737	OKE	150	150
	Bawah	668	301										0.24	75					0.24	75							
K2 Lantai 5 Grid B-3	Atas	251	253	316.602317	398.1968688	13	3	450	143.5492958	109.3	79.26	188.56	1.0	189	80	79.26	109.3	188.56	1.0	189	80	151008.6	100	602.0737	OKE	150	150
	Bawah	274	256										0.5	94					0.5	94							
K1 Lantai 1 Grid B-4	Atas	2224	681	307.692308	398.1968688	13	3	600	383.0704225	260.55	158.74	419.29	0.5	210	59	158.74	316.11	474.85	0.5	237	67	354814.3	100	802.7649	OKE	150	150
	Bawah	2265	679										0	0					0	0							
K1 Lantai 2 Grid B-4	Atas	1720	797	307.692308	398.1968688	13	3	600	446.8112676	316.11	158.74	474.85	0.5	237	134	158.74	316.11	474.85	0.5	237	134	330285.7	100	802.7649	OKE	150	150
	Bawah	1760	790										0.5	237					0.5	237							
K1 Lantai 3 Grid B-4	Atas	1227	753	307.692308	398.1968688	13	3	600	425.4169014	252.71	158.74	411.45	0.76	313	146	158.74	252.71	411.45	0.76	313	146	306340	100	802.7649	OKE	150	150
	Bawah	1267	757										0.5	206					0.5	206							
K2 Lantai 4 Grid B-4	Atas	749	308	316.602317	398.1968688	13	3	450	173.7887324	204.7	109.3	314.00	0.5	157	65	109.3	204.7	314.00	0.5	157	65	175197.1	100	602.0737	OKE	150	150
	Bawah	772	309										0.24	75					0.24	75							
K2 Lantai 5 Grid B-4	Atas	260	254	316.602317	398.1968688	13	3	450	144.2901408	109.3	79.26	188.56	1.0	189	80	79.26	109.3	188.56	1.0	189	80	151445.7	100	602.0737	OKE	150	150
	Bawah	283	258										0.5	94					0.5	94							
K1 Lantai 1 Grid B-5	Atas	1380	770	307.692308	398.1968688	13	3	600	434.8929577	316.11		316.11	0.5	158	45	158.74		158.74	0.5	79	22	313771.4	100	802.7649	OKE	150	150
	Bawah	1420	774										0	0					0	0							
K1 Lantai 2 Grid B-5	Atas	1063	735	307.692308	398.1968688	13	3	600	415.0732394	316.11		316.11	0.5	158	89	158.74		158.74	0.5	79	45	298374.3	100	802.7649	OKE	150	150
	Bawah	1103	739										0.5	158					0.5	79							
K1 Lantai 3 Grid B-5	Atas	746	686	307.692308	398.1968688	13	3	600	388.7802817	252.71		252.71	0.76	192	90	158.74		158.74	0.76	121	56	283025.7	100	802.7649	OKE	150	150
	Bawah	787	694										0.5	126					0.5	79							
K2 Lantai 4 Grid B-5	Atas	445	280	316.602317	398.1968688	13	3	450	158.8507042	204.7		204.70	0.5	102	43	109.3		109.30	0.5	55	23	160431.4	100	602.0737	OKE	150	150
	Bawah	468	283										0.24	49					0.24	26							
K2 Lantai 5 Grid B-5	Atas	142	237	316.602317	398.1968688	13	3	450	134.3239437	109.3		109.30	1.0	109	46	79.26		79.26	1.0	79	33	0	100	602.0737	OKE	150	150
	Bawah	165	240										0.5	55					0.5	40							

Nama Kolom	Lokasi	Pu	Mpr Kolom	Ash	Ash Pakai	Diameter Senggang	Kaki Senggang	Io	Ve	Struktur Bergoyang Ke Kanan						Struktur Bergoyang Ke Kiri						Vc	Cek S Desain	Vs	Cek	Area Lapangan	
										Mpr1 Balok	Mpr 2 Balok	E Mnb	k	Mpr Kolom Balok	Vu	Mpr1 Balok	Mpr 2 Balok	E Mnb	k	Mpr Kolom Balok	Vu					S max	S Pakai
K3 Lantai 1 Grid C-1	Atas	739	116	108.482143	157.0796327	10	2	450	65.23661972	94.42		94.42	0.5	47	13	136.41		136.41	0.5	68	19	119194.3	75	246.3009	OKE	150	150
	Bawah	725	116										0	0													
K3 Lantai 2 Grid C-1	Atas	320	142	108.482143	157.0796327	10	2	450	80.43661972	136.41		136.41	0.5	68	38	136.41		136.41	0.5	68	38	99522.86	75	246.3009	OKE	150	150
	Bawah	334	143										0.5	68													
K3 Lantai 3 Grid C-1	Atas	238	133	108.482143	157.0796327	10	2	450	75.56338028	94.42		94.42	0.50	47	27	136.41		136.41	0.50	68	38	95491.43	75	246.3009	OKE	150	150
	Bawah	251	135										0.5	47													
K3 Lantai 4 Grid C-1	Atas	154	124	108.482143	157.0796327	10	2	450	70.4028169	94.42		94.42	0.5	47	27	94.42		94.42	0.5	47	27	91460	75	246.3009	OKE	150	150
	Bawah	168	126										0.50	47													
K3 Lantai 5 Grid C-1	Atas	70	115	108.482143	157.0796327	10	2	450	65.02535211	68.71		68.71	1.0	69	29	68.71		68.71	1.0	69	29	0	75	246.3009	OKE	150	150
	Bawah	84	116										0.5	34													
K3 Lantai 1 Grid C-2	Atas	645	140	108.482143	157.0796327	10	2	450	78.5943662	136.41	94.42	230.83	0.5	115	33	94.42	136.41	230.83	0.5	115	33	115308.6	75	246.3009	OKE	150	150
	Bawah	659	139										0	0													
K3 Lantai 2 Grid C-2	Atas	493	143	108.482143	157.0796327	10	2	450	80.70985915	136.41	94.42	230.83	0.5	115	65	136.41	136.41	272.82	0.5	136	77	107877.1	75	246.3009	OKE	150	150
	Bawah	506	143										0.5	115													
K3 Lantai 3 Grid C-2	Atas	359	162	108.482143	157.0796327	10	2	450	90.74929577	136.41	94.42	230.83	0.50	115	65	94.42	136.41	230.83	0.50	115	65	101417.1	75	246.3009	OKE	150	150
	Bawah	373	160										0.5	115													
K3 Lantai 4 Grid C-2	Atas	219	179	108.482143	157.0796327	10	2	450	100.2394366	94.42	94.42	188.84	0.5	94	53	94.42	136.41	230.83	0.5	115	65	94568.57	75	246.3009	OKE	150	150
	Bawah	232	177										0.50	94													
K3 Lantai 5 Grid C-2	Atas	81	190	108.482143	157.0796327	10	2	450	106.7746479	68.71		68.71	1.0	69	29	68.71	68.71	137.42	1.0	137	58	0	75	246.3009	OKE	150	150
	Bawah	94	189										0.5	34													
K3 Lantai 1 Grid C-3	Atas	782	115	108.482143	157.0796327	10	2	450	64.55492958	136.41		136.41	0.5	68	19	94.42		94.42	0.5	47	13	121962.9	75	246.3009	OKE	150	150
	Bawah	796	114										0	0													
K3 Lantai 2 Grid C-3	Atas	593	118	108.482143	157.0796327	10	2	450	66.65352113	136.41		136.41	0.5	68	38	94.42		94.42	0.5	47	27	112782.9	75	246.3009	OKE	150	150
	Bawah	607	118										0.5	68													
K3 Lantai 3 Grid C-3	Atas	433	153	108.482143	157.0796327	10	2	450	86.67887324	136.41		136.41	0.50	68	38	94.42		94.42	0.50	47	27	105011.4	75	246.3009	OKE	150	150
	Bawah	447	155										0.5	68													
K3 Lantai 4 Grid C-3	Atas	274	137	108.482143	157.0796327	10	2	450	77.74647887	136.41		136.41	0.5	68	38	94.42		94.42	0.5	47	27	97288.57	75	246.3009	OKE	150	150
	Bawah	288	139										0.50	68													
K3 Lantai 5 Grid C-3	Atas	113	120	108.482143	157.0796327	10	2	450	67.8028169	68.71		68.71	1.0	69	29	68.71		68.71	1.0	69	29	0	75	246.3009	OKE	150	150
	Bawah	127	121										0.5	34													

