LAMPIRAN

Universitas Pembangunan Jaya	**FORMULIR PEMBIMBINGAN SKRIPSI/TA**	SPT-I/03/SOP-28/F-03

Nama Mahasiswa : Victor Ruben Warouw

Prodi/NIM : Teknik Sipil / 2017091038

Judul Skripsi/TA yang diajukan : Perbandingan Analisis Respon Spektrum Gedung Apartemen 20 Lantai Dengan Bentuk Ketidakberaturan Pada Wilayah Jakarta Selatan dan Penajam Paser Utara

No	Tanggal	Materi Pembimbingan	Paraf Mhs	Paraf Dosen Pembimbing
1	28/01/2021	Asistensi Judul Skripsi & Persiapan Bab 1,2,3	√	
2	16/02/2021	Asistensi Penyusunan Bab 1, 2, dan 3	√	
3	23/02/2021	Asistensi Revisi Bab 1, 2, dan 3	√	
4	25/02/2021	Asistensi Revisi Variasi Pemodelan	√	
5	01/03/2021	Asistensi Review Proposal	√	
6	01/03/2021	Asistensi Proposal Kedua	√	
7	03/03/2021	ACC Siap Seminar Proposal	√	
8	22/04/2021	Asistensi Penentuan Lokasi Penelitian dan perbaikan variasi pemodelan	√	

* Jika pembimbingan lebih dari minimal 8 kali, mohon membuat salinan formulir ini

Victor Ruben Warouw	Pratika Riris Putrianti, S.T., M.T	
Mahasiswa	Dosen Pembimbing 1	Dosen Pembimbing 2

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No	Tanggal	Materi Pembimbingan	Paraf Mhs	Paraf Dosen Pembimbing
1	29/04/2021	Analisa tahap perhitungan analisa statik ekivalen dan dinamik		
2	04/05/2021	Asistensi Perbandingan yang akan dianalisa		
3	03/06/2021	Asistensi bab IV (bagian komparasi data)		
4	07/06/2021	Asistensi bab IV dan bab V		
5	10/06/2021	ACC Laporan		
6				
7				
8				

* Jika pembimbingan lebih dari minimal 8 kali, mohon membuat salinan formulir ini

Victor Ruben Warouw		
Mahasiswa	Dosen Pembimbing 1	Dosen Pembimbing 2

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Nama Mahasiswa : Victor Ruben Warouw

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No	Tanggal	Materi Pembimbingan	Paraf Mhs	Paraf Dosen Pembimbing
1	21/02/2021	Asistensi Revisi Proposal Pertama	√	
2	25/02/2021	Asistensi Revisi Bab 3	√	
3	02/03/2021	Asistensi Revisi Proposal Kedua	√	
4	03/03/2021	ACC Siap Seminar Proposal	√	
5	10/05/2021	Asistensi Penentuan Tipe Slab dalam pemodelan Etabs	√	
6	24/05/2021	Asistensi Perbaikan Variasi Pemodelan	√	
7	04/06/2021	Asistensi Kontrol Sistem Ganda	√	
8	12/06/2021	ACC laporan skripsi	√	

* Jika pembimbingan lebih dari minimal 8 kali, mohon membuat salinan formulir ini

Victor Ruben Warouw		Agustinus Agus Setiawan, S.T., M.T
Mahasiswa	Dosen Pembimbing 1	Dosen Pembimbing 2

Pengecekan Ketidakberaturan Horisontal 1a, 1b

Bentuk L (Jakarta Selatan)

Lantai	Arah X				Arah Y			
	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek
20	8.204	6.987	1.174	OK	10.831	9.045	1.197	OK
19	8.251	7.304	1.13	OK	11.103	10.024	1.108	OK
18	8.428	7.475	1.127	OK	11.603	10.525	1.102	OK
17	8.817	7.718	1.142	OK	12.073	10.861	1.112	OK
16	9.072	7.892	1.149	OK	12.474	11.161	1.118	OK
15	9.241	8.016	1.153	OK	12.816	11.425	1.122	OK
14	9.359	8.1	1.155	OK	13.092	11.639	1.125	OK
13	9.428	8.142	1.158	OK	13.293	11.79	1.127	OK
12	9.438	8.13	1.161	OK	13.409	11.868	1.13	OK
11	9.373	8.052	1.164	OK	13.433	11.86	1.133	OK
10	9.233	7.904	1.168	OK	13.351	11.752	1.136	OK
9	8.988	7.664	1.173	OK	13.133	11.517	1.14	OK
8	8.618	7.316	1.178	OK	12.748	11.13	1.145	OK
7	8.099	6.844	1.183	OK	12.158	10.559	1.152	OK
6	7.406	6.225	1.19	OK	11.318	9.762	1.159	OK
5	6.549	5.476	1.196	OK	10.161	8.712	1.166	OK
4	5.632	4.684	1.202	1a	8.89	7.568	1.175	OK
3	4.592	3.765	1.22	1a	7.241	6.111	1.185	OK
2	3.298	2.65	1.244	1a	5.277	4.362	1.21	1a
1	1.603	1.26	1.272	1a	2.776	2.212	1.255	1a

