Verified RealEstate™

RE REGULATORY RECORD

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TABLE: Modal Participating Mass Ratios

Case	Mode	Period	UX	UY	UZ	SumUX	SumUY	SumUZ	RX	RY	RZ	SumRX	SumRY	SumRZ
		sec												
Modal	1	6.938	0.5625	0.0011	0.00001209	0.5625	0.0011	0.00001209	0.0007	0.396	0.0054	0.0007	0.396	0.0054
Modal	2	6.175	0.000006655	0.33	0	0.5625	0.3311	0.00001212	0.1716	0.000006446	0.2009	0.1723	0.396	0.2063
Modal	3	4.594	0.002	0.2402	0	0.5645	0.5713	0.00001226	0.1501	0.0018	0.2698	0.3224	0.3977	0.476
Modal	4	1.8	0.0482	0.0474	0.00001153	0.6126	0.6187	0.00002379	0.0382	0.0403	0.0137	0.3606	0.438	0.4897
Modal	5	1.627	0.0913	0.0285	0.00003698	0.7039	0.6472	0.0001	0.0205	0.079	0.0156	0.3811	0.517	0.5053
Modal	6	1.294	0.000005297	0.0468	0.000003332	0.7039	0.694	0.0001	0.0301	0.00003536	0.062	0.4112	0.5171	0.5672
Modal	7	0.891	0.018	0.023	0.000001582	0.722	0.717	0.0001	0.0154	0.0109	0.0066	0.4267	0.528	0.5738
Modal	8	0.757	0.0432	0.0107	0.00001069	0.7651	0.7277	0.0001	0.0074	0.0311	0.003	0.4341	0.5591	0.5769
Modal	9	0.57	0.0042	0.0472	0.000006206	0.7693	0.7749	0.0001	0.0392	0.0055	0.0099	0.4732	0.5646	0.5868
Modal	10	0.503	0.0016	0.0002	0.3977	0.7709	0.775	0.3978	0.0004	0.0225	0.0001	0.4737	0.5871	0.5869
Modal	11	0.477	0.0396	0.0033	0.0221	0.8105	0.7783	0.4199	0.0037	0.0448	0.0012	0.4773	0.6319	0.5881
Modal	12	0.374	0.0003	9.996E-07	0.2726	0.8109	0.7783	0.6925	0.0006	0.0104	0.0001	0.4779	0.6423	0.5882
Modal	13	0.252	0.0223	0.1205	0.0008	0.8332	0.8988	0.6933	0.1349	0.032	0.0015	0.6128	0.6743	0.5896
Modal	14	0.229	0.0879	0.0282	0.0178	0.9211	0.9271	0.7111	0.0353	0.1311	0.0005	0.6481	0.8054	0.5902
Modal	15	0.214	0.0111	0.001	0.1576	0.9322	0.9281	0.8687	0.00004058	0.0126	0.0001	0.6481	0.818	0.5903
			0.7417	0.6907										

MODAL MASS PARTICIPATION

TABLE: Story Stiffness

Story	Output Case	Case Type	Shear X	Drift X	Stiff X	Shear Y	Drift Y	Stiff Y	
			kN	mm	kN/m	kN	mm	kN/m	
LMR/OHT TOP	EQX	LinStatic	0.00002182	0.387	0.056	0	0.085	0	
LMR/OHT FLOOR	EQX	LinStatic	0.000003787	0.269	0.014	0.000000593	0.1	0.006	
TERRACE	EQX	LinStatic	837.3138	1.043	802861.917	0.000002684	0.17	0	
19	EQX	LinStatic	1650.0641	1.075	1534626.15	0.000001983	0.167	0	191%
18	EQX	LinStatic	2389.8384	1.117	2138567.548	0	0.168	0	139%
17	EQX	LinStatic	3060.069	1.166	2625184.396	0.000002087	0.17	0	123%
16	EQX	LinStatic	3664.1877	1.216	3012483.562	0.000002776	0.173	0	115%
15	EQX	LinStatic	4205.6269	1.267	3320500.769	0.000004003	0.175	0	110%
14	EQX	LinStatic	4687.8185	1.313	3569838.396	0.000003321	0.176	0	108%
13	EQX	LinStatic	5114.1947	1.354	3777339.752	0.000001779	0.176	0	106%
12	EQX	LinStatic	5488.1877	1.387	3956577.349	0.000003136	0.176	0	105%
11	EQX	LinStatic	5813.2294	1.411	4118559.505	0.000005763	0.174	0	104%
10	EQX	LinStatic	6092.7521	1.426	4272661.639	0.000003253	0.17	0	104%
9	EQX	LinStatic	6330.1878	1.43	4427498.498	0.000002299	0.166	0	104%
8	EQX	LinStatic	6528.9687	1.422	4591971.726	0.00000184	0.159	0	104%
7	EQX	LinStatic	6692.5268	1.401	4776738.906	0.000002403	0.151	0	104%
6	EQX	LinStatic	6824.2942	1.366	4997276.183	0.000002711	0.141	0	105%
5	EQX	LinStatic	6927.7032	1.313	5276764.642	0.000002243	0.133	0	106%
4	EQX	LinStatic	7006.1857	1.247	5616553.625	0.000002266	0.133	0	106%
3	EQX	LinStatic	7063.2708	1.089	6483298.367	0.000001923	0.133	0	115%
2	EQX	LinStatic	7106.6163	1.045	6800102.844	0.000007561	0.189	0	105%
1	EQX	LinStatic	7128.5645	0.873	8163565.66	0.000007808	0.183	0	120%
TRANSFER/GROUND	EQX	LinStatic	7191.9453	1.108	6492135.701	0.0003	0.378	0	80%
UPPER BASEMENT	EQX	LinStatic	7197.561	0.38	18937448.28	0.0003	0.114	0	292%

STORY STIFFNESS FOR X DIRECTION

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TABLE: Story Stiffness

Story	Output Case	Case Type	Shear X	Drift X	Stiff X	Shear Y	Drift Y	Stiff Y	
			kN	mm	kN/m	kN	mm	kN/m	
LMR/OHT TOP	EQY	LinStatic	1.48E-06	0.15	0	0.00002	0.373	0.054	
LMR/OHT FLOOR	EQY	LinStatic	1.54E-06	0.111	0	4.55E-05	0.316	0.144	
TERRACE	EQY	LinStatic	2.32E-06	0.137	0	905.4672	1.046	865914.3	
19	EQY	LinStatic	7.32E-06	0.139	0	1784.372	1.165	1531146	177%
18	EQY	LinStatic	7.82E-06	0.143	0	2584.36	1.233	2096014	137%
17	EQY	LinStatic	1.18E-05	0.146	0	3309.144	1.292	2561420	122%
16	EQY	LinStatic	1.81E-05	0.152	0	3962.436	1.355	2925150	114%
15	EQY	LinStatic	2.19E-05	0.157	0	4547.945	1.417	3210441	110%
14	EQY	LinStatic	1.68E-05	0.16	0	5069.385	1.475	3437783	107%
13	EQY	LinStatic	1.56E-05	0.162	0	5530.466	1.526	3624357	105%
12	EQY	LinStatic	1.76E-05	0.165	0	5934.901	1.568	3784622	104%
11	EQY	LinStatic	1.56E-05	0.163	0	6286.399	1.599	3931177	104%
10	EQY	LinStatic	1.95E-05	0.163	0	6588.674	1.616	4075907	104%
9	EQY	LinStatic	1.94E-05	0.16	0	6845.436	1.618	4231419	104%
8	EQY	LinStatic	1.99E-05	0.157	0	7060.396	1.6	4412814	104%
7	EQY	LinStatic	1.92E-05	0.154	0	7237.267	1.56	4639346	105%
6	EQY	LinStatic	2.04E-05	0.152	0	7379.76	1.494	4941183	107%
5	EQY	LinStatic	2.17E-05	0.149	0	7491.586	1.412	5305616	107%
4	EQY	LinStatic	2.2E-05	0.148	0	7576.457	1.35	5612722	106%
3	EQY	LinStatic	2.12E-05	0.154	0	7638.188	1.175	6499260	116%
2	EQY	LinStatic	0.0002	0.156	0	7685.06	1.769	4944597	76%
1	EQY	LinStatic	0.0002	0.143	0	7708.795	1.602	6512506	132%
TRANSFER/GROUND	EQY	LinStatic	0.0001	0.201	0	7777.334	0.776	10018710	154%
UPPER BASEMENT	EQY	LinStatic	0.0001	0.073	0	7783.407	0.236	32982192	329%

STORY STIFFNESS FOR Y DIRECTION

TABLE: Story Drifts

Story	Output Ca	Case Typ	Step Ty	Directi	Drift
LMR/OHT TOP	EQX	LinStatic		X	0.000144
LMR/OHT FLOOR	EQX	LinStatic		X	0.000177
TERRACE	EQX	LinStatic		X	0.000454
19	EQX	LinStatic		X	0.000463
18	EQX	LinStatic		X	0.000477
17	EQX	LinStatic		X	0.000493
16	EQX	LinStatic		X	0.000509
15	EQX	LinStatic		X	0.000526
14	EQX	LinStatic		X	0.00054
13	EQX	LinStatic		X	0.000553
12	EQX	LinStatic		X	0.000563
11	EQX	LinStatic		X	0.000569
10	EQX	LinStatic		X	0.000571
9	EQX	LinStatic		X	0.000569
8	EQX	LinStatic		X	0.000562
7	EQX	LinStatic		X	0.000549
6	EQX	LinStatic		X	0.000531
5	EQX	LinStatic		X	0.000505
4	EQX	LinStatic		X	0.000477
3	EQX	LinStatic		X	0.000445
2	EQX	LinStatic		X	0.000405
1	EQX	LinStatic		X	0.000383
TRANSFER/GROUND	EQX	LinStatic		X	0.000425
UPPER BASEMENT	EQX	LinStatic		X	0.000226

STORY DRIFT FOR X DIRECTION (FOR SEISMIC ANALYSIS)

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TABLE: Story Drifts

Story	Output Ca	Case Typ	Step Ty	Directi	Drift
LMR/OHT TOP	EQY	LinStatic		Y	0.00016
LMR/OHT FLOOR	EQY	LinStatic		Y	0.000199
TERRACE	EQY	LinStatic		Y	0.000482
19	EQY	LinStatic		Y	0.000493
18	EQY	LinStatic		Y	0.000513
17	EQY	LinStatic		Y	0.000538
16	EQY	LinStatic		Y	0.000564
15	EQY	LinStatic		Y	0.000588
14	EQY	LinStatic		Y	0.000611
13	EQY	LinStatic		Y	0.000631
12	EQY	LinStatic		Y	0.000646
11	EQY	LinStatic		Y	0.000656
10	EQY	LinStatic		Y	0.00066
9	EQY	LinStatic		Y	0.000656
8	EQY	LinStatic		Y	0.000643
7	EQY	LinStatic		Y	0.000619
6	EQY	LinStatic		Y	0.000581
5	EQY	LinStatic		Y	0.000538
4	EQY	LinStatic		Y	0.000513
3	EQY	LinStatic		Y	0.000489
2	EQY	LinStatic		Y	0.00087
1	EQY	LinStatic		Y	0.00083
TRANSFER/GROUND	EQY	LinStatic		Y	0.000301
UPPER BASEMENT	EQY	LinStatic		Y	0.000142

STORY DRIFT FOR Y DIRECTION (FOR SEISMIC ANALYSIS)

MANGADU-PHASE 2

TOWER 3B – DESIGN CALCUALTION REPORT

TABLE: Story Drifts

Story	Output Case		Case Type	Direction	Drift	Label	X	Y	Z		
TERRACE	EQX	2.95	LinStatic	X	0.000434	907	-8.975	23.7	67.15	0.00128	1.2803
19	EQX	2.95	LinStatic	X	0.000444	907	-8.975	23.7	64.2	0.00131	1.3098
18	EQX	2.95	LinStatic	X	0.000459	908	2.235	23.7	61.25	0.001354	1.35405
17	EQX	2.95	LinStatic	X	0.000476	908	2.235	23.7	58.3	0.001404	1.4042
16	EQX	2.95	LinStatic	X	0.000493	1174	1.665	23.7	55.35	0.001454	1.45435
15	EQX	2.95	LinStatic	X	0.000511	1283	-3.37	23.7	52.4	0.001507	1.50745
14	EQX	2.95	LinStatic	X	0.000527	1283	-3.37	23.7	49.45	0.001555	1.55465
13	EQX	2.95	LinStatic	X	0.00054	1283	-3.37	23.7	46.5	0.001593	1.593
12	EQX	2.95	LinStatic	X	0.00055	1283	-3.37	23.7	43.55	0.001623	1.6225
11	EQX	2.95	LinStatic	X	0.000557	1283	-3.37	23.7	40.6	0.001643	1.64315
10	EQX	2.95	LinStatic	X	0.000559	1283	-3.37	23.7	37.65	0.001649	1.64905
9	EQX	2.95	LinStatic	X	0.000556	1283	-3.37	23.7	34.7	0.00164	1.6402
8	EQX	2.95	LinStatic	X	0.000548	1283	-3.37	23.7	31.75	0.001617	1.6166
7	EQX	2.95	LinStatic	X	0.000535	1283	-3.37	23.7	28.8	0.001578	1.57825
6	EQX	2.95	LinStatic	X	0.000515	1283	-3.37	23.7	25.85	0.001519	1.51925
5	EQX	2.95	LinStatic	X	0.000488	1283	-3.37	23.7	22.9	0.00144	1.4396
4	EQX	2.95	LinStatic	X	0.000452	1283	-3.37	23.7	19.95	0.001333	1.3334
3	EQX	2.95	LinStatic	X	0.00041	1286	5.175	21.565	17	0.00121	1.2095
2	EQX	2.95	LinStatic	X	0.000359	1286	5.175	21.565	14.05	0.001059	1.05905
1	EQX	2.95	LinStatic	X	0.000317	171	13.4892	10.5754	11.1	0.000935	0.93515
TRANSFER	EQX	4.95	LinStatic	X	0.000272	366	0.155	23.7546	8.15	0.001346	1.3464
UPPER BA	EQX	3.2	LinStatic	X	0.000181	1532	-11.8958	20.8871	3.2	0.000579	0.5792

