STRUCTURAL DESIGN PORTFOLIO

PRESENTATION

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AMALGAMATION PROJECT

PROJECT STATEMENT- RCC Building (G+4) With Shear Wall

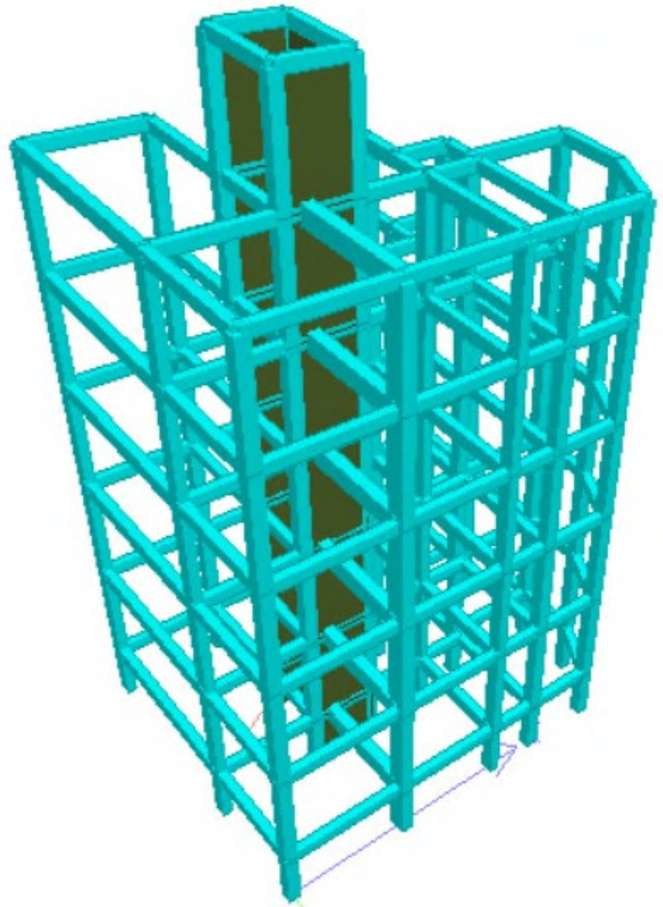
ZONE- III PUNE

- Material Used
