

No balok	Tipe Balok	b (mm)	h (mm)	b (mm)	h (mm)	s (mm)	D (mm)	D (mm)	Ø (mm)	f'c (Mpa)	fy (mpa)	Mu tump (Nmm)	Mu lap (Nmm)	Gaya geser (N)
1	BP1	500	700	300	500	40	25	16	10	25	400	937276300	864729400	690952
2	BP2	250	400	150	300	40	16	16	10	25	400	30784800	22697300	40613
3	BP3	300	700	300	600	40	19	19	10	25	400	597521600	667401400	462677
4	BP4	400	600	300	500	40	16	16	10	25	400	426021400	353861800	332607
5	BP6	500	700	400	600	40	25	25	10	25	400	1068046300	1010557300	4339039
6	BP7	700	600	700	600	40	25	25	10	25	400	600763500	332713200	326023
7	BP9	800	1000	400	600	40	25	25	10	25	400	2355223300	406829900	2528083
8	BP11	1000	1200	400	1200	40	29	22	10	25	400	3149201100	3735732600	2435291
9	BP12	1300	1600	700	1200	40	36	22	10	25	400	9136479100	3861395900	3654229
10	B1	500	800	300	500	40	25	16	10	25	400	1245078800	873570500	1112397
11	B2	300	600	300	500	40	19	19	10	25	400	473520900	470213100	332237
12	B3	300	700	300	500	40	19	19	10	25	400	513549100	448335800	352656
13	B4	400	650	300	500	40	19	19	10	25	400	489694600	606173000	843570
14	B5	300	400	150	300	40	16	16	8	25	400	167035800	180755300	274319
15	B6	300	500	300	500	40	19	19	10	25	400	319559400	222468800	164335
16	B7	500	700	300	600	40	25	19	10	25	400	943255700	704617600	497583
17	RB1	300	500	300	500	40	16	16	10	25	400	153146300	111019600	91618
18	RB2	300	500	300	500	40	13	13	10	25	400	166050300	119607600	94565
19	RB3	400	600	400	600	40	16	16	10	25	400	244170500	182242700	148802
20	RB4	300	600	150	400	40	16	16	10	25	400	24864200	11871000	22445
21	RB5	300	500	300	500	40	16	16	10	25	400	190600300	149907300	119105
22	RB6	300	500	300	500	40	16	16	10	25	400	231931800	213095200	144770

Lampiran 1. Tabel Data Balok

Mu tump (Nmm)	d' (mm)	d (mm)	Lb (mm)	β	ϕ	fys (Mpa)	ρ min	ρb	ρ maks	Mn (Nmm)	Rn (N/mm ²)	m	ρ_{hit}	ρ koreksi	ρ min < ρ perlu	ρ perlu < ρ max
937276300	62.5	637.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	1171595375	5.765636601	18.82353	0.01719777	0.017197735	OK	OK
30784800	58	342	6000	0.85	0.8	240	0.0035	0.02709	0.02032	38481000	1.315994665	18.82353	0.0033987	0.020320313	NOT OK	OK
597521600	59.5	640.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	746902000	6.068817805	18.82353	0.0183366	0.018336555	OK	OK
426021400	58	542	6000	0.85	0.8	240	0.0035	0.02709	0.02032	532526750	4.531926563	18.82353	0.0128948	0.012894755	OK	OK
1068046300	62.5	637.5	8000	0.85	0.8	240	0.0035	0.02709	0.02032	1335057875	6.570065667	18.82353	0.0203059	0.020305921	OK	OK
600763500	62.5	537.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	750954375	3.713287491	18.82353	0.0102773	0.010277321	OK	OK
2355223300	62.5	937.5	7850	0.85	0.8	240	0.0035	0.02709	0.02032	2944029125	4.187063644	18.82353	0.0117719	0.011771925	OK	OK
3149201100	64.5	1135.5	7812	0.85	0.8	240	0.0035	0.02709	0.02032	3936501375	3.053065561	18.82353	0.0082775	0.008277535	OK	OK
9136479100	68	1532	7812	0.85	0.8	240	0.0035	0.02709	0.02032	11420598875	3.743070398	18.82353	0.0103697	0.010369737	OK	OK
1245078800	62.5	737.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	1556348500	5.722855731	18.82353	0.0170399	0.017039933	OK	OK
473520900	59.5	540.5	4700	0.85	0.8	240	0.0035	0.02709	0.02032	591901125	6.753618339	18.82353	0.0210573	0.020320313	OK	NOT OK
513549100	59.5	640.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	641936375	5.215938506	18.82353	0.0152201	0.015220093	OK	OK
489694600	59.5	590.5	5200	0.85	0.8	240	0.0035	0.02709	0.02032	612118250	4.388696343	18.82353	0.0124247	0.012424654	OK	OK
167035800	56	344	6000	0.85	0.8	240	0.0035	0.02709	0.02032	208794750	5.881409715	18.82353	0.0176283	0.017628294	OK	OK
319559400	59.5	440.5	4700	0.85	0.8	240	0.0035	0.02709	0.02032	399449250	6.861965494	18.82353	0.0215092	0.020320313	OK	NOT OK
943255700	62.5	637.5	4400	0.85	0.8	240	0.0035	0.02709	0.02032	1179069625	5.802418762	18.82353	0.017334	0.017333966	OK	OK
153146300	58	442	6000	0.85	0.8	240	0.0035	0.02709	0.02032	191432875	3.266259819	18.82353	0.0089134	0.008913402	OK	OK
166050300	56.5	443.5	3000	0.85	0.8	240	0.0035	0.02709	0.02032	207562875	3.51755725	18.82353	0.0096749	0.009674862	OK	OK
244170500	58	542	6000	0.85	0.8	240	0.0035	0.02709	0.02032	305213125	2.597434718	18.82353	0.0069479	0.006947927	OK	OK
24864200	58	542	3850	0.85	0.8	240	0.0035	0.02709	0.02032	31080250	0.35266688	18.82353	0.0008891	0.0035	NOT OK	OK
190600300	58	442	3850	0.85	0.8	240	0.0035	0.02709	0.02032	238250375	4.065067856	18.82353	0.011382	0.011381953	OK	OK
231931800	58	442	4700	0.85	0.8	240	0.0035	0.02709	0.02032	289914750	4.946574087	18.82353	0.0142878	0.014287751	OK	OK

Lampiran 2. Tabel Perhitungan Tulangan Lentur Tumpuan Balok (SNI 03-2847-2002)

As perlu (mm2)	As tul (mm2)	n tulangan	n	n atas	S tul. atas (mm)	n bawah	S tul. bawah (mm)	As n (mm)	As tul. tekan	n tul. tekan	n tekan	As' tekan	As min	As max	As max > As n
5481.777888	490.8738521	11.2	12	6	50	6	50	5890.486	2740.889	5.6	6	2945.243	1115.625	9562.5	OK
1737.386719	201.0619298	8.6	9	5	17.5	4	28.67	1809.557	868.6934	4.3	5	1005.31	299.25	1923.75	OK
3523.36907	283.528737	12.4	13	7	11.17	6	17.2	3685.874	1761.685	6.2	7	1984.701	672.525	6244.875	OK
2795.582833	201.0619298	13.9	14	7	31.33	7	31.33	2814.867	1397.791	6.9	7	1407.434	758.8	7588	OK
6472.512388	490.8738521	13.2	14	7	37.5	7	37.5	6872.234	3236.256	6.5	7	3436.117	1115.625	11156.25	OK
3866.841853	490.8738521	7.9	8	4	166.67	4	166.67	3926.991	1933.421	3.9	4	1963.495	1316.875	7525	OK
8828.943455	490.8738521	17.9	18	9	59.375	9	59.375	8835.729	4414.472	8.9	9	4417.865	2625	33750	OK
9399.141392	660.5198554	14.2	15	8	95.43	7	116.17	9907.798	4699.571	7.1	8	5284.159	3974.25	42581.25	OK
20652.36736	1017.87602	20.3	21	11	80.4	10	93.33	21375.4	10326.18	10.1	11	11196.64	6970.6	104559	OK
6283.475237	490.8738521	12.8	13	7	37.5	6	50	6381.36	3141.738	6.4	7	3436.117	1290.625	11984.38	OK
3294.938672	283.528737	11.6	12	6	17.2	6	17.2	3402.345	1647.469	5.8	6	1701.172	567.525	4864.5	OK
2924.540909	283.528737	10.3	11	6	17.2	5	26.25	3118.816	1462.27	5.2	6	1701.172	672.525	5284.125	OK
2934.703291	283.528737	10.4	11	6	37.2	5	51.25	3118.816	1467.352	5.2	6	1701.172	826.7	6495.5	OK
1819.239893	201.0619298	9.04	10	5	31	5	31	2010.619	909.6199	4.5	5	1005.31	361.2	2580	OK
2685.329297	283.528737	9.5	10	5	26.25	5	26.25	2835.287	1342.665	4.7	5	1417.644	462.525	3303.75	OK
5525.201544	490.8738521	11.3	12	6	50	6	50	5890.486	2762.601	5.6	6	2945.243	1115.625	9562.5	OK
1181.917161	201.0619298	5.9	6	3	76	3	76	1206.372	590.9586	2.9	3	603.1858	464.1	1989	OK
1287.240407	132.7322896	9.7	10	5	33.75	5	33.75	1327.323	643.6202	4.8	5	663.6614	465.675	3326.25	OK
1506.310674	201.0619298	7.5	8	4	78.67	4	78.66666666	1608.495	753.1553	3.7	4	804.2477	758.8	4336	OK
569.1	201.0619298	2.8	4	2	168	2	168	804.2477	284.55	1.4	2	402.1239	569.1	1626	OK
1509.246963	201.0619298	7.5	8	4	45.33	4	45.33333333	1608.495	754.6235	3.7	4	804.2477	464.1	2652	OK
1894.555828	201.0619298	9.4	10	5	30	5	30	2010.619	947.2779	4.7	5	1005.31	464.1	3315	OK

Lampiran 3. Tabel Perhitungan Tulangan Lentur Tumpuan Balok (SNI 03-2847-2002)

a (mm)	c (mm)	ϵ_s	ϵ_s'	$\epsilon_s' > 0,002$	R(mm)	Q (mm)	c+ (mm)	c- (mm)	fs'	fs' < 400 MPa	a (mm)	ND1	ND2	ND total
110.8797	130.4468	0.011661	0.001562632	NOT OK	-32.61169	12229.38	147.9066	82.68317	346.4615	OK	125.7206	1335781	1020413	2356194
60.55512	71.24132	0.011402	0.000557597	NOT OK	-13.35775	7747.494	102.3854	75.66991	260.1078	OK	87.02759	462334.1	261488.9	723822.9
106.7402	125.5767	0.012301	0.001578558	NOT OK	-26.16182	13075.68	143.4654	91.14171	351.1594	OK	121.9456	777402.9	696946.5	1474349
66.23217	77.92019	0.017868	0.000766946	NOT OK	-19.48005	6779.057	104.0881	65.12804	265.668	OK	88.47492	752036.8	373910	1125947
129.3597	152.1879	0.009567	0.00176797	NOT OK	-38.04697	14267.61	163.4072	87.31325	370.5119	OK	138.8961	1475771	1273122	2748894
52.79988	62.1175	0.022959	-1.8473E-05	NOT OK	-15.52938	5823.516	93.40541	62.34666	198.5243	OK	79.3946	1180995	389801.6	1570796
103.9498	122.2938	0.019998	0.001466807	NOT OK	-30.57346	11465.05	141.9278	80.78086	335.7811	OK	120.6386	2050856	1483435	3534292
87.0332	102.392	0.030269	0.001110204	NOT OK	-21.94114	11321.63	130.583	86.70067	303.6367	OK	110.9955	2358655	1604464	3963119
147.3848	173.3938	0.023506	0.001823488	NOT OK	-39.01361	19454.79	183.8475	105.8203	378.0769	OK	156.2704	4316969	4233190	8550159
110.8797	130.4468	0.013961	0.001562632	NOT OK	-27.17641	14267.61	149.6761	95.32327	349.459	OK	127.2247	1351762	1200782	2552544
106.7402	125.5767	0.009912	0.001578558	NOT OK	-31.39419	11207.72	141.8175	79.02918	348.2681	OK	120.5449	768473.8	592464.1	1360938
88.95019	104.6473	0.015362	0.00129427	NOT OK	-20.92946	11207.72	128.845	86.9861	322.9229	OK	109.5183	698178.9	549347.6	1247526
66.71264	78.48546	0.019571	0.000725693	NOT OK	-15.69709	8405.793	108.7143	77.32007	271.6162	OK	92.40711	785460.5	462066	1247526
63.07825	74.20971	0.010907	0.000736145	NOT OK	-18.55243	6233.616	99.65611	62.55126	262.8406	OK	84.7077	540011.6	264236.1	804247.7
88.95019	104.6473	0.009628	0.00129427	NOT OK	-26.16182	9339.77	126.2828	73.95916	317.3012	OK	107.3404	684294.9	449820	1134115
110.8797	130.4468	0.011661	0.001562632	NOT OK	-32.61169	12229.38	147.9066	82.68317	346.4615	OK	125.7206	1335781	1020413	2356194
37.84695	44.52583	0.02678	-0.00090784	NOT OK	-11.13146	3873.747	74.35848	52.09556	131.9969	OK	63.20471	402930	79618.64	482548.6
41.6415	48.99	0.024159	-0.00045989	NOT OK	-12.2475	4151.903	77.8364	53.3414	164.4711	OK	66.16094	421776	109153.2	530929.2
37.84695	44.52583	0.033518	-0.00090784	NOT OK	-11.13146	3873.747	74.35848	52.09556	131.9969	OK	63.20471	537240	106158.2	643398.2
25.2313	29.68388	0.051777	-0.00286177	NOT OK	-7.420971	2582.498	58.77824	43.93629	7.944124	OK	49.9615	318504.6	3194.522	321699.1
50.4626	59.36777	0.019335	6.91166E-05	NOT OK	-14.84194	5164.996	88.2264	58.54252	205.5602	OK	74.99244	478076.8	165321.4	643398.2
63.07825	74.20971	0.014868	0.000655293	NOT OK	-18.55243	6456.245	101.0172	63.91234	255.5042	OK	85.86461	547386.9	256860.8	804247.7