Overall Height upto Terrace = 67.15

Overall Drift upto Terrace = 30.6291

Overall Drift in X-Direction

TABLE: Story Drifts

Story	Output Case		Case Type	Direction	Drift	Label	X	Y	Z		
LMR/OHT	EQY		LinStatic	Y	0.000161	1051	0.81	10.38	73.4		
LMR/OHT	EQY		LinStatic	Y	0.000184	1419	2.14	0	69.8		
TERRACE	EQY	2.95	LinStatic	Y	0.000441	461	13.89	3.325	67.15	0.001301	1.30095
19	EQY	2.95	LinStatic	Y	0.000452	461	13.89	3.325	64.2	0.001333	1.3334
18	EQY	2.95	LinStatic	Y	0.000471	355	13.89	5.275	61.25	0.001389	1.38945
17	EQY	2.95	LinStatic	Y	0.000496	355	13.89	5.275	58.3	0.001463	1.4632
16	EQY	2.95	LinStatic	Y	0.000521	355	13.89	5.275	55.35	0.001537	1.53695
15	EQY	2.95	LinStatic	Y	0.000547	355	13.89	5.275	52.4	0.001614	1.61365
14	EQY	2.95	LinStatic	Y	0.00057	355	13.89	5.275	49.45	0.001682	1.6815
13	EQY	2.95	LinStatic	Y	0.000592	355	13.89	5.275	46.5	0.001746	1.7464
12	EQY	2.95	LinStatic	Y	0.000609	355	13.89	5.275	43.55	0.001797	1.79655
11	EQY	2.95	LinStatic	Y	0.000622	355	13.89	5.275	40.6	0.001835	1.8349
10	EQY	2.95	LinStatic	Y	0.000629	355	13.89	5.275	37.65	0.001856	1.85555
9	EQY	2.95	LinStatic	Y	0.00063	355	13.89	5.275	34.7	0.001859	1.8585
8	EQY	2.95	LinStatic	Y	0.000622	355	13.89	5.275	31.75	0.001835	1.8349
7	EQY	2.95	LinStatic	Y	0.000603	461	13.89	3.325	28.8	0.001779	1.77885
6	EQY	2.95	LinStatic	Y	0.00057	461	13.89	3.325	25.85	0.001682	1.6815
5	EQY	2.95	LinStatic	Y	0.000518	461	13.89	3.325	22.9	0.001528	1.5281
4	EQY	2.95	LinStatic	Y	0.000478	886	5.175	-6.17	19.95	0.00141	1.4101
3	EQY	2.95	LinStatic	Y	0.000443	885	5.175	-7.67	17	0.001307	1.30685
2	EQY	2.95	LinStatic	Y	0.000632	170	11.0495	10.5754	14.05	0.001864	1.8644
1	EQY	2.95	LinStatic	Y	0.000592	168	11.0495	5.2701	11.1	0.001746	1.7464
TRANSFER	EQY	4.95	LinStatic	Y	0.000194	13	-6.8958	21.5404	8.15	0.00096	0.9603
UPPER BA	EQY	3.2	LinStatic	Y	0.000106	14	-11.4958	21.5204	3.2	0.000339	0.3392

Overall Height Upto Terrace = 67.15

Overall Drift Upto Terrace = 33.8616

Overall Drift in Y-Direction

H.P. YOGESH
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Client :	Architect :	Structural Consultant :	Document Number
Shriram Properties Homes that live in you	Design Realm	innotech Transform Thoughts	IECP-T3-01

MANGADU-PHASE 2

TOWER 3B – DESIGN CALCUALTION REPORT

SHEET – ----

Project Name	3B								PHASE 1
Check for Torsional Irregularity along X direction									
Storey	Load Case	Direction	Point 1	Δ_1 (m)	Point 2	Δ_2 (m)	Δ_{max} (m)	Δ_{avg} (m)	$\Delta_{max}/\Delta_{avg}$	Check
Terrace	SPEC X	X	1280	18.804	1311	16.382	18.804	17.593	1.069	<1.2, Torsional Irregularity does not exist
19th	SPEC X	X	1280	18.051	1311	15.801	18.051	16.926	1.066	<1.2, Torsional Irregularity does not exist
18th	SPEC X	X	1280	17.28	1311	15.203	17.28	16.2415	1.064	<1.2, Torsional Irregularity does not exist
17th	SPEC X	X	1280	16.484	1311	14.575	16.484	15.5295	1.061	<1.2, Torsional Irregularity does not exist
16th	SPEC X	X	1280	15.664	1311	13.913	15.664	14.7885	1.059	<1.2, Torsional Irregularity does not exist
15th	SPEC X	X	1280	14.82	1311	13.22	14.82	14.02	1.057	<1.2, Torsional Irregularity does not exist
14th	SPEC X	X	1280	13.955	1311	12.498	13.955	13.2265	1.055	<1.2, Torsional Irregularity does not exist
13th	SPEC X	X	1280	13.072	1311	11.752	13.072	12.412	1.053	<1.2, Torsional Irregularity does not exist
12th	SPEC X	X	1280	12.174	1311	10.983	12.174	11.5785	1.051	<1.2, Torsional Irregularity does not exist
11th	SPEC X	X	1280	11.266	1311	10.196	11.266	10.731	1.050	<1.2, Torsional Irregularity does not exist
10th	SPEC X	X	1280	10.351	1311	9.391	10.351	9.871	1.049	<1.2, Torsional Irregularity does not exist
9th	SPEC X	X	1280	9.434	1311	8.568	9.434	9.001	1.048	<1.2, Torsional Irregularity does not exist
8th	SPEC X	X	1280	8.518	1311	7.728	8.518	8.123	1.049	<1.2, Torsional Irregularity does not exist
7th	SPEC X	X	1280	7.61	1311	6.871	7.61	7.2405	1.051	<1.2, Torsional Irregularity does not exist
SIXTH	SPEC X	X	1280	6.714	1311	5.998	6.714	6.356	1.056	<1.2, Torsional Irregularity does not exist
FIFTH	SPEC X	X	1280	5.837	1311	5.113	5.837	5.475	1.066	<1.2, Torsional Irregularity does not exist
FOURTH	SPEC X	X	1280	4.987	1311	4.221	4.987	4.604	1.083	<1.2, Torsional Irregularity does not exist
TF	SPEC X	X	1280	4.172	1311	3.333	4.172	3.7525	1.112	<1.2, Torsional Irregularity does not exist
SF	SPEC X	X	1280	3.403	1311	2.47	3.403	2.9365	1.159	<1.2, Torsional Irregularity does not exist
FF	SPEC X	X	1280	2.721	1311	1.695	2.721	2.208	1.232	1.2 to 1.4, Torsional Irregularity exists
Terrace	SPEC X	X	1286	18.798	1307	16.384	18.798	17.591	1.069	<1.2, Torsional Irregularity does not exist
19th	SPEC X	X	1286	18.05	1307	15.802	18.05	16.926	1.066	<1.2, Torsional Irregularity does not exist
18th	SPEC X	X	1286	17.281	1307	15.204	17.281	16.2425	1.064	<1.2, Torsional Irregularity does not exist
17th	SPEC X	X	1286	16.485	1307	14.575	16.485	15.53	1.061	<1.2, Torsional Irregularity does not exist
16th	SPEC X	X	1286	15.665	1307	13.913	15.665	14.789	1.059	<1.2, Torsional Irregularity does not exist
15th	SPEC X	X	1286	14.82	1307	13.22	14.82	14.02	1.057	<1.2, Torsional Irregularity does not exist
14th	SPEC X	X	1286	13.955	1307	12.498	13.955	13.2265	1.055	<1.2, Torsional Irregularity does not exist
13th	SPEC X	X	1286	13.072	1307	11.752	13.072	12.412	1.053	<1.2, Torsional Irregularity does not exist
12th	SPEC X	X	1286	12.174	1307	10.983	12.174	11.5785	1.051	<1.2, Torsional Irregularity does not exist
11th	SPEC X	X	1286	11.266	1307	10.196	11.266	10.731	1.050	<1.2, Torsional Irregularity does not exist
10th	SPEC X	X	1286	10.352	1307	9.391	10.352	9.8715	1.049	<1.2, Torsional Irregularity does not exist
9th	SPEC X	X	1286	9.434	1307	8.568	9.434	9.001	1.048	<1.2, Torsional Irregularity does not exist
8th	SPEC X	X	1286	8.519	1307	7.728	8.519	8.1235	1.049	<1.2, Torsional Irregularity does not exist
7th	SPEC X	X	1286	7.611	1307	6.871	7.611	7.241	1.051	<1.2, Torsional Irregularity does not exist
SIXTH	SPEC X	X	1286	6.715	1307	5.998	6.715	6.3565	1.056	<1.2, Torsional Irregularity does not exist
FIFTH	SPEC X	X	1286	5.838	1307	5.113	5.838	5.4755	1.066	<1.2, Torsional Irregularity does not exist
FOURTH	SPEC X	X	1286	4.989	1307	4.22	4.989	4.6045	1.084	<1.2, Torsional Irregularity does not exist
TF	SPEC X	X	1286	4.177	1307	3.332	4.177	3.7545	1.113	<1.2, Torsional Irregularity does not exist
SF	SPEC X	X	1286	3.418	1307	2.468	3.418	2.943	1.161	<1.2, Torsional Irregularity does not exist
FF	SPEC X	X	1286	2.757	1307	1.683	2.757	2.22	1.242	1.2 to 1.4, Torsional Irregularity exists

Note:

As per IS-1893-2016 (Amendment issued on NOV 2020)

1. As per IS-1893-2016
   (Δ Max) < 1.2 Δavg
   The said floor structure is regular without Torsional irregularities.
2. (Δ max) > 1.2Δavg < 1.4Δ avg
   The said structure has Torsional Irregularities but satisfy
   - Three dimensional dynamic analysis.
   - Fundamental torsional mode should be less than the least translation mode in each principal direction.
3. (Δ max) > 1.4Δ avg
   The said structure has high torsional irregularities, hence iterate structural wall configuration by revising wall positions.

Note:

As per IS-1893-2016 (Amendment issued on NOV 2020)

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   - Fundamental torsional mode should be less than the least translation mode in each principal direction.
3. (Δ max) > 1.4Δ avg
   The said structure has high torsional irregularities, hence iterate structural wall configuration by revising wall positions.

IRREGULARITY CHECK FOR X DIRECTION

Project Name	3B								PHASE 1
Check for Torsional Irregularity along Y direction									
Storey	Load Case	Direction	Point 1	Δ_1 (m)	Point 2	Δ_2 (m)	Δ_{max} (m)	Δ_{avg} (m)	$\Delta_{max}/\Delta_{avg}$	Check
Terrace	SPEC Y	Y	1280	15.455	1286	16.834	16.834	16.1445	1.043	<1.2, Torsional Irregularity does not exist
19th	SPEC Y	Y	1280	14.942	1286	16.279	16.279	15.6105	1.043	<1.2, Torsional Irregularity does not exist
18th	SPEC Y	Y	1280	14.4	1286	15.686	15.686	15.043	1.043	<1.2, Torsional Irregularity does not exist
17th	SPEC Y	Y	1280	13.816	1286	15.045	15.045	14.4305	1.043	<1.2, Torsional Irregularity does not exist
16th	SPEC Y	Y	1280	13.193	1286	14.357	14.357	13.775	1.042	<1.2, Torsional Irregularity does not exist
15th	SPEC Y	Y	1280	12.533	1286	13.63	13.63	13.0815	1.042	<1.2, Torsional Irregularity does not exist
14th	SPEC Y	Y	1280	11.841	1286	12.867	12.867	12.354	1.042	<1.2, Torsional Irregularity does not exist
13th	SPEC Y	Y	1280	11.121	1286	12.075	12.075	11.598	1.041	<1.2, Torsional Irregularity does not exist
12th	SPEC Y	Y	1280	10.377	1286	11.258	11.258	10.8175	1.041	<1.2, Torsional Irregularity does not exist
11th	SPEC Y	Y	1280	9.613	1286	10.42	10.42	10.0165	1.040	<1.2, Torsional Irregularity does not exist
10th	SPEC Y	Y	1280	8.832	1286	9.566	9.566	9.199	1.040	<1.2, Torsional Irregularity does not exist
9th	SPEC Y	Y	1280	8.038	1286	8.697	8.697	8.3675	1.039	<1.2, Torsional Irregularity does not exist
8th	SPEC Y	Y	1280	7.234	1286	7.819	7.819	7.5265	1.039	<1.2, Torsional Irregularity does not exist
7th	SPEC Y	Y	1280	6.424	1286	6.933	6.933	6.6785	1.038	<1.2, Torsional Irregularity does not exist
SIXTH	SPEC Y	Y	1280	5.614	1286	6.046	6.046	5.83	1.037	<1.2, Torsional Irregularity does not exist
FIFTH	SPEC Y	Y	1280	4.811	1286	5.161	5.161	4.986	1.035	<1.2, Torsional Irregularity does not exist
FOURTH	SPEC Y	Y	1280	4.022	1286	4.288	4.288	4.155	1.032	<1.2, Torsional Irregularity does not exist
TF	SPEC Y	Y	1280	3.258	1286	3.437	3.437	3.3475	1.027	<1.2, Torsional Irregularity does not exist
SF	SPEC Y	Y	1280	2.529	1286	2.618	2.618	2.5735	1.017	<1.2, Torsional Irregularity does not exist
FF	SPEC Y	Y	1280	1.866	1286	1.844	1.866	1.855	1.006	<1.2, Torsional Irregularity does not exist
Terrace	SPEC Y	Y	1311	15.428	1307	17.055	17.055	16.2415	1.0500877	<1.2, Torsional Irregularity does not exist
19th	SPEC Y	Y	1311	14.925	1307	16.476	16.476	15.7005	1.0493933	<1.2, Torsional Irregularity does not exist
18th	SPEC Y	Y	1311	14.393	1307	15.858	15.858	15.1255	1.0484282	<1.2, Torsional Irregularity does not exist
17th	SPEC Y	Y	1311	13.821	1307	15.192	15.192	14.5065	1.0472547	<1.2, Torsional Irregularity does not exist
16th	SPEC Y	Y	1311	13.207	1307	14.482	14.482	13.8445	1.0460472	<1.2, Torsional Irregularity does not exist
15th	SPEC Y	Y	1311	12.554	1307	13.736	13.736	13.145	1.0449601	<1.2, Torsional Irregularity does not exist
14th	SPEC Y	Y	1311	11.868	1307	12.958	12.958	12.413	1.0439056	<1.2, Torsional Irregularity does not exist
13th	SPEC Y	Y	1311	11.151	1307	12.152	12.152	11.6515	1.0429558	<1.2, Torsional Irregularity does not exist
12th	SPEC Y	Y	1311	10.41	1307	11.323	11.323	10.8665	1.0420098	<1.2, Torsional Irregularity does not exist
11th	SPEC Y	Y	1311	9.647	1307	10.473	10.473	10.06	1.0410537	<1.2, Torsional Irregularity does not exist
10th	SPEC Y	Y	1311	8.865	1307	9.607	9.607	9.236	1.0401639	<1.2, Torsional Irregularity does not exist
9th	SPEC Y	Y	1311	8.069	1307	8.726	8.726	8.3975	1.0391188	<1.2, Torsional Irregularity does not exist
8th	SPEC Y	Y	1311	7.262	1307	7.834	7.834	7.548	1.0378908	<1.2, Torsional Irregularity does not exist
7th	SPEC Y	Y	1311	6.446	1307	6.935	6.935	6.6905	1.0365444	<1.2, Torsional Irregularity does not exist
SIXTH	SPEC Y	Y	1311	5.627	1307	6.032	6.032	5.8295	1.0347371	<1.2, Torsional Irregularity does not exist
FIFTH	SPEC Y	Y	1311	4.81	1307	5.132	5.132	4.971	1.0323878	<1.2, Torsional Irregularity does not exist
FOURTH	SPEC Y	Y	1311	4.004	1307	4.241	4.241	4.1225	1.0287447	<1.2, Torsional Irregularity does not exist
TF	SPEC Y	Y	1311	3.218	1307	3.362	3.362	3.29	1.0218845	<1.2, Torsional Irregularity does not exist
SF	SPEC Y	Y	1311	2.468	1307	2.497	2.497	2.4825	1.0058409	<1.2, Torsional Irregularity does not exist
FF	SPEC Y	Y	1311	1.776	1307	1.642	1.776	1.709	1.0392042	<1.2, Torsional Irregularity does not exist

Note:

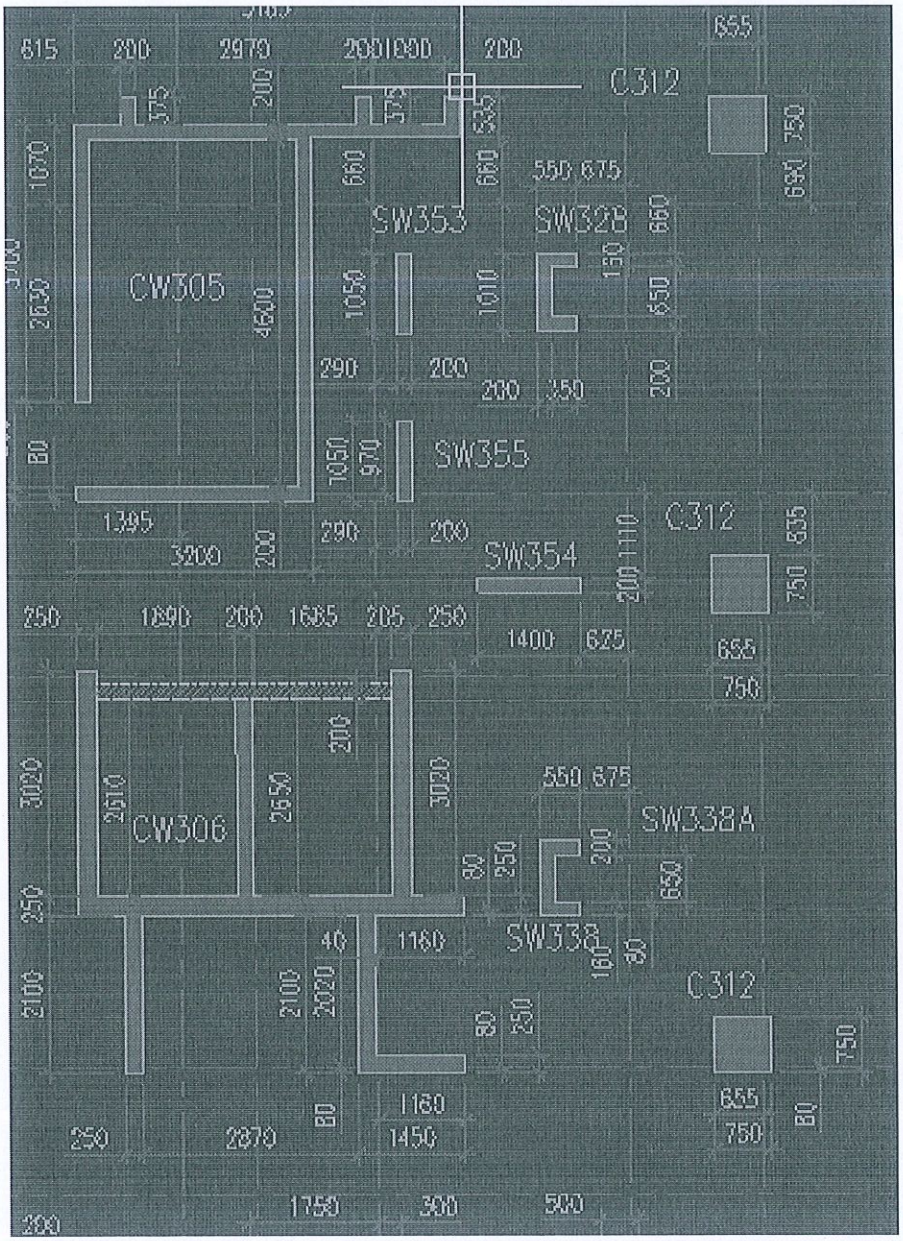
As per IS-1893-2016 (Amendment issued on NOV 2020)

1. As per IS-1893-2016
   (Δ Max) < 1.2 Δavg
   The said floor structure is regular without Torsional irregularities.
2. (Δ max) > 1.2Δavg < 1.4Δ avg
   The said structure has Torsional Irregularities but satisfy
   - Three dimensional dynamic analysis.
   - Fundamental torsional mode should be less than the least translation mode in each principal direction.
3. (Δ max) > 1.4Δ avg
   The said structure has high torsional irregularities, hence iterate structural wall configuration by revising wall positions

IRREGULARITY CHECK FOR Y DIRECTION

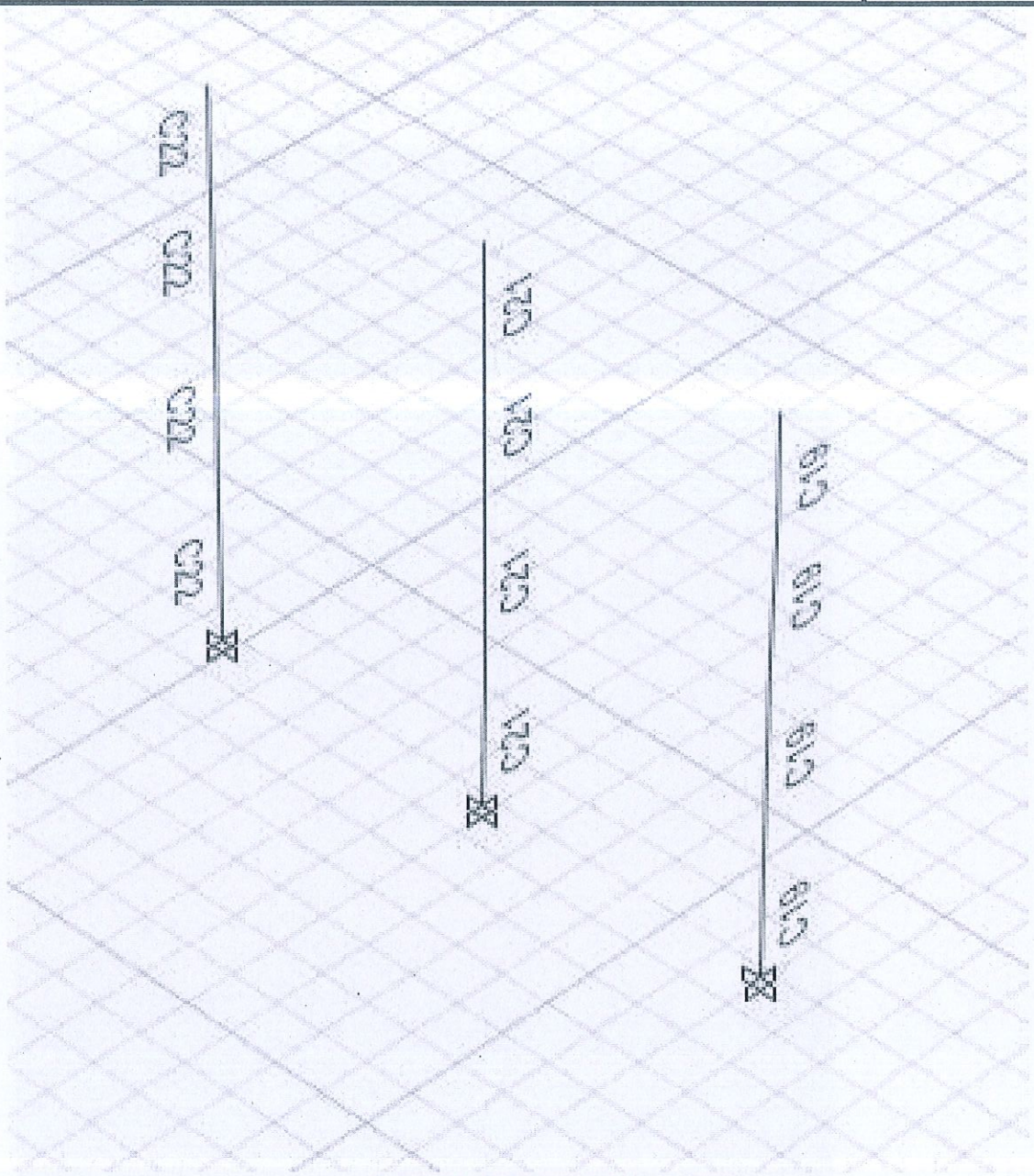
	Story	Output Case	Case Type	Step Type	Location	P kN	VX kN	VY kN
▶	1	EQX	LinStatic		Bottom	-0.0011	-7128.5645	7.808E-06
	1	EQY	LinStatic		Bottom	-0.0004	0.0002	-7708.795
	1	SPECX	LinRespSpec	Max	Bottom	1160.2224	7128.0897	772.1357
	1	SPECY	LinRespSpec	Max	Bottom	2401.0095	968.0484	7708.5963

BASE SHEAR

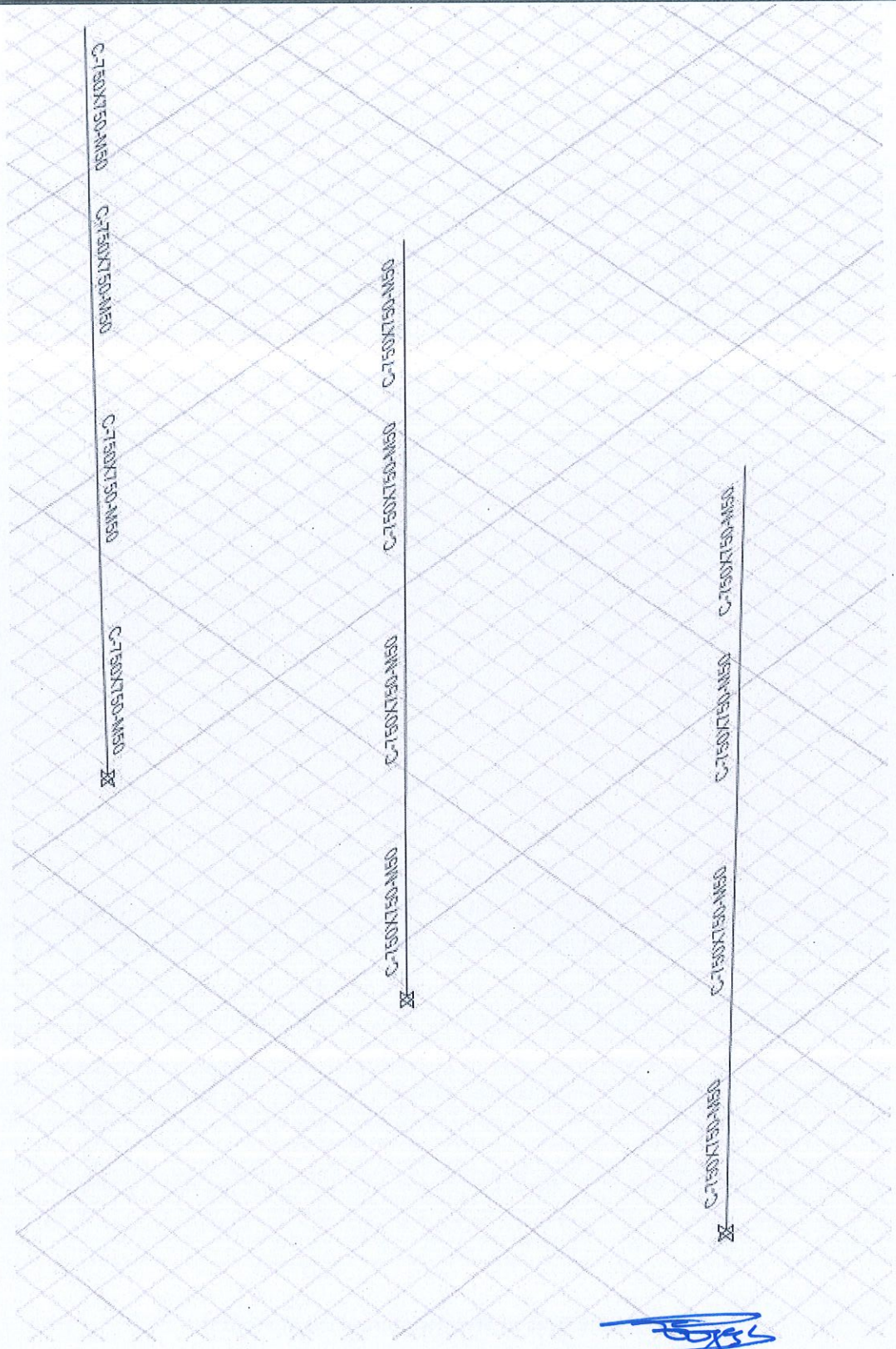


Column Number in Column Layout (C312)

H.P. YOGESH
B.E. (Civil), M.Tech (Structure)
Registration No. SE/GR-I/19/03/022
Structural Engineer Grade-I (SE)
Mobile : +91 97413 99608