  Concrete : M20 grade STEEL :FE500 grade

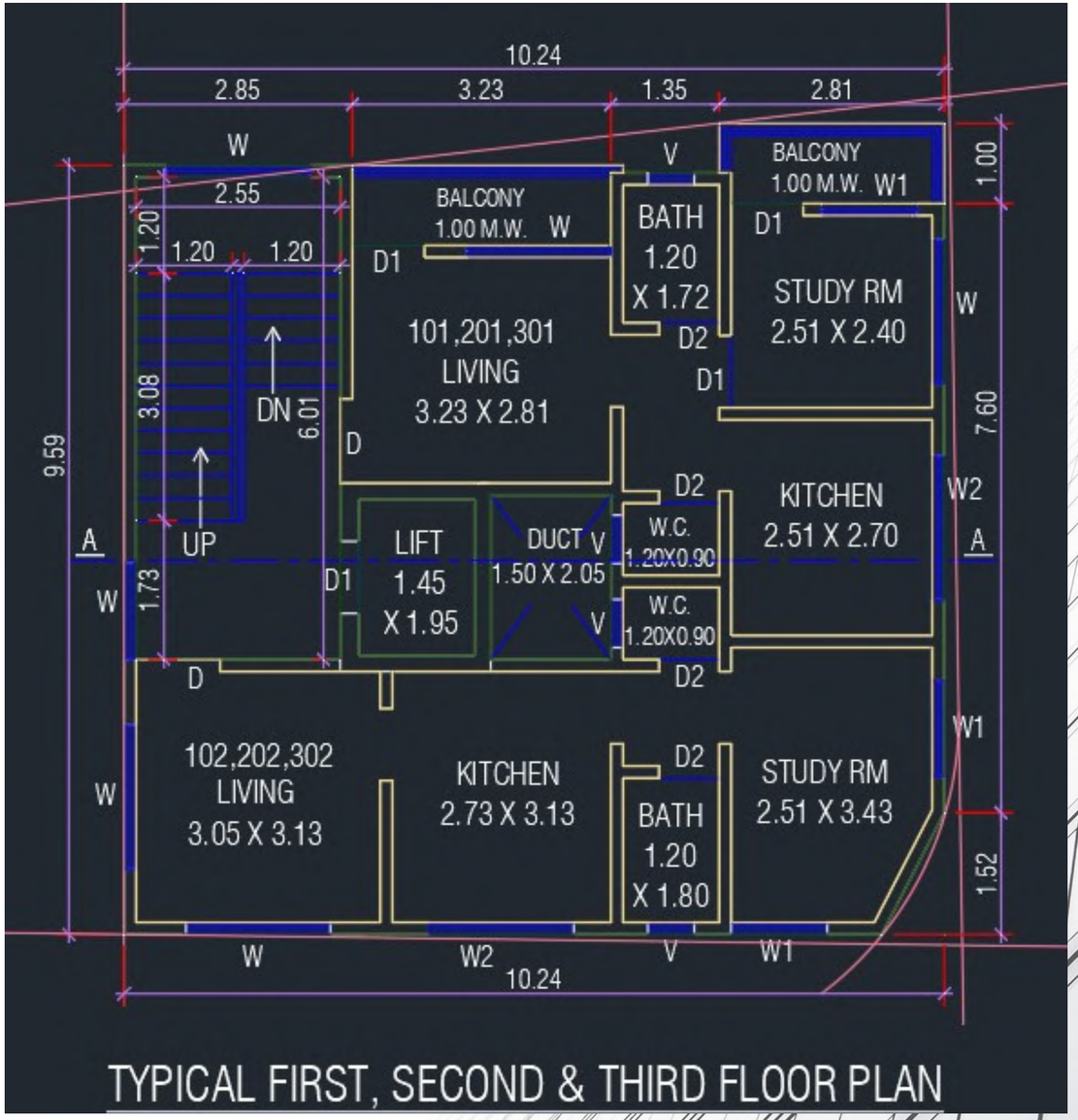
- Code Provision :
  IS456:2021 for RCC DESIGN
  IS:1893-2016 PART1 FOR SEISMIC DESIGN
  IS:13920-2016 FOR DUCTILE DETAILING
  IS:875 -2016 PART(1,2) FOR DEAD AND LIVE LOAD