Bentuk T (Jakarta Selatan)

Lantai	Arah X				Arah Y			
	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek
20	7.739	6.779	1.142	OK	10.606	8.762	1.21	1a
19	7.865	7.124	1.104	OK	10.7	9.829	1.089	OK
18	8.167	7.344	1.112	OK	10.917	10.714	1.019	OK
17	8.454	7.535	1.122	OK	11.413	11.3	1.01	OK
16	8.687	7.7	1.128	OK	11.89	11.676	1.018	OK
15	8.886	7.84	1.133	OK	12.138	11.925	1.018	OK
14	9.045	7.947	1.138	OK	12.267	12.09	1.015	OK
13	9.149	8.01	1.142	OK	12.32	12.186	1.011	OK
12	9.187	8.016	1.146	OK	12.307	12.211	1.008	OK
11	9.147	7.955	1.15	OK	12.219	12.155	1.005	OK
10	9.019	7.817	1.154	OK	12.038	12.001	1.003	OK
9	8.784	7.586	1.158	OK	11.746	11.727	1.002	OK
8	8.425	7.246	1.163	OK	11.317	11.307	1.001	OK
7	7.923	6.783	1.168	OK	10.728	10.713	1.001	OK
6	7.249	6.173	1.174	OK	9.931	9.905	1.003	OK
5	6.415	5.434	1.181	OK	8.901	8.854	1.005	OK
4	5.524	4.651	1.188	OK	7.924	7.779	1.019	OK
3	4.449	3.711	1.199	OK	6.767	6.455	1.048	OK
2	3.15	2.586	1.218	1a	5.291	4.789	1.105	OK
1	1.512	1.223	1.236	1a	2.946	2.514	1.172	OK

Bentuk U (Jakarta Selatan)

Lantai	Arah X				Arah Y			
	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek
20	7.82	7.305	1.071	OK	9.822	8.781	1.119	OK
19	7.919	7.747	1.022	OK	10.063	9.754	1.032	OK
18	8.18	8.059	1.015	OK	10.405	10.376	1.003	OK
17	8.382	8.228	1.019	OK	10.823	10.755	1.006	OK
16	8.564	8.382	1.022	OK	11.146	11.08	1.006	OK
15	8.716	8.512	1.024	OK	11.428	11.368	1.005	OK
14	8.828	8.605	1.026	OK	11.662	11.604	1.005	OK
13	8.884	8.648	1.027	OK	11.829	11.774	1.005	OK
12	8.874	8.628	1.029	OK	11.916	11.867	1.004	OK
11	8.789	8.535	1.03	OK	11.915	11.871	1.004	OK
10	8.618	8.359	1.031	OK	11.813	11.771	1.004	OK
9	8.347	8.085	1.032	OK	11.59	11.546	1.004	OK
8	7.963	7.698	1.034	OK	11.224	11.173	1.005	OK
7	7.448	7.184	1.037	OK	10.685	10.619	1.006	OK
6	6.769	6.515	1.039	OK	9.936	9.849	1.009	OK
5	5.956	5.715	1.042	OK	8.888	8.8	1.01	OK
4	5.106	4.884	1.045	OK	7.777	7.671	1.014	OK
3	4.07	3.873	1.051	OK	6.413	6.266	1.023	OK
2	2.838	2.675	1.061	OK	4.776	4.538	1.053	OK
1	1.362	1.267	1.075	OK	2.596	2.349	1.105	OK

Bentuk L (Penajam Paser Utara)

Lantai	Arah X				Arah Y			
	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek
20	2.758	2.36	1.169	OK	3.638	3.05	1.193	OK
19	2.785	2.474	1.126	OK	3.732	3.383	1.103	OK
18	2.848	2.537	1.123	OK	3.908	3.573	1.094	OK
17	2.985	2.622	1.138	OK	4.078	3.694	1.104	OK
16	3.076	2.685	1.146	OK	4.229	3.808	1.111	OK
15	3.141	2.732	1.15	OK	4.364	3.911	1.116	OK
14	3.189	2.766	1.153	OK	4.478	3.998	1.12	OK
13	3.221	2.786	1.156	OK	4.566	4.063	1.124	OK
12	3.23	2.786	1.159	OK	4.623	4.102	1.127	OK
11	3.213	2.763	1.163	OK	4.643	4.107	1.13	OK
10	3.168	2.714	1.167	OK	4.622	4.074	1.134	OK
9	3.084	2.631	1.172	OK	4.547	3.993	1.139	OK
8	2.955	2.51	1.177	OK	4.408	3.855	1.143	OK
7	2.773	2.345	1.182	OK	4.195	3.651	1.149	OK
6	2.531	2.13	1.188	OK	3.89	3.365	1.156	OK
5	2.233	1.87	1.194	OK	3.48	2.994	1.162	OK
4	1.916	1.596	1.2	1a	3.034	2.593	1.17	OK
3	1.554	1.279	1.215	1a	2.46	2.086	1.179	OK
2	1.111	0.896	1.24	1a	1.785	1.483	1.204	1a
1	0.537	0.425	1.262	1a	0.92	0.741	1.241	1a

Bentuk T (Penajam Paser Utara)