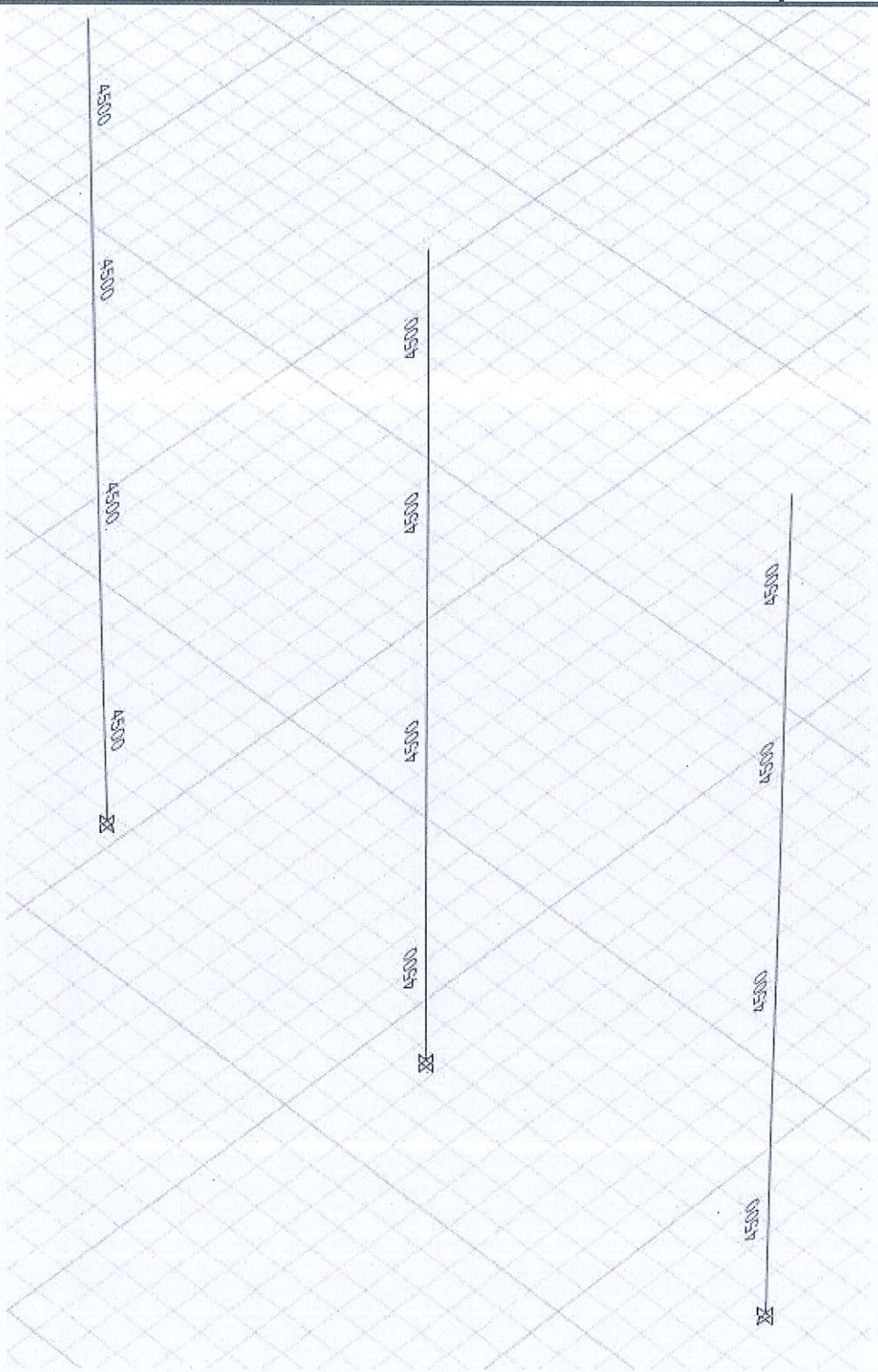


Column Labels from ETAB Model

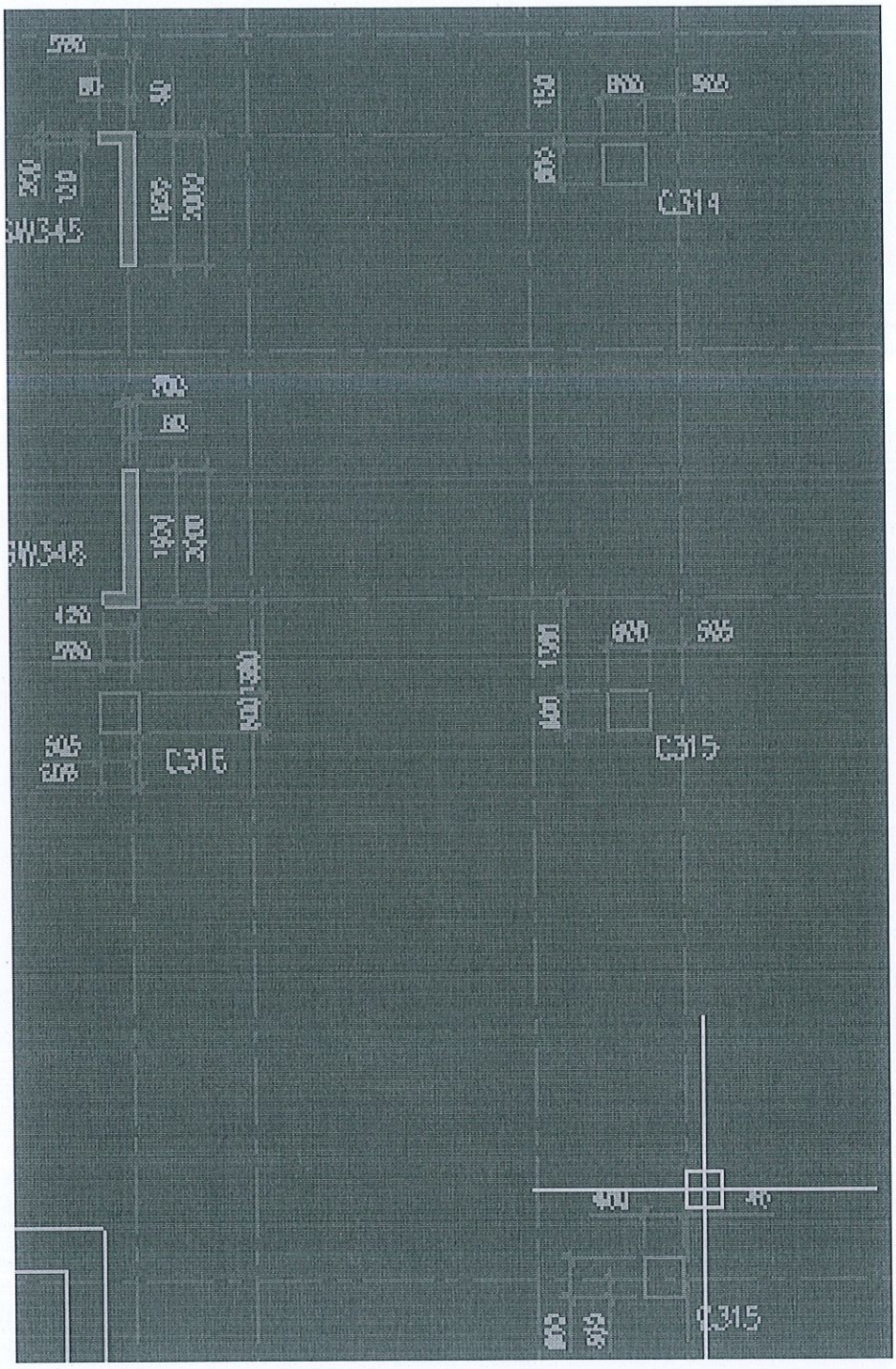


Column Sections from ETABS Model

H.P. YOGESH
B.E. (Civil), M.Tech (Structure)
Registration No. SE/GR-I/19/03/022
Structural Engineer Grade-I (SE)
Mobile : +91 97413 99608

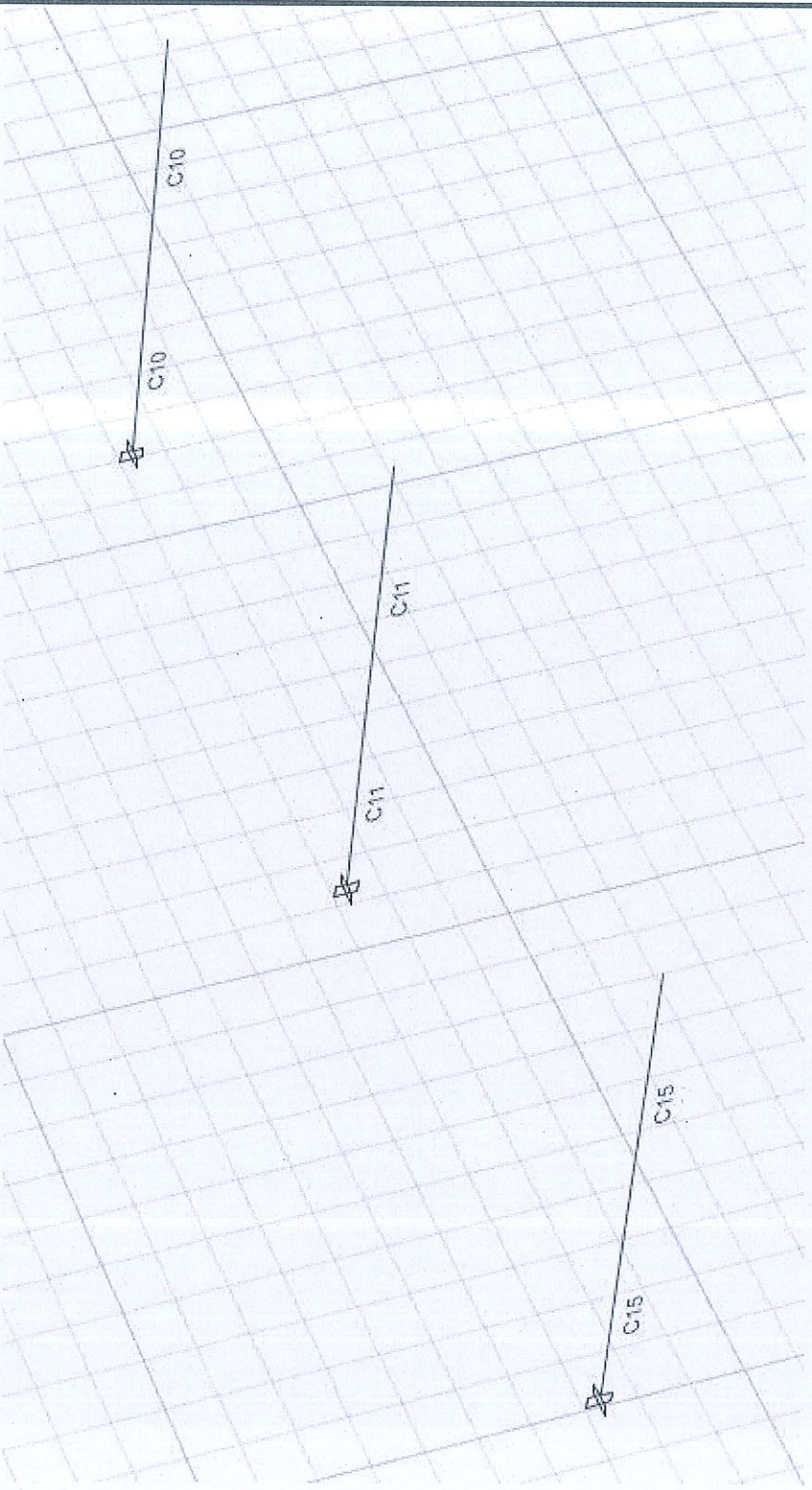


Column Area of Steel Reinforcement in SQ MM

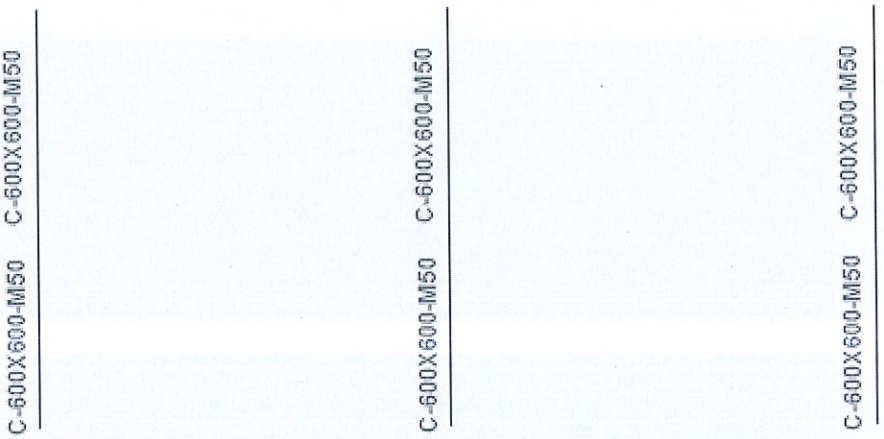


Podium Column Number in Column Layout (C 315)

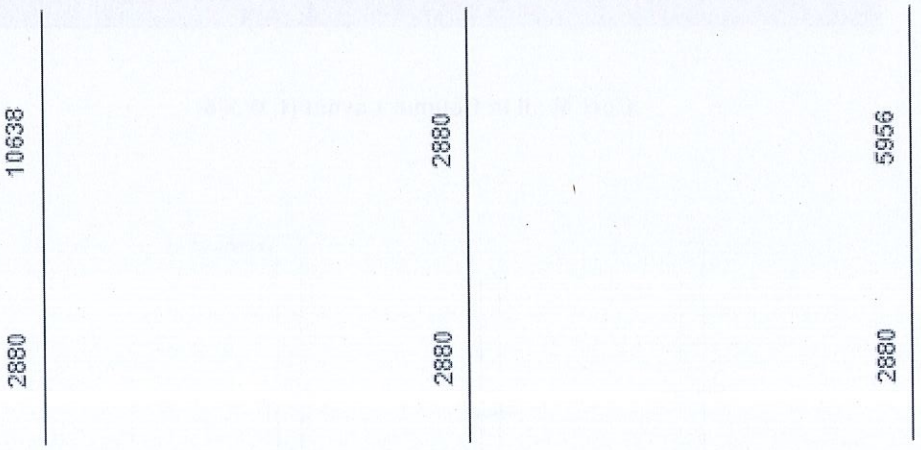
H.P. YOGESH
B.E. (Civil), M.Tech (Structure)
Registration No. SE/GR-I/19/03/022
Structural Engineer Grade-I (SE)
Mobile : +91 97413 99608