Lampiran 4. Tabel Analisis Gaya Tumpuan Balok (SNI 03-2847-2002)

No balok	Tipe Balok	Z1(mm)	Z2 (mm)	Mn1	Mn2	Mn total	Mr (Nmm)	Mr > Mu
1	BP1	574.6397	489.5934	767592837.7	499587739.7	1267180577	1013744462	76468161.92
2	BP2	298.4862	239.6146	138000343.4	62656551.35	200656894.7	160525515.8	129740715.8
3	BP3	579.5272	497.0346	450526141	346406575.1	796932716.2	637546172.9	40024572.93
4	BP4	497.7625	437.9119	374335754.9	163739620.4	538075375.4	430460300.3	4438900.302
5	BP6	568.0519	474.0928	838314705.4	603578152	1441892857	1153514286	85467985.87
6	BP7	497.8027	444.0946	587902347.7	173108793.9	761011141.6	608808913.3	8045413.27
7	BP9	877.1807	795.5722	1798971552	1180180043	2979151594	2383321276	28097975.53
8	BP11	1080.002	1004.917	2547352373	1612353641	4159706014	3327764811	178563711.2
9	BP12	1453.865	1348.153	6276289058	5706985423	11983274481	9586619585	450140484.9
10	B1	673.8877	587.8239	910935825.5	705848318.8	1616784144	1293427315	48348515.5
11	B2	480.2275	398.6825	369042303.2	236205039	605247342.2	484197873.8	10676973.76
12	B3	585.7409	511.655	408951912.5	281076416.1	690028328.6	552022662.9	38473562.91
13	B4	544.2964	481.7857	427523339.1	222616801.2	650140140.3	520112112.3	30417512.25
14	B5	301.6462	244.3439	162892411.9	64564487.28	227456899.2	181965519.4	14929719.36
15	B6	386.8298	314.2172	264705680.7	141341182	406046862.6	324837490.1	5278090.107
16	B7	574.6397	489.5934	767592837.7	499587739.7	1267180577	1013744462	70488761.92
17	RB1	410.3976	367.6415	165361522.5	29271116.38	194632638.9	155706111.1	2559811.104
18	RB2	410.4195	365.6636	173105109.8	39913334.28	213018444.1	170414755.3	4364455.284
19	RB3	510.3976	467.6415	274206029.5	49643973.22	323850002.7	259080002.2	14909502.17
20	RB4	517.0192	483.2218	164672991.8	1543662.387	166216654.2	132973323.3	108109123.3
21	RB5	404.5038	353.7736	193383878.3	58486332.72	251870211	201496168.8	10895868.78
22	RB6	399.0677	340.9828	218444428.8	87585123	306029551.8	244823641.4	12891841.42

Lampiran 5. Tabel Analisis Momen Nominal Tumpuan Balok (SNI 03-2847-2002)

Mu Lap (Nmm)	d' (mm)	d (mm)	Lb (mm)	β	ϕ	fys (Mpa)	ρ min	ρb	ρ maks	Mn (Nmm)	Rn	m	ρ_{hit}	ρ koreksi	ρ min < ρ perlu	ρ perlu < ρ max
864729400	62.5	637.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	1080911750	5.3193658	18.823529	0.0155842	0.015584	OK	OK
22697300	58	342	6000	0.85	0.8	240	0.0035	0.02709	0.02032	28371625	0.9702686	18.823529	0.0024837	0.02032	NOT OK	OK
667401400	59.5	640.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	834251750	6.7785625	18.823529	0.0211608	0.02032	OK	NOT OK
353861800	58	542	6000	0.85	0.8	240	0.0035	0.02709	0.02032	442327250	3.7643078	18.823529	0.0104358	0.010436	OK	OK
1010557300	62.5	637.5	8000	0.85	0.8	240	0.0035	0.02709	0.02032	1263196625	6.2164232	18.823529	0.0189047	0.018905	OK	OK
332713200	62.5	537.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	415891500	2.0564827	18.823529	0.0054174	0.005417	OK	OK
406829900	62.5	937.5	7850	0.85	0.8	240	0.0035	0.02709	0.02032	508537375	0.7232532	18.823529	0.00184	0.0035	NOT OK	OK
3735732600	64.5	1135.5	7812	0.85	0.8	240	0.0035	0.02709	0.02032	4669665750	3.621692	18.823529	0.0099943	0.009994	OK	OK
3861395900	68	1532	7812	0.85	0.8	240	0.0035	0.02709	0.02032	4826744875	1.5819526	18.823529	0.0041142	0.004114	OK	OK
873570500	62.5	737.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	1091963125	4.0152623	18.823529	0.0112238	0.011224	OK	OK
470213100	59.5	540.5	4700	0.85	0.8	240	0.0035	0.02709	0.02032	587766375	6.7064407	18.823529	0.0208625	0.02032	OK	NOT OK
448335800	59.5	640.5	6000	0.85	0.8	240	0.0035	0.02709	0.02032	560419750	4.5535898	18.823529	0.0129663	0.012966	OK	OK
606173000	59.5	590.5	5200	0.85	0.8	240	0.0035	0.02709	0.02032	757716250	5.4325885	18.823529	0.015987	0.015987	OK	OK
180755300	56	344	6000	0.85	0.8	240	0.0035	0.02709	0.02032	225944125	6.3644798	18.823529	0.0194842	0.019484	OK	OK
222468800	59.5	440.5	4700	0.85	0.8	240	0.0035	0.02709	0.02032	278086000	4.7771188	18.823529	0.0137125	0.013713	OK	OK
704617600	62.5	637.5	4400	0.85	0.8	240	0.0035	0.02709	0.02032	880772000	4.3344412	18.823529	0.012248	0.012248	OK	OK
111019600	58	442	6000	0.85	0.8	240	0.0035	0.02709	0.02032	138774500	2.3677938	18.823529	0.0062921	0.006292	OK	OK
119607600	56.5	443.5	3000	0.85	0.8	240	0.0035	0.02709	0.02032	149509500	2.5337297	18.823529	0.0067651	0.006765	OK	OK
182242700	58	542	6000	0.85	0.8	240	0.0035	0.02709	0.02032	227803375	1.9386597	18.823529	0.0050905	0.005091	OK	OK
11871000	58	542	3850	0.85	0.8	240	0.0035	0.02709	0.02032	14838750	0.168375	18.823529	0.0004226	0.0035	NOT OK	OK
149907300	58	442	3850	0.85	0.8	240	0.0035	0.02709	0.02032	187384125	3.1971794	18.823529	0.0087064	0.008706	OK	OK
213095200	58	442	4700	0.85	0.8	240	0.0035	0.02709	0.02032	266369000	4.5448326	18.823529	0.0129374	0.012937	OK	OK

Lampiran 6. Tabel Perhitungan Tulangan Lentur Lapangan Balok (SNI 03-2847-2002)

As perlu (mm)	As tul (mm ²)	n tulangan	n	n bawah	S tul. Bawah (mm)	n atas	S tul. Atas (mm)	As total	As perlu	n tulangan	n	As' total	As min	As max	As max > As perlu
4967.4747	490.87385	10.1	11	5	68.75	6	50	5399.6124	2483.7373	5.0598282	6	2945.2431	1115.625	8765.625	OK
1737.3867	201.06193	8.6	9	4	28.67	5	17.5	1809.5574	868.69336	4.3205263	5	1005.3096	299.25	1923.75	OK
3904.548	283.52874	13.8	14	7	11.17	7	11.17	3969.4023	2033.024	7.1704338	8	2268.2299	672.525	6725.25	OK
2262.4724	201.06193	11.3	12	6	40.8	6	40.8	2412.7432	1131.2362	5.6263073	6	1206.3716	758.8	6504	OK
6025.8765	490.87385	12.3	13	6	50	7	37.5	6381.3601	3012.9383	6.1379074	7	3436.117	1115.625	10359.375	OK
2038.3074	490.87385	4.2	5	2	550	3	262.5	2454.3693	1019.1537	2.0762029	3	1472.6216	1316.875	4703.125	OK
2625	490.87385	5.3	6	3	312.5	3	312.5	2945.2431	1312.5	2.673803	3	1472.6216	2625	11250	OK
11348.575	660.51986	17.2	18	9	79.875	9	79.875	11889.357	5674.2876	8.5906389	9	5944.6787	3974.25	51097.5	OK
8193.8213	1017.876	8.04	9	4	352	5	255	9160.8842	4096.9107	4.0249604	5	5089.3801	6970.6	44811	OK
4138.7718	490.87385	8.4	9	4	100	5	68.75	4417.8647	2069.3859	4.2157183	5	2454.3693	1290.625	8296.875	OK
3294.9387	283.52874	11.6	12	6	17.2	6	17.2	3402.3448	1647.4693	5.8105903	6	1701.1724	567.525	4864.5	OK
2491.4814	283.52874	8.8	9	4	41.33	5	26.25	2551.7586	1245.7407	4.3937017	5	1417.6437	672.525	4323.375	OK
3776.119	283.52874	13.3	14	7	27.83	7	27.83	3969.4023	1888.0595	6.6591468	7	1984.7012	826.7	8267	OK
2010.7737	201.06193	10.4	11	5	31	6	21.6	2211.6812	1005.3868	5.0003839	6	1206.3716	361.2	2838	OK
1812.1098	283.52874	6.4	7	3	71.5	4	41.33	1984.7012	906.05488	3.1956369	4	1134.1149	462.525	2312.625	OK
3904.0479	490.87385	7.9	8	4	100	4	100	3926.9908	1952.0239	3.9766305	4	1963.4954	1115.625	6375	OK
834.33264	201.06193	4.1	5	2	168	3	76	1005.3096	417.16632	2.074815	3	603.18579	464.1	1657.5	OK
900.09176	132.73229	6.8	7	3	80.5	4	49.33	929.12603	450.04588	3.3906285	4	530.92916	465.675	2328.375	OK
1103.6296	201.06193	5.5	6	3	126	3	126	1206.3716	551.81478	2.7445015	3	603.18579	758.8	3252	OK
569.1	201.06193	2.8	3	0	-200	3	76	603.18579	284.55	1.4152356	2	402.12386	569.1	1219.5	OK
1154.4644	201.06193	5.7	6	3	76	3	76	1206.3716	577.23221	2.8709175	3	603.18579	464.1	1989	OK
1715.4971	201.06193	8.5	9	4	45.33	5	30	1809.5574	857.74856	4.2660914	5	1005.3096	464.1	2983.5	OK