Lantai	Arah X				Arah Y			
	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek
20	2.612	2.29	1.14	OK	3.613	2.977	1.214	1a
19	2.655	2.409	1.102	OK	3.645	3.336	1.093	OK
18	2.758	2.488	1.108	OK	3.723	3.638	1.023	OK
17	2.858	2.555	1.119	OK	3.866	3.844	1.006	OK
16	2.943	2.615	1.125	OK	4.042	3.984	1.015	OK
15	3.017	2.667	1.131	OK	4.145	4.084	1.015	OK
14	3.078	2.708	1.137	OK	4.208	4.158	1.012	OK
13	3.121	2.735	1.141	OK	4.246	4.207	1.009	OK
12	3.139	2.741	1.145	OK	4.257	4.229	1.006	OK
11	3.13	2.723	1.149	OK	4.237	4.22	1.004	OK
10	3.088	2.677	1.154	OK	4.181	4.171	1.002	OK
9	3.007	2.597	1.158	OK	4.079	4.076	1.001	OK
8	2.883	2.48	1.162	OK	3.928	3.926	1.001	OK
7	2.707	2.318	1.168	OK	3.714	3.711	1.001	OK
6	2.472	2.106	1.173	OK	3.425	3.421	1.001	OK
5	2.182	1.851	1.179	OK	3.056	3.046	1.003	OK
4	1.875	1.581	1.186	OK	2.707	2.665	1.016	OK
3	1.505	1.258	1.196	OK	2.296	2.2	1.044	OK
2	1.062	0.875	1.215	1a	1.779	1.621	1.098	OK
1	0.508	0.412	1.233	1a	0.982	0.844	1.164	OK

Bentuk U (Penajam Paser Utara)

Lantai	Arah X				Arah Y			
	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek	Max Drift (mm)	Avg Drift (mm)	$\Delta_{max}/\Delta_{avg}$	Cek
20	2.647	2.478	1.069	OK	3.329	2.972	1.12	OK
19	2.686	2.629	1.022	OK	3.409	3.294	1.035	OK
18	2.776	2.739	1.013	OK	3.523	3.507	1.005	OK
17	2.848	2.799	1.017	OK	3.657	3.645	1.003	OK
16	2.915	2.856	1.02	OK	3.781	3.769	1.003	OK
15	2.973	2.906	1.023	OK	3.894	3.882	1.003	OK
14	3.017	2.943	1.025	OK	3.992	3.978	1.003	OK
13	3.042	2.963	1.027	OK	4.066	4.052	1.003	OK
12	3.044	2.96	1.028	OK	4.111	4.098	1.003	OK
11	3.018	2.932	1.029	OK	4.121	4.108	1.003	OK
10	2.961	2.872	1.031	OK	4.092	4.079	1.003	OK
9	2.868	2.778	1.032	OK	4.015	4.001	1.003	OK
8	2.734	2.644	1.034	OK	3.884	3.868	1.004	OK
7	2.553	2.464	1.036	OK	3.689	3.668	1.006	OK
6	2.316	2.231	1.038	OK	3.417	3.39	1.008	OK
5	2.034	1.953	1.041	OK	3.044	3.018	1.008	OK
4	1.739	1.665	1.044	OK	2.654	2.623	1.012	OK
3	1.383	1.318	1.049	OK	2.179	2.134	1.021	OK
2	0.961	0.907	1.059	OK	1.61	1.535	1.049	OK
1	0.459	0.428	1.072	OK	0.862	0.787	1.096	OK

Hasil Eksentrisitas Output Etabs

Bentuk L

Story	Tinggi, h (m)	XCM	YCM	XCR	YCR	ex	ey
20	60.5	18.37	11.27	19.91	12.87	1.54	1.60
19	57.5	18.28	11.31	19.98	12.93	1.70	1.62
18	54.5	18.25	11.33	20.07	13.01	1.82	1.69
17	51.5	18.24	11.33	20.17	13.11	1.94	1.78
16	48.5	18.23	11.33	20.30	13.22	2.07	1.89
15	45.5	18.23	11.34	20.44	13.35	2.21	2.01
14	42.5	18.22	11.34	20.59	13.48	2.36	2.14
13	39.5	18.22	11.34	20.75	13.63	2.53	2.29
12	36.5	18.22	11.34	20.92	13.78	2.70	2.44
11	33.5	18.22	11.34	21.10	13.94	2.88	2.60
10	30.5	18.22	11.34	21.29	14.10	3.07	2.76
9	27.5	18.22	11.34	21.49	14.28	3.27	2.93
8	24.5	18.21	11.34	21.70	14.45	3.48	3.11
7	21.5	18.21	11.34	21.91	14.64	3.70	3.29
6	18.5	18.21	11.34	22.13	14.82	3.92	3.48
5	15.5	18.21	11.35	22.35	15.00	4.15	3.65
4	12.5	18.20	11.35	22.58	15.18	4.38	3.83
3	9.5	18.19	11.35	22.83	15.35	4.63	4.00
2	6.5	18.18	11.36	23.07	15.51	4.89	4.15
1	3.5	18.18	11.36	23.19	15.44	5.02	4.08
					Rata-rata	3.11	2.77