Nama Kolom	Lokasi	Pu	Mpr Kolom	Ash	Ash Pakai	Diameter Sengkang	Kaki Sengkang	Io	Ve	Struktur Bergoyang Ke Kanan					Struktur Bergoyang Ke Kiri					Vc	Cek S Desain	Vs	Cek	Area Lapangan			
										Mpr1 Balok	Mpr 2 Balok	E Mnb	k	Mpr Kolom Balok	Vu	Mpr1 Balok	Mpr 2 Balok	E Mnb	k					Mpr Kolom Balok	Vu	S max	S Pakai
K1 Lantai 1 Grid D-1	Atas	626	663	307.692308	398.1968688	13	3	600	375.9323944	142.77		142.77	0.5	71	20	260.55		260.55	0.5	130	37	277197.1	100	802.7649	OKE	150	150
	Bawah	667	671										0	0					0	0							
K1 Lantai 2 Grid D-1	Atas	371	612	307.692308	398.1968688	13	3	600	347.0929577	204.78		204.78	0.5	102	58	316.11		316.11	0.5	158	89	0	100	802.7649	OKE	150	150
	Bawah	412	620										0.5	102					0.5	158							
K1 Lantai 3 Grid D-1	Atas	251	586	307.692308	398.1968688	13	3	600	332.8507042	142.77		142.77	0.76	108	51	252.71		252.71	0.76	192	90	0	100	802.7649	OKE	150	150
	Bawah	292	595										0.5	71					0.5	126							
K2 Lantai 4 Grid D-1	Atas	148	238	316.602317	398.1968688	13	3	450	134.8422535	109.3		109.30	0.5	55	23	204.7		204.70	0.5	102	43	0	100	602.0737	OKE	150	150
	Bawah	171	241										0.24	26					0.24	49							
K2 Lantai 5 Grid D-1	Atas	45	221	316.602317	398.1968688	13	3	450	125.7943662	79.26		79.26	1.0	79	33	116.27		116.27	1.0	116	49	0	100	602.0737	OKE	150	150
	Bawah	68	225										0.5	40					0.5	58							
K1 Lantai 1 Grid D-3	Atas	1131	742	307.692308	398.1968688	13	3	600	419.4140845	260.55	142.77	403.32	0.5	202	57	142.77	260.55	403.32	0.5	202	57	301725.7	100	802.7649	OKE	150	150
	Bawah	1172	747										0	0					0	0							
K1 Lantai 2 Grid D-3	Atas	880	711	307.692308	398.1968688	13	3	600	402.4873239	316.11	204.78	520.89	0.5	260	147	204.78	316.11	520.89	0.5	260	147	289485.7	100	802.7649	OKE	150	150
	Bawah	920	718										0.5	260					0.5	260							
K1 Lantai 3 Grid D-3	Atas	615	661	307.692308	398.1968688	13	3	600	374.6788732	252.71	142.77	395.48	0.76	300	140	142.77	252.71	395.48	0.76	300	140	276614.3	100	802.7649	OKE	150	150
	Bawah	655	669										0.5	198					0.5	198							
K2 Lantai 4 Grid D-3	Atas	363	269	316.602317	398.1968688	13	3	450	152.5690141	204.7	109.3	314.00	0.5	157	65	109.3	204.7	314.00	0.5	157	65	156448.6	100	602.0737	OKE	150	150
	Bawah	386	272										0.24	75					0.24	75							
K2 Lantai 5 Grid D-3	Atas	116	233	316.602317	398.1968688	13	3	450	132.0647887	116.27	79.26	195.53	1.0	196	83	79.26	79.26	158.52	1.0	159	67	144451.4	100	602.0737	OKE	150	150
	Bawah	139	236										0.5	98					0.5	79							
K1 Lantai 1 Grid D-4	Atas	1287	760	307.692308	398.1968688	13	3	600	429.1859155	260.55	204.78	465.33	0.5	233	66	142.77	260.55	403.32	0.5	202	57	309302.9	100	802.7649	OKE	150	150
	Bawah	1328	764										0	0					0	0							
K1 Lantai 2 Grid D-4	Atas	988	726	307.692308	398.1968688	13	3	600	410.3211268	316.11	204.78	520.89	0.5	260	147	204.78	316.11	520.89	0.5	260	147	294780	100	802.7649	OKE	150	150
	Bawah	1029	731										0.5	260					0.5	260							
K1 Lantai 3 Grid D-4	Atas	688	675	307.692308	398.1968688	13	3	600	382.6338028	252.71	142.77	395.48	0.76	300	140	142.77	252.71	395.48	0.76	300	140	280208.6	100	802.7649	OKE	150	150
	Bawah	729	683										0.5	198					0.5	198							
K2 Lantai 4 Grid D-4	Atas	407	275	316.602317	398.1968688	13	3	450	155.9746479	204.7	109.3	314.00	0.5	157	65	109.3	204.7	314.00	0.5	157	65	158585.7	100	602.0737	OKE	150	150
	Bawah	430	278										0.24	75					0.24	75							
K2 Lantai 5 Grid D-4	Atas	129	235	316.602317	398.1968688	13	3	450	133.1521127	79.26	79.26	158.52	1.0	159	67	79.26	79.26	158.52	1.0	159	67	145034.3	100	602.0737	OKE	150	150
	Bawah	151	238										0.5	79					0.5	79							
K1 Lantai 1 Grid D-5	Atas	804	697	307.692308	398.1968688	13	3	600	394.8112676	260.55		260.55	0.5	130	37	204.78		204.78	0.5	102	29	285842.9	100	802.7649	OKE	150	150
	Bawah	845	705										0	0					0	0							
K1 Lantai 2 Grid D-5	Atas	613	661	307.692308	398.1968688	13	3	600	374.456338	316.11		316.11	0.5	158	89	204.78		204.78	0.5	102	58	276517.1	100	802.7649	OKE	150	150
	Bawah	653	669										0.5	158					0.5	102							
K1 Lantai 3 Grid D-5	Atas	418	622	307.692308	398.1968688	13	3	600	352.5042254	252.71		252.71	0.76	192	90	142.77		142.77	0.76	108	51	267045.7	100	802.7649	OKE	150	150
	Bawah	458	630										0.5	126					0.5	71							
K2 Lantai 4 Grid D-5	Atas	242	252	316.602317	398.1968688	13	3	450	142.7605634	204.7		204.70	0.5	102	43	109.3		109.30	0.5	55	23	150522.9	100	602.0737	OKE	150	150
	Bawah	264	255										0.24	49					0.24	26							
K2 Lantai 5 Grid D-5	Atas	69	225	316.602317	398.1968688	13	3	450	127.9323944	79.26		79.26	1.0	79	33	79.26		79.26	1.0	79	33	0	100	602.0737	OKE	150	150
	Bawah	92	229										0.5	40					0.5	40							

LAMPIRAN G Perhitungan Daya Dukung Tiang Pancang dan Kebutuhan Tiang pada Keseluruhan Pondasi



DATA P IJIN										
Kedalaman (m)	Li (m)	Jenis Tanah	N-SPT	qc (t/m2)	Ap	Ast	Fi	li.fi	Eli.fi	Pa
1,5	1.5	lanau	15	300	0.125664	1.256637	12	18	18	17.09026
3	1.5	lanau	15	300	0.125664	1.256637	12	18	36	21.61416
4,5	1.5	lanau	15	300	0.125664	1.256637	12	18	54	26.13805
6	1.5	lanau	15	300	0.125664	1.256637	12	18	72	30.66194
7,5	1.5	lanau	15	300	0.125664	1.256637	12	18	90	35.18584
9	1.5	lanau	15	300	0.125664	1.256637	12	18	108	39.70973
10,5	1.5	lanau	15	300	0.125664	1.256637	12	18	126	44.23362
12	1.5	lanau	15	300	0.125664	1.256637	12	18	144	48.75752
13,5	1.5	lanau	15	300	0.125664	1.256637	12	18	162	53.28141
15	1.5	lanau	15	300	0.125664	1.256637	12	18	180	57.8053

PENENTUAN TIANG										
Nama Kolom	Axial	P ijin	n	Tiang yang dipakai	Jarak antar tiang	Jarak tiang ke pilecap	Tebal Pilecap	Pu + berat pilecap	Cek kembali n	Tiang yang dipakai
P1	682.074	578.05305	1.1799505	2	1.4	0.7	0.5	776.154	1.342704	2
P2	1061.205	578.05305	1.8358263	4	1.2	0.7	0.7	1223.445	2.116493	4
P3	1062.754	578.05305	1.838506	4	1.2	0.7	0.7	1224.994	2.119172	4
P4	681.186	578.05305	1.1784143	2	1.4	0.7	0.5	775.266	1.341168	2
P5	1050.7	578.05305	1.8176532	4	1.2	0.7	0.7	1212.94	2.09832	4
P6	1437.477	578.05305	2.4867562	4	1.2	0.7	0.7	1599.717	2.767422	4
P7	1742.93	578.05305	3.0151731	5	1	0.6	1	1988.69	3.440324	5
P8	1113.335	578.05305	1.9260084	4	1.2	0.7	0.7	1275.575	2.206675	4
P9	550.146	578.05305	0.9517223	2	1.4	0.7	0.5	644.226	1.114476	2
P10	932.887	578.05305	1.6138432	4	1.2	0.7	0.7	1095.127	1.89451	4
P11	1039.314	578.05305	1.7979561	4	1.2	0.7	0.7	1201.554	2.078622	4
P12	671.496	578.05305	1.1616512	2	1.4	0.7	0.5	765.576	1.324404	2

EFISIENSI KELOMPOK TIANG						
Tiang yang dipakai	arc tg (D/S)	m	n	Efisiensi Kelompok Tiang	P total	Cek
2	15.9454	2	1	0.9114144	1053.692	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
2	15.9454	2	1	0.9114144	1053.692	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
5	21.8	2	2	0.7577778	2190.179	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
2	15.9454	2	1	0.9114144	1053.692	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
4	18.435	2	2	0.7951667	1838.594	AMAN
2	15.9454	2	1	0.9114144	1053.692	AMAN