Lampiran 7. Tabel Perhitungan Tulangan Lentur Lapangan Balok (SNI 03-2847-2002)

a (mm)	c (mm)	ϵ_s	ϵ_s'	$\epsilon_s' > 0,002$	R (mm)	Q (mm)	c+ (mm)	c- (mm)	fs'	fs '< 400 MPa	α (mm)	ND1	ND2	ND total
92.399784	108.70563	0.0145934	0.00127515	NOT OK	-21.74113	12229.383	134.44454	90.962289	321.07458	OK	114.27786	1214202.3	945642.69	2159844.949
60.555122	71.24132	0.0114018	0.00055759	NOT OK	-13.35775	7747.4936	102.3854	75.669906	260.10779	OK	87.027591	462334.08	261488.87	723822.9474
106.74023	125.57674	0.0123014	0.00157855	NOT OK	-20.92946	14943.632	144.95234	103.09342	353.71214	OK	123.20949	785460.47	802300.46	1587760.927
56.770427	66.788738	0.0213454	0.0003947	NOT OK	-16.69718	5810.6202	94.731896	61.337527	232.64749	OK	80.522111	684437.95	280659.32	965097.2632
110.87974	130.44675	0.0116612	0.00156263	NOT OK	-27.17641	14267.614	149.67608	95.32327	349.45897	OK	127.22467	1351762.1	1200781.9	2552544.031
26.399938	31.058751	0.0489177	-0.0030369	NOT OK	-3.882344	4367.6368	70.084379	62.319691	64.930693	OK	59.571722	886129.37	95618.339	981747.7042
34.649919	40.764611	0.0659937	-0.0015995	NOT OK	-10.19115	3821.6822	72.845297	52.462992	85.210419	OK	61.918503	1052614.5	125482.7	1178097.245
111.89983	131.64686	0.022876	0.0015301	NOT OK	-32.91172	12736.834	150.47028	84.646844	342.80635	OK	127.89973	2717869.4	2037873.6	4755742.959
58.953905	69.357536	0.0632653	5.8719E-05	NOT OK	-13.00454	8843.0858	107.93717	81.92809	222.0023	OK	91.746591	2534499.6	1129854.1	3664353.671
73.919827	86.964503	0.0224414	0.0008439	NOT OK	-16.30584	10191.153	118.56548	85.953792	283.71907	OK	100.78066	1070794.5	696351.37	1767145.868
106.74023	125.57674	0.0099124	0.0015785	NOT OK	-31.39419	11207.724	141.81755	79.029177	348.26811	OK	120.54492	768473.84	592464.1	1360937.938
71.160154	83.717828	0.0199521	0.0008678	NOT OK	-15.69709	9339.7702	113.60608	82.21189	285.75624	OK	96.565164	615602.92	405100.53	1020703.453
93.397702	109.87965	0.0131222	0.0013754	NOT OK	-27.46991	9806.7587	130.23836	75.29854	325.88722	OK	110.70261	940972.18	646788.74	1587760.927
63.078252	74.209709	0.0109065	0.0007361	NOT OK	-14.84194	7480.3386	102.59513	72.911246	272.49907	OK	87.20586	555937.36	328735.14	884672.4913
53.370115	62.788371	0.0180469	0.0001571	NOT OK	-10.46473	7471.8161	97.535543	76.606086	233.97958	OK	82.905211	528520.72	265359.74	793880.4636
73.919827	86.964503	0.0189917	0.0008439	NOT OK	-21.74113	8152.9221	114.61523	71.132975	272.81834	OK	97.422943	1035118.8	535677.56	1570796.327
25.231301	29.683884	0.0416707	-0.0028617	NOT OK	-3.710485	3873.7468	66.060421	58.63945	73.209536	OK	56.151358	357964.91	44158.952	402123.8597
24.984902	29.394002	0.0422643	-0.0027664	NOT OK	-4.899	3321.5222	62.739491	52.941491	59.670469	OK	53.328568	339969.62	31680.792	371650.4109
28.385214	33.394369	0.0456908	-0.0022104	NOT OK	-8.348592	2905.3101	62.892236	46.195052	46.672561	OK	53.458401	454396.41	28152.225	482548.6316
12.61565	14.841942	0.1065544	-0.0087235	NOT OK	0	2582.4979	50.818283	50.818283	-84.79291	OK	43.19554	275371.57	-34097.25	241274.3158
37.846951	44.525825	0.0267805	-0.0009078	NOT OK	-11.13146	3873.7468	74.358477	52.095564	131.99687	OK	63.204705	402930	79618.635	482548.6316
50.462602	59.367767	0.0193354	6.91166E-05	NOT OK	-11.13146	6456.2447	92.249605	69.986692	222.76261	OK	78.412164	499877.55	223945.4	723822.9474

Lampiran 8. Tabel Analisis Gaya Lapangan Balok (SNI 03-2847-2002)

No balok	Tipe Balok	Z1(mm)	Z2(mm)	Mn1	Mn2	Mn total	Mr (Nmm)	MR > MU
1	BP1	580.36107	503.05546	704675720.8	475710719.7	1180386441	944309152.4	79579752.43
2	BP2	298.4862	239.6146	138000343.4	62656551.35	200656894.7	160525515.8	137828215.8
3	BP3	578.89526	495.54766	454699340	397578118.5	852277458.5	681821966.8	14420566.81
4	BP4	501.73894	447.2681	343409173	125529960.2	468939133.2	375151306.6	21289506.59
5	BP6	573.88766	487.82392	775759612.4	585770128.9	1361529741	1089223793	78666493.01
6	BP7	507.71414	467.41562	449900407.8	44693505.27	494593913	395675130.4	62961930.42
7	BP9	906.54075	864.6547	954237977.4	108499207	1062737184	850189747.6	443359847.6
8	BP11	1071.5501	985.02972	2912333281	2007366060	4919699341	3935759473	200026873.2
9	BP12	1486.1267	1424.0628	3766587492	1608983236	5375570728	4300456582	439060682.1
10	B1	687.10967	618.93452	735753253	430995902.3	1166749155	933399324.2	59828824.21
11	B2	480.22754	398.68245	369042303.2	236205039	605247342.2	484197873.8	13984773.76
12	B3	592.21742	526.89392	364570772.2	213445009.4	578015781.6	462412625.3	14076825.3
13	B4	535.1487	460.26164	503560035.5	297692045.6	801252081.2	641001664.9	34828664.93
14	B5	300.39707	241.40487	167001952.8	79358262.96	246360215.8	197088172.6	16332872.64
15	B6	399.04739	342.96446	210904816.7	91008960.01	301913776.8	241531021.4	19062221.4
16	B7	588.78853	522.88477	609466055.4	280097639.7	889563695.1	711650956.1	7033356.119
17	RB1	413.92432	375.93958	148170381.4	16601097.7	164771479.1	131817183.3	20797583.32
18	RB2	416.83572	380.76051	141711479.7	12062794.37	153774274.1	123019419.2	3411819.242
19	RB3	515.2708	479.10776	234137199.6	13487949.7	247625149.3	198100119.5	15857419.46
20	RB4	520.40223	491.18172	143303979	-16747947.84	126556031.2	101244824.9	89373824.94
21	RB5	410.39765	367.64152	165361522.5	292711116.38	194632638.9	155706111.1	5798811.104
22	RB6	402.79392	349.7504	201347635	78324992.97	279672627.9	223738102.3	10642902.33

Lampiran 9. Tabel Analisis Momen Nominal Lapangan Balok (SNI 03-2847-2002)

Mu tump (Nmm)	d' (mm)	d (mm)	Lb (mm)	β	ϕ	fys (Mpa)	ρ min	ρb	ρ maks	Mn (Nmm)	Rn (N/mm2)	m	ρ_{hit}	ρ koreksi	ρ min < ρ perlu	ρ perlu < ρ max
937276300	62.5	637.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	1041418111	5.125010312	18.82353	0.0149028	0.014902824	OK	OK
30784800	58	342	6000	0.85	0.9	240	0.0035	0.02709	0.02032	34205333.33	1.169773036	18.82353	0.0030097	0.020320313	NOT OK	OK
597521600	59.5	640.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	663912888.9	5.394504715	18.82353	0.015851	0.01585101	OK	OK
426021400	58	542	6000	0.85	0.9	240	0.0035	0.02709	0.02032	473357111.1	4.028379168	18.82353	0.0112654	0.011265385	OK	OK
1068046300	62.5	637.5	8000	0.85	0.9	240	0.0035	0.02709	0.02032	1186718111	5.840058371	18.82353	0.0174739	0.017473911	OK	OK
600763500	62.5	537.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	667515000	3.300699992	18.82353	0.009017	0.009016983	OK	OK
2355223300	62.5	937.5	7850	0.85	0.9	240	0.0035	0.02709	0.02032	2616914778	3.721834351	18.82353	0.0103038	0.010303821	OK	OK
3149201100	64.5	1135.5	7812	0.85	0.9	240	0.0035	0.02709	0.02032	3499112333	2.713836054	18.82353	0.0072839	0.007283938	OK	OK
9136479100	68	1532	7812	0.85	0.9	240	0.0035	0.02709	0.02032	10151643444	3.327173687	18.82353	0.0090968	0.009096769	OK	OK
1245078800	62.5	737.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	1383420889	5.086982872	18.82353	0.0147709	0.014770915	OK	OK
473520900	59.5	540.5	4700	0.85	0.9	240	0.0035	0.02709	0.02032	526134333.3	6.003216301	18.82353	0.018087	0.018087002	OK	OK
513549100	59.5	640.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	570610111.1	4.636389783	18.82353	0.0132411	0.013241111	OK	OK
489694600	59.5	590.5	5200	0.85	0.9	240	0.0035	0.02709	0.02032	544105111.1	3.901063416	18.82353	0.0108634	0.010863367	OK	OK
167035800	56	344	6000	0.85	0.9	240	0.0035	0.02709	0.02032	185595333.3	5.227919746	18.82353	0.0152621	0.015262097	OK	OK
319559400	59.5	440.5	4700	0.85	0.9	240	0.0035	0.02709	0.02032	355066000	6.099524884	18.82353	0.018454	0.018453984	OK	OK
943255700	62.5	637.5	4400	0.85	0.9	240	0.0035	0.02709	0.02032	1048061889	5.157705566	18.82353	0.0150166	0.015016601	OK	OK
153146300	58	442	6000	0.85	0.9	240	0.0035	0.02709	0.02032	170162555.6	2.903342062	18.82353	0.0078363	0.007836311	OK	OK
166050300	56.5	443.5	3000	0.85	0.9	240	0.0035	0.02709	0.02032	184500333.3	3.126717556	18.82353	0.0084962	0.008496183	OK	OK
244170500	58	542	6000	0.85	0.9	240	0.0035	0.02709	0.02032	271300555.6	2.30883086	18.82353	0.0061252	0.006125187	OK	OK
24864200	58	542	3850	0.85	0.9	240	0.0035	0.02709	0.02032	27626888.89	0.313481671	18.82353	0.0007896	0.0035	NOT OK	OK
190600300	58	442	3850	0.85	0.9	240	0.0035	0.02709	0.02032	211778111.1	3.61339365	18.82353	0.0099688	0.009968796	OK	OK
231931800	58	442	4700	0.85	0.9	240	0.0035	0.02709	0.02032	257702000	4.396954744	18.82353	0.0124516	0.012451612	OK	OK

Lampiran 10. Tabel Perhitungan Tulangan Lentur Tumpuan Balok (SNI 2847:2013)