Bentuk T

Story	Tinggi, h (m)	XCM	YCM	XCR	YCR	ex	ey
20	60.5	23.75	11.27	23.75	12.66	0.00	1.39
19	57.5	23.75	11.31	23.75	12.72	0.00	1.41
18	54.5	23.75	11.33	23.75	12.80	0.00	1.48
17	51.5	23.75	11.33	23.75	12.90	0.00	1.57
16	48.5	23.75	11.33	23.75	13.02	0.00	1.68
15	45.5	23.75	11.34	23.75	13.14	0.00	1.81
14	42.5	23.75	11.34	23.75	13.29	0.00	1.95
13	39.5	23.75	11.34	23.75	13.44	0.00	2.10
12	36.5	23.75	11.34	23.75	13.60	0.00	2.26
11	33.5	23.75	11.34	23.75	13.77	0.00	2.42
10	30.5	23.75	11.34	23.75	13.94	0.00	2.60
9	27.5	23.75	11.34	23.75	14.13	0.00	2.79
8	24.5	23.75	11.34	23.75	14.32	0.00	2.98
7	21.5	23.75	11.34	23.75	14.51	0.00	3.17
6	18.5	23.75	11.34	23.75	14.71	0.00	3.37
5	15.5	23.75	11.35	23.75	14.91	0.00	3.56
4	12.5	23.75	11.35	23.75	15.10	0.00	3.75
3	9.5	23.75	11.35	23.75	15.30	0.00	3.95
2	6.5	23.75	11.36	23.75	15.48	0.00	4.12
1	3.5	23.75	11.36	23.75	15.43	0.00	4.07
					Rata-rata	0.00	2.62

Bentuk U

Story	Tinggi, h (m)	XCM	YCM	XCR	YCR	ex	ey
20	60.5	23.75	9.64	23.75	9.14	0.00	0.50
19	57.5	23.75	9.66	23.75	9.16	0.00	0.50
18	54.5	23.75	9.67	23.75	9.18	0.00	0.49
17	51.5	23.75	9.67	23.75	9.19	0.00	0.48
16	48.5	23.75	9.67	23.75	9.21	0.00	0.46
15	45.5	23.75	9.67	23.75	9.22	0.00	0.45
14	42.5	23.75	9.67	23.75	9.24	0.00	0.44
13	39.5	23.75	9.67	23.75	9.25	0.00	0.42
12	36.5	23.75	9.67	23.75	9.27	0.00	0.41
11	33.5	23.75	9.67	23.75	9.28	0.00	0.39
10	30.5	23.75	9.67	23.75	9.30	0.00	0.37
9	27.5	23.75	9.67	23.75	9.32	0.00	0.36
8	24.5	23.75	9.67	23.75	9.34	0.00	0.34
7	21.5	23.75	9.67	23.75	9.36	0.00	0.31
6	18.5	23.75	9.67	23.75	9.39	0.00	0.29
5	15.5	23.75	9.67	23.75	9.42	0.00	0.25
4	12.5	23.75	9.68	23.75	9.46	0.00	0.21
3	9.5	23.75	9.68	23.75	9.51	0.00	0.17
2	6.5	23.75	9.68	23.75	9.57	0.00	0.11
1	3.5	23.75	9.68	23.75	9.63	0.00	0.05
					Rata-rata	0.00	0.35

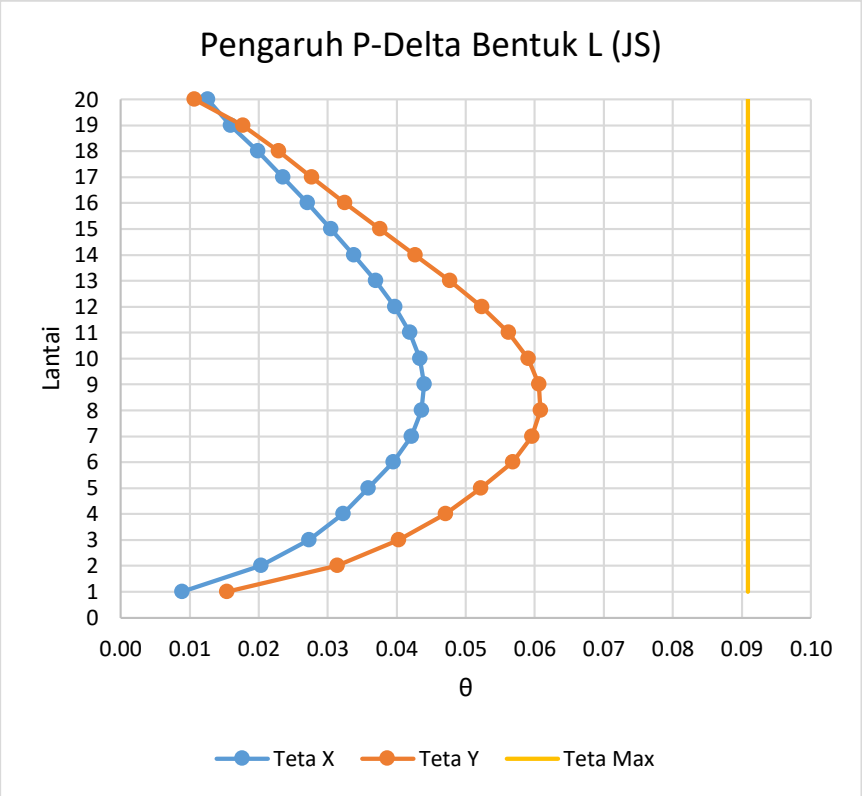
Tabel Perbandingan *Story Shears* Jakarta Selatan dan PPU