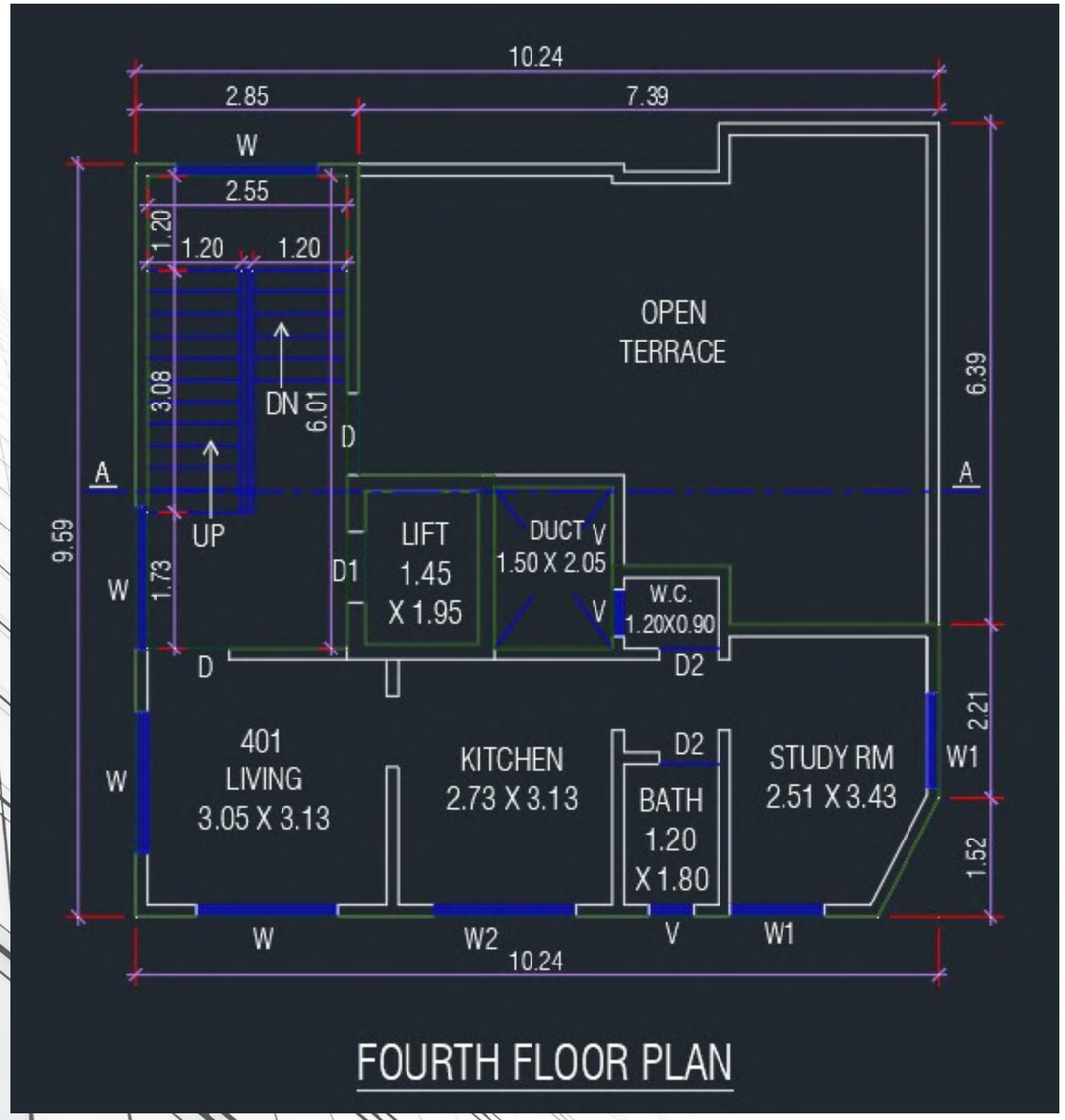
- Load Considered
  Dead load : 4.75 KN /M Live load :2 KN/M
  Stair Load-7.5 KN /M Stair L.L-3 KN /M

- Height of floors- 2.85M, Parking +(G+4)