As perlu (mm2)	As tul (mm2)	n tulangan	n	n atas	S tul. atas (mm)	n bawah	S tul. bawah (mm)	As n (mm)	As tul tekan	n tul. tekan	n tekan	As' tekan	As min	As max	As max > As n
4750.275056	490.8738521	9.7	10	5	68.75	5	68.75	4908.739	2375.138	4.8	5	2454.369	1115.625	7968.75	OK
1737.386719	201.0619298	8.6	9	5	17.5	4	28.67	1809.557	868.6934	4.3	5	1005.31	299.25	1923.75	OK
3045.771624	283.528737	10.7	11	6	17.2	5	26.25	3118.816	1522.886	5.4	6	1701.172	672.525	5284.125	OK
2442.335363	201.0619298	12.1	13	7	31.33	6	40.8	2613.805	1221.168	6.1	7	1407.434	758.8	7046	OK
5569.80925	490.8738521	11.3	12	6	50	6	50	5890.486	2784.905	5.7	6	2945.243	1115.625	9562.5	OK
3392.639743	490.8738521	6.9	7	4	166.67	4	0	3436.117	1696.32	3.5	4	1963.495	1316.875	6584.375	OK
7727.865709	490.8738521	15.7	16	8	71.43	8	71.43	7853.982	3863.933	7.9	8	3926.991	2625	30000	OK
8270.912122	660.5198554	12.5	13	7	116.17	6	145.2	8586.758	4135.456	6.3	7	4623.639	3974.25	36903.75	OK
18117.12538	1017.87602	17.8	18	9	109.5	9	109.5	18321.77	9058.563	8.9	9	9160.884	6970.6	89622	OK
5446.775082	490.8738521	11.1	12	6	50	6	50	5890.486	2723.388	5.5	6	2945.243	1290.625	11062.5	OK
2932.807395	283.528737	10.3	11	6	17.2	5	26.25	3118.816	1466.404	5.2	6	1701.172	567.525	4459.125	OK
2544.27951	283.528737	8.9	9	5	26.25	4	41.33	2551.759	1272.14	4.5	5	1417.644	672.525	4323.375	OK
2565.927198	283.528737	9.04	10	5	51.25	5	51.25	2835.287	1282.964	4.5	5	1417.644	826.7	5905	OK
1575.048385	201.0619298	7.8	8	4	46.67	4	46.67	1608.495	787.5242	3.9	4	804.2477	361.2	2064	OK
2438.694029	283.528737	8.6	9	5	26.25	4	41.33	2551.759	1219.347	4.3	5	1417.644	462.525	2973.375	OK
4786.541528	490.8738521	9.7	10	6	50	6	50	4908.739	2393.271	4.9	5	2454.369	1115.625	7968.75	OK
1039.094782	201.0619298	5.2	6	3	76	3	76	1206.372	519.5474	2.6	3	603.1858	464.1	1989	OK
1130.417197	132.7322896	8.5	9	5	33.75	4	49.33	1194.591	565.2086	4.3	5	663.6614	465.675	2993.625	OK
1327.940529	201.0619298	6.6	7	4	78.67	3	126	1407.434	663.9703	3.3	4	804.2477	758.8	3794	OK
569.1	201.0619298	2.8	3	3	76	0	-200	603.1858	284.55	1.4	2	402.1239	569.1	1219.5	OK
1321.86236	201.0619298	6.6	7	4	45.33	3	76	1407.434	660.9312	3.3	4	804.2477	464.1	2320.5	OK
1651.083703	201.0619298	8.2	9	5	30	4	45.33	1809.557	825.5419	4.1	5	1005.31	464.1	2983.5	OK

Lampiran 11. Tabel Perhitungan Tulangan Lentur Tumpuan Balok (SNI 2847:2013)

a (mm)	c (mm)	es	es'	es' > 0,002	R (mm)	Q (mm)	c+ (mm)	c- (mm)	fs'	fs' < 400 MPa	α (mm)	ND1	ND2	ND total
92.39978	108.7056	0.014593	0.001275158	NOT OK	-27.17641	10191.15	131.7217	77.36885	315.3088	OK	111.9634	1189611	773884.2	1963495
60.55512	71.24132	0.011402	0.000557597	NOT OK	-13.35775	7747.494	102.3854	75.66991	260.1078	OK	87.02759	462334.1	261488.9	723822.9
88.95019	104.6473	0.015362	0.00129427	NOT OK	-20.92946	11207.72	128.845	86.9861	322.9229	OK	109.5183	698178.9	549347.6	1247526
56.77043	66.78874	0.021345	0.00039477	NOT OK	-13.91432	6779.057	97.41681	69.58817	242.7721	OK	82.80429	703836.4	341685.6	1045522
110.8797	130.4468	0.011661	0.001562632	NOT OK	-32.61169	12229.38	147.9066	82.68317	346.4615	OK	125.7206	1335781	1020413	2356194
39.59991	46.58813	0.031612	-0.00102463	NOT OK	-7.764688	5823.516	84.47066	68.94128	156.0589	OK	71.80006	1068026	306420.9	1374447
92.39978	108.7056	0.022873	0.001275158	NOT OK	-27.17641	10191.15	131.7217	77.36885	315.3088	OK	111.9634	1903378	1238215	3141593
74.59989	87.76458	0.035814	0.000795238	NOT OK	-18.28429	9906.427	119.4808	82.91226	276.0987	OK	101.5587	2158123	1276581	3434703
132.6463	156.0545	0.026451	0.001692764	NOT OK	-39.01361	15917.55	171.0728	93.04553	361.505	OK	145.4118	4017002	3311705	7328707
110.8797	130.4468	0.013961	0.001562632	NOT OK	-32.61169	12229.38	147.9066	82.68317	346.4615	OK	125.7206	1335781	1020413	2356194
88.95019	104.6473	0.012495	0.00129427	NOT OK	-20.92946	11207.72	128.845	86.9861	322.9229	OK	109.5183	698178.9	549347.6	1247526
71.16015	83.71783	0.019952	0.000867838	NOT OK	-15.69709	9339.77	113.6061	82.21189	285.7562	OK	96.56516	615602.9	405100.5	1020703
66.71264	78.48546	0.019571	0.000725693	NOT OK	-19.62137	7004.828	105.5855	66.34273	261.8853	OK	89.74764	762855	371260	1134115
50.4626	59.36777	0.014383	0.000170182	NOT OK	-14.84194	4986.892	87.0027	57.31882	213.8051	OK	73.9523	471445.9	171952.3	643398.2
71.16015	83.71783	0.012785	0.000867838	NOT OK	-15.69709	9339.77	113.6061	82.21189	285.7562	OK	96.56516	615602.9	405100.5	1020703
92.39978	108.7056	0.014593	0.001275158	NOT OK	-27.17641	10191.15	131.7217	77.36885	315.3088	OK	111.9634	1189611	773884.2	1963495
37.84695	44.52583	0.02678	-0.00090784	NOT OK	-11.13146	3873.747	74.35848	52.09556	131.9969	OK	63.20471	402930	79618.64	482548.6
33.3132	39.192	0.030948	-0.00132486	NOT OK	-7.3485	4151.903	72.20144	57.50443	130.4803	OK	61.37122	391241.5	86594.71	477836.2
28.38521	33.39437	0.045691	-0.00221046	NOT OK	-5.565728	3873.747	68.05352	56.92206	88.63777	OK	57.84549	491686.7	71286.72	562973.4
12.61565	14.84194	0.106554	-0.00872353	NOT OK	0	2582.498	50.81828	50.81828	-84.79291	OK	43.19554	275371.6	-34097.25	241274.3
37.84695	44.52583	0.02678	-0.00090784	NOT OK	-7.420971	5164.996	79.671	64.82906	163.2037	OK	67.72035	431717.2	131256.2	562973.4
50.4626	59.36777	0.019335	6.91166E-05	NOT OK	-11.13146	6456.245	92.2496	69.98669	222.7626	OK	78.41216	499877.5	223945.4	723822.9

Lampiran 11. Tabel Analisis Gaya Nominal Tumpuan Balok (SNI 2847:2013)

No balok	Tipe Balok	Z1(mm)	Z2(mm)	Mn1	Mn2	Mn total	Mr (Nmm)	Mr > Mu
1	BP1	581.5183	505.7783	691780696.4	391413853.7	1083194550	974875095.1	37598795.13
2	BP2	298.4862	239.6146	138000343.4	62656551.35	200656894.7	180591205.3	149806405.3
3	BP3	585.7409	511.655	408951912.5	281076416.1	690028328.6	621025495.8	23503895.78
4	BP4	500.5979	444.5832	352339007.8	151907678.2	504246686	453822017.4	27800617.39
5	BP6	574.6397	489.5934	767592837.7	499587739.7	1267180577	1140462520	72416219.66
6	BP7	501.6	453.0293	535721762.1	138817648.9	674539411	607085469.9	6321969.862
7	BP9	881.5183	805.7783	1677862507	997726569.6	2675589076	2408030169	52806868.68
8	BP11	1084.721	1016.019	2340960143	1297030398	3637990541	3274191487	124990386.7
9	BP12	1459.294	1360.927	5861987382	4506989896	10368977278	9332079550	195600450.3
10	B1	674.6397	589.5934	901170941.8	601629084.6	1502800026	1352520024	107441223.8
11	B2	485.7409	411.655	339134023.3	226141661.1	565275684.4	508748115.9	35227215.93
12	B3	592.2174	526.8939	364570772.2	213445009.4	578015781.6	520214203.5	6665103.466
13	B4	545.6262	484.9145	416233634	180029368.7	596263002.7	536636702.4	46942102.43
14	B5	307.0239	256.9973	144745137	44191268.58	188936405.6	170042765	3006965.01
15	B6	392.2174	326.8939	241450188.1	132424902.9	373875091	336487581.9	16928181.9
16	B7	581.5183	505.7783	691780696.4	391413853.7	1083194550	974875095.1	31619395.13
17	RB1	410.3976	367.6415	165361522.5	29271116.38	194632638.9	175169375	22023074.99
18	RB2	412.8144	371.2986	161510133.5	32152492.39	193662625.9	174296363.3	8246063.342
19	RB3	513.0773	473.9465	252273252.7	33786090.7	286059343.4	257453409	13282909.03
20	RB4	520.4022	491.1817	143303979	-16747947.84	126556031.2	113900428.1	89036228.06
21	RB5	408.1398	362.329	176200992.9	47557920.04	223758912.9	201383021.6	10782721.64
22	RB6	402.7939	349.7504	201347635	78324992.97	279672627.9	251705365.1	19773565.12

Lampiran 12. Tabel Analisis Momen Nominal Tumpuan Balok (SNI 2847:2013)

Mu Lap (Nmm)	d' (mm)	d (mm)	Lb (mm)	β	ϕ	fys (Mpa)	ρ min	ρb	ρ maks	Mn (Nmm)	Rn	m	ρ_{hit}	ρ koreksi	ρ min < ρ perlu	ρ perlu < ρ max
864729400	62.5	637.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	960810444.4	4.7283251	18.823529	0.0135484	0.013548	OK	OK
22697300	58	342	6000	0.85	0.9	240	0.0035	0.02709	0.02032	25219222.22	0.862461	18.823529	0.0022018	0.02032	NOT OK	OK
667401400	59.5	640.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	741557111.1	6.0253889	18.823529	0.0181711	0.02032	OK	OK
353861800	58	542	6000	0.85	0.9	240	0.0035	0.02709	0.02032	393179777.8	3.3460514	18.823529	0.0091538	0.009154	OK	OK
1010557300	62.5	637.5	8000	0.85	0.9	240	0.0035	0.02709	0.02032	1122841444	5.5257095	18.823529	0.0163215	0.016321	OK	OK
332713200	62.5	537.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	369681333.3	1.8279847	18.823529	0.0047855	0.004786	OK	OK
406829900	62.5	937.5	7850	0.85	0.9	240	0.0035	0.02709	0.02032	452033222.2	0.6428917	18.823529	0.0016323	0.0035	NOT OK	OK
3735732600	64.5	1135.5	7812	0.85	0.9	240	0.0035	0.02709	0.02032	4150814000	3.2192818	18.823529	0.0087725	0.008773	OK	OK
3861395900	68	1532	7812	0.85	0.9	240	0.0035	0.02709	0.02032	4290439889	1.4061801	18.823529	0.0036402	0.00364	OK	OK
873570500	62.5	737.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	970633888.9	3.569122	18.823529	0.0098328	0.009833	OK	OK
470213100	59.5	540.5	4700	0.85	0.9	240	0.0035	0.02709	0.02032	522459000	5.9612806	18.823529	0.0179284	0.017928	OK	OK
448335800	59.5	640.5	6000	0.85	0.9	240	0.0035	0.02709	0.02032	498150888.9	4.0476354	18.823529	0.0113265	0.011327	OK	OK
606173000	59.5	590.5	5200	0.85	0.9	240	0.0035	0.02709	0.02032	673525555.6	4.8289675	18.823529	0.0138876	0.013888	OK	OK
180755300	56	344	6000	0.85	0.9	240	0.0035	0.02709	0.02032	200839222.2	5.6573154	18.823529	0.0167995	0.0168	OK	OK
222468800	59.5	440.5	4700	0.85	0.9	240	0.0035	0.02709	0.02032	247187555.6	4.2463279	18.823529	0.0119627	0.011963	OK	OK
704617600	62.5	637.5	4400	0.85	0.9	240	0.0035	0.02709	0.02032	782908444.4	3.8528366	18.823529	0.0107121	0.010712	OK	OK
111019600	58	442	6000	0.85	0.9	240	0.0035	0.02709	0.02032	123355111.1	2.1047056	18.823529	0.0055519	0.005552	OK	OK
119607600	56.5	443.5	3000	0.85	0.9	240	0.0035	0.02709	0.02032	132897333.3	2.2522042	18.823529	0.0059654	0.005965	OK	OK
182242700	58	542	6000	0.85	0.9	240	0.0035	0.02709	0.02032	202491888.9	1.7232531	18.823529	0.0044986	0.004499	OK	OK
11871000	58	542	3850	0.85	0.9	240	0.0035	0.02709	0.02032	13190000	0.1496666	18.823529	0.0003755	0.0035	NOT OK	OK
149907300	58	442	3850	0.85	0.9	240	0.0035	0.02709	0.02032	166563666.7	2.8419372	18.823529	0.0076566	0.007657	OK	OK
213095200	58	442	4700	0.85	0.9	240	0.0035	0.02709	0.02032	236772444.4	4.0398512	18.823529	0.0113018	0.011302	OK	OK