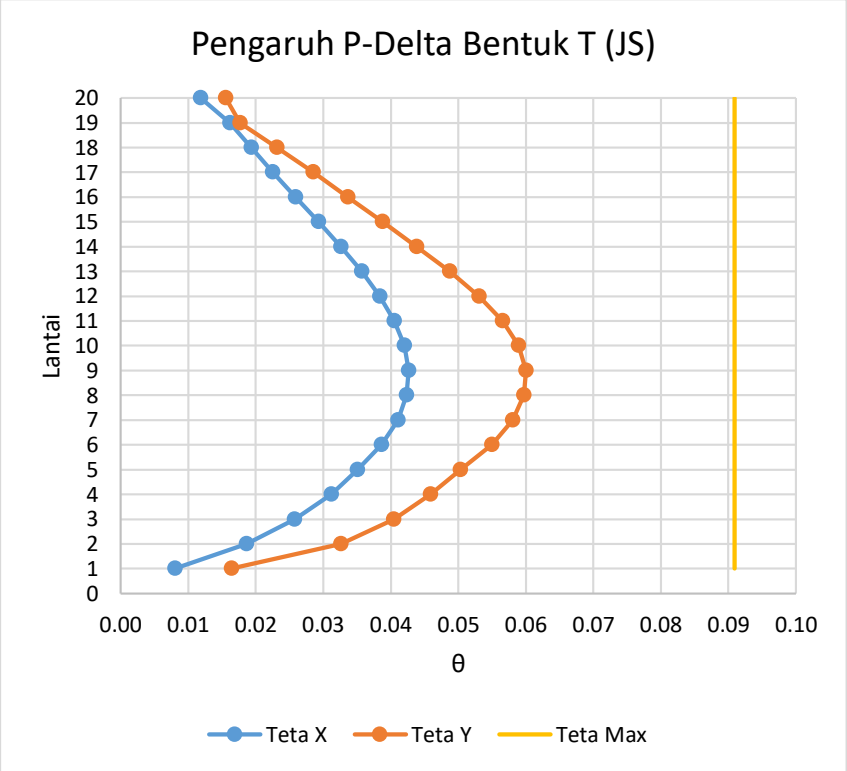
Story	Elevation (m)	Location	Jakarta Selatan		PPU	
			X-Dir (kN)	Y-Dir (kN)	X-Dir (kN)	Y-Dir (kN)
LT ATAP	57.5	Top	1139.28	1212.82	344.47	352.8738
	54.5	Bottom	1139.28	1212.82	344.47	352.8738
Story19	54.5	Top	2309.93	2432.36	705.92	727.0662
	51.5	Bottom	2309.93	2432.36	705.92	727.0662
Story18	51.5	Top	3233.44	3356.03	1002.9806	1032.3852
	48.5	Bottom	3233.44	3356.03	1002.9806	1032.3852
Story17	48.5	Top	3944.77	4037.05	1246.3681	1273.0435
	45.5	Bottom	3944.77	4037.05	1246.3681	1273.0435
Story16	45.5	Top	4494.28	4545.46	1449.2949	1460.5531
	42.5	Bottom	4494.28	4545.46	1449.2949	1460.5531
Story15	42.5	Top	4936.69	4939.07	1623.5951	1609.7894
	39.5	Bottom	4936.69	4939.07	1623.5951	1609.7894
Story14	39.5	Top	5318.86	5259.92	1778.1712	1734.6917
	36.5	Bottom	5318.86	5259.92	1778.1712	1734.6917
Story13	36.5	Top	5672.20	5540.96	1919.3938	1846.9746
	33.5	Bottom	5672.20	5540.96	1919.3938	1846.9746
Story12	33.5	Top	6015.05	5812.37	2051.5947	1954.8375
	30.5	Bottom	6015.05	5812.37	2051.5947	1954.8375
Story11	30.5	Top	6357.79	6097.99	2177.4368	2062.898
	27.5	Bottom	6357.79	6097.99	2177.4368	2062.898
Story10	27.5	Top	6707.04	6411.44	2298.3919	2173.8417
	24.5	Bottom	6707.04	6411.44	2298.3919	2173.8417
Story9	24.5	Top	7066.82	6756.84	2415.1538	2288.5385
	21.5	Bottom	7066.82	6756.84	2415.1538	2288.5385
Story8	21.5	Top	7434.95	7130.41	2527.3674	2405.7106
	18.5	Bottom	7434.95	7130.41	2527.3674	2405.7106
Story7	18.5	Top	7802.19	7520.12	2633.7743	2522.7737
	15.5	Bottom	7802.19	7520.12	2633.7743	2522.7737
Story6	15.5	Top	8155.09	7906.77	2731.9731	2636.0418
	12.5	Bottom	8155.09	7906.77	2731.9731	2636.0418
Story5	12.5	Top	8484.30	8279.53	2821.1537	2744.1993
	9.5	Bottom	8484.30	8279.53	2821.1537	2744.1993
Story4	9.5	Top	8770.53	8619.16	2897.6779	2842.9861
	6.5	Bottom	8770.53	8619.16	2897.6779	2842.9861
Story3	6.5	Top	8991.03	8897.21	2955.8662	2924.2167
	3.5	Bottom	8991.03	8897.21	2955.8662	2924.2167
Story2	3.5	Top	9133.19	9094.86	2993.0297	2981.3062
	0	Bottom	9133.19	9094.86	2993.0297	2981.3062
Story1	0	Top	9191.91	9191.91	3008.3853	3008.3852
	0	Bottom	9191.91	9191.91	3008.3853	3008.3852