BEBAN MAKSIMUM SETIAP TIANG PADA KELOMPOK TIANG									
Nama Titik Pondasi	Tiang yang dipakai	Mx	My	P max (P1)	P max (P2)	P max (P3)	P max (P4)	P max (P5)	Cek
P1	2	270.512	314.763	365.9515	410.2025	0	0	0	Aman
P2	4	278.429	323.867	283.1423	317.2208	456.435	294.5018	0	Aman
P3	4	278.921	326.722	282.348	318.1988	457.659	294.2983	0	Aman
P4	2	266.11	322.025	359.6755	415.5905	0	0	0	Aman
P5	4	304.75	321.419	294.9005	307.4023	459.777	299.0678	0	Aman
P6	4	328.222	338.472	394.8043	402.4918	566.603	397.3668	0	Aman
P7	5	319.576	333.392	391.901	401.21	379.76	394.31	561.01	Aman
P8	4	308.345	337.478	304.3273	326.177	480.35	311.6105	0	Aman
P9	2	318.135	304.215	329.073	329.073	0	0	0	Aman
P10	4	338.335	307.252	281.5525	266.011	435.179	281.5525	0	Aman
P11	4	344.292	327.062	309.0035	296.081	468.227	304.696	0	Aman
P12	2	323.525	323.39	382.8555	382.7205	0	0	0	Aman

Perhitungan Momen dan Tulangan Pondasi

Perhitungan Momen Ultimate

Nama Tipe Pondasi	P total (+X)	P total (-X)	P total (+Y)	P total (-Y)	Q (Berat Pile Cap)	My arah (+X)	My arah (-X)	Mx arah (+Y)	Mx arah (-Y)
P1	962.22	786.211	793.111	955.32	122.88	863.916	687.907	694.807	857.016
P2	969.0945	792.171	797.296	963.9695	56.784	544.5471	438.393	441.468	541.4721
P3	776.154		776.154		47.04	477.4518		477.4518	

Perhitungan Tulangan Arah-X

Nama Tipe Pondasi	My	Mny	d	Rn	rasio	As	S	As Pakai	Pakai Tulangan
P1	863.916	959.906667	914	1.1490439	0.002817	2574.281	125	3041.062	D22-125
P2	544.5471	605.052333	615.5	1.5971173	0.003957	2435.798	100	2835.287	D19-100
P3	477.4518	530.502	415.5	3.0728755	0.00794	3299.07	100	3801.327	D22-100

Perhitungan Tulangan Arah-Y

Nama Tipe Pondasi	My	Mny	d	Rn	rasio	As	S	As Pakai	Pakai Tulangan
P1	857.016	952.24	914	1.1398666	0.002348	2146.292	125	3041.062	D22-125
P2	541.4721	601.635667	615.5	1.5880986	0.003934	2421.463	100	2835.287	D19-100
P3	477.4518	530.502	415.5	3.0728755	0.00794	3299.07	100	3801.327	D22-100

LAMPIRAN H Perhitungan Keseluruhan Volume Struktur



PERHITUNGAN VOLUME STRUKTUR KOLOM

Grid	Tipe Kolom	Data				Pekerjaan Bekisting	Beton	Tulangan Utama							Tulangan Senggang Tumpuan						
		Panjang	Lebar	Tinggi	Jumlah			Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)																	
A	K1 Lantai 1 Grid A-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid A-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid A-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid A-1	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid A-1	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid A-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid A-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid A-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid A-3	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid A-3	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid A-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid A-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid A-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid A-4	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid A-4	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid A-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid A-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid A-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid A-5	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid A-5	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
Grid	Tulangan Kait Horizontal Tumpuan				Tulangan Kait Vertikal Tumpuan				Tulangan Senggang Lapangan					Tulangan Kait Horizontal Lapangan							
	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi				
	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(m)	(m)	(m)	Kg	(nos)	(nos) yg dipakai	(m)	Kg				
A	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				

Grid	Tulangan Kait Vertikal Lapangan				Rekap Pembesian (kg)
	Jumlah Tul.		Panjang	Total Berat Besi	
	(nos)	(nos) yg dipakai	(m)	Kg	
A	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824

Grid	Tipe Kolom	Data				Pekerjaan Bekisting	Beton	Tulangan Utama							Tulangan Sengkang Tumpuan						
		Panjang	Lebar	Tinggi	Jumlah			Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
B	K1 Lantai 2 Grid B-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid B-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid B-1	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid B-1	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K3 Lantai 1 Grid B-2	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 2 Grid B-2	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 3 Grid B-2	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 4 Grid B-2	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 5 Grid B-2	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K1 Lantai 1 Grid B-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid B-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid B-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid B-3	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid B-3	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid B-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid B-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid B-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid B-4	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid B-4	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid B-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
K1 Lantai 2 Grid B-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053	
K2 Lantai 4 Grid B-5	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173	
K2 Lantai 5 Grid B-5	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173	
Grid	Tulangan Kait Horizontal Tumpuan				Tulangan Kait Vertikal Tumpuan			Tulangan Sengkang Lapangan					Tulangan Kait Horizontal Lapangan								
	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi				
	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(m)	(m)	(Kg)	(nos)	(nos) yg dipakai	(m)	Kg					
B	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376				
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776				

Grid	Tipe Kolom	Data				Pekerjaan Bekisting	Beton	Tulangan Utama							Tulangan Senggang Tumpuan						
		Panjang	Lebar	Tinggi	Jumlah			Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)																	
C	K3 Lantai 1 Grid C-1	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 2 Grid C-1	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 3 Grid C-1	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 4 Grid C-1	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 5 Grid C-1	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 1 Grid C-2	0.35	0.35	4	1	5.39	0.47	8	0.04	0.022	1.76	0.264	5.944	141.705	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 2 Grid C-2	0.35	0.35	4	1	5.39	0.47	8	0.04	0.022	1.76	0.264	5.944	141.705	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 3 Grid C-2	0.35	0.35	4	1	5.39	0.47	8	0.04	0.022	1.76	0.264	5.944	141.705	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 4 Grid C-2	0.35	0.35	4	1	5.39	0.47	8	0.04	0.022	1.76	0.264	5.944	141.705	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 5 Grid C-2	0.35	0.35	4	1	5.39	0.47	8	0.04	0.022	1.76	0.264	5.944	141.705	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 1 Grid C-3	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 2 Grid C-3	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
	K3 Lantai 3 Grid C-3	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848
K3 Lantai 4 Grid C-3	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848	
K3 Lantai 5 Grid C-3	0.35	0.35	4	1	5.39	0.47	4	0.04	0.022	1.76	0.264	5.944	70.8525	12	0.04	0.01	0.8	0.12	1.2	8.8848	
Grid	Tulangan Kait Horizontal Tumpuan				Tulangan Kait Vertikal Tumpuan				Tulangan Senggang Lapangan					Tulangan Kait Horizontal Lapangan							
	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi				
	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(m)	(m)	(m)	Kg	(nos)	(nos) yg dipakai	(m)	Kg				
C	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				
	6	12	0.39	2.88756	6	12	0.39	2.88756	18.66666667	19	0.12	1.2	23.712	18.67	19	0.39	7.7064				

Grid	Tulangan Kait Vertikal Lapangan				Rekap Pembesian (kg)
	Jumlah Tul.		Panjang	Total Berat Besi	
	(nos)	(nos) yg dipakai	(m)	Kg	
C	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	195.48968
	18.66666667	19	0.39	7.7064	195.48968
	18.66666667	19	0.39	7.7064	195.48968
	18.66666667	19	0.39	7.7064	195.48968
	18.66666667	19	0.39	7.7064	195.48968
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372
	18.66666667	19	0.39	7.7064	124.6372

Grid	Tipe Kolom	Data				Pekerjaan Bekisting	Beton	Tulangan Utama						Tulangan Senggang Tumpuan							
		Panjang	Lebar	Tinggi	Jumlah			Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Selimut Beton	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)																	
D	K1 Lantai 1 Grid D-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid D-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid D-1	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid D-1	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid D-1	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid D-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid D-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid D-3	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid D-3	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid D-3	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid D-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid D-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid D-4	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid D-4	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid D-4	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K1 Lantai 1 Grid D-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 2 Grid D-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K1 Lantai 3 Grid D-5	0.6	0.6	4	1	9.24	1.39	8	0.04	0.025	2	0.3	6.22	191.576	12	0.04	0.013	1.04	0.156	2.236	27.9053
	K2 Lantai 4 Grid D-5	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173
	K2 Lantai 5 Grid D-5	0.45	0.45	4	1	6.93	0.78	8	0.04	0.019	1.52	0.228	5.668	101.117	12	0.04	0.013	1.04	0.156	1.636	20.4173

Grid	Tulangan Kait Horizontal Tumpuan				Tulangan Kait Vertikal Tumpuan				Tulangan Senggang Lapangan				Tulangan Kait Horizontal Lapangan				
	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.		Panjang	Total Berat Besi
	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(nos) yg dipakai	(m)	Kg	(nos)	(m)	(m)	(Kg)	(nos)	(nos) yg dipakai	(m)	Kg	
D	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.676	8.43648	6	12	0.676	8.43648	18.66666667	19	0.156	2.236	44.18336	18.67	19	0.676	13.35776
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376
	6	12	0.526	6.56448	6	12	0.526	6.56448	18.66666667	19	0.156	1.636	32.32736	18.67	19	0.526	10.39376