Podium Column Label in ETABS Model

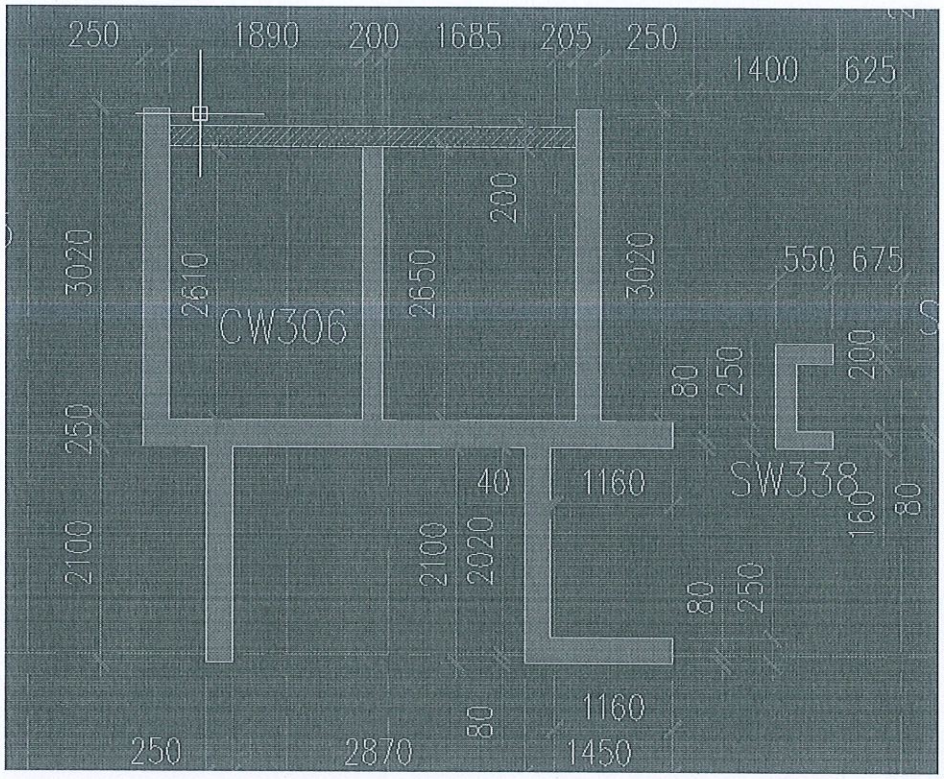


Podium Column Section in ETABS Model

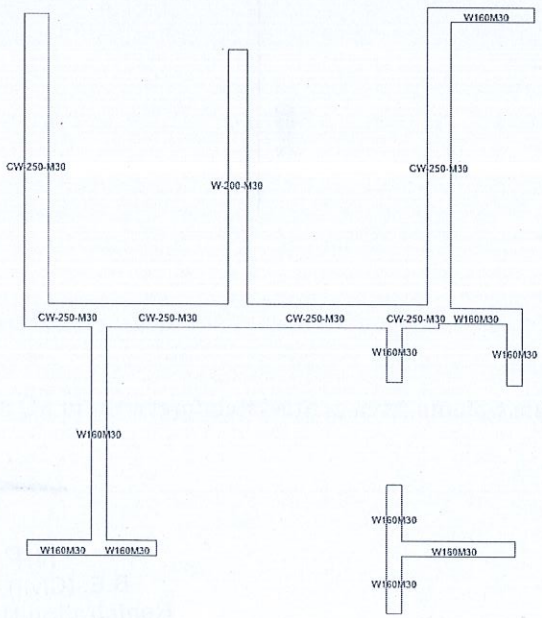


Podium Column Area of Steel Reinforcement in SQ MM

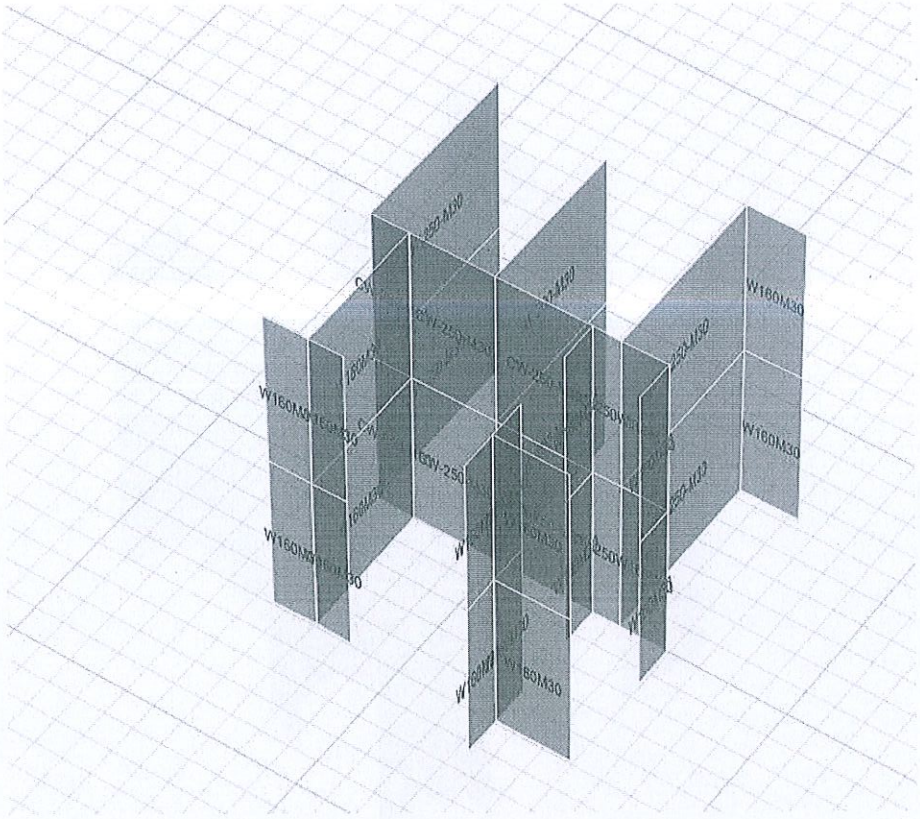
H.P. YOGESH
B.E. (Civil), M.Tech (Structure)
Registration No. SE/GR-I/19/03/022
Structural Engineer Grade-I (SE)
Mobile : +91 97413 99608



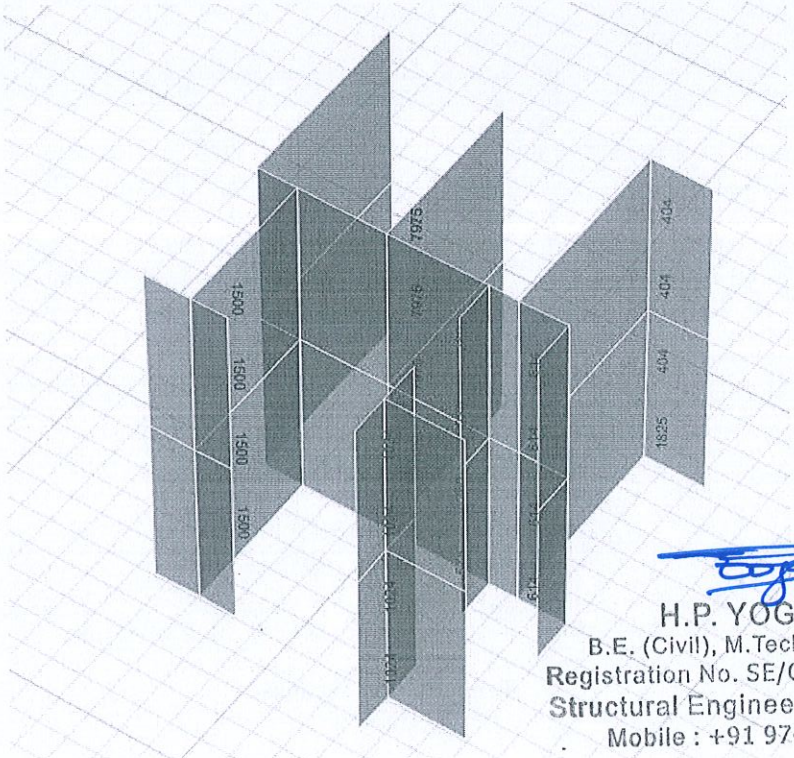
Core Wall in Column Layout (CW306)



Core Wall Section in ETABS Model

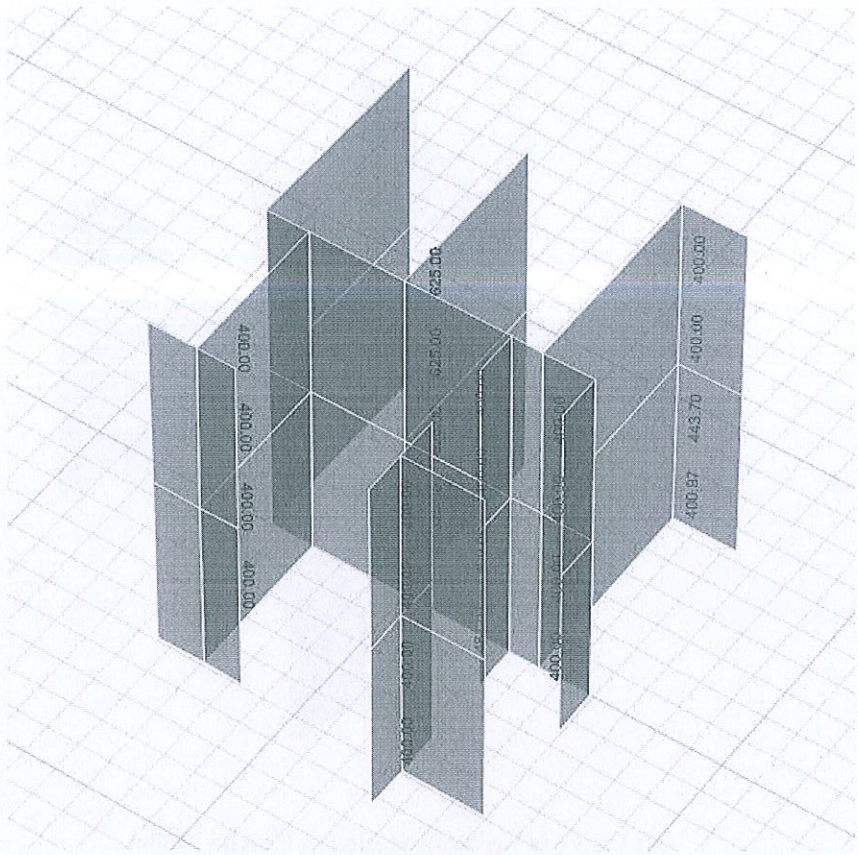


3D View of Core Wall Section in ETABS Model

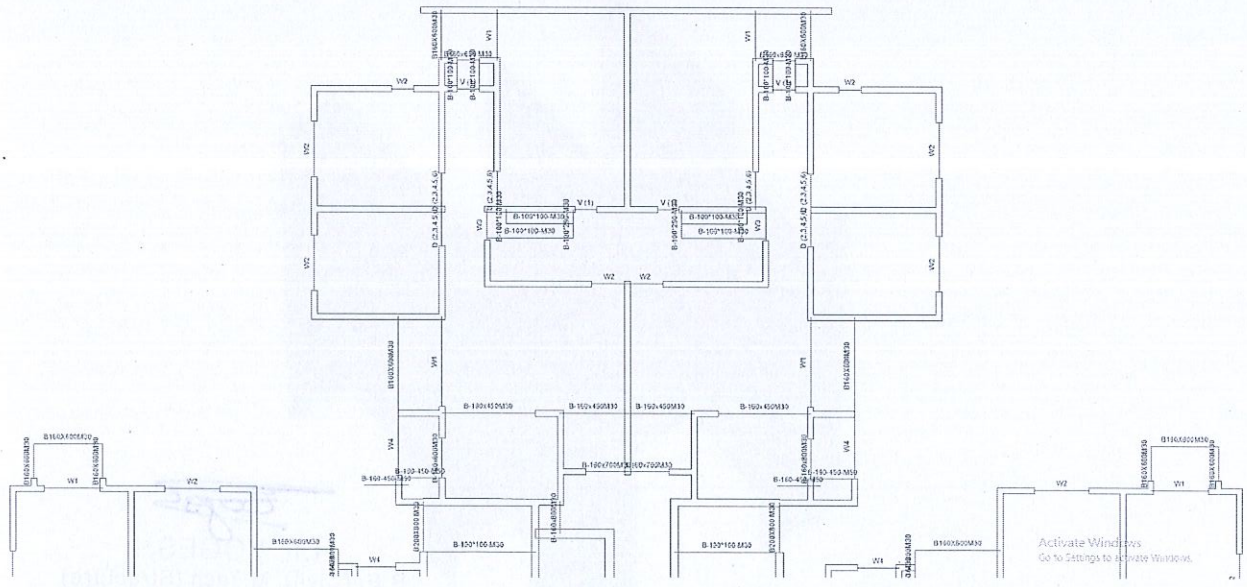


H.P. YOGESH
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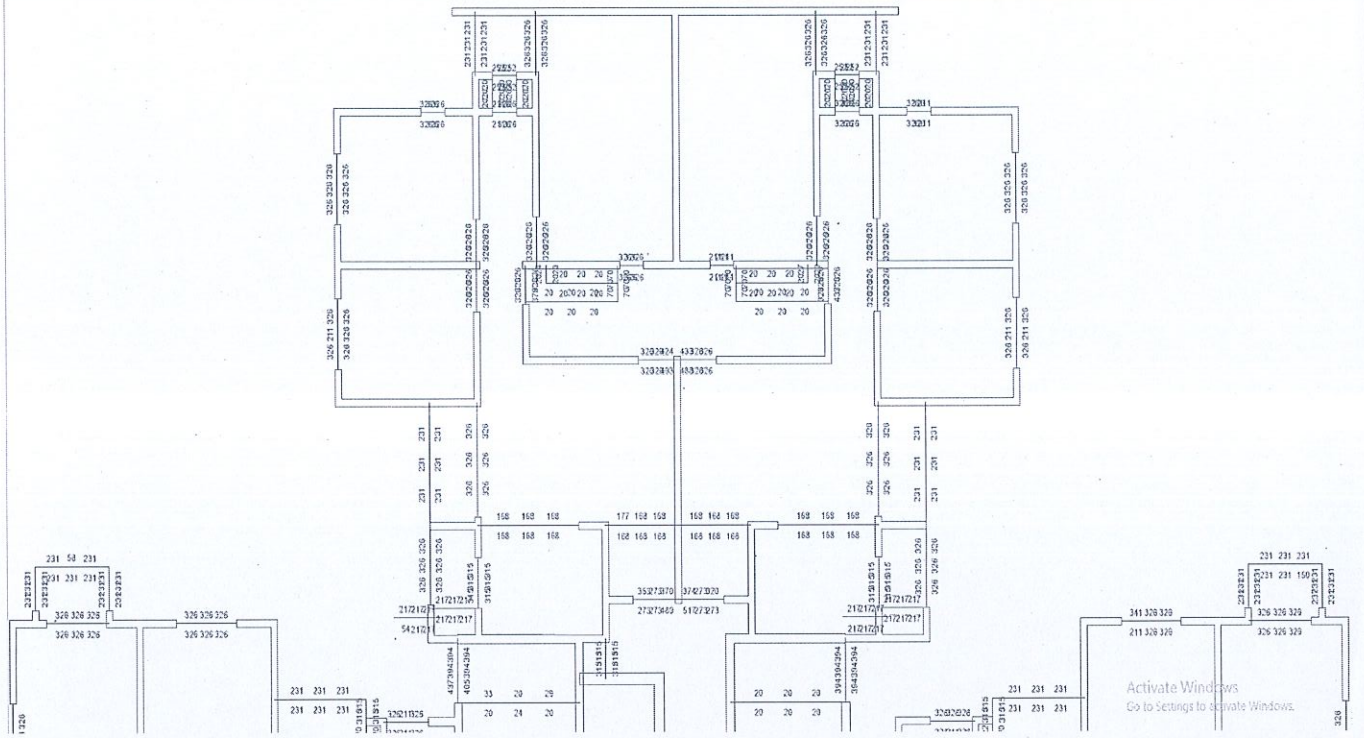
Area of Steel Reinforcement in SQMM