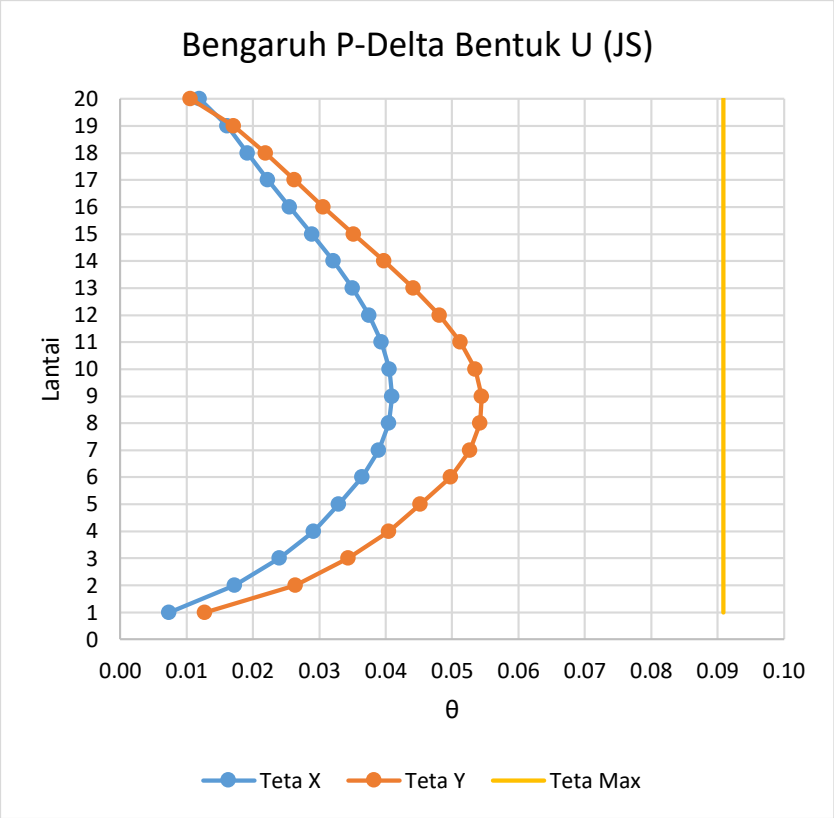
Perhitungan Teta Max (Pengaruh P-Delta)

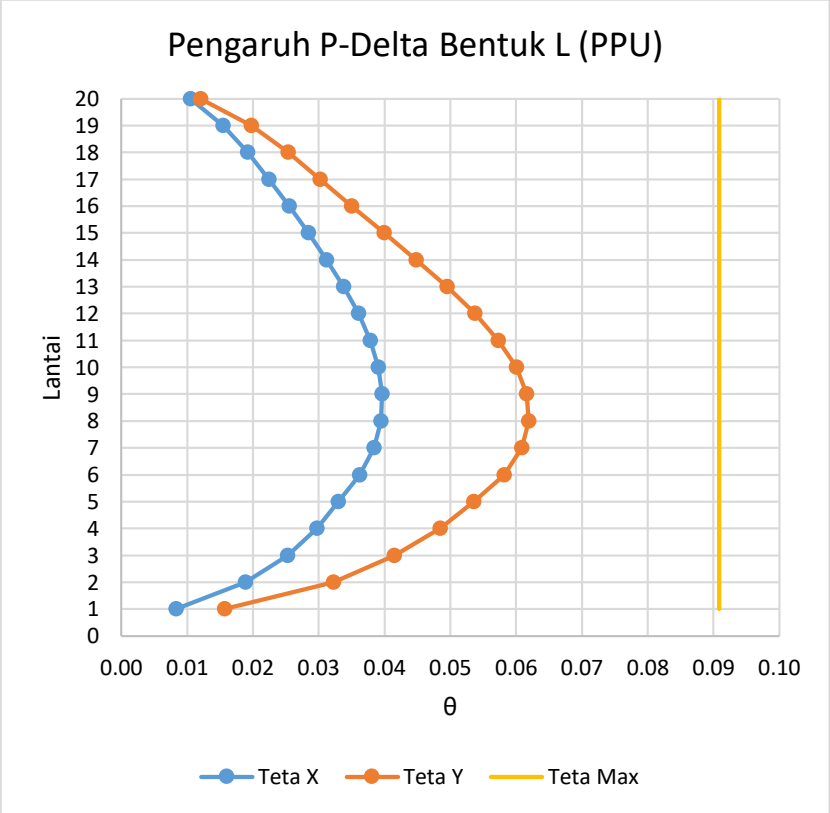
Izin			
Story	**Beta**	**Cd**	**Teta Max**
20	1	5.5	0.09091
19	1	5.5	0.09091
18	1	5.5	0.09091
17	1	5.5	0.09091
16	1	5.5	0.09091
15	1	5.5	0.09091
14	1	5.5	0.09091
13	1	5.5	0.09091
12	1	5.5	0.09091
11	1	5.5	0.09091
10	1	5.5	0.09091
9	1	5.5	0.09091
8	1	5.5	0.09091
7	1	5.5	0.09091
6	1	5.5	0.09091
5	1	5.5	0.09091
4	1	5.5	0.09091
3	1	5.5	0.09091
2	1	5.5	0.09091
1	1	5.5	0.09091