Grid	Tulangan Kait Vertikal Lapangan				Rekap Pembesian (kg)
	Jumlah Tul.		Panjang	Total Berat Besi	
	(nos)	(nos) yg dipakai	(m)	Kg	
D	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.676	13.35776	307.25312
	18.66666667	19	0.526	10.39376	187.77824
	18.66666667	19	0.526	10.39376	187.77824

PERHITUNGAN VOLUME STRUKTUR BALOK

LANTAI 2

Lokasi	Tipe Balok	Data					Pekerjaan Bekisting	Beton	Tulangan Utama Atas						Tulangan Utama Bawah					
		Panjang	Lebar	Tinggi	Tebal pelat	Jumlah			Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)	(m)															
Lantai 2	B1 Lantai 2 grid A/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 2 grid A/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 2 grid A/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 2 grid B/1-2	1.4	0.3	0.45	0.15	1	0.84	0.126	2	0.022	1.76	0.264	3.424	20.40704	4	0.022	1.76	0.264	3.424	30.54208
	B1 Lantai 2 grid B/2-3	2.65	0.3	0.45	0.15	1	1.59	0.2385	2	0.022	1.76	0.264	4.674	27.85704	2	0.019	1.52	0.228	4.398	19.61508
	B1 Lantai 2 grid B/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 2 grid B/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.025	2	0.3	6.7	51.59	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 2 grid D/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 2 grid D/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 2 grid D/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 2 grid 3/B-C	2.2	0.3	0.45	0.15	1	1.32	0.198	2	0.022	1.76	0.264	4.224	25.17504	3	0.022	1.76	0.264	4.224	28.25856
	B1 Lantai 2 grid 3/C-D	2.6	0.3	0.45	0.15	1	1.56	0.234	2	0.022	1.76	0.264	4.624	27.55904	2	0.019	1.52	0.228	4.348	19.39208
	B2 Lantai 2 grid 1/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.019	1.52	0.228	7.298	48.82362
	B2 Lantai 2 grid 3/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 2 grid 4/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 2 grid 5/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 2 grid 4/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.025	2	0.3	7.7	59.29	3	0.022	1.76	0.264	7.424	49.66656
	B2 Lantai 2 grid 5/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.025	2	0.3	7.7	59.29	3	0.022	1.76	0.264	7.424	49.66656
	B3 Lantai 2 grid 1/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.025	2	0.3	5.15	39.655	3	0.022	1.76	0.264	4.874	32.60706
	B3 Lantai 2 grid 2/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.019	1.52	0.228	4.598	20.50708	2	0.022	1.76	0.264	4.874	21.73804
	B3 Lantai 2 grid 1/C-D	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.025	2	0.3	4.75	36.575	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 2 Tangga	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.019	1.52	0.228	4.198	18.72308	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 2 grid BC/3-4	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.022	1.76	0.264	3.674	16.38604
	B3 Lantai 2 grid C/1-2	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508
B3 Lantai 2 grid C/2-3	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508	

Tulangan Tumpuan Kiri Atas							Tulangan Tumpuan Kiri Bawah							Tulangan Lapangan Atas						Tulangan Lapangan Bawah							
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan		
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.022	1.76	0.264	0.9	2.924	13.04104	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.022	1.76	0.264	0.9	2.924	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.85	0	0	0	0	0	0	0.85	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.025	2	0.3	0.9	3.2	19.072	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	0.4	0	0	0	0	0	0	0.4	0	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.8	0	0	0	0	0	0	0.8	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.019	1.52	0.228	1	2.748	6.12804	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
3	0.025	2	0.3	1	3.3	29.502	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
3	0.025	2	0.3	1	3.3	29.502	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	0	3.4	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	0	3.4	0	
3	0.025	2	0.3	0.8	3.1	27.714	1	0.022	1.76	0.264	0.8	2.824	6.29752	0	0	0	0	1.25	0	0	0	0	0	0	1.25	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	1.25	0	0	0	0	0	0	1.25	0	
1	0.025	2	0.3	0.8	3.1	9.238	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	0.05	0	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0	0.05	0	

Tulangan Tumpuan Kanan Atas							Tulangan Tumpuan Kanan Bawah							Tulangan Sengkang Tumpuan							Tulangan Sengkang Lapangan									
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Panjang 2h	Jumlah Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Jumlah Tulangan	Total Berat Besi
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
0	0.022	1.76	0.264	0.9	2.924	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.025	2	0.3	0.9	3.2	19.072	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
0	0.022	1.76	0.264	0.9	2.924	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	3	2.40435
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.019	1.52	0.228	0.9	2.648	11.81008	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725
2	0.025	2	0.3	1	3.3	19.668	1	0.019	1.52	0.228	1	2.748	6.12804	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455
3	0.025	2	0.3	1	3.3	29.502	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.175	21	19.41975
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097
2	0.025	2	0.3	0.8	3.1	18.476	1	0.022	1.76	0.264	0.8	2.824	6.29752	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.022	1.76	0.264	0.8	2.824	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582
3	0.025	2	0.3	0.8	3.1	27.714	1	0.019	1.52	0.228	0.8	2.548	5.68204	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	6	4.4388
2	0.019	1.52	0.228	0.8	2.548	11.36408	0	0.019	1.52	0.228	0.8	2.548	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0				

Tulangan Kait Tumpuan Kiri								Tulangan Kait Tumpuan Kanan								Total Berat Besi (m)
Selimit Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	119.92379
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	101.29629
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	184.25819
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	167.66531
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.27035
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.68033
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	211.79593
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	224.70733
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	237.31558
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	214.87333
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	207.16633
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	207.16633
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	159.94862
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	82.51072
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	124.61424
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	75.49236
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	65.88832
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	72.2504
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	66.56836

LANTAI 3

Lokasi	Tipe Balok	Data					Pekerjaan Bekisting	Beton	Tulangan Utama Atas						Tulangan Utama Bawah					
		Panjang	Lebar	Tinggi	Tebal pelat	Jumlah			Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)	(m)				(m ²)	(m ²)	(nos)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)
Lantai 3	B1 Lantai 3 grid A/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 3 grid A/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 3 grid A/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 3 grid B/1-2	1.4	0.3	0.45	0.15	1	0.84	0.126	2	0.022	1.76	0.264	3.424	20.40704	4	0.022	1.76	0.264	3.424	30.54208
	B1 Lantai 3 grid B/2-3	2.65	0.3	0.45	0.15	1	1.59	0.2385	2	0.022	1.76	0.264	4.674	27.85704	2	0.019	1.52	0.228	4.398	19.61508
	B1 Lantai 3 grid B/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 3 grid B/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.025	2	0.3	6.7	23.584	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 3 grid D/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 3 grid D/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 3 grid D/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 3 grid 3/B-C	2.2	0.3	0.45	0.15	1	1.32	0.198	2	0.022	1.76	0.264	4.224	25.17504	3	0.022	1.76	0.264	4.224	28.25856
	B1 Lantai 3 grid 3/C-D	2.6	0.3	0.45	0.15	1	1.56	0.234	2	0.022	1.76	0.264	4.624	27.55904	2	0.019	1.52	0.228	4.348	19.39208
	B2 Lantai 3 grid 1/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.019	1.52	0.228	7.298	48.82362
	B2 Lantai 3 grid 3/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 3 grid 4/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 3 grid 5/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.025	2	0.3	7.85	60.445	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 3 grid 4/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.025	2	0.3	7.7	59.29	3	0.022	1.76	0.264	7.424	49.66656
	B2 Lantai 3 grid 5/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.025	2	0.3	7.7	59.29	3	0.022	1.76	0.264	7.424	49.66656
	B3 Lantai 3 grid 1/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.025	2	0.3	5.15	39.655	3	0.022	1.76	0.264	4.874	32.60706
	B3 Lantai 3 grid 2/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.019	1.52	0.228	4.598	18.392	2	0.022	1.76	0.264	4.874	21.73804
	B3 Lantai 3 grid 1/C-D	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.025	2	0.3	4.75	16.72	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 3 Tangga	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.019	1.52	0.228	4.198	18.72308	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 3 grid BC/3-4	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.022	1.76	0.264	3.674	16.38604
B3 Lantai 3 grid C/1-2	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508	
B3 Lantai 3 grid C/2-3	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508	

Tulangan Tumpuan Kiri Atas							Tulangan Tumpuan Kiri Bawah							Tulangan Lapangan Atas					Tulangan Lapangan Bawah							
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.022	1.76	0.264	0.9	2.924	13.04104	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.022	1.76	0.264	0.9	2.924	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.85	0	0	0	0	0	0.85	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.025	2	0.3	0.9	3.2	19.072	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.8	0	0	0	0	0	0.8	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.019	1.52	0.228	1	2.748	6.12804	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
3	0.025	2	0.3	1	3.3	29.502	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
3	0.025	2	0.3	1	3.3	29.502	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	3.4	0	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	3.4	0	
3	0.025	2	0.3	0.8	3.1	27.714	1	0.022	1.76	0.264	0.8	2.824	6.29752	0	0	0	0	1.25	0	0	0	0	0	1.25	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	1.25	0	0	0	0	0	1.25	0	
1	0.025	2	0.3	0.8	3.1	9.238	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	0.05	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0.05	0	