Lampiran 13. Tabel Perhitungan Penulangan Lentur Lapangan Balok (SNI 2847:2013)

As perlu (mm)	As tul (mm ²)	n tulangan	n	n atas	S tul. atas (mm)	n bawah	S tul. bawah (mm)	As total	As perlu	n tulangan	n	As' total	As min	As max	As max > As perlu
4318.5646	490.87385	8.8	9	5	68.75	4	100	4417.8647	2159.2823	4.4	5	2454.3693	1115.625	7171.875	OK
1737.3867	201.06193	8.6	9	5	17.5	4	28.67	1809.5574	868.69336	4.3	1	201.06193	299.25	1923.75	OK
3904.548	283.52874	13.8	14	7	11.17	7	11.17	3969.4023	1745.7931	6.2	7	1984.7012	672.525	6725.25	OK
1984.5333	201.06193	9.9	10	5	55	5	55	2010.6193	992.26663	4.9	5	1005.3096	758.8	5420	OK
5202.472	490.87385	10.6	11	6	50	5	68.75	5399.6124	2601.236	5.3	6	2945.2431	1115.625	8765.625	OK
1800.5446	490.87385	3.7	4	2	550	2	550	1963.4954	900.2723	1.8	2	981.7477	1316.875	3762.5	OK
2625	490.87385	5.3	6	3	312.5	3	312.5	2945.2431	1312.5	2.7	3	1472.6216	2625	11250	OK
9961.1784	660.51986	15.1	16	8	95.43	8	95.43	10568.318	4980.5892	7.5	8	5284.1588	3974.25	45420	OK
7249.7496	1017.876	7.1	8	4	352	4	352	8143.0082	3624.8748	3.6	4	4071.5041	6970.6	39832	OK
3625.8322	490.87385	7.4	8	4	100	4	100	3926.9908	1812.9161	3.7	4	1963.4954	1290.625	7375	OK
2907.0905	283.52874	10.3	11	6	17.2	5	26.25	3118.8161	1453.5452	5.1	6	1701.1724	567.525	4459.125	OK
2176.3919	283.52874	7.7	8	4	41.33	4	41.33	2268.2299	1088.1959	3.8	4	1134.1149	672.525	3843	OK
3280.2584	283.52874	11.6	12	6	37.2	6	37.2	3402.3448	1640.1292	5.8	6	1701.1724	826.7	7086	OK
1733.7094	201.06193	8.6	9	5	31	4	46.67	1809.5574	866.85472	4.3	5	1005.3096	361.2	2322	OK
1580.8711	283.52874	5.6	6	3	71.5	3	71.5	1701.1724	790.43553	2.8	3	850.58621	462.525	1982.25	OK
3414.4751	490.87385	6.9	7	4	100	3	162.5	3436.117	1707.2375	3.5	4	1963.4954	1115.625	5578.125	OK
736.17726	201.06193	3.7	4	2	168	2	168	804.24772	368.08863	1.8	2	402.12386	464.1	1326	OK
793.70209	132.73229	5.9	6	3	80.5	3	80.5	796.39374	396.85105	2.9	3	398.19687	465.675	1995.75	OK
975.29705	201.06193	4.9	5	3	126	2	268	1005.3096	487.64852	2.4	3	603.18579	758.8	2710	OK
569.1	201.06193	2.8	3	3	76	0	-200	603.18579	284.55	1.4	2	402.12386	569.1	1219.5	OK
1015.2642	201.06193	5.1	6	3	76	3	76	1206.3716	507.6321	2.5	3	603.18579	464.1	1989	OK
1498.6185	201.06193	7.5	8	4	45.33	4	45.33	1608.4954	749.30926	3.7	4	804.24772	464.1	2652	OK

Lampiran 14. Tabel Perhitungan Penulangan Lentur Lapangan Balok (SNI 2847:2013)

a (mm)	c (mm)	es	es'	es' > 0,002	R (mm)	Q (mm)	c+ (mm)	c- (mm)	fs'	fs' < 400 MPa	a (mm)	ND1	ND2	ND total
73.919827	86.964503	0.0189917	0.000843948	NOT OK	-16.30584	10191.153	118.56548	85.953792	283.71907	OK	100.78066	1070794.5	696351.37	1767145.868
121.11024	142.48264	0.0042009	0.001778799	NOT OK	-66.78874	1549.4987	144.31444	10.736963	358.85989	OK	122.66727	651669.89	72153.061	723822.9474
124.53027	146.5062	0.0101155	0.001781622	NOT OK	-36.62655	13075.678	156.69812	83.445022	372.1734	OK	133.1934	849107.95	738652.98	1587760.927
47.308689	55.657282	0.0262145	-0.000126276	NOT OK	-13.91432	4842.1835	84.877634	57.048993	189.99799	OK	72.145989	613240.9	191006.82	804247.7193
92.399784	108.70563	0.0145934	0.001275158	NOT OK	-21.74113	12229.383	134.44454	90.962289	321.07458	OK	114.27786	1214202.3	945642.69	2159844.949
26.399938	31.058751	0.0489177	-0.003036946	NOT OK	-7.764688	2911.7579	62.281183	46.751808	-2.108022	OK	52.939006	787467.71	-2069.546	785398.1634
34.649919	40.764611	0.0659937	-0.001599578	NOT OK	-10.19115	3821.6822	72.845297	52.462992	85.210419	OK	61.918503	1052614.5	125482.7	1178097.245
99.466519	117.01943	0.0261105	0.001346429	NOT OK	-29.25486	11321.63	139.60647	81.096748	322.79221	OK	118.6655	2521641.8	1705685.3	4227327.075
58.953905	69.357536	0.0632653	5.8719E-05	NOT OK	-17.33938	7074.4686	103.21792	68.539152	204.7198	OK	87.735231	2423685.8	833517.49	3257203.263
73.919827	86.964503	0.0224414	0.000843948	NOT OK	-21.74113	8152.9221	114.61523	71.132975	272.81834	OK	97.422943	1035118.8	535677.56	1570796.327
88.950192	104.64728	0.0124949	0.00129427	NOT OK	-20.92946	11207.724	128.84501	86.986095	322.92291	OK	109.51826	698178.89	549347.55	1247526.443
71.160154	83.717828	0.0199521	0.000867838	NOT OK	-20.92946	7471.8161	109.86684	68.007927	275.0612	OK	93.386815	595340.95	311951.01	907291.9584
80.055173	94.182556	0.0158092	0.001104745	NOT OK	-23.54564	8405.7931	118.20392	71.112642	297.97956	OK	100.47333	854023.33	506914.61	1360937.938
50.462602	59.367767	0.0143832	0.000170182	NOT OK	-11.13146	6233.6155	90.865545	68.602632	230.22287	OK	77.235713	492377.67	231445.28	723822.9474
53.370115	62.788371	0.0180469	0.000157117	NOT OK	-15.69709	5603.8621	92.18409	60.789905	212.73144	OK	78.356477	499522.54	180946.43	680468.9688
55.43987	65.223377	0.0263223	0.000125264	NOT OK	-10.87056	8152.9221	101.8161	80.074977	231.68891	OK	86.543687	919526.68	454920.11	1374446.786
25.231301	29.683884	0.0416707	-0.002861767	NOT OK	-7.420971	2582.4979	58.778236	43.936294	7.9441236	OK	49.961501	318504.57	3194.5217	321699.0877
24.984902	29.394002	0.0422643	-0.002766483	NOT OK	-7.3485	2491.1417	57.797902	43.100901	13.47352	OK	49.128217	313192.38	5365.1136	318557.4951
18.923476	22.262913	0.0700363	-0.004815689	NOT OK	-2.782864	2905.3101	56.755583	51.189855	-13.15553	OK	48.242246	410059.09	-7935.231	402123.8597
12.61565	14.841942	0.1065544	-0.008723533	NOT OK	0	2582.4979	50.818283	50.818283	-84.79291	OK	43.19554	275371.57	-34097.25	241274.3158
37.846951	44.525825	0.0267805	-0.000907844	NOT OK	-11.13146	3873.7468	74.358477	52.095564	131.99687	OK	63.204705	402930	79618.635	482548.6316
50.462602	59.367767	0.0193354	6.91166E-05	NOT OK	-14.84194	5164.9957	88.226402	58.542518	205.56025	OK	74.992441	478076.81	165321.36	643398.1755

Lampiran 15. Tabel Analisis Gaya Nominal Lapangan Balok (SNI 2847:2013)

No balok	Type Balok	Z1(mm)	Z2 (mm)	Mn1	Mn2	Mn total	Mr (Nmm)	MR > MU
1	BP1	587.10967	518.93452	628673803.5	361360765	990034568.5	891031111.7	26301711.65
2	BP2	280.66636	197.68556	182901817.2	14263618.46	197165435.7	177448892.1	154751592.1
3	BP3	573.9033	483.80188	487305850.7	357361700	844667550.7	760200795.6	92799395.63
4	BP4	505.92701	457.12237	310255133.5	87313488.16	397568621.7	357811759.5	3949959.537
5	BP6	580.36107	503.05546	704675720.8	475710719.7	1180386441	1062347796	51790496.48
6	BP7	511.0305	475.21882	402420015	-983487.172	401436527.8	361292875	28579675.05
7	BP9	906.54075	864.6547	954237977.4	108499207	1062737184	956463466	549633566
8	BP11	1076.1673	995.89353	2713708302	1698680961	4412389263	3971150337	235417736.6
9	BP12	1488.1324	1428.7821	3606765283	1190914859	4797680142	4317912128	456516227.6
10	B1	688.78853	622.88477	712977932.1	333665395.7	1046643328	941978995	68408495.05
11	B2	485.74087	411.65499	339134023.3	226141661.1	565275684.4	508748115.9	38535015.93
12	B3	593.80659	530.63316	353517378	165531551.6	519048929.6	467144036.6	18808236.64
13	B4	540.26333	472.29608	461397489.3	239413783.5	700811272.8	630730145.6	24557145.56
14	B5	305.38214	253.13446	150363348.5	58586774.02	208950122.5	188055110.3	7299810.257
15	B6	401.32176	348.31591	200469265.6	63026519.99	263495785.6	237146207.1	14677407.06
16	B7	594.22816	535.6839	546408642.9	243693376	790102018.9	711091817	6474217.011
17	RB1	417.01925	383.22176	132822535.2	1224210.222	134046745.4	120642070.9	9622470.86
18	RB2	418.93589	385.7021	131207529.6	2069335.563	133276865.2	119949178.6	341578.646
19	RB3	517.87888	485.24442	212360941.2	-3850526.314	208510414.8	187659373.4	5416673.357
20	RB4	520.40223	491.18172	143303979	-16747947.84	126556031.2	113900428.1	102029428.1
21	RB5	410.39765	367.64152	165361522.5	29271116.38	194632638.9	175169375	25262074.99
22	RB6	404.50378	353.7736	193383878.3	58486332.72	251870211	226683189.9	13587989.87

Lampiran 16. Tabel Analisis Momen Nominal Lapangan Balok (SNI 2847:2013)