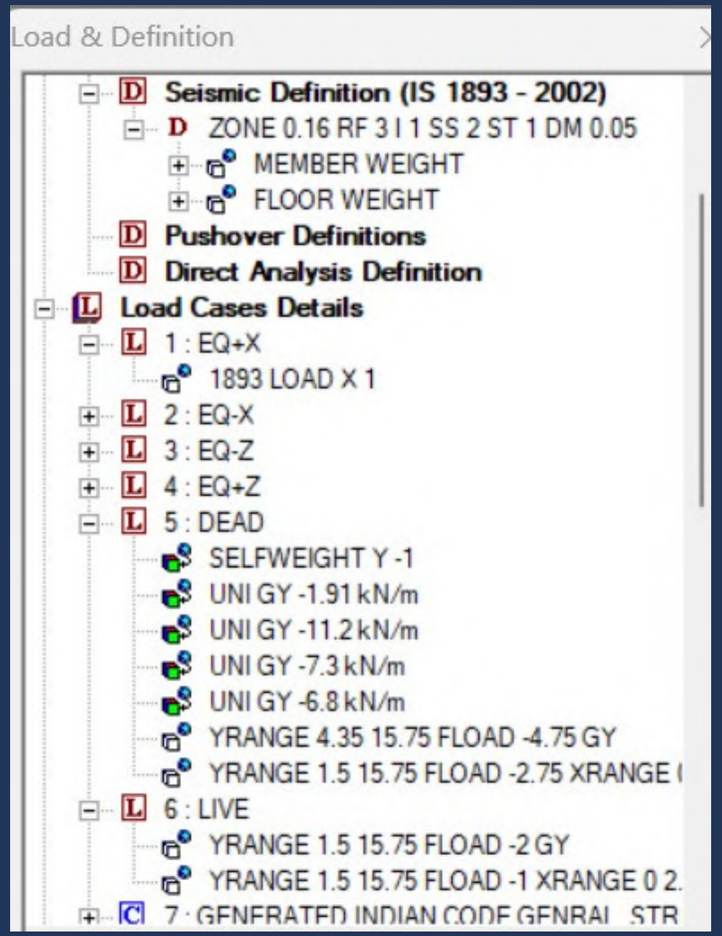


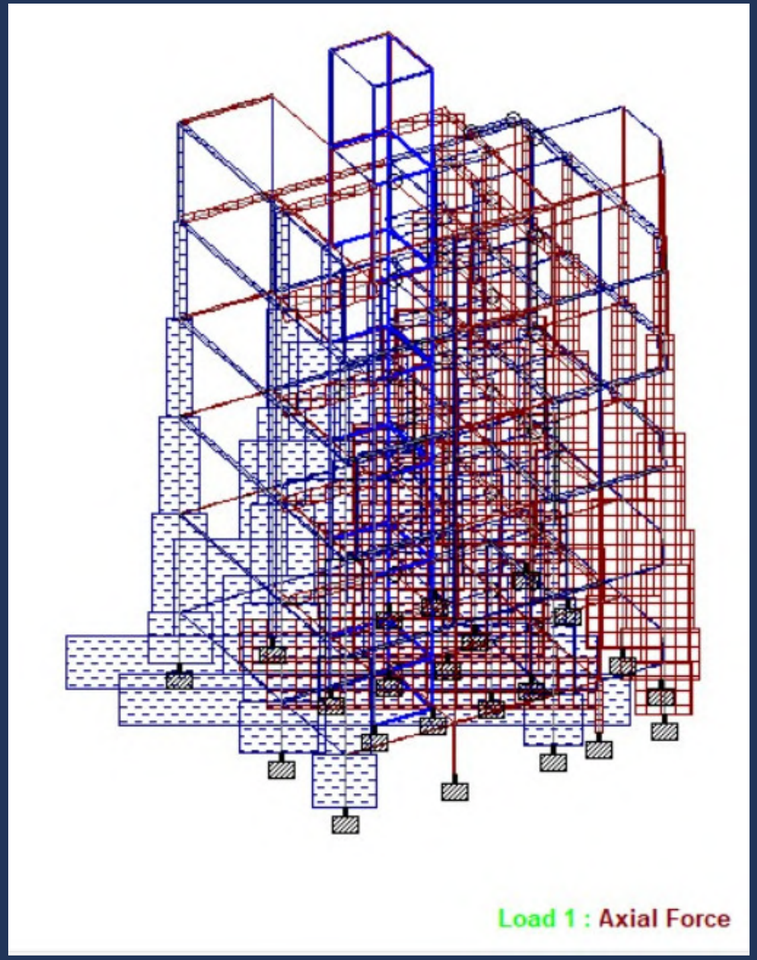
ARCHITECTURAL PLAN

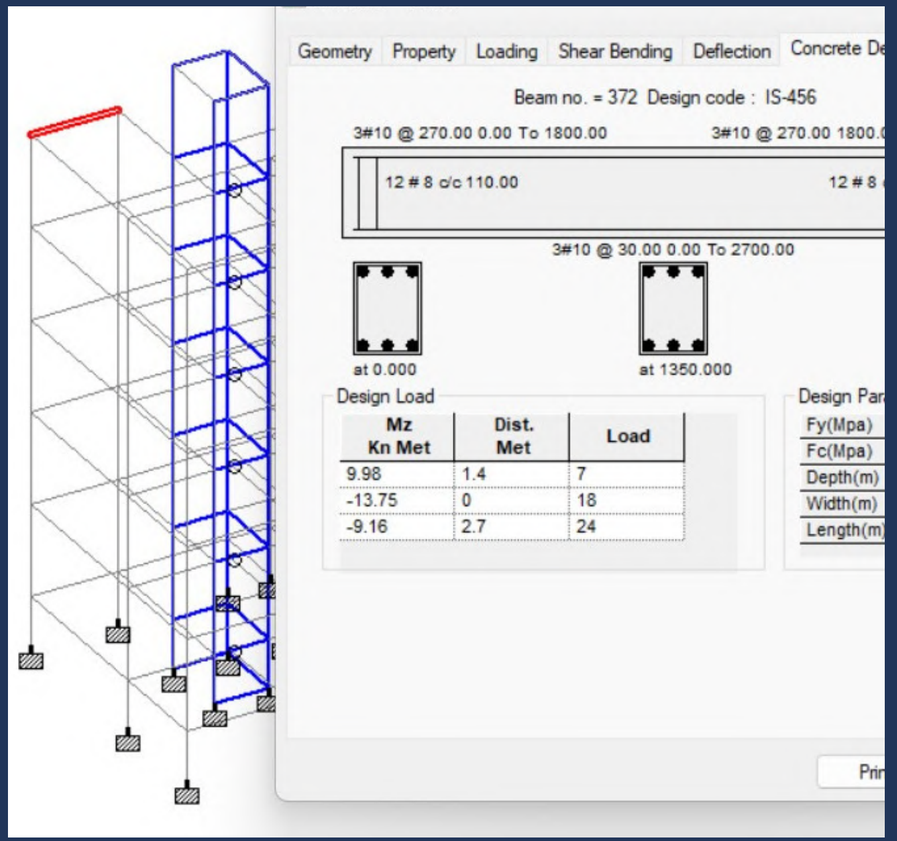