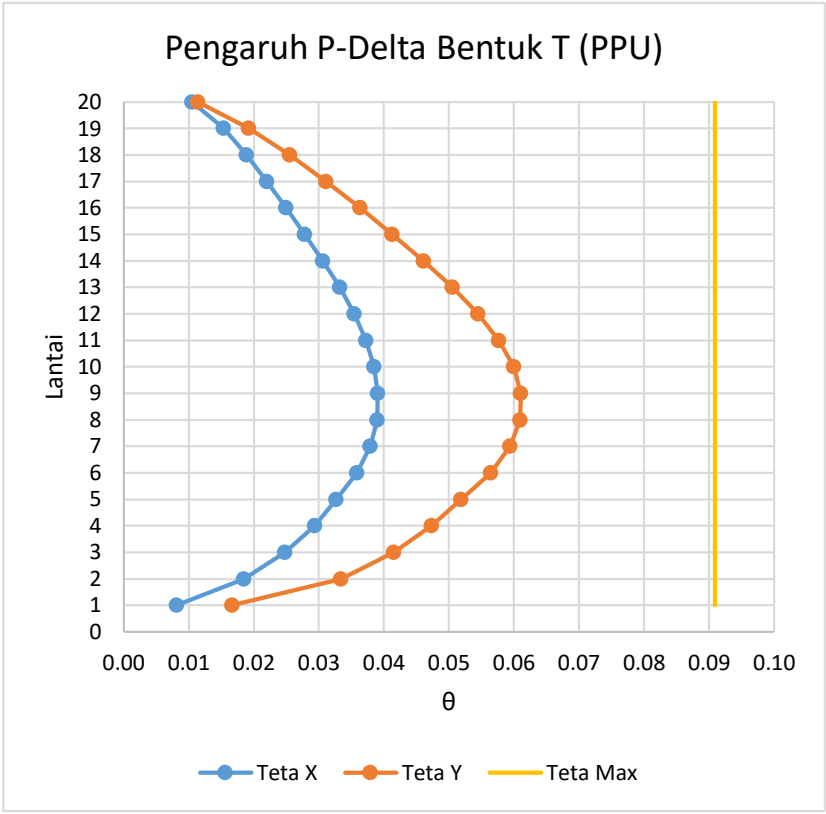
Grafik Pengaruh P-Delta

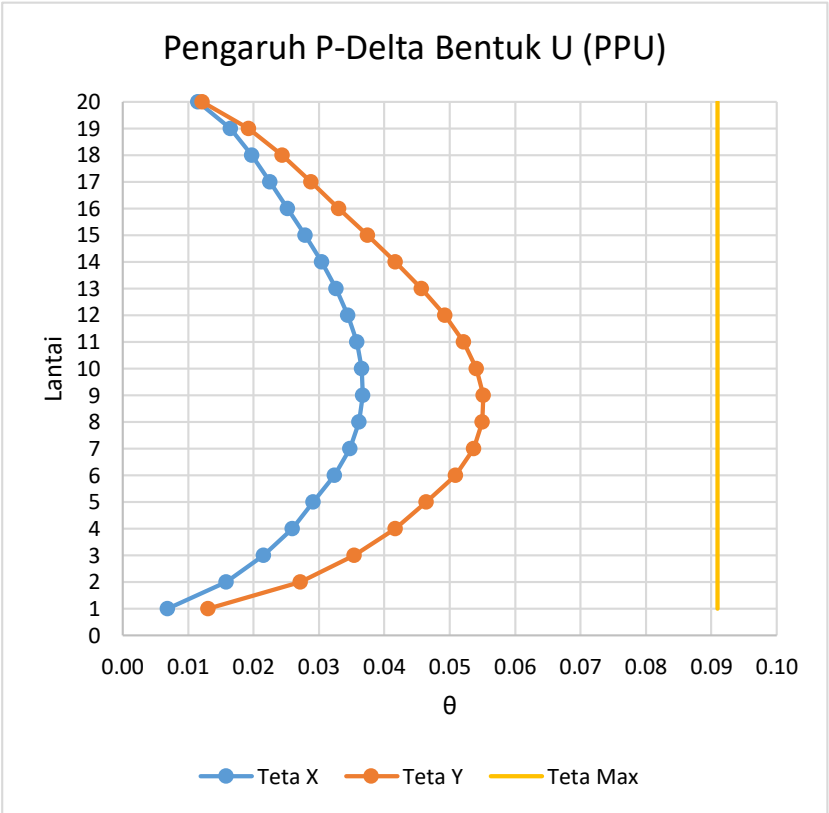





Bengaruh P-Delta Bentuk U (JS)
Lantai
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10
θ
Teta X
Teta Y
Teta Max