Tipe Balok	Mu tump (Nmm)	d' (mm)	d (mm)	Lb (mm)	β	ϕ	fys (Mpa)	Ki (mm)	Ka (mm)	Ln (mm)	As perlu (mm)	a	Φ	V ult (N)	V death (N)	V live (N)
BP1	937276300	62.5	637.5	6000	0.85	0.8	240	400	400	5600	2814.867018	110.8797407	0.55	690952	329053	110408
BP2	30784800	58	342	6000	0.85	0.8	240	400	400	5600	603.1857895	60.5551224	0.55	40613	19484	5792
BP3	597521600	59.5	640.5	6000	0.85	0.8	240	400	400	5600	4819.988529	106.7402304	0.55	462677	121883	33916
BP4	426021400	58	542	6000	0.85	0.8	240	400	400	5600	4423.362456	66.23216512	0.55	332607	77831	19258
BP6	1068046300	62.5	637.5	8000	0.85	0.8	240	500	500	7500	4417.864669	129.3596975	0.55	4339039	1928409	1024541
BP7	600763500	62.5	537.5	6000	0.85	0.8	240	500	500	5500	3926.990817	52.79987653	0.55	326023	176237	2898
BP9	2355223300	62.5	937.5	7850	0.85	0.8	240	400	400	7450	4417.864669	103.9497569	0.55	2528083	1410508	345858
BP11	3149201100	62.5	1137.5	7812	0.85	0.8	240	500	500	7312	11403.98133	87.03320448	0.55	2435291	1214173	459656
BP12	9136479100	68	1532	7812	0.85	0.8	240	400	400	7412	16345.70658	147.384763	0.55	3654229	1580707	900775
B1	1245078800	62.5	737.5	6000	0.85	0.8	240	500	500	5500	2814.867018	110.8797407	0.55	1112397	277808	47139
B2	473520900	59.5	540.5	4700	0.85	0.8	240	400	400	4300	5670.57474	106.7402304	0.55	332237	53465	17132
B3	513549100	59.5	640.5	6000	0.85	0.8	240	400	400	5600	2835.28737	88.950192	0.55	352656	71238	22301
B4	489694600	59.5	590.5	5200	0.85	0.8	240	400	400	4800	2835.28737	66.712644	0.55	843570	128000	32173
B5	167035800	56	344	6000	0.85	0.8	240	500	500	5500	804.2477193	63.0782525	0.55	274319	52280	26817
B6	319559400	59.5	440.5	4700	0.85	0.8	240	400	400	4300	3118.816107	88.950192	0.55	164335	64043	29318
B7	943255700	62.5	637.5	4400	0.85	0.8	240	400	400	4000	3402.344844	110.8797407	0.55	497583	88812	28045
RB1	153146300	58	442	6000	0.85	0.8	240	400	400	5600	1206.371579	37.8469515	0.55	91618	52822	4699
RB2	166050300	56.5	443.5	3000	0.85	0.8	240	400	400	2600	1327.322896	41.64150262	0.55	94565	34085	7675
RB3	244170500	58	542	6000	0.85	0.8	240	400	400	5600	1608.495439	37.8469515	0.55	148802	90303	14416
RB4	24864200	58	542	3850	0.85	0.8	240	400	400	3450	402.1238597	25.231301	0.55	22445	13818	2230
RB5	190600300	58	442	3850	0.85	0.8	240	400	400	3450	1608.495439	50.462602	0.55	119105	69878	13298
RB6	231931800	58	442	4700	0.85	0.8	240	400	400	4300	2010.619298	63.0782525	0.55	144770	79164	16151

Lampiran 17. Tabel Perhitungan Penulangan Geser Balok (SNI 03-2847-2002)

VE (N)	Mnki = Mnka (Nmm)	Vg (N)	Ø0	Mkap,b	Vu,2 (N)	Vu,3 (N)	Vu,b terpakai	Vs perlu (N)	Vs max	Vs max > Vs perlu	n asumsi	av (mm2)	S (mm)
551576	655368744.5	505271.6	1.25	819210930.6	735337.9127	2778053.25	567917.227	1032576.78	1062500	29923.2233	10	785.39816	116.374803
65823	75210618.14	29172.8	1.25	94013272.68	54134.75817	302996.4	47522.5841	86404.6984	285000	198595.302	2	157.07963	149.2175366
508967	1131983724	180175.6	1.25	1414979655	542929.2937	2301250.35	418734.218	761334.941	640500	-120834.94	7	549.77871	111.0049984
260186	900391206	112655.2	1.25	1125489007	399660.2119	1194724.65	322297.414	585995.298	722666.667	136671.369	6	471.2389	104.6062248
584150	1012256763	3338631.8	1.25	1265320954	3741756.635	5554027.5	3105658.01	5646650.92	1062500	-4584150.9	19	1492.2565	40.43374547
117651	802834099.6	214382.4	1.25	1003542624	480548.7335	682225.95	386623.299	702951.453	1254166.67	551215.214	5	392.69908	72.06497876
402587	1564852059	2038467.6	1.25	1956065074	2507973.678	3535049.7	1876772.25	3412313.18	2500000	-912313.18	16	1256.6371	82.85972707
806917	4990306498	1916663.6	1.25	6237883123	3206839.829	5146571.85	2209088.1	4016523.83	3791666.67	-224857.16	10	785.39816	53.38290221
367579	9534827372	2797623.4	1.25	11918534215	5188711.788	4149387.9	3043782.9	5534150.73	6638666.67	1104515.94	10	785.39816	52.18058035
888344	767963425.2	380508.6	1.25	959954281.5	643886.0289	4072239.15	471207.503	856740.915	1229166.67	372425.752	7	549.77871	113.5825671
305548	1104922568	81290	1.25	1381153210	535032.2893	1357428.45	400527.66	728232.11	540500	-187732.11	8	628.31853	111.9223922
316927	675960753	107786.6	1.25	844950941.2	324413.6653	1429309.35	250204.039	454916.435	640500	185583.565	6	471.2389	159.2354943
791805	631864973.4	185773	1.25	789831216.7	425429.0882	3493762.65	320755.806	583192.375	787333.333	204140.958	6	471.2389	114.5144887
255072	100518378	89553	1.25	125647972.5	126013.7703	1154354.25	110250.593	200455.624	344000	143544.376	5	251.32741	103.5121427
132684	494051539.7	106169.6	1.25	617564424.7	312545.5671	655301.85	248510.068	451836.488	440500	-11336.488	6	471.2389	110.2597458
517588	792147712.4	134619.4	1.25	990184640.4	487914.9942	2296569.45	332392.09	604349.254	1062500	458150.746	5	392.69908	99.41761174
47190	204154997.8	68085.4	1.25	255193747.3	135288.1068	258595.05	113931.913	207148.932	442000	234851.068	4	314.15927	160.8794913
47660	224412737.8	48577	1.25	280515922.3	202052.8851	244020	133121.766	242039.575	443500	201460.425	4	314.15927	138.1555567
29768	336546481.3	122779.6	1.25	420683101.7	234089.3554	234980.55	188776.344	343229.717	722666.667	379436.949	4	314.15927	119.0626429
9197	85151231.15	18811.6	1.25	106439038.9	62944.83348	55477.8	43167.3844	78486.1534	542000	463513.847	1	78.539816	130.168939
22288	268148220.5	97151.6	1.25	335185275.7	238026.3933	180944.4	177036.442	321884.44	442000	120115.56	5	392.69908	129.4176213
76553	330112221.6	111147.8	1.25	412640277	251053.1872	421603.35	199441.323	362620.587	442000	79379.4134	5	392.69908	114.8790778

Lampiran 18. Tabel Perhitungan Penulangan Geser Tumpuan Balok (SNI 03-2847-2002)

Tipe Balok	S pakai < 200	n tulangan	n pakai	Av pakai (mm ²)	Vs pakai	Vs pakai >Vs perlu	Vu,b terpakai	Vc (N)	Vs max	Vs perlu (N)	Vs max	Vs max > Vs
BP1	100	14	15	1178.0972	1802488.785	769912.0083	400496.5417	265625	1062500	462550.5304	1062500	599949.4696
BP2	140	10	11	863.93798	506514.4955	420109.7971	40910.4101	71250	285000	3132.563822	285000	281867.4362
BP3	100	14	15	1178.0972	1810971.085	1049636.144	294539.1418	160125	640500	375400.7124	640500	265099.2876
BP4	100	14	15	1178.0972	1532468.896	946473.5988	244934.6156	180666.6667	722666.6667	264668.998	722666.6667	457997.6687
BP6	40	46.875	48	3769.9112	14419910.28	8773259.358	2469559.379	265625	1062500	4224482.962	1062500	-3161982.962
BP7	70	19.642857	21	1649.3361	3039490.892	2336539.439	292697.865	313541.6667	1254166.667	218636.2696	1254166.667	1035530.397
BP9	80	23.28125	24	1884.9556	5301437.603	1889124.422	1245570.82	625000	2500000	1639674.219	2500000	860325.7815
BP11	50	36.56	38	2984.513	16295441.09	12278917.27	1211336.38	947916.6667	3791666.667	1254513.114	3791666.667	2537153.552
BP12	50	37.06	38	2984.513	21946914.95	16412764.22	898854.0119	1659666.667	6638666.667	-25386.64508	6638666.667	6664053.312
B1	100	13.75	15	1178.0972	2085232.124	1228491.209	298528.977	307291.6667	1229166.667	235488.2916	1229166.667	993678.3751
B2	100	10.75	12	942.4778	1222582.197	494350.0875	266023.0313	135125	540500	348553.2387	540500	191946.7613
B3	150	9.3333333	10	785.39816	804876.0378	349959.6026	175994.4134	160125	640500	159864.8426	640500	480635.1574
B4	100	12	13	1021.0176	1446986.16	863793.7852	216082.5244	196833.3333	787333.3333	196043.9837	787333.3333	591289.3496
B5	100	13.75	15	753.98224	622487.7348	422032.1108	94487.41612	86000	344000	85795.30203	344000	258204.698
B6	100	10.75	12	942.4778	996387.526	544551.0381	184474.5696	110125	440500	225283.3084	440500	215216.6916
B7	90	11.111111	12	942.4778	1602212.253	997862.9992	176869.1854	265625	1062500	55955.33706	1062500	1006544.663
RB1	150	9.3333333	10	785.39816	555433.5812	348284.6488	92575.71881	110500	442000	57819.48875	442000	384180.5113
RB2	130	5	6	471.2389	385835.9101	143796.3352	64190.64733	110875	443500	5835.267874	443500	437664.7321
RB3	110	12.727273	14	1099.5574	1300276.639	957046.9222	143463.3335	180666.6667	722666.6667	80175.75794	722666.6667	642490.9087
RB4	120	7.1875	8	628.31853	681097.2873	602611.1339	23389.93522	135500	542000	-92972.84505	542000	634972.845
RB5	120	7.1875	8	628.31853	555433.5812	233549.141	116046.4909	110500	442000	100493.6198	442000	341506.3802
RB6	100	10.75	12	942.4778	999780.4461	637159.8595	147829.4581	110500	442000	158280.8329	442000	283719.1671

Lampiran 19. Tabel Perhitungan Penulangan Geser Tumpuan Balok (SNI 03-2847-2002)

Tipe Balok	Mu lap (Nmm)	n asumsi	Av (mm ²)	S (mm)	S pakai < 200	n tulangan	n pakai	Av pakai (mm ²)	Vs pakai	Vs pakai > Vs perlu
BP1	864729400	4	314.1592654	103.915928	100	28	29	2277.654674	3484811.651	3022261.121
BP2	22697300	1	78.53981634	2057.91438	150	18.66666667	20	1570.796327	859539.75	856407.1862
BP3	667401400	5	392.6990817	160.803378	160	17.5	19	1492.25651	1433685.442	1058284.73
BP4	353861800	4	314.1592654	154.403567	150	18.66666667	20	1570.796327	1362194.575	1097525.577
BP6	1010557300	30	2356.19449	85.3353559	85	44.11764706	45	3534.291735	6361725.124	2137242.162
BP7	332713200	3	235.619449	139.020433	135	20.37037037	21	1649.336143	1576032.315	1357396.045
BP9	406829900	8	628.3185307	86.2193647	80	46.5625	48	3769.911184	10602875.21	8963200.987
BP11	3735732600	6	471.238898	102.548325	100	36.56	38	2984.513021	8147720.547	6893207.433
BP12	3861395900	1	78.53981634	-1137.5083	150	24.70666667	26	2042.035225	5005436.743	5030823.388
B1	873570500	2	157.0796327	118.065721	110	25	26	2042.035225	3285820.316	3050332.025
B2	470213100	4	314.1592654	116.919699	110	19.54545455	21	1649.336143	1945017.132	1596463.893
B3	448335800	2	157.0796327	151.041847	150	18.66666667	20	1570.796327	1609752.076	1449887.233
B4	606173000	2	157.0796327	113.55271	110	21.81818182	23	1806.415776	2327320.398	2131276.414
B5	180755300	3	150.7964474	145.109982	140	19.64285714	21	1055.575132	622487.7348	536692.4327
B6	222468800	2	157.0796327	73.713667	70	30.71428571	32	2513.274123	3795762.004	3570478.695
B7	704617600	1	78.53981634	214.753275	150	13.33333333	14	1099.557429	1121548.577	1065593.24
RB1	111019600	1	78.53981634	144.095078	140	20	21	1649.336143	1249725.558	1191906.069
RB2	119607600	1	78.53981634	1432.6297	150	8.666666667	10	785.3981634	557318.5367	551483.2689
RB3	182242700	1	78.53981634	127.42579	130	21.53846154	23	1806.415776	1807527.416	1727351.658
RB4	11871000	1	78.53981634	-109.88649	150	11.5	13	1021.017612	885426.4735	978399.3185
RB5	149907300	2	157.0796327	165.811596	160	10.78125	12	942.4777961	624862.7788	524369.159
RB6	213095200	3	235.619449	157.912431	125	17.2	18	1413.716694	1199736.535	1041455.702