STAAD. PRO DETAILS





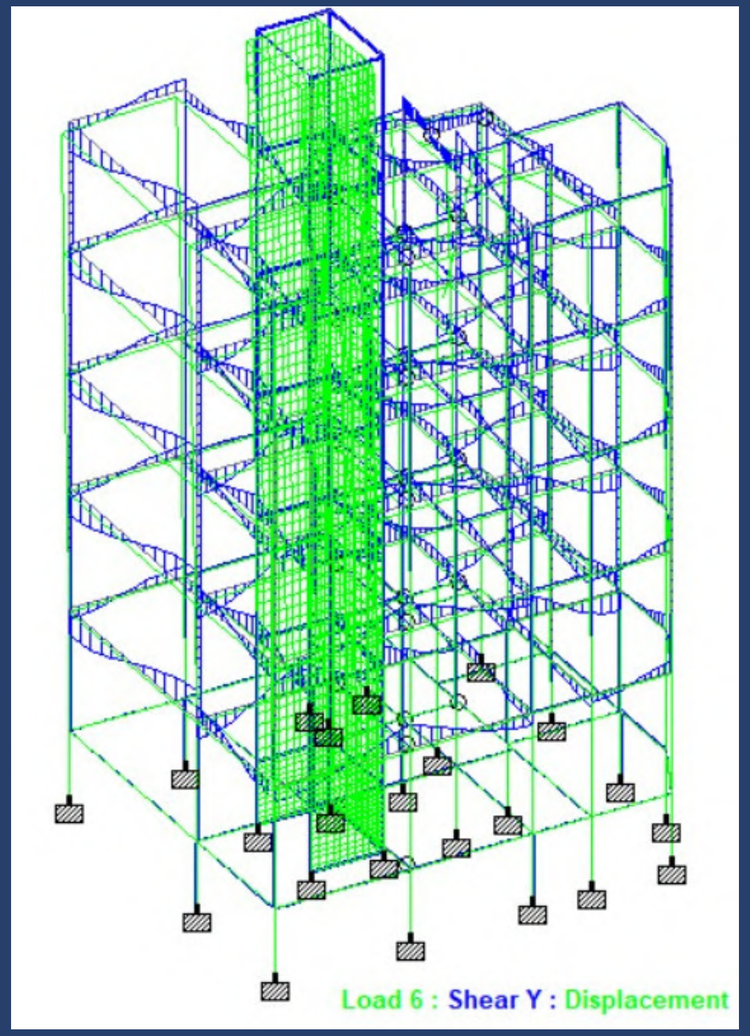


Load assigned

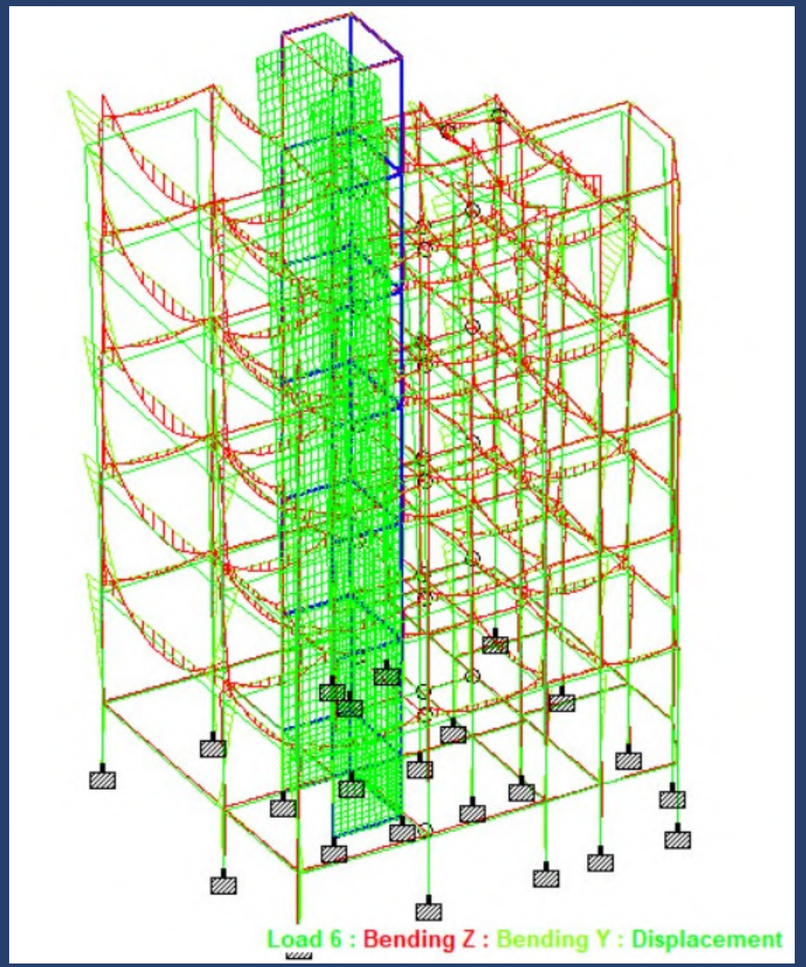