Tulangan Tumpuan Kanan Atas							Tulangan Tumpuan Kanan Bawah							Tulangan Sengking Tumpuan							Tulangan Sengking Lapangan										
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Selimut Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Panjang 2h	Jumlah Tulangan	Total Berat Besi	Selimut Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Jumlah Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.025	2	0.3	0.9	3.2	19.072	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	3	2.40435	
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.019	1.52	0.228	0.9	2.648	11.81008	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725	
2	0.025	2	0.3	1	3.3	19.668	1	0.019	1.52	0.228	1	2.748	6.12804	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455	
3	0.025	2	0.3	1	3.3	29.502	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.175	21	19.41975	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097	
2	0.025	2	0.3	1	3.3	19.668	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097	
2	0.025	2	0.3	0.8	3.1	18.476	1	0.022	1.76	0.264	0.8	2.824	6.29752	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582	
1	0.019	1.52	0.228	0.8	2.548	0	0	0.022	1.76	0.264	0.8	2.824	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582	
3	0.025	2	0.3	0.8	3.1	27.714	1	0.019	1.52	0.228	0.8	2.548	5.68204	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	6	4.4388	
2	0.019	1.52	0.228	0.8	2.548	11.36408	0	0.019	1.52	0.228	0.8	2.548	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	6	4.4388	
2	0.019	1.52	0.228	0.8	2.548	11.36408	0	0.022	1.76	0.264	0.8	2.824	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	1	0.7398	
1	0.019	1.52	0.228	0.8																											

Tulangan Kait Tumpuan Kiri								Tulangan Kait Tumpuan Kanan								Total Berat Besi (m)
Selimut Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	Selimut Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	119.92379
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	101.29629
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	156.25219
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	167.66531
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.27035
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.68033
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	211.79593
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	224.70733
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	237.31558
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	214.87333
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	207.16633
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	207.16633
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	159.94862
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	74.7136
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	104.75924
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	75.49236
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	65.88832
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	72.2504
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	66.56836

LANTAI 4

Lokasi	Tipe Balok	Data					Pekerjaan Bekisting	Beton	Tulangan Utama Atas						Tulangan Utama Bawah					
		Panjang	Lebar	Tinggi	Tebal pelat	Jumlah			Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)	(m)															
Lantai 4	B1 Lantai 4 grid A/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 4 grid A/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 4 grid A/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.019	1.52	0.228	6.148	36.64208	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 4 grid B/1-2	1.4	0.3	0.45	0.15	1	0.84	0.126	2	0.022	1.76	0.264	3.424	20.40704	4	0.022	1.76	0.264	3.424	30.54208
	B1 Lantai 4 grid B/2-3	2.65	0.3	0.45	0.15	1	1.59	0.2385	2	0.019	1.52	0.228	4.398	26.21208	2	0.019	1.52	0.228	4.398	19.61508
	B1 Lantai 4 grid B/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.019	1.52	0.228	6.148	36.64208	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 4 grid B/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	22.61248	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 4 grid D/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 4 grid D/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 4 grid D/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 4 grid 3/B-C	2.2	0.3	0.45	0.15	1	1.32	0.198	2	0.022	1.76	0.264	4.224	25.17504	3	0.022	1.76	0.264	4.224	28.25856
	B1 Lantai 4 grid 3/C-D	2.6	0.3	0.45	0.15	1	1.56	0.234	2	0.022	1.76	0.264	4.624	27.55904	2	0.019	1.52	0.228	4.348	19.39208
	B2 Lantai 4 grid 1/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.019	1.52	0.228	7.298	48.82362
	B2 Lantai 4 grid 3/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 4 grid 4/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 4 grid 5/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 4 grid 4/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.022	1.76	0.264	7.424	57.1648	3	0.022	1.76	0.264	7.424	49.66656
	B2 Lantai 4 grid 5/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.022	1.76	0.264	7.424	57.1648	3	0.022	1.76	0.264	7.424	49.66656
	B3 Lantai 4 grid 1/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.022	1.76	0.264	4.874	37.5298	3	0.022	1.76	0.264	4.874	32.60706
	B3 Lantai 4 grid 2/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.022	1.76	0.264	4.874	19.496	2	0.022	1.76	0.264	4.874	21.73804
	B3 Lantai 4 grid 1/C-D	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.022	1.76	0.264	4.474	15.74848	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 4 Tangga	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.019	1.52	0.228	4.198	18.72308	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 4 grid BC/3-4	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.022	1.76	0.264	3.674	16.38604
	B3 Lantai 4 grid C/1-2	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508
	B3 Lantai 4 grid C/2-3	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508

Tulangan Tumpuan Kiri Atas							Tulangan Tumpuan Kiri Bawah							Tulangan Lapangan Atas					Tulangan Lapangan Bawah								
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan		
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.022	1.76	0.264	0.9	2.924	13.04104	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.019	1.52	0.228	0.9	2.648	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.85	0	0	0	0	0	0	0.85	0	
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	0.4	0	0	0	0	0	0	0.4	0	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.8	0	0	0	0	0	0	0.8	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.019	1.52	0.228	1	2.748	6.12804	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
3	0.022	1.76	0.264	1	3.024	27.03456	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
3	0.022	1.76	0.264	1	3.024	27.03456	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	0	3.55	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	0	3.4	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	0	3.4	0	
3	0.022	1.76	0.264	0.8	2.824	25.24656	1	0.022	1.76	0.264	0.8	2.824	6.29752	0	0	0	0	1.25	0	0	0	0	0	0	1.25	0	
1	0.022	1.76	0.264	0.8	2.824	6.29752	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	1.25	0	0	0	0	0	0	1.25	0	
1	0.022	1.76	0.264	0.8	2.824	8.41552	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	0.05	0	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0	0.05	0	

Tulangan Tumpuan Kanan Atas							Tulangan Tumpuan Kanan Bawah							Tulangan Sengkang Tumpuan							Tulangan Sengkang Lapangan									
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Panjang 2h	Jumlah Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Jumlah Tulangan	Total Berat Besi
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
0	0.022	1.76	0.264	0.9	2.924	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.019	1.52	0.228	0.9	2.648	11.81008	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.019	1.52	0.228	1	2.748	6.12804	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455
3	0.022	1.76	0.264	1	3.024	27.03456	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.175	21	19.41975
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097
2	0.022	1.76	0.264	0.8	2.824	16.83104	1	0.022	1.76	0.264	0.8	2.824	6.29752	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582
1	0.022	1.76	0.264	0.8	2.824	0	0	0.022	1.76	0.264	0.8	2.824	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582
3	0.022	1.76	0.264	0.8	2.824	25.24656	1	0.019	1.52	0.228	0.8	2.548	5.68204	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	6	4.4388
2	0.019	1.52	0.228	0.8	2.548	11.36408	0	0.019	1.52	0.228	0.8	2.548	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	6	4.4388
2	0.019	1.52	0.228	0.8	2.548	11.36408	0																							

Tulangan Kait Tumpuan Kiri								Tulangan Kait Tumpuan Kanan								Total Berat Besi
Selimit Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	159.65303
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	119.92379
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	98.00637
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	159.65303
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	151.99075
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	167.66531
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.27035
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.68033
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	206.38081
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	218.46973
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	230.2555
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	209.45821
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	201.75121
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	201.75121
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	153.71102
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	76.43308
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	100.4978
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	75.49236
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	65.88832
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	72.2504
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	66.56836

LANTAI 5

Lokasi	Tipe Balok	Data					Pekerjaan Bekisting	Beton	Tulangan Utama Atas						Tulangan Utama Bawah					
		Panjang	Lebar	Tinggi	Tebal pelat	Jumlah			Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)	(m)															
Lantai 5	B1 Lantai 5 grid A/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.019	1.52	0.228	6.148	36.64208	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 5 grid A/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 5 grid A/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 5 grid B/1-2	1.4	0.3	0.45	0.15	1	0.84	0.126	2	0.019	1.52	0.228	3.148	18.76208	4	0.022	1.76	0.264	3.424	30.54208
	B1 Lantai 5 grid B/2-3	2.65	0.3	0.45	0.15	1	1.59	0.2385	2	0.019	1.52	0.228	4.398	26.21208	2	0.019	1.52	0.228	4.398	19.61508
	B1 Lantai 5 grid B/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai 5 grid B/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.019	1.52	0.228	6.148	21.64096	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 5 grid D/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 5 grid D/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	2	0.022	1.76	0.264	6.424	28.65104
	B1 Lantai 5 grid D/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.022	1.76	0.264	6.424	38.28704	3	0.022	1.76	0.264	6.424	42.97656
	B1 Lantai 5 grid 3/B-C	2.2	0.3	0.45	0.15	1	1.32	0.198	2	0.022	1.76	0.264	4.224	25.17504	3	0.022	1.76	0.264	4.224	28.25856
	B1 Lantai 5 grid 3/C-D	2.6	0.3	0.45	0.15	1	1.56	0.234	2	0.022	1.76	0.264	4.624	27.55904	2	0.019	1.52	0.228	4.348	19.39208
	B2 Lantai 5 grid 1/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.019	1.52	0.228	7.298	56.1946	3	0.019	1.52	0.228	7.298	48.82362
	B2 Lantai 5 grid 3/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 5 grid 4/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 5 grid 5/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.022	1.76	0.264	7.574	58.3198	3	0.022	1.76	0.264	7.574	50.67006
	B2 Lantai 5 grid 4/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.022	1.76	0.264	7.424	57.1648	3	0.022	1.76	0.264	7.424	49.66656
	B2 Lantai 5 grid 5/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.022	1.76	0.264	7.424	57.1648	3	0.022	1.76	0.264	7.424	49.66656
	B3 Lantai 5 grid 1/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.022	1.76	0.264	4.874	37.5298	3	0.022	1.76	0.264	4.874	32.60706
	B3 Lantai 5 grid 2/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.019	1.52	0.228	4.598	18.392	2	0.022	1.76	0.264	4.874	21.73804
	B3 Lantai 5 grid 1/C-D	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.022	1.76	0.264	4.474	15.74848	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 5 Tangga	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.019	1.52	0.228	4.198	18.72308	2	0.019	1.52	0.228	4.198	18.72308
	B3 Lantai 5 grid BC/3-4	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.022	1.76	0.264	3.674	16.38604
	B3 Lantai 5 grid C/1-2	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508
B3 Lantai 5 grid C/2-3	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.019	1.52	0.228	3.398	15.15508	2	0.019	1.52	0.228	3.398	15.15508	