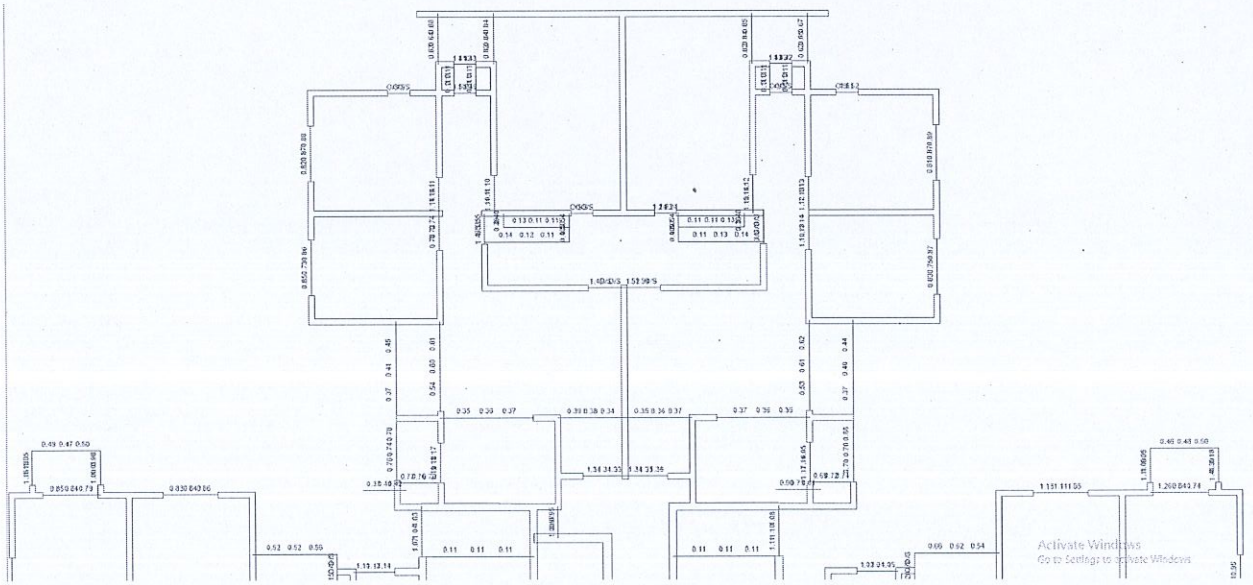
Shear Reinforcing



Typical Beam Sections

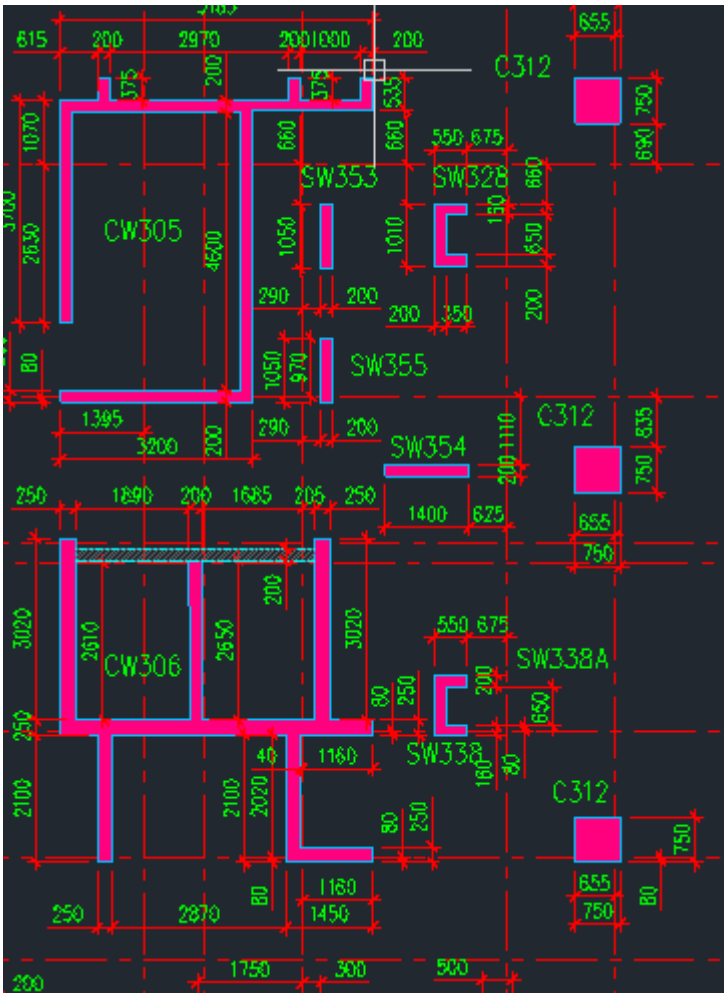


Area of Steel Reinforcing in SQ MM

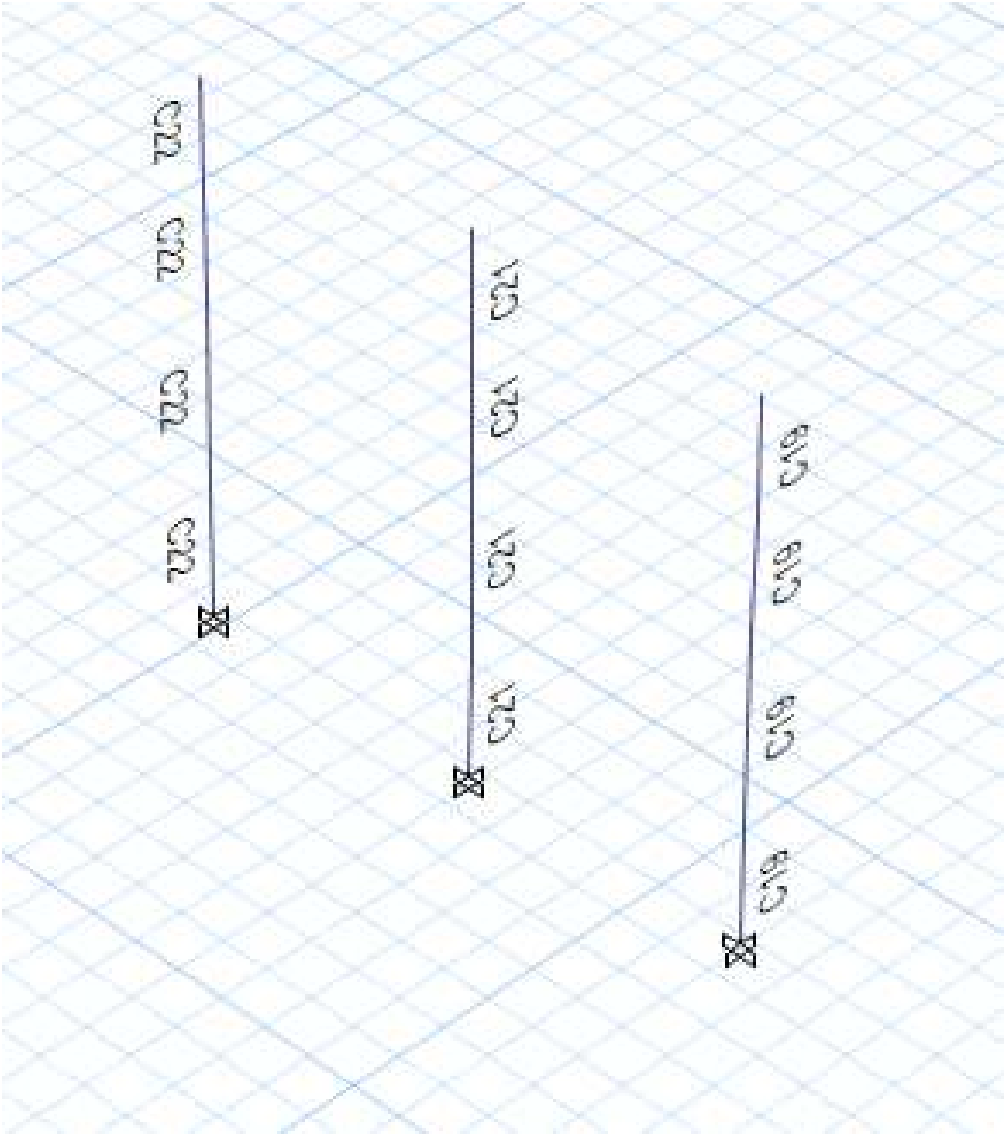


Shear Reinforcing for Beams

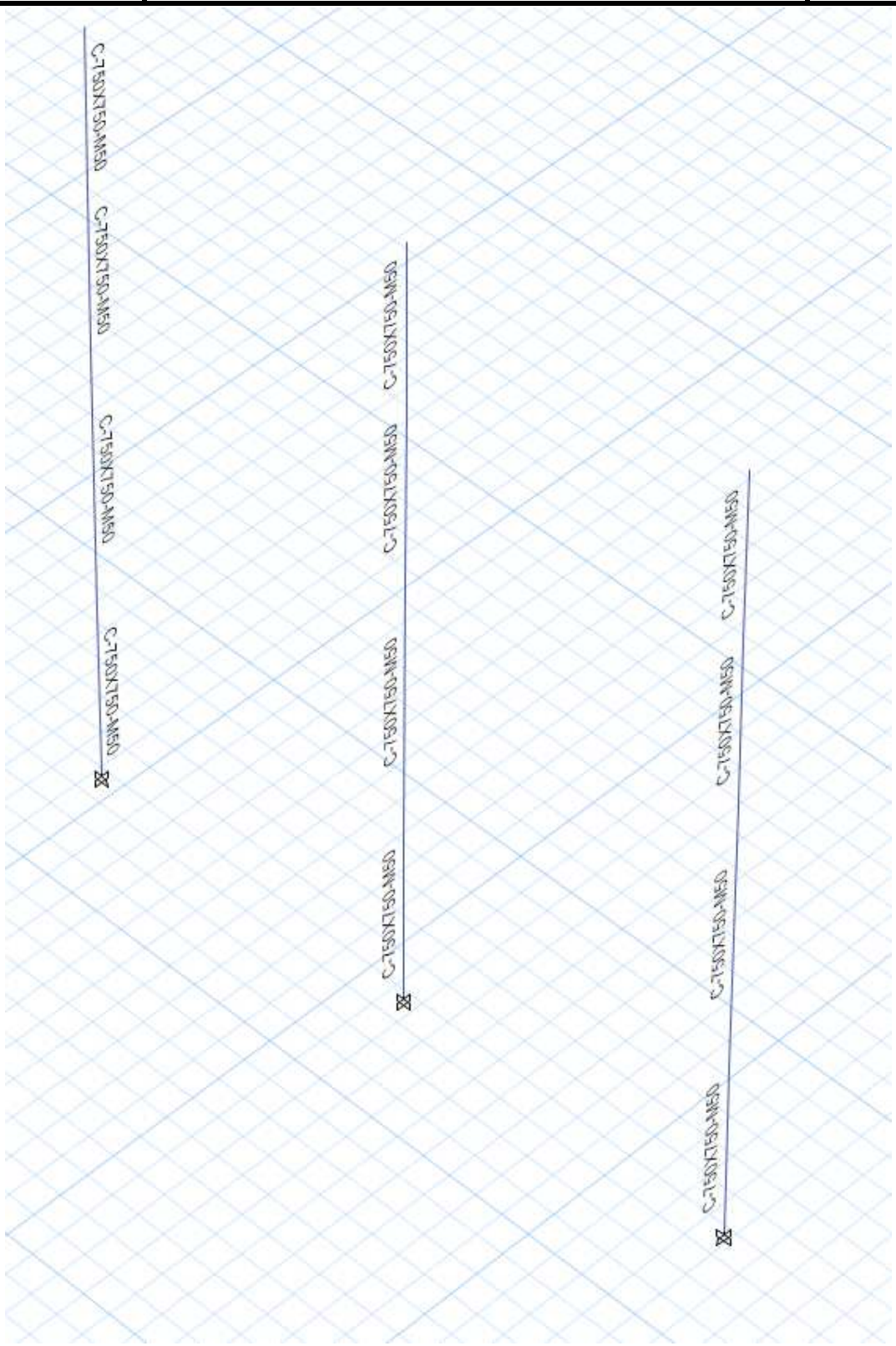
H.P. YOGESH
B.E. (Civil), M.Tech (Structure)
Registration No. SE/GR-I/19/03/022
Structural Engineer Grade-I (SE)
Mobile : +91 97413 99608



Column Number in Column Layout (C 312)



Column Labels from ETAB Model

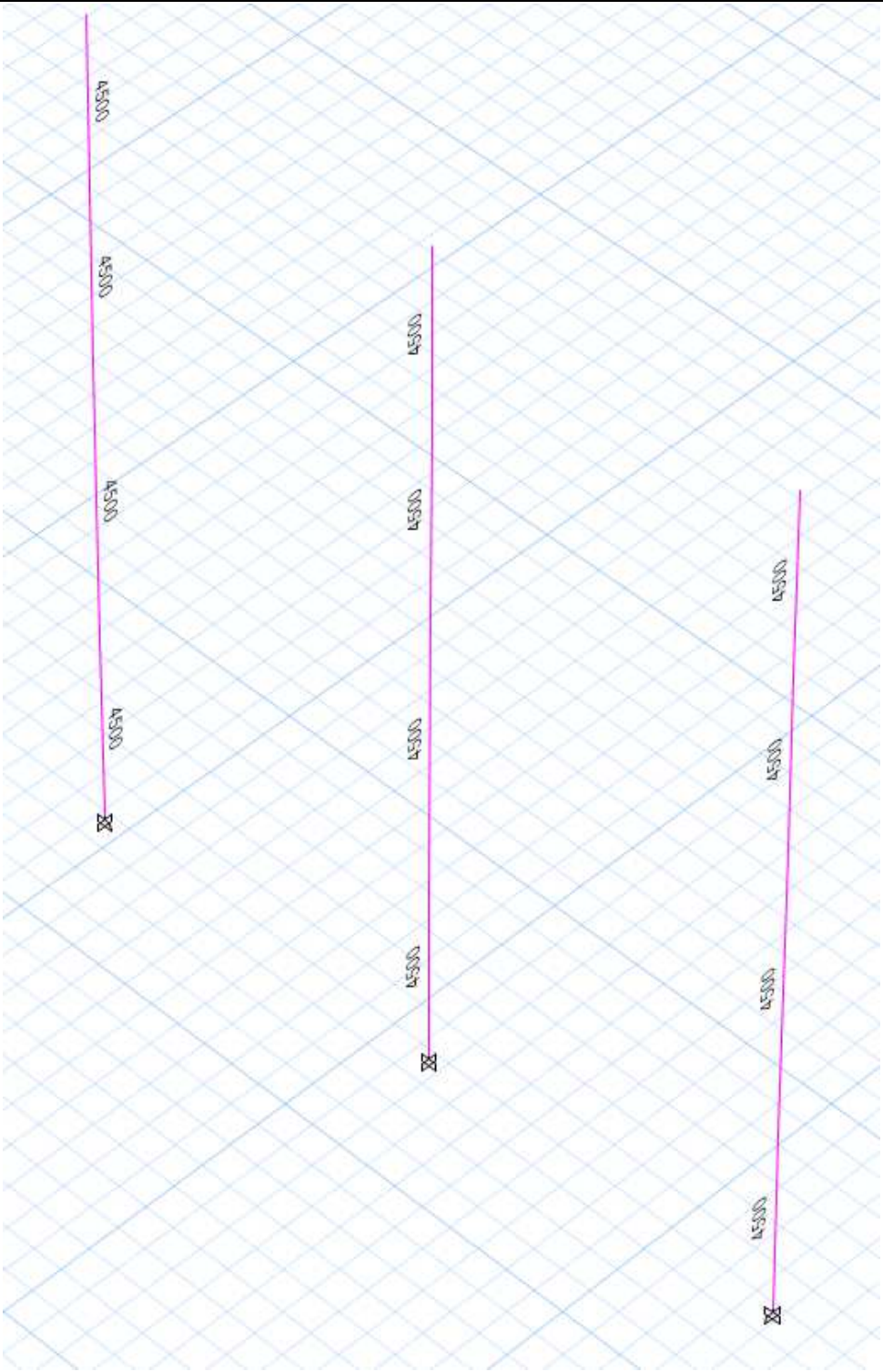


Column Sections from ETAB Model

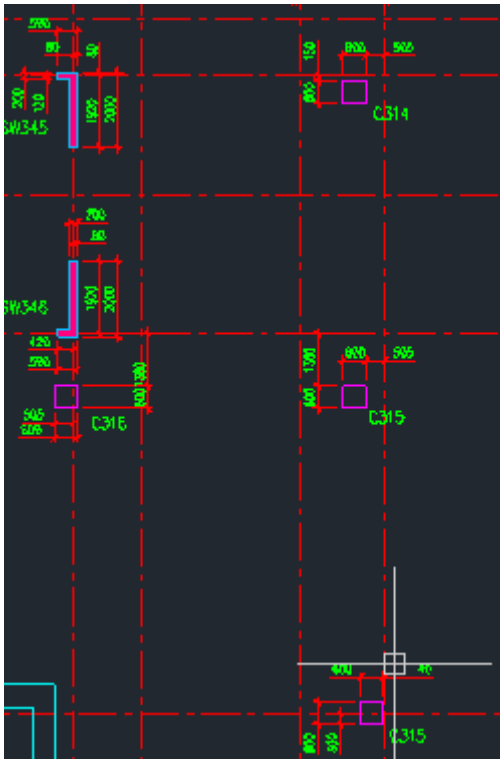
Client :	Architect :	Structural Consultant :	Document Number
Shriram Properties Homes that live in you	Design Realm	innotech Transform Thoughts	IECP-T3-01