Base Shear

Beam design

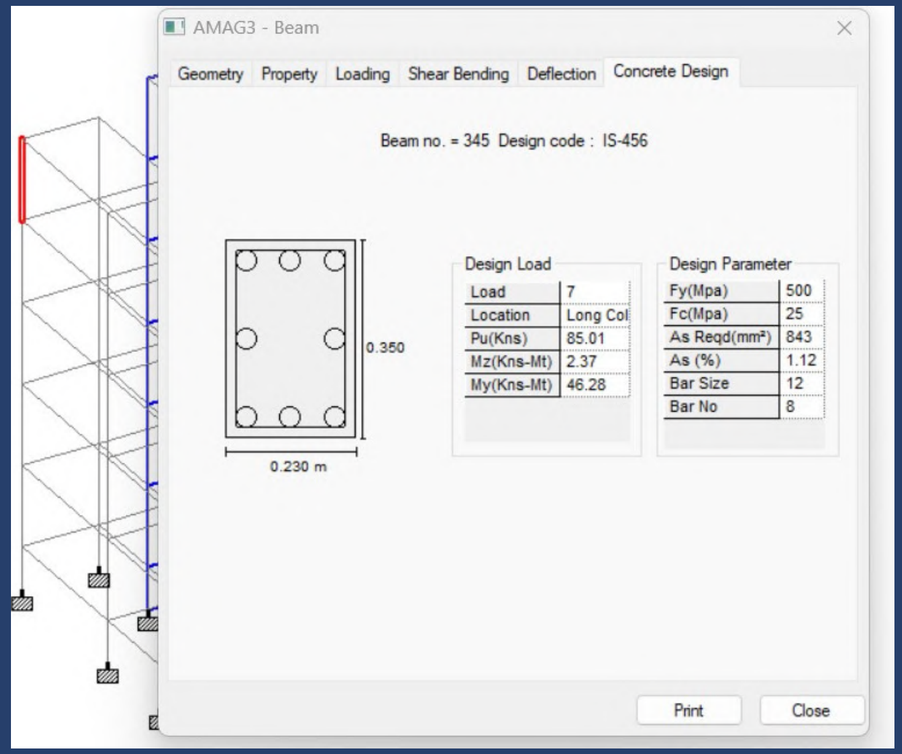
SHEAR FORCE, BENDING MOMENT AND CONCRETE DESIGN



Shear Force