Tulangan Tumpuan Kiri Atas							Tulangan Tumpuan Kiri Bawah							Tulangan Lapangan Atas					Tulangan Lapangan Bawah							
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang luar 2h	Panjang Tulangan	
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.019	1.52	0.228	0.9	2.648	15.78208	2	0.022	1.76	0.264	0.9	2.924	13.04104	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0.019	1.52	0.228	0.9	2.648	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.85	0	0	0	0	0	0.85	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	2.6	0	0	0	0	0	2.6	0	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0	0	0	0	0.4	0	0	0	0	0	0.4	0	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.019	1.52	0.228	0.9	2.648	0	0	0	0	0	0.8	0	0	0	0	0	0.8	0	
2	0.019	1.52	0.228	1	2.748	16.37808	1	0.019	1.52	0.228	1	2.748	6.12804	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
3	0.022	1.76	0.264	1	3.024	27.03456	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
3	0.022	1.76	0.264	1	3.024	27.03456	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.55	0	0	0	0	0	3.55	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	3.4	0	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0	0	0	0	3.4	0	0	0	0	0	3.4	0	
3	0.022	1.76	0.264	0.8	2.824	25.24656	1	0.022	1.76	0.264	0.8	2.824	6.29752	0	0	0	0	1.25	0	0	0	0	0	1.25	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	1.25	0	0	0	0	0	1.25	0	
1	0.022	1.76	0.264	0.8	2.824	8.41552	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.85	0	0	0	0	0	0.85	0	
0	0.019	1.52	0.228	0.8	2.548	0	0	0.022	1.76	0.264	0.8	2.824	0	0	0	0	0	0.05	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0.05	0	
1	0.019	1.52	0.228	0.8	2.548	5.68204	0	0.019	1.52	0.228	0.8	2.548	0	0	0	0	0	0.05	0	0	0	0	0	0.05	0	

Tulangan Tumpuan Kanan Atas							Tulangan Tumpuan Kanan Bawah							Tulangan Senggang Tumpuan							Tulangan Senggang Lapangan										
Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang 2h	Panjang Tulangan	Total Berat Besi	Selimut Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Panjang 2h	Jumlah Tulangan	Total Berat Besi	Selimut Beton	Diameter Tul.	Panjang Keliling Balok	Diameter Bengkokan 6db	Panjang Tulangan	Jarak Pemasangan	Jumlah Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
0	0.019	1.52	0.228	0.9	2.648	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.019	1.52	0.228	0.9	2.648	5.90504	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.019	1.52	0.228	0.9	2.648	15.78208	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
2	0.022	1.76	0.264	0.9	2.924	17.42704	1	0.022	1.76	0.264	0.9	2.924	6.52052	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	15	12.02175	
0	0.022	1.76	0.264	0.9	2.924	0	0	0.022	1.76	0.264	0.9	2.924	0	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	3	2.40435	
2	0.022	1.76	0.264	0.9	2.924	17.42704	2	0.019	1.52	0.228	0.9	2.648	11.81008	0.32	0.01	1.5	0.12	1.3	0.075	0.9	24	19.2348	0.32	0.01	1.5	0.12	1.3	0.175	5	4.00725	
2	0.019	1.52	0.228	1	2.748	16.37808	1	0.019	1.52	0.228	1	2.748	6.12804	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455	
3	0.022	1.76	0.264	1	3.024	27.03456	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.175	21	19.41975	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	18	16.6455	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097	
2	0.022	1.76	0.264	1	3.024	18.02304	1	0.022	1.76	0.264	1	3.024	6.74352	0.32	0.01	1.7	0.12	1.5	0.075	1	27	24.96825	0.32	0.01	1.7	0.12	1.5	0.2	12	11.097	
2	0.022	1.76	0.264	0.8	2.824	16.83104	1	0.022	1.76	0.264	0.8	2.824	6.29752	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582	
1	0.019	1.52	0.228	0.8	2.548	0	0	0.022	1.76	0.264	0.8	2.824	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	9	6.6582	
3	0.022	1.76	0.264	0.8	2.824	25.24656	1	0.019	1.52	0.228	0.8	2.548	5.68204	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1.4	0.12	1.2	0.15	6	4.4388	
2	0.019	1.52	0.228	0.8	2.548	11.36408	0	0.019	1.52	0.228	0.8	2.548	0	0.32	0.01	1.4	0.12	1.2	0.075	0.8	22	16.2756	0.32	0.01	1						

Tulangan Kait Tumpuan Kiri								Tulangan Kait Tumpuan Kanan								Total Berat Besi
Selimut Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	Selimut Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	162.73043
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	116.63387
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	98.00637
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	164.58791
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	147.72931
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	153.33979
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	167.66531
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.27035
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	106.68033
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	200.96569
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	218.46973
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	230.2555
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	209.45821
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	201.75121
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	201.75121
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	153.71102
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	74.7136
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	100.4978
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	75.49236
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	65.88832
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	72.2504
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	66.56836

LANTAI ATAP

Lokasi	Tipe Balok	Data					Pekerjaan Bekisting	Beton	Tulangan Utama Atas						Tulangan Utama Bawah					
		Panjang	Lebar	Tinggi	Tebal pelat	Jumlah			Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi	Jumlah Tul.	Diameter Tul.	Diameter Bengkokan 40db	Diameter Bengkokan 6db	Panjang Tulangan	Total Berat Besi
		(m)	(m)	(m)	(m)															
Lantai Atap	B1 Lantai Atap grid A/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.016	1.28	0.192	5.872	34.99712	3	0.016	1.28	0.192	5.872	39.28368
	B1 Lantai Atap grid A/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.016	1.28	0.192	5.872	34.99712	2	0.016	1.28	0.192	5.872	26.18912
	B1 Lantai Atap grid A/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.016	1.28	0.192	5.872	34.99712	3	0.016	1.28	0.192	5.872	39.28368
	B1 Lantai Atap grid B/1-2	1.4	0.3	0.45	0.15	1	0.84	0.126	2	0.016	1.28	0.192	2.872	17.11712	4	0.016	1.28	0.192	2.872	25.61824
	B1 Lantai Atap grid B/2-3	2.65	0.3	0.45	0.15	1	1.59	0.2385	2	0.019	1.52	0.228	4.398	26.21208	2	0.019	1.52	0.228	4.398	19.61508
	B1 Lantai Atap grid B/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.019	1.52	0.228	6.148	36.64208	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai Atap grid B/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.019	1.52	0.228	6.148	21.64096	3	0.019	1.52	0.228	6.148	41.13012
	B1 Lantai Atap grid D/1-3	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.016	1.28	0.192	5.872	34.99712	2	0.016	1.28	0.192	5.872	26.18912
	B1 Lantai Atap grid D/3-4	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.016	1.28	0.192	5.872	34.99712	2	0.016	1.28	0.192	5.872	26.18912
	B1 Lantai Atap grid D/4-5	4.4	0.3	0.45	0.15	1	2.64	0.396	2	0.016	1.28	0.192	5.872	34.99712	3	0.016	1.28	0.192	5.872	39.28368
	B1 Lantai Atap grid 3/B-C	2.2	0.3	0.45	0.15	1	1.32	0.198	2	0.016	1.28	0.192	3.672	21.88512	3	0.016	1.28	0.192	3.672	24.56568
	B1 Lantai Atap grid 3/C-D	2.6	0.3	0.45	0.15	1	1.56	0.234	2	0.016	1.28	0.192	4.072	24.26912	2	0.016	1.28	0.192	4.072	18.16112
	B2 Lantai Atap grid 1/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.016	1.28	0.192	7.022	54.0694	3	0.016	1.28	0.192	7.022	46.97718
	B2 Lantai Atap grid 3/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.016	1.28	0.192	7.022	54.0694	3	0.016	1.28	0.192	7.022	46.97718
	B2 Lantai Atap grid 4/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.016	1.28	0.192	7.022	54.0694	3	0.016	1.28	0.192	7.022	46.97718
	B2 Lantai Atap grid 5/A-B	5.55	0.35	0.5	0.15	1	3.885	0.679875	2	0.016	1.28	0.192	7.022	54.0694	3	0.016	1.28	0.192	7.022	46.97718
	B2 Lantai Atap grid 4/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.016	1.28	0.192	6.872	52.9144	3	0.016	1.28	0.192	6.872	45.97368
	B2 Lantai Atap grid 5/B-D	5.4	0.35	0.5	0.15	1	3.78	0.6615	2	0.016	1.28	0.192	6.872	52.9144	3	0.016	1.28	0.192	6.872	45.97368
	B3 Lantai Atap grid 1/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.016	1.28	0.192	4.322	33.2794	3	0.016	1.28	0.192	4.322	28.91418
	B3 Lantai Atap grid 2/B-C	2.85	0.3	0.4	0.15	1	1.425	0.21375	2	0.016	1.28	0.192	4.322	17.288	2	0.016	1.28	0.192	4.322	19.27612
	B3 Lantai Atap grid 1/C-D	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.016	1.28	0.192	3.922	13.80544	2	0.016	1.28	0.192	3.922	17.49212
	B3 Lantai Atap Tangga	2.45	0.3	0.4	0.15	1	1.225	0.18375	2	0.016	1.28	0.192	3.922	17.49212	2	0.016	1.28	0.192	3.922	17.49212
	B3 Lantai Atap grid BC/3-4	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.016	1.28	0.192	3.122	13.92412	2	0.016	1.28	0.192	3.122	13.92412
	B3 Lantai Atap grid C/1-2	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.016	1.28	0.192	3.122	13.92412	2	0.016	1.28	0.192	3.122	13.92412
	B3 Lantai Atap grid C/2-3	1.65	0.3	0.4	0.15	1	0.825	0.12375	2	0.016	1.28	0.192	3.122	13.92412	2	0.016	1.28	0.192	3.122	13.92412