MANGADU-PHASE 1

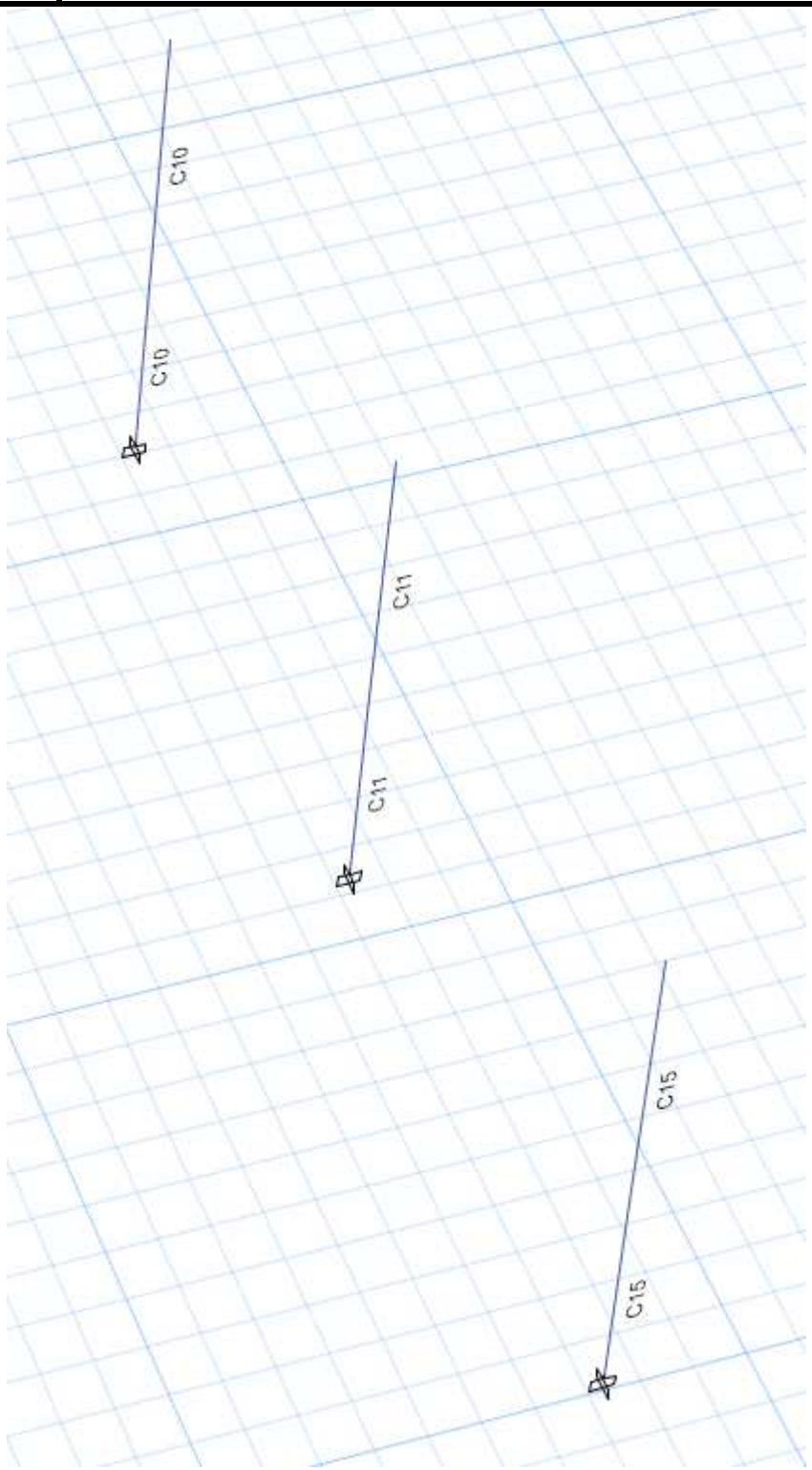
DESIGN CALCUALTION REPORT



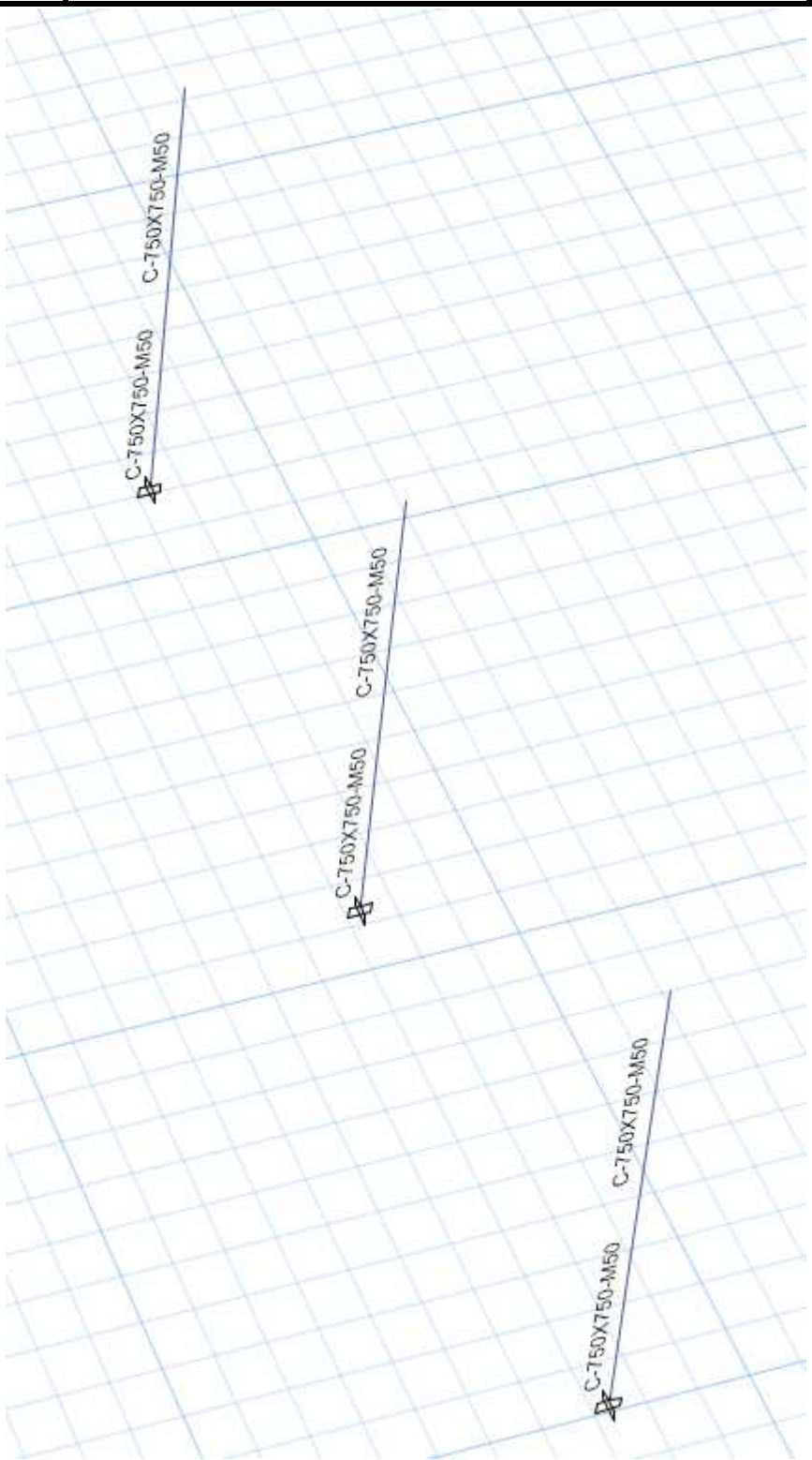
Column Area of Steel Reinforcement in SQ MM



Podium Column Number in Column Layout (C 315)



Podium Column Label in ETABS Model

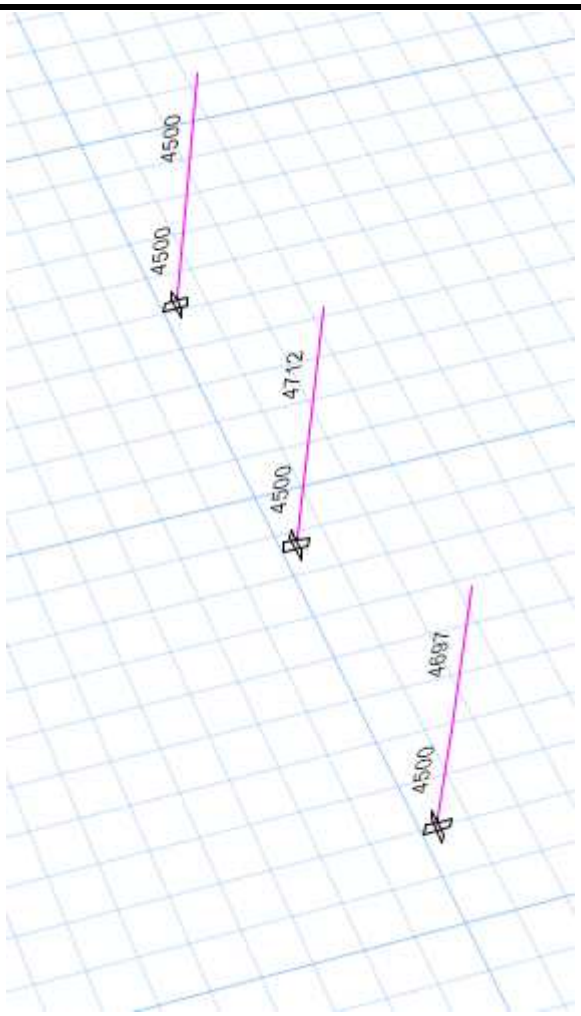


Podium Column Section in ETABS Model

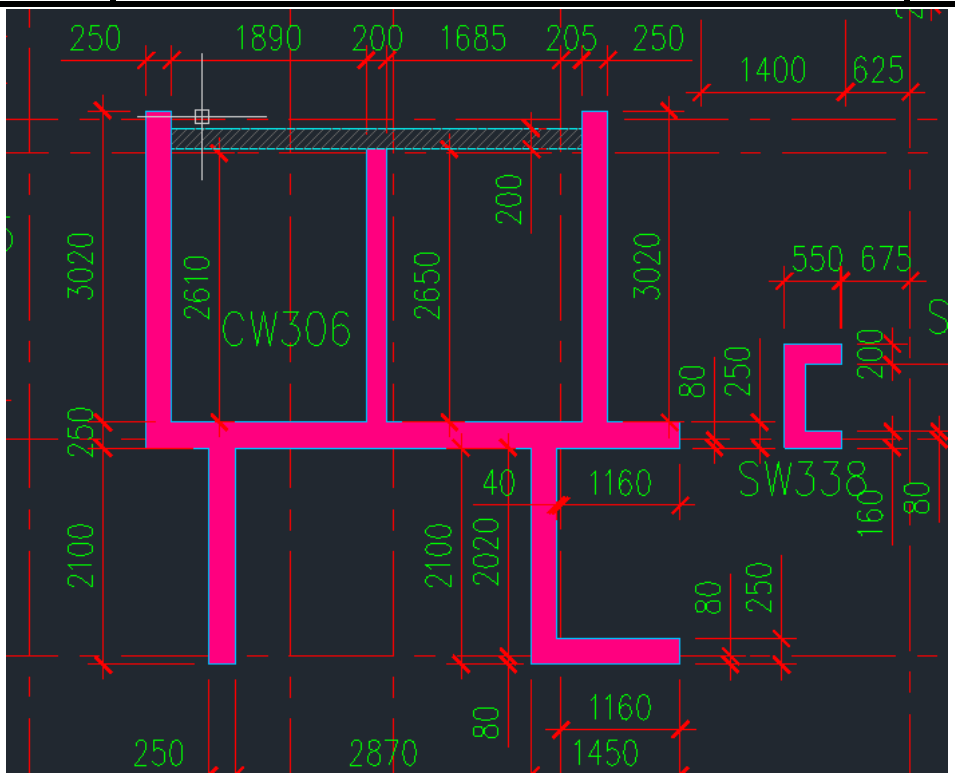
Client :	Architect :	Structural Consultant :	Document Number
Shriram Properties Homes that live in you	Design Realm	innotech Transform Thoughts	IECP-T3-01

MANGADU-PHASE 1

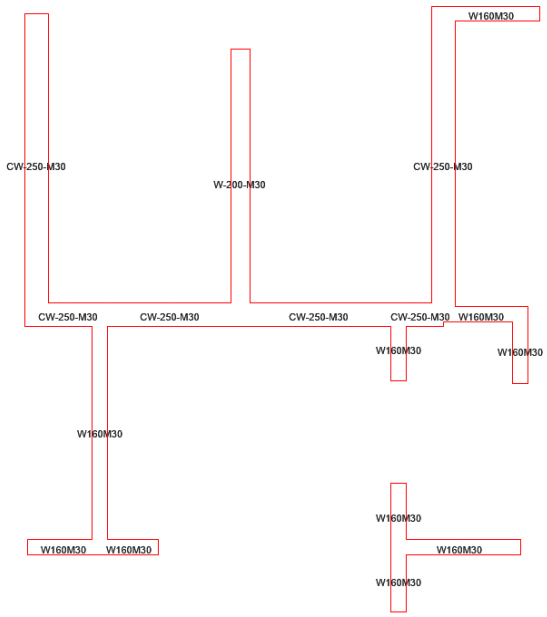
DESIGN CALCUALTION REPORT



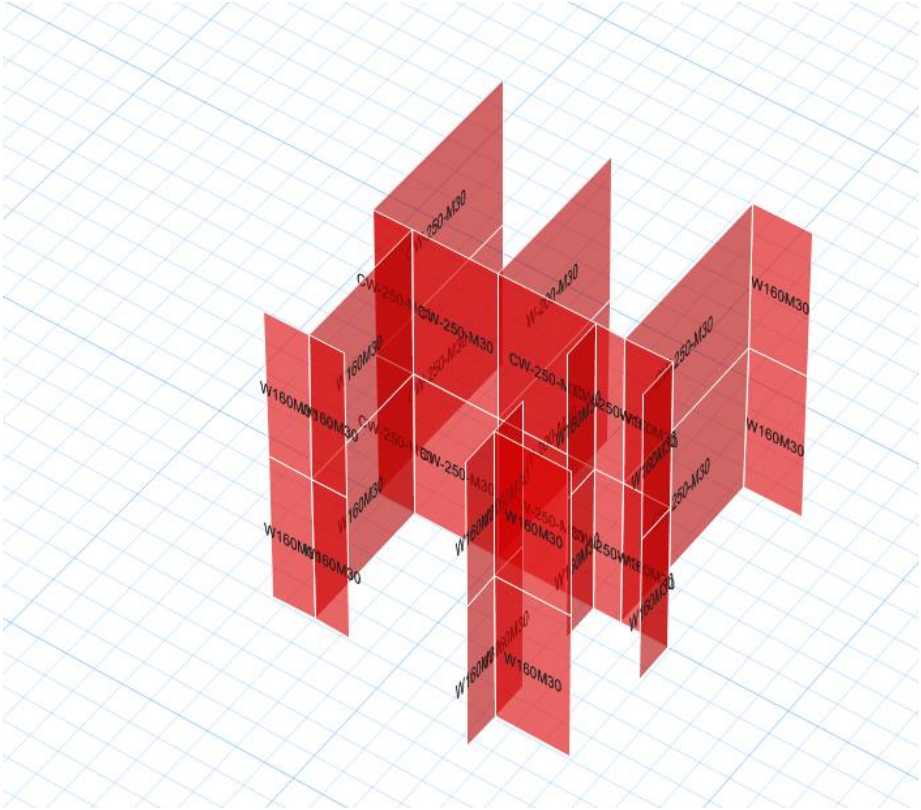
Podium Column Area of Steel Reinforcement in SQ MM