Pengaruh P-Delta Bentuk L (PPU)
Lantai
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
0.00 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.10
θ
Teta X
Teta Y
Teta Max


Pengaruh P-Delta Bentuk T (PPU)
Lantai
θ
Teta X
Teta Y
Teta Max


Pengaruh P-Delta Bentuk U (PPU)
Lantai
θ
Teta X
Teta Y
Teta Max

Perhitungan Berat Tulangan (PPU)

Balok (Bentuk U PPU)								
Bentang	**As Top**	**As Bottom**	**Jumlah (mm2)**	**Jumlah (m2)**	**Panjang (m)**	**BJ Tul.**	**Berat Tul.**	**Total**
L = 5m	541272	310725	851997	0.851997	370	7850	2474.625	**2578.049**
L = 2,5m	109144	79070	188214	0.188214	70	7850	103.424	
		Sum	**1040211**					

Balok (Bentuk T PPU)								
Bentang	**As Top**	**As Bottom**	**Jumlah (mm2)**	**Jumlah (m2)**	**Panjang (m)**	**BJ Tul.**	**Berat Tul.**	**Total**
L = 5m	541609	311019	852628	0.852628	370	7850	2476.458	**2581.406**
L = 2,5m	111058	79929.4	190987.4	0.190987	70	7850	104.948	
		Sum	**1043615.4**					

Balok (Bentuk L PPU)								
Bentang	**As Top**	**As Bottom**	**Jumlah (mm2)**	**Jumlah (m2)**	**Panjang (m)**	**BJ Tul.**	**Berat Tul.**	**Total**
L = 5m	542825	311654	853263	0.853263	370	7850	2478.302	**2585.104**
L = 2,5m	113093	81269	194362	0.194362	70	7850	106.802	
		Sum	**1047625**					

Kolom (Bentuk U PPU)						
Tipe	**As**	**As (m2)**	**Tinggi (m)**	**BJ Tulangan**	**Berat Tulangan**	**Total**
K1	1296000	1.296	70.5	7850	717.2388	3728.624
K2	3456000	3.456	111	7850	3011.3856	

Kolom (Bentuk T PPU)						
Tipe	**As Top**	**As (m2)**	**Tinggi (m)**	**BJ Tulangan**	**Berat Tulangan**	**Total**
K1	1296000	1.296	70.5	7850	717.2388	3728.624
K2	3456000	3.456	111	7850	3011.3856	

Kolom (Bentuk L PPU)						
Tipe	**As Top**	**As (m2)**	**Tinggi (m)**	**BJ Tulangan**	**Berat Tulangan**	**Total**
K1	1296000	1.296	70.5	7850	717.2388	3728.624
K2	3456000	3.456	111	7850	3011.3856	

***Shear Wall* (Bentuk U PPU)**				
Pier Label	**Lt 1 - 5**		**Lt 6 - 20**	
	As Bot	**As Top**	**As Bot**	**As Top**
P1	50248	43542	82125	82125
P2	50271	43554	82125	82125
P3	46495	40067	82125	82125
P4	46512	30600	82125	82125
P5	117638	86964	69372	69372
P6	117638	86964	69372	69372
Sum	428802	331691	467244	467244
			Total	**1694981**

***Shear Wall* (Bentuk T PPU)**				
Pier Label	**Lt 1 - 5**		**Lt 6 - 20**	
	As Bot	**As Top**	**As Bot**	**As Top**
P1	51637	44748	82125	82125
P2	51631	44742	82125	82125
P3	55373	46475	82125	82125
P4	55365	46460	82125	82125
P5	139955	105361	80934	80934
P6	129385	104598	69372	69372
Sum	483346	392384	478806	478806
			Total	**1833342**

***Shear Wall* (Bentuk L PPU)**				
Pier Label	**Lt 1 - 5**		**Lt 6 - 20**	
	As Bot	**As Top**	**As Bot**	**As Top**
P1	50798	44263	82125	82125
P2	52414	45115	82125	82125
P3	65941	54280	82125	82125
P4	58162	47916	82125	82125
P5	158017	126386	75153	75153
P6	158017	126386	75153	75153
Sum	543349	444346	478806	478806
			Total	**1945307**

Shear Wall			
	Bentuk U	**Bentuk T**	**Bentuk L**
Luas Tul. Total	1694981	1833342.000	1945307
Luas D16	201.1	201.100	201.1
Jumlah Tul.	8428.548	9116.569	9673.332
Berat D16	573.540	573.540	573.540
Berat Tul. Perlu	4834.109	5228.717	5548.043