Tulangan Kait Tumpuan Kiri								Tulangan Kait Tumpuan Kanan								Total Berat Besi
Selimit Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	Selimit Beton	Diameter Tul.	Diameter Bengkokan 6db	Panjang 2h	Jumlah Tul. Kait	Jarak Pemasangan	Panjang Tulangan	Total Berat Besi	
(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)	(m)	(m)	(m)	(m)	(m)	(m)	(kg)	(m)
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	151.64075
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	138.54619
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	151.64075
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	105.95819
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	98.00637
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	159.65303
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	144.65191
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	138.54619
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	138.54619
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	151.64075
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	94.76667
0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	0.08	0.01	0.12	0.9	12	0.075	0.49	3.62502	97.63857
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	192.47317
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	199.83973
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	209.98054
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	192.47317
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	184.76617
0.08	0.01	0.12	1	14	0.075	0.54	4.66074	0.08	0.01	0.12	1	14	0.075	0.54	4.66074	184.76617
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	135.08102
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	70.5322
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	90.12848
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	71.79948
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	60.96448
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	67.73504
0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	0.08	0.01	0.12	0.8	11	0.075	0.44	2.98386	62.66848

PERHITUNGAN VOLUME STRUKTUR PELAT

Lokasi	Tipe Pelat	Data				Pekerjaan Bekisting	Beton	Tulangan Atas																				Total Berat Besi (Kg)
		Panjang (m)	Lebar (m)	Tinggi (m)	Jumlah			Tulangan Arah-X					Tulangan Arah-Y					Tulangan Susut Arah-X					Tulangan Susut Arah-Y					
								Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)		Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)		Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)		Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)		
								(m)	(m)	(m)	(nos)	(nos) yang dipakai	(m)	(m)	(m)	(nos)	(nos) yang dipakai	(m)	(m)	(m)	(nos)	(nos) yang dipakai	(m)	(m)	(m)	(nos)	(nos) yang dipakai	
Lantai 2	P1	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.2	30.750	31	0	0	0	0.000	0	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	484.06592
	P2	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6.15 m)	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6m)	6	5	0.15	1	33.3	4.5	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	518.0032
	P4	3.2	3	0.15	1	11.46	1.44	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172
Lantai 3	P1	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.2	30.750	31	0	0	0	0.000	0	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	484.06592
	P2	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6.15 m)	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6m)	6	5	0.15	1	33.3	4.5	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	518.0032
	P4	3.2	3	0.15	1	11.46	1.44	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172
Lantai 4	P1	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.2	30.750	31	0	0	0	0.000	0	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	484.06592
	P2	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6.15 m)	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6m)	6	5	0.15	1	33.3	4.5	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	518.0032
	P4	3.2	3	0.15	1	11.46	1.44	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172
Lantai 5	P1	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.2	30.750	31	0	0	0	0.000	0	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	484.06592
	P2	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6.15 m)	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6m)	6	5	0.15	1	33.3	4.5	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	518.0032
	P4	3.2	3	0.15	1	11.46	1.44	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172
Lantai Atap	P1	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.2	30.750	31	0	0	0	0.000	0	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	484.06592
	P2	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6.15 m)	6.15	5	0.15	1	34.095	4.6125	6.376	0.013	0.3	20.500	21	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	583.53152
	P3 (6m)	6	5	0.15	1	33.3	4.5	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	518.0032
	P4	3.2	3	0.15	1	11.46	1.44	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172

Lokasi	Tipe Pelat	Data				Tulangan Bawah																				Total Berat Besi (Kg)	Rekap Pembesian (Kg)
		Panjang (m)	Lebar (m)	Tinggi (m)	Jumlah	Tulangan Arah-X					Tulangan Arah-Y					Tulangan Susut Arah-X					Tulangan Susut Arah-Y						
						Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)	(nos) yang	Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)	(nos) yang	Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)	(nos) yang	Panjang (m)	D. Tul (m)	S (m)	Jumlah Tul. (nos)	(nos) yang		
						(m)	(m)	(m)	(nos)	(nos) yang	(m)	(m)	(m)	(nos)	(nos) yang	(m)	(m)	(m)	(nos)	(nos) yang	(m)	(m)	(m)	(nos)	(nos) yang		
Lantai 2	P1	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1094.1216
	P2	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
	P3 (6.15 m)	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
	P3 (6m)	6	5	0.15	1	6.226	0.013	0.25	24.000	24	6.226	0.013	0.25	24.000	24	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	569.80352	1087.80672
Lantai 3	P4	3.2	3	0.15	1	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172	184.06344
	P1	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1094.1216
	P2	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
	P3 (6.15 m)	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
Lantai 4	P3 (6m)	6	5	0.15	1	6.226	0.013	0.25	24.000	25	6.226	0.013	0.25	24.000	24	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	576.27856	1094.28176
	P4	3.2	3	0.15	1	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172	184.06344
	P1	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1094.1216
	P2	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
Lantai 5	P3 (6.15 m)	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
	P3 (6m)	6	5	0.15	1	6.226	0.013	0.25	24.000	24	6.226	0.013	0.25	24.000	24	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	569.80352	1087.80672
	P4	3.2	3	0.15	1	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172	184.06344
	P1	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1094.1216
Lantai Atap	P2	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
	P3 (6.15 m)	6.15	5	0.15	1	6.376	0.013	0.25	24.600	25	6.376	0.013	0.25	24.600	25	6.376	0.013	0.3	20.500	21	6.376	0.013	0.3	20.500	21	610.05568	1193.5872
	P3 (6m)	6	5	0.15	1	6.226	0.013	0.25	24.000	24	6.226	0.013	0.25	24.000	24	6.226	0.013	0.3	20.000	20	6.226	0.013	0.3	20.000	20	569.80352	1087.80672
	P4	3.2	3	0.15	1	3.39	0.01	0.3	10.667	11	3.39	0.01	0.3	10.667	11	3.39	0.013	0.3	10.667	11	3.39	0.013	0.3	10.667	11	92.03172	184.06344

PERHITUNGAN VOLUME STRUKTUR PILE CAP

Tipe PileCap	Data				Pekerjaan Bekisting	Beton	Tulangan Atas											
	Panjang	Lebar	Tinggi	Jumlah			Tulangan Arah-X						Tulangan Arah-Y					
							Panjang	D. Tul	S	Jumlah Tul.		Total Berat Besi	Panjang	D. Tul	S	Jumlah Tul.		Total Berat Besi
	(m)	(m)	(m)				(m)	(m)	(m)	(nos)	(nos) yang dipakai	(Kg)	(m)	(m)	(m)	(nos)	(nos) yang dipakai	(Kg)
P1	3.2	3.2	1	1	12.8	10.24	4.164	0.022	0.125	25.600	26	322.62672	4.164	0.022	0.125	25.600	26	322.62672
P2	2.6	2.6	0.7	1	7.28	4.732	3.564	0.022	0.125	20.800	21	223.03512	3.564	0.022	0.125	20.800	27	286.75944
P3	2.8	2.8	0.7	1	7.84	5.488	3.764	0.022	0.125	22.400	21	235.55112	3.764	0.022	0.125	22.400	28	314.06816





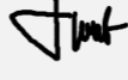

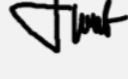


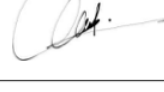

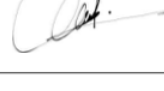
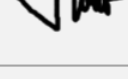
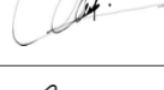


Tipe PileCap	Data				Tulangan Bawah												Rekap Pembesian
	Panjang	Lebar	Tinggi	Jumlah	Tulangan Arah-X						Tulangan Arah-Y						
					Panjang	D. Tul	S	Jumlah Tul.		Total Berat Besi	Panjang	D. Tul	S	Jumlah Tul.		Total Berat Besi	
	(m)	(m)	(m)		(m)	(m)	(m)	(nos)	(nos) yang dipakai	(Kg)	(m)	(m)	(m)	(nos)	(nos) yang dipakai	(Kg)	
P1	3.2	3.2	1	1	4.164	0.022	0.125	25.600	26	322.62672	4.164	0.022	0.125	25.600	26	322.62672	645.2534
P2	2.6	2.6	0.7	1	3.564	0.022	0.125	20.800	21	223.03512	3.564	0.022	0.125	20.800	27	286.75944	573.5189
P3	2.8	2.8	0.7	1	3.764	0.022	0.125	22.400	21	235.55112	3.764	0.022	0.125	22.400	28	314.06816	628.1363