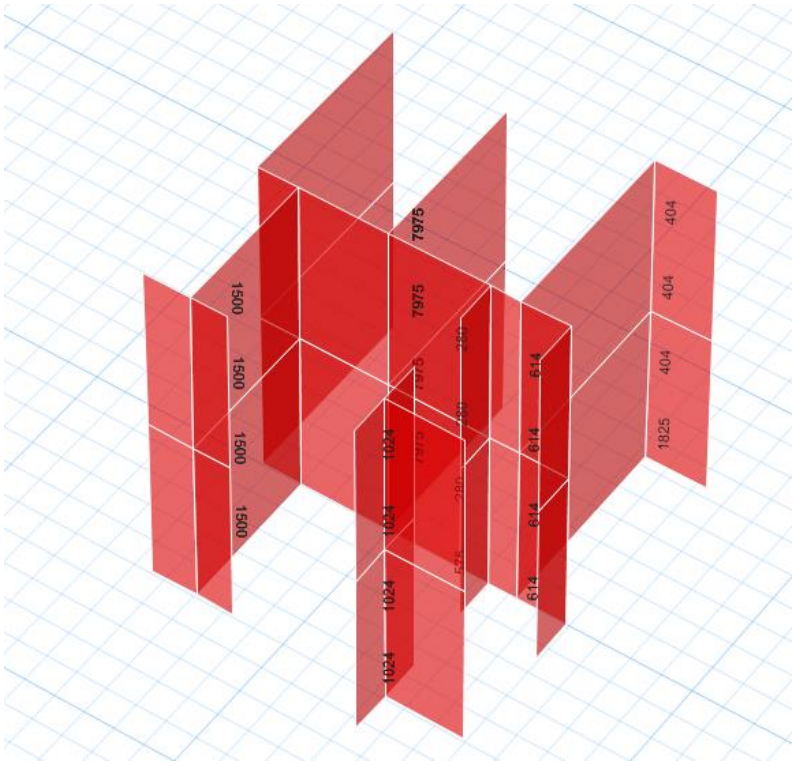
Core Wall in Column Layout (CW306)



Core Wall Section in ETABS Model



3D View of Core Wall Section in ETABS Model

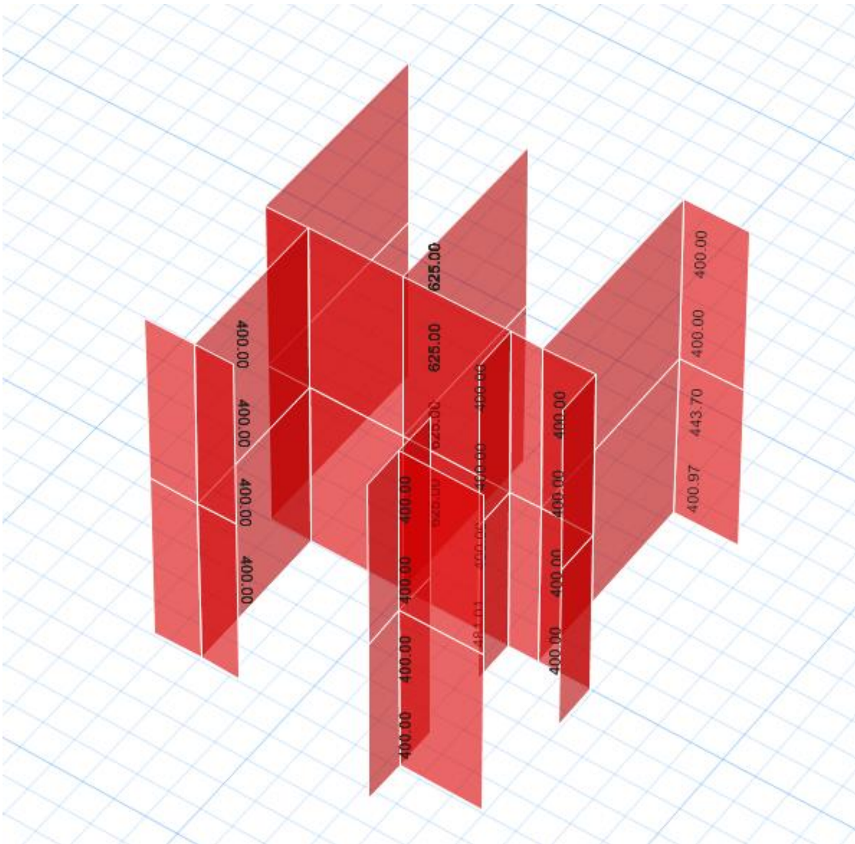


Area of Steel Reinforcement in SQMM

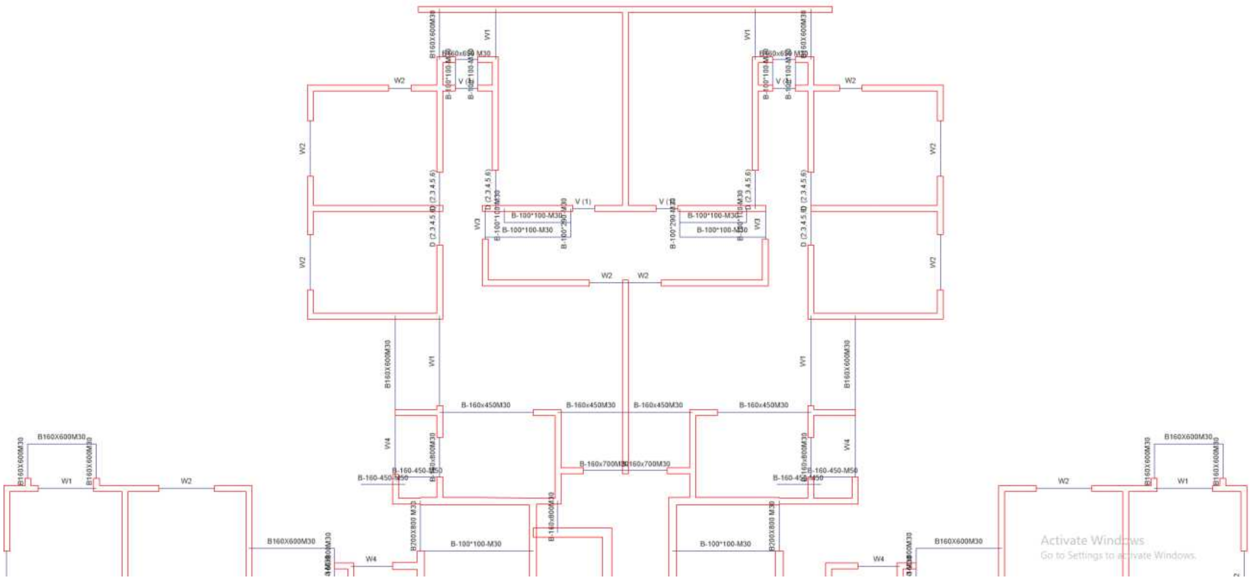
Client :	Architect :	Structural Consultant :	Document Number IECP-T3-01

MANGADU-PHASE 1

DESIGN CALCUALTION REPORT



Shear Reinforcing

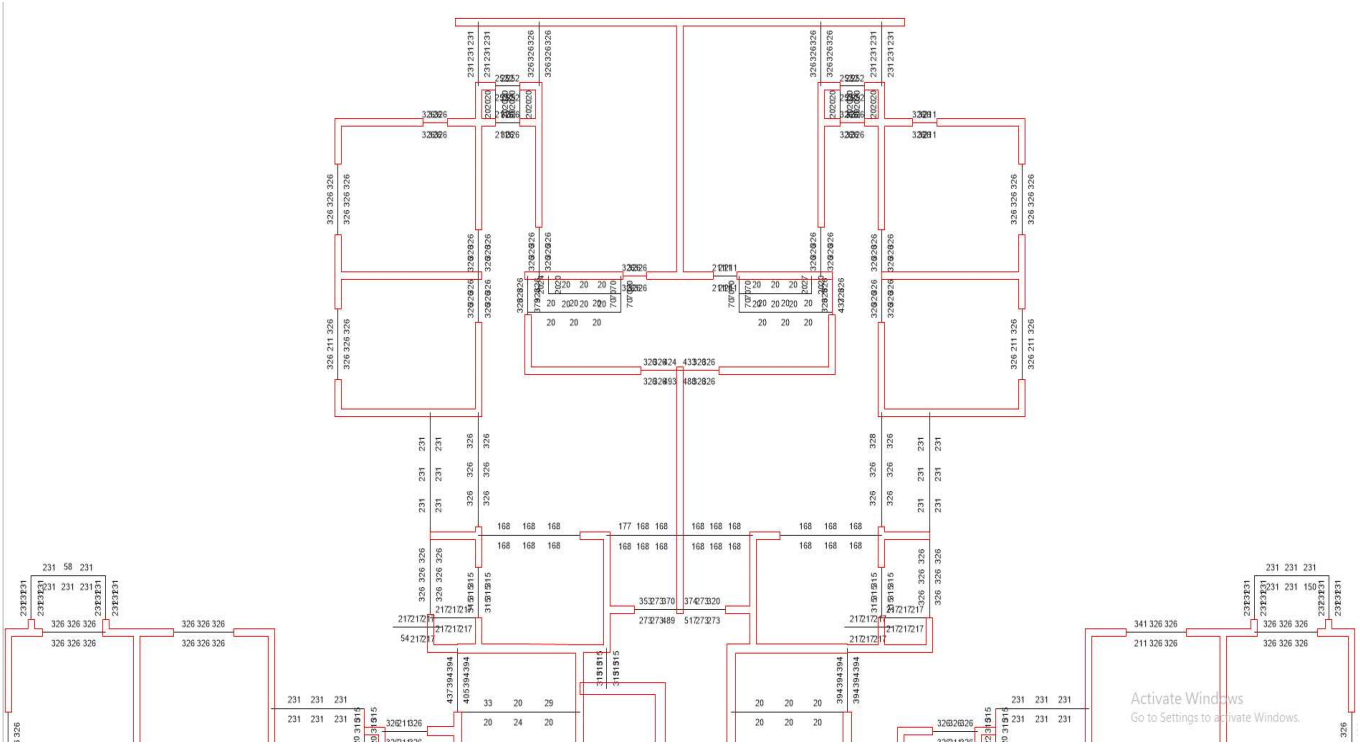


Typical Beam Sections

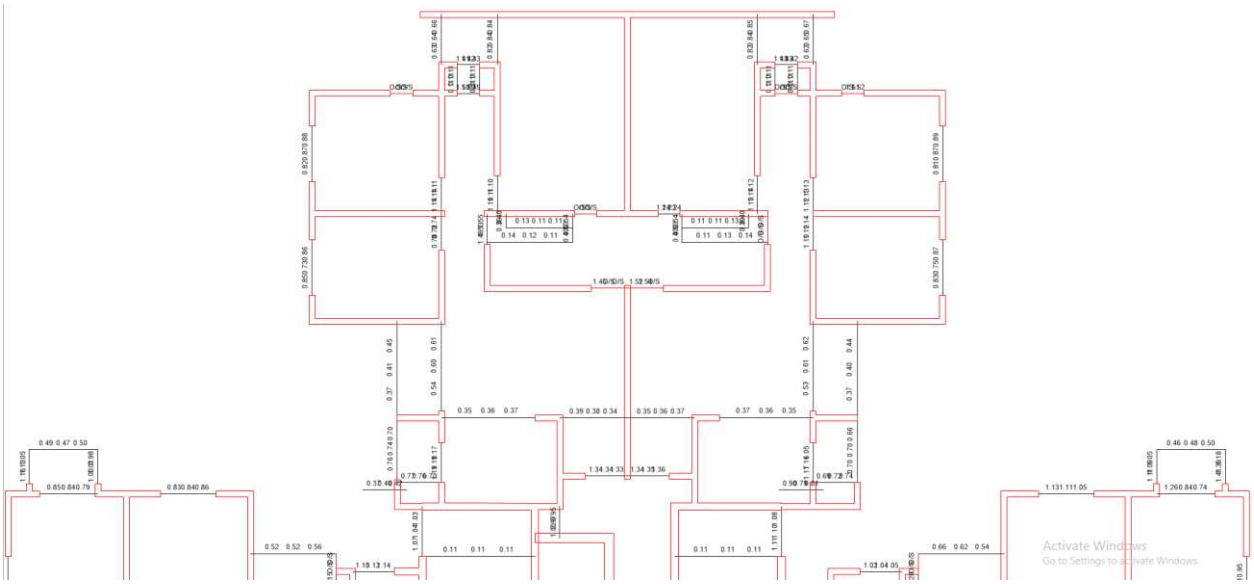
Client :	Architect :	Structural Consultant :	Document Number
Shriram Properties Homes that live in you	Design Realm	innotech Transform Thoughts	IECP-T3-01

MANGADU-PHASE 1

DESIGN CALCUALTION REPORT



Area of Steel Reinforcing in SQ MM



Shear Reinforcing for Beams

THE LANDLENS SUITE

Eight ways to know a piece of land before you pay for it.

This report covers one part of the picture. These cover the rest, drawn from the same government records, for any property in Tamil Nadu.

LandLens One
Ask anything about a property and get an answer grounded in live government records, with the sources shown.
/landlens/one

Verify My Land
Every record check run on one property and returned as a single report.
/landlens/verify-my-land

Legal Opinion
An advocate's written opinion on the title, built on the records we pull for it.
/landlens

One Map
Every layer on one map: the parcel, its boundary, zoning, water bodies and what sits around it.
/landlens/one/map

PriceMap
What land actually changed hands for around this plot, taken from the registered deeds.
/landlens/pricemap

Build Scope
What you are allowed to build here: floor space, height, coverage and setbacks.
/landlens/build-scope

Property Tracker
Watch a property and hear about it when something new is registered against it.
/landlens/property-tracker

Deal Room
Run the transaction in one place: documents, stamping, signatures and the parties.
/landlens/deal-room

FREE TOOLS · NO ACCOUNT NEEDED

Twenty-four checks you can run yourself, at no cost.

Records and verification

The registers themselves, read for you.

- Encumbrance Certificate
- Patta and Chitta
- Field Measurement Sketch
- EC Analyzer
- Bank charge check
- Court case search
- Seller background check
- Approval check by survey

Value and duty

What it is worth and what it costs to register.

- Guideline value by street
- Guideline value by survey
- Stamp duty and registration fees
- Capital gains
- Floor space index
- Area unit converter

Zoning and land use

What the plan says can happen on this land.

- Land use zone finder
- CMDA land use check
- Coastal regulation zone
- Master plan check
- Water bodies finder
- Airport height clearance

Registers and directories

Who holds it, and which office keeps the record.

- Find your registering office
- Temple property check
- Waqf property check
- RERA register

Every free tool
/tools

Services we run for you
/services

The LandLens suite
/landlens/one

Verified RealEstate™

Every claim in this document traces back to a government record.

- Legal opinions, due diligence and title verification
- Building plan, layout and sub-division approvals
- Completion and occupancy certificates, regularisation
- Escrow, negotiation and NRI property management
- Land survey, soil testing, architecture and construction

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Prepared from the registers named on the page each finding sits on. Where a register could not be read, this document says so in its place rather than leaving the gap to be read as a clean result.