Lampiran 20. Tabel Perhitungan Penulangan Geser Lapangan Balok (SNI 03-2847-2002)

Tipe Balok	Mu tump (Nmm)	d' (mm)	d (mm)	Lb (mm)	β	ϕ	fys (Mpa)	Ki (mm)	Ka (mm)	Ln (mm)	As n (mm)	a	Φ	V ult (N)	V death (N)	V live (N)
BP1	937276300	62.5	637.5	6000	0.85	0.9	240	400	400	5600	2814.867018	110.8797407	0.55	690952	329053	110408
BP2	30784800	58	342	6000	0.85	0.9	240	400	400	5600	603.1857895	60.5551224	0.55	40613	19484	5792
BP3	597521600	59.5	640.5	6000	0.85	0.9	240	400	400	5600	4819.988529	106.7402304	0.55	462677	121883	33916
BP4	426021400	58	542	6000	0.85	0.9	240	400	400	5600	4423.362456	66.23216512	0.55	332607	77831	19258
BP6	1068046300	62.5	637.5	8000	0.85	0.9	240	500	500	7500	4417.864669	129.3596975	0.55	4339039	1928409	1024541
BP7	600763500	62.5	537.5	6000	0.85	0.9	240	500	500	5500	3926.990817	52.79987653	0.55	326023	176237	2898
BP9	2355223300	62.5	937.5	7850	0.85	0.9	240	400	400	7450	4417.864669	103.9497569	0.55	2528083	1410508	345858
BP11	3149201100	62.5	1137.5	7812	0.85	0.9	240	500	500	7312	11403.98133	87.03320448	0.55	2435291	1214173	459656
BP12	9136479100	68	1532	7812	0.85	0.9	240	400	400	7412	16345.70658	147.384763	0.55	3654229	1580707	900775
B1	1245078800	62.5	737.5	6000	0.85	0.9	240	500	500	5500	2814.867018	110.8797407	0.55	1112397	277808	47139
B2	473520900	59.5	540.5	4700	0.85	0.9	240	400	400	4300	5670.57474	106.7402304	0.55	332237	53465	17132
B3	513549100	59.5	640.5	6000	0.85	0.9	240	400	400	5600	2835.28737	88.950192	0.55	352656	71238	22301
B4	489694600	59.5	590.5	5200	0.85	0.9	240	400	400	4800	2835.28737	66.712644	0.55	843570	128000	32173
B5	167035800	56	344	6000	0.85	0.9	240	500	500	5500	804.2477193	63.0782525	0.55	274319	52280	26817
B6	319559400	59.5	440.5	4700	0.85	0.9	240	400	400	4300	3118.816107	88.950192	0.55	164335	64043	29318
B7	943255700	62.5	637.5	4400	0.85	0.9	240	400	400	4000	3402.344844	110.8797407	0.55	497583	88812	28045
RB1	153146300	58	442	6000	0.85	0.9	240	400	400	5600	1206.371579	37.8469515	0.55	91618	52822	4699
RB2	166050300	56.5	443.5	3000	0.85	0.9	240	400	400	2600	1327.322896	41.64150262	0.55	94565	34085	7675
RB3	244170500	58	542	6000	0.85	0.9	240	400	400	5600	1608.495439	37.8469515	0.55	148802	90303	14416
RB4	24864200	58	542	3850	0.85	0.9	240	400	400	3450	402.1238597	25.231301	0.55	22445	13818	2230
RB5	190600300	58	442	3850	0.85	0.9	240	400	400	3450	1608.495439	50.462602	0.55	119105	69878	13298
RB6	231931800	58	442	4700	0.85	0.9	240	400	400	4300	2010.619298	63.0782525	0.55	144770	79164	16151

Lampiran 21. Tabel Perhitungan Penulangan Geser Balok (2847:2013)

VE (N)	Mnki = Mnka (Nmm)	Vg (N)	Ø0	Mkap,b	Vu,2 (N)	Vu,3 (N)	Vu,b terpakai	Vs perlu (N)	Vs max	Vs max > Vs perlu	N asumsi	av (mm2)	S (mm)
551576	655368744.5	505271.6	1.25	819210930.6	735337.9127	2778053.25	567917.227	1032576.78	1062500	29923.2233	10	785.39816	116.374803
65823	75210618.14	29172.8	1.25	94013272.68	54134.75817	302996.4	47522.5841	86404.6984	285000	198595.302	2	157.07963	149.2175366
508967	1131983724	180175.6	1.25	1414979655	542929.2937	2301250.35	418734.218	761334.941	640500	-120834.94	7	549.77871	111.0049984
260186	900391206	112655.2	1.25	1125489007	399660.2119	1194724.65	322297.414	585995.298	722666.667	136671.369	6	471.2389	104.6062248
584150	1012256763	3338631.8	1.25	1265320954	3741756.635	5554027.5	3105658.01	5646650.92	1062500	-4584150.9	19	1492.2565	40.43374547
117651	802834099.6	214382.4	1.25	1003542624	480548.7335	682225.95	386623.299	702951.453	1254166.67	551215.214	5	392.69908	72.06497876
402587	1564852059	2038467.6	1.25	1956065074	2507973.678	3535049.7	1876772.25	3412313.18	2500000	-912313.18	16	1256.6371	82.85972707
806917	4990306498	1916663.6	1.25	6237883123	3206839.829	5146571.85	2209088.1	4016523.83	3791666.67	-224857.16	10	785.39816	53.38290221
367579	9534827372	2797623.4	1.25	11918534215	5188711.788	4149387.9	3043782.9	5534150.73	6638666.67	1104515.94	10	785.39816	52.18058035
888344	767963425.2	380508.6	1.25	959954281.5	643886.0289	4072239.15	471207.503	856740.915	1229166.67	372425.752	7	549.77871	113.5825671
305548	1104922568	81290	1.25	1381153210	535032.2893	1357428.45	400527.66	728232.11	540500	-187732.11	8	628.31853	111.9223922
316927	675960753	107786.6	1.25	844950941.2	324413.6653	1429309.35	250204.039	454916.435	640500	185583.565	6	471.2389	159.2354943
791805	631864973.4	185773	1.25	789831216.7	425429.0882	3493762.65	320755.806	583192.375	787333.333	204140.958	6	471.2389	114.5144887
255072	100518378	89553	1.25	125647972.5	126013.7703	1154354.25	110250.593	200455.624	344000	143544.376	5	251.32741	103.5121427
132684	494051539.7	106169.6	1.25	617564424.7	312545.5671	655301.85	248510.068	451836.488	440500	-11336.488	6	471.2389	110.2597458
517588	792147712.4	134619.4	1.25	990184640.4	487914.9942	2296569.45	332392.09	604349.254	1062500	458150.746	5	392.69908	99.41761174
47190	204154997.8	68085.4	1.25	255193747.3	135288.1068	258595.05	113931.913	207148.932	442000	234851.068	4	314.15927	160.8794913
47660	224412737.8	48577	1.25	280515922.3	202052.8851	244020	133121.766	242039.575	443500	201460.425	4	314.15927	138.1555567
29768	336546481.3	122779.6	1.25	420683101.7	234089.3554	234980.55	188776.344	343229.717	722666.667	379436.949	4	314.15927	119.0626429
9197	85151231.15	18811.6	1.25	106439038.9	62944.83348	55477.8	43167.3844	78486.1534	542000	463513.847	1	78.539816	130.168939
22288	268148220.5	97151.6	1.25	335185275.7	238026.3933	180944.4	177036.442	321884.44	442000	120115.56	5	392.69908	129.4176213
76553	330112221.6	111147.8	1.25	412640277	251053.1872	421603.35	199441.323	362620.587	442000	79379.4134	5	392.69908	114.8790778

Lampiran 22. Tabel Perhitungan Penulangan Geser Tumpuan Balok (SNI 2847:2013)

Tipe Balok	S pakai < 200	n tulangan	n pakai	Av pakai (mm ²)	Vs pakai	Vs pakai >Vs	Vu,b terpakai	Vc (N)	Vs max	Vs (N)	Vs max	Vs max > Vs
BP1	100	14	15	1178.0972	1802488.785	769912.0083	400496.5417	270937.5	1062500	457238.0304	1062500	605261.9696
BP2	140	10	11	863.93798	506514.4955	420109.7971	40910.4101	72675	285000	1707.563822	285000	283292.4362
BP3	100	14	15	1178.0972	1810971.085	1049636.144	294539.1418	163327.5	640500	372198.2124	640500	268301.7876
BP4	100	14	15	1178.0972	1532468.896	946473.5988	244934.6156	184280	722666.6667	261055.6647	722666.6667	461611.002
BP6	40	46.875	48	3769.9112	14419910.28	8773259.358	2469559.379	270937.5	1062500	4219170.462	1062500	-3156670.462
BP7	70	19.642857	21	1649.3361	3039490.892	2336539.439	292697.865	319812.5	1254166.667	212365.4363	1254166.667	1041801.23
BP9	80	23.28125	24	1884.9556	5301437.603	1889124.422	1245570.82	637500	2500000	1627174.219	2500000	872825.7815
BP11	50	36.56	38	2984.513	16295441.09	12278917.27	1211336.38	966875	3791666.667	1235554.781	3791666.667	2556111.886
BP12	50	37.06	38	2984.513	21946914.95	16412764.22	898854.0119	1692860	6638666.667	-58579.97841	6638666.667	6697246.645
B1	100	13.75	15	1178.0972	2085232.124	1228491.209	298528.977	313437.5	1229166.667	229342.4583	1229166.667	999824.2084
B2	100	10.75	12	942.4778	1222582.197	494350.0875	266023.0313	137827.5	540500	345850.7387	540500	194649.2613
B3	150	9.3333333	10	785.39816	804876.0378	349959.6026	175994.4134	163327.5	640500	156662.3426	640500	483837.6574
B4	100	12	13	1021.0176	1446986.16	863793.7852	216082.5244	200770	787333.3333	192107.3171	787333.3333	595226.0163
B5	100	13.75	15	753.98224	622487.7348	422032.1108	94487.41612	87720	344000	84075.30203	344000	259924.698
B6	100	10.75	12	942.4778	996387.526	544551.0381	184474.5696	112327.5	440500	223080.8084	440500	217419.1916
B7	90	11.111111	12	942.4778	1602212.253	997862.9992	176869.1854	270937.5	1062500	50642.83706	1062500	1011857.163
RB1	150	9.3333333	10	785.39816	555433.5812	348284.6488	92575.71881	112710	442000	55609.48875	442000	386390.5113
RB2	130	5	6	471.2389	385835.9101	143796.3352	64190.64733	113092.5	443500	3617.767874	443500	439882.2321
RB3	110	12.727273	14	1099.5574	1300276.639	957046.9222	143463.3335	184280	722666.6667	76562.4246	722666.6667	646104.2421
RB4	150	5.75	7	549.77871	476768.1011	398281.9477	23389.93522	138210	542000	-95682.84505	542000	637682.845
RB5	120	7.1875	8	628.31853	555433.5812	233549.141	116046.4909	112710	442000	98283.61979	442000	343716.3802
RB6	110	9.727273	11	863.93798	833150.3717	470529.7851	147829.4581	112710	442000	156070.8329	442000	285929.1671

Lampiran 23. Tabel Perhitungan Penulangan Geser Tumpuan Balok (SNI 2847:2013)

Tipe Balok	Mu lap (Nmm)	n asumsi	Av (mm²)	S (mm)	S pakai < 200	n tulangan	n pakai	Av pakai (mm²)	Vs pakai	Vs pakai > Vs
BP1	864729400	4	314.1592654	105.123293	100	28	29	2277.654674	3484811.651	3027573.621
BP2	22697300	1	78.53981634	3775.28971	150	18.66666667	20	1570.796327	859539.75	857832.1862
BP3	667401400	5	392.6990817	162.186977	160	17.5	19	1492.25651	1433685.442	1061487.23
BP4	353861800	4	314.1592654	156.540703	150	18.66666667	20	1570.796327	1362194.575	1101138.91
BP6	1010557300	30	2356.19449	85.4428045	85	44.11764706	45	3534.291735	6361725.124	2142554.662
BP7	332713200	3	235.619449	143.125498	140	19.64285714	21	1649.336143	1519745.446	1307380.01
BP9	406829900	9	706.8583471	97.7419174	90	41.38888889	42	3298.672286	8246680.716	6619506.497
BP11	3735732600	6	471.238898	104.121825	100	36.56	38	2984.513021	8147720.547	6912165.766
BP12	3861395900	1	78.53981634	-492.95887	150	24.70666667	26	2042.035225	5005436.743	5064016.722
B1	873570500	2	157.0796327	121.229602	120	22.91666667	24	1884.955592	2780309.498	2550967.04
B2	470213100	4	314.1592654	117.833318	110	19.54545455	21	1649.336143	1945017.132	1599166.393
B3	448335800	2	157.0796327	154.129453	150	18.66666667	20	1570.796327	1609752.076	1453089.733
B4	606173000	3	235.619449	173.819451	170	14.11764706	15	1178.097245	982117.3034	790009.9863
B5	180755300	3	150.7964474	148.07862	140	19.64285714	21	1055.575132	622487.7348	538412.4327
B6	222468800	2	157.0796327	74.4414497	70	30.71428571	32	2513.274123	3795762.004	3572681.195
B7	704617600	1	78.53981634	237.281175	150	13.33333333	14	1099.557429	1121548.577	1070905.74
RB1	111019600	1	78.53981634	149.82162	140	20	21	1649.336143	1249725.558	1194116.069
RB2	119607600	1	78.53981634	2310.75579	150	8.666666667	10	785.3981634	557318.5367	553700.7689
RB3	182242700	1	78.53981634	133.4396	130	21.53846154	23	1806.415776	1807527.416	1730964.992
RB4	11871000	1	78.53981634	-106.7742	150	11.5	13	1021.017612	885426.4735	981109.3185
RB5	149907300	1	78.53981634	84.7700129	90	19.16666667	20	1570.796327	1851445.271	1753161.651
RB6	213095200	3	235.619449	160.148509	150	14.33333333	15	1178.097245	833150.3717	677079.5388

Lampiran 24. Tabel Perhitungan Penulangan Geser Lapangan Balok (SNI 2847:2013)

No Kolom	A (mm)	Tipe	b (mm)	l (mm)	H (mm)	ds (mm)	D (mm)	Ø (mm)	f'c (Mpa)	f'y (Mpa)	d' (mm)	d (mm)	M1b (Nmm)	M2b (Nmm)	Pu(N)
1	1000000	K1	1000	1000	3500	40	36	13	30	400	71	929	1091091200	2013405400	1183597
2	720000	K2	800	900	3500	40	36	13	30	400	71	829	1430941000	1707429300	707786
3	560000	K3	700	800	3500	40	36	13	30	400	71	729	787402100	984781000	474474
4	1000000	K4	1000	1000	3500	40	36	13	30	400	71	929	3853399300	6071351700	3171087
5	360000	K5	600	600	3500	40	22	10	30	400	61	539	357462300	244317500	170727

Lampiran 25. Tabel Data Kolom

b/h > 0,4	Hk/b < 16	K	r (mm)	k.lu / r	34-12. (M _{1b} /M _{2b})	ρg (%)	Ast (mm ²)	n	Ast total (mm)	ρ (%)	Ø < 0,65	Ø koreksi	Ag (mm ²)	Pn	Ø Pn _{mak}	Ø Pn _{maks} > Pn _b
1	3.5	1	300	11.66667	27.49704	0.025	25000	24	24429.024	2.629604	0.889	0.65	1000000	3000000	18128500	15128500
0.889	4.375	1	270	12.96296	23.94319	0.025	18000	20	20357.52	3.06959	0.876667	0.65	720000	2160000	13052520	10892520
0.875	5	1	240	14.58333	24.40515	0.025	14000	16	16286.016	3.191459	0.86125	0.65	560000	1680000	10151960	8471960
1	3.5	1	300	11.66667	26.38377	0.025	25000	18	18321.768	1.972203	0.889	0.65	1000000	3000000	18128500	15128500
1	5.8333333	1	180	19.44444	16.44273	0.025	9000	6	2280.7963	0.705255	0.831667	0.65	360000	1080000	6526260	5446260

Lampiran 26. Tabel Perhitungan Penulangan Lentur Kolom (SNI 03-2847-2002)

cb (mm)	a (mm)	ϵ_s'	f's (Mpa)	ND1 (N)	ND2 (N)	NT (N)	Pnb (N)	ϕPnb	$\phi Pnb > Pu$	Md,k (Nmm)	MI,k (Nmm)	Me,k (Nmm)	Mu,k (Nmm)	Mn (Nmm)	ϕMn	$\phi Mn > Mu$
557.4	473.8	0.0026	523.574	12081645	4574335	4885805	11770174.94	7650613.71	6467016.71	344074600	238557400	2051597000	9228471000	11562782407	9250225926	21754925.85
497.4	422.8	0.0026	514.355	8624916	3811946	4071504	8365357.615	5437482.45	4729696.45	785226900	207264600	1226569500	6193707975	8230348266	6584278613	390570637.82
437.4	371.8	0.0025	502.606	6636451.5	3049557	3257203	6428804.792	4178723.115	3704249.115	42195800	17044000	977900000	4169381790	5707376943	4565901554	396519764.27
557.4	473.8	0.0026	523.574	12081645	3430751	3664354	11848042.45	7701227.595	4530140.595	2721039100	1413685600	665274800	7135615095	9466772107	7573417686	437802590.93
323.4	274.9	0.0024	486.827	4205817	427079.1	456159.3	4176736.848	2714878.951	2544151.951	185701600	44816500	150316000	873371205	1119764829	895811862.9	22440657.87

Lampiran 27. Tabel Perhitungan Kuat Momen Kolom

Nu (N)	Vd,k (N)	Vl,k (N)	Ve,k (N)	Vu,max (N)	Vc (N)	Vn (N)	Vc < Vn	Vs (N)	n	Av (mm ²)	fy	S	S < 6Db	S pakai (mm)
1183597	292213	198762	968967	4585185	919754.081	7641975.25	OK	6722221.169	25	3318.307	240	110.0603	105.9397	100
707786	320982	85031	642715	3125717	647926.414	5209527.75	OK	4561601.336	20	2654.646	240	115.7857	100.2143	100
474474	51052	19949	475420	2071315	494030.387	3452191.75	OK	2958161.363	20	2654.646	240	157.0086	58.99138	150
3171087	1403948	753474	648813	4990308	1040147.29	8317179.5	OK	7277032.205	30	3981.969	240	122.003	93.997	120
170727	78627	19007	85085	459872.7	305222.944	766454.5	OK	461231.5565	5	392.6991	240	110.1389	21.86106	110

Lampiran 28. Tabel Perhitungan Gaya Geser Kolom

No Kolom	A (mm)	Tipe	n tulangan	n	Av pakai (mm ²)	Vs pakai (N)	(Vs + Vc)Ø	Vu < (Vs + Vc) Ø
1	1000000	K1	17.5	19	2521.914	140571458.6	91969288.3	OK
2	720000	K2	17.5	19	2521.914	100351982.1	65649940.5	OK
3	560000	K3	11.66667	13	1725.52	40252925.08	26485521.1	OK
4	1000000	K4	14.58333	16	2123.717	118375965.2	77620473.1	OK
5	360000	K5	15.90909	17	1335.177	7850840.041	5301440.94	OK

Lampiran 29. Hasil Perhitungan Tulangan Geser Kolom (SNI 03-2847-2002)

b/h > 0,4	Hk/b < 16	K	r (mm)	k.lu / r	34-12.(M _{1b} /M _{2b})	ρ _g (%)	Ast (mm ²)	n	Ast total (mm ²)	ρ (%)	Ø < 0,65	Ø koreksi	Ag (mm ²)	Pn	Ø Pn _{maks}	Ø _p n _{max} > Pnb
1	3.5	1	300	11.66667	27.49704	0.025	25000	24	24429.024	2.629604	0.889	0.65	1000000	3000000	18128500	15128500
0.889	4.375	1	270	12.96296	23.94319	0.025	18000	20	20357.52	3.06959	0.876667	0.65	720000	2160000	13052520	10892520
0.875	5	1	240	14.58333	24.40515	0.025	14000	16	16286.016	3.191459	0.86125	0.65	560000	1680000	10151960	8471960
1	3.5	1	300	11.66667	26.38377	0.025	25000	18	18321.768	1.972203	0.889	0.65	1000000	3000000	18128500	15128500
1	5.8333333	1	180	19.44444	16.44273	0.025	9000	6	2280.7963	0.705255	0.831667	0.65	360000	1080000	6526260	5446260

Lampiran 30. Tabel Perhitungan Penulangan Lentur Kolom (SNI 2847:2013)

cb (mm)	a (mm)	ϵ_s'	f'_s (MPa)	ND1 (N)	ND2 (N)	NT (N)	Pnb (N)	ϕ Pnb	$P_u > \phi$ Pnb	Md,k (Nmm)	MI,k (Nmm)	Me,k (Nmm)	Mu,k (Nmm)	Mn (Nmm)	ϕ Mn	ϕ Mn > Mu
557.4	473.8	0.0026	523.5737	12081645	4574335	4885805	11770174.94	7650613.71	6467016.71	344074600	238557400	2051597000	9228471000	11562782407	9250225926	21754925.85
497.4	422.8	0.0026	514.3546	8624916	3811946	4071504	8365357.615	5437482.45	4729696.45	785226900	207264600	1226569500	6193707975	8230348266	6584278613	390570637.8
437.4	371.8	0.0025	502.6063	6636451.5	3049557	3257203	6428804.792	4178723.115	3704249.115	42195800	17044000	977900000	4169381790	5707376943	4565901554	396519764.3
557.4	473.8	0.0026	523.5737	12081645	3430751	3664354	11848042.45	7701227.595	4530140.595	2721039100	1413685600	665274800	7135615095	9466772107	7573417686	437802590.9
323.4	274.9	0.0024	486.8275	4205817	427079.1	456159.3	4176736.848	2714878.951	2544151.951	185701600	44816500	150316000	873371205	1119764829	895811862.9	22440657.87

Lampiran 31. Tabel Perhitungan Kuat Momen Kolom

Nu (N)	Vd,k (N)	Vl,k (N)	Ve,k (N)	Vu,max (N)	Vc (N)	Vn (N)	Vc < Vn	Vs (N)	n	Av (mm ²)	fy	S	S < 6Db	S pakai (mm)
1183597	292213	198762	968967	4585185	156358.194	7641975.25	OK	7485617.056	20	2654.646	240	79.06894	136.9311	130
707786	320982	85031	642715	3125717	110147.49	5209527.75	OK	5099380.26	20	2654.646	240	103.575	112.425	100
474474	51052	19949	475420	2071315	83985.1657	3452191.75	OK	3368206.584	20	2654.646	240	137.8944	78.1056	130
3171087	1403948	753474	648813	4990308	176825.04	8317179.5	OK	8140354.46	20	2654.646	240	72.70934	143.2907	70
170727	78627	19007	85085	459872.7	51887.9004	766454.5	OK	714566.5996	8	628.3185	240	113.7463	18.25373	100

Lampiran 32. Tabel Perhitungan Gaya Geser Kolom

No Kolom	A (mm)	Tipe	n tulangan	n pakai	Av pakai (mm²)	Vs pakai (N)	(Vs + Vc)Ø	Vu < (Vs + Vc) Ø
1	1000000	K1	13.46154	15	1990.984	68293826.06	44492619.8	OK
2	720000	K2	17.5	19	2521.914	100351982.1	65300384.2	OK
3	560000	K3	13.46154	15	1990.984	53591172.44	34888852.4	OK
4	1000000	K4	25	26	3451.04	219841078.2	143011637	OK
5	360000	K5	17.5	19	1492.257	15443064.18	10071718.8	OK

Lampiran 33. Hasil Perhitungan Tulangan Geser Kolom (SNI 2847:2013)