LAMPIRAN I Formulir Bimbingan Proyek Akhir



FORMULIR PEMBIMBINGAN PROYEK AKHIR DAN/ATAU SKRIPSI

Nama : Clement Charisna Honandar
 NIM : 22170013
 Program Studi : Manajemen Rekayasa Konstruksi
 Dosen Pembimbing Tugas Akhir : 1. Ir. Suwito, Ph.D.
 2. Elsa Try Julita Sembiring, S.T., M.T.
 Tema/Judul (Proposal/ Tugas Akhir*) : DESAIN STRUKTUR GEDUNG PERKANTORAN 5 LANTAI
 Formulir Bimbingan Proyek Akhir Dosen Pembimbing 1 : Ir. Suwito, Ph.D.:



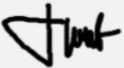

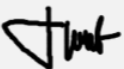



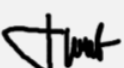

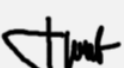

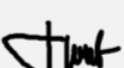
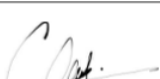
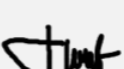

NO	TANGGAL	PEMBAHASAN	TANDA TANGAN	
			DOSEN	MAHASISWA
1	2 Februari 2021	Pembahasan mengenai BAB IV		
2	9 Februari 2021	Pembahasan mengenai pembuatan permodelan struktur		
3	23 Februari 2021	Pembahasan mengenai permodelan struktur menggunakan SAP 2000		
4	2 Maret 2021	Pembahasan mengenai desain perhitungan tulangan pelat		
5	16 Maret 2021	Perbaikan perhitungan pelat dan pembahasan mengenai mendesain tulangan utama balok		
6	30 Maret 2021	Pembahasan mengenai tulangan sengkang balok dengan sistem struktur SRPMK		
7	06 April 2021	Pengecekan perhitungan gaya geser tulangan sengkang balok		
8	13 April 2021	Pembahasan mengenai tulangan sengkang lapangan balok		

Syarat & Ketentuan:

Bimbingan proposal proyek akhir dan/atau skripsi dilakukan min. 10 kali pertemuan

FORMULIR PEMBIMBINGAN PROYEK AKHIR DAN/ATAU SKRIPSI







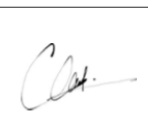

Nama : Clement Charisna Honandar
 NIM : 22170013
 Program Studi : Manajemen Rekayasa Konstruksi
 Dosen Pembimbing Tugas Akhir : 1. Ir. Suwito, Ph.D.
 2. Elsa Try Julita Sembiring, S.T., M.T.
 Tema/Judul (Proposal/ Tugas Akhir*) : DESAIN STRUKTUR GEDUNG PERKANTORAN 5 LANTAI
 Formulir Bimbingan Proyek Akhir Dosen Pembimbing 1 : Ir. Suwito, Ph.D.

NO	TANGGAL	PEMBAHASAN	TANDA TANGAN	
			DOSEN	MAHASISWA
9	20 April 2021	Pengecekan mengenai tulangan sengkang lapangan balok		
10	4 Mei 2021	Pembahasan mengenai perhitungan tulangan utama kolom		
11	11 Mei 2021	Pengecekan tentang perhitungan tulangan utama kolom menggunakan Microsoft excel		
12	18 Mei 2021	Pembahasan mengenai kolom kuat balok lemah		
13	25 Mei 2021	Pembahasan mengenai gaya geser tulangan kolom dengan sistem rangka pemikul momen khusus		
14	1 Juni 2021	Pembahasan mengenai daya dukung tanah pondasi pilecap		
15	8 Juni 2021	Pembahasan mengenai tulangan tiang pancang dan pile cap		
16	15 Juni 2021	Pengecekan perhitungan pondasi		

Syarat & Ketentuan:
 Bimbingan proposal proyek akhir dan/atau skripsi dilakukan min. 10 kali pertemuan

FORMULIR PEMBIMBINGAN PROYEK AKHIR DAN/ATAU SKRIPSI

Nama : Clement Charisna Honandar
 NIM : 22170013
 Program Studi : Manajemen Rekayasa Konstruksi
 Dosen Pembimbing Tugas Akhir : 1. Ir. Suwito, Ph.D.
 : 2. Elsa Try Julita Sembiring, S.T., M.T.
 Tema/Judul (Proposal/ Tugas Akhir*) : DESAIN STRUKTUR GEDUNG PERKANTORAN 5 LANTAI
 Formulir Bimbingan Proyek Akhir Dosen Pembimbing 2 : Elsa Try Julita Sembiring, S.T., M.T.



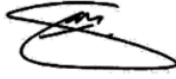



NO	TANGGAL	PEMBAHASAN	TANDA TANGAN	
			DOSEN	MAHASISWA
1	2 April 2021	Pembahasan mengenai penggunaan Mendeley untuk daftar pustaka		
2	24 April 2021	Pembahasan mengenai pedoman dan cara penulisan		
3	7 Mei 2021	Pembahasan mengenai daftar pustaka		
4	13 Mei 2021	Pembahasan mengenai isi dari bab 4		
5	28 Mei 2021	Pengecekan mengenai sumber-sumber gambar dan tabel		
6	7 Juni 2021	Pengecekan penulisan kutipan dari referensi jurnal		
7	13 Juni 2021	Pembahasan mengenai penulisan bab 5		
8	21 Juni 2021	Pembahasan penulisan kesimpulan dan saaran		
9	30 Juni 2021	Pembahasan mengenai abstrack		
10	3 Juli 2021	Pengecekan keseluruhan laporan		







Syarat & Ketentuan:
 Bimbingan proposal proyek akhir dan/atau skripsi dilakukan min. 10 kali pertemuan






LAMPIRAN J Risalah Perbaikan

**RISALAH PERBAIKAN
PROYEK AKHIR**

No.	Dosen Penguji	Masukkan	Tindakan Perbaikan	Tanda Tangan
1	Ferdinand Fassa, S.T., M.T.	Menambahkan penjelasan penentuan sistem struktur berupa diagram alir berdasarkan kategori desain resiko	Sudah ditambahkan pada halaman 48	
		Menambahkan gambar penampang tiap elemen struktur pada perhitungan volume	Sudah ditambahkan pada BAB V gambar-gambar penampang elemen struktur untuk perhitungan volume pada halaman 209, 216, 222, 227.	
		Menambahkan pedoman perhitungan volume struktur	Sudah diubah pada halaman 207.	
		Kesimpulan dikaitkan dengan rumusan masalah	Sudah diubah pada kesimpulan halaman 232.	
2	Andre Feliks Setiawan, S.T., M.Sc.	Mengubah tanda pembulatan	Sudah diubah pada setiap bab pada pembulatan yang salah.	
		Menambahkan detail gambar tiap elemen struktur	Sudah ditambahkan detail gambar Pelat pada halaman 117-119, dan untuk pilecap pada halaman 207.	

2	Andre Feliks Setiawan, S.T., M.Sc.	Menambahkan proses tiang pancang kenapa kebutuhan jumlah tiang pancang memakai 5 tiang	Sudah ditambahkan penjelasan proses kebutuhan tiang pancang pada halaman 188 sampai 189	
		Perlu dirincikan kenapa tipe pelat, dan kolom dibagi beberapa tipe	Sudah diubah pada halaman 50 dan 77 untuk rincian tipe pelat, dan halaman 55-56 untuk tipe kolom.	
		Menambah penjelasan darimana dapat nilai koefisien X pada perhitungan momen pelat lantai 2 arah	Sudah dijelaskan pada halaman 78, dan untuk lampiran tabel sudah dilampirkan pada lampiran C halaman 241.	
		Menambahkan penjelasan momen yang didapatkan pada envelope didapatkan pada kombinasi yang mana	Sudah tambahkan penjelasan momen yang didapatkan pada envelope menggunakan kombinasi yang didapatkan pada halaman 134.	
		Memperbaiki penamaan tulangan pada Gambar Penampang Kolom	Sudah diubah pada halaman 182.	
		Mencantumkan referensi dari perhitungan daya dukung tanah menggunakan data N-SPT	Sudah ditambahkan pengambilan asumsi data N-SPT diambil dari jurnal pada halaman 62 dan 187.	

3	Ir. Suwito, Ph.D.	Memperbaiki penulisan penamaan tulang sengkang pada kolom	Sudah diperbaiki pada halaman 181 dan 182.	
		Penulisan satuan harus dibenarkan	Sudah diubah pada halaman 78, 79.	
		Gambar tulang sengkang kolom salah satu ujungnya harus dibuat bengkakan 90°	Sudah diubah pada halaman 182, 186, dan 223.	
4	Elsa Try Julita Sembiring, S.T., M.T.	Memperbaiki abstrak, menambahkan hasil-hasil yang didapatkan pada perhitungan struktur	Abstrak sudah diperbaiki pada halaman V dan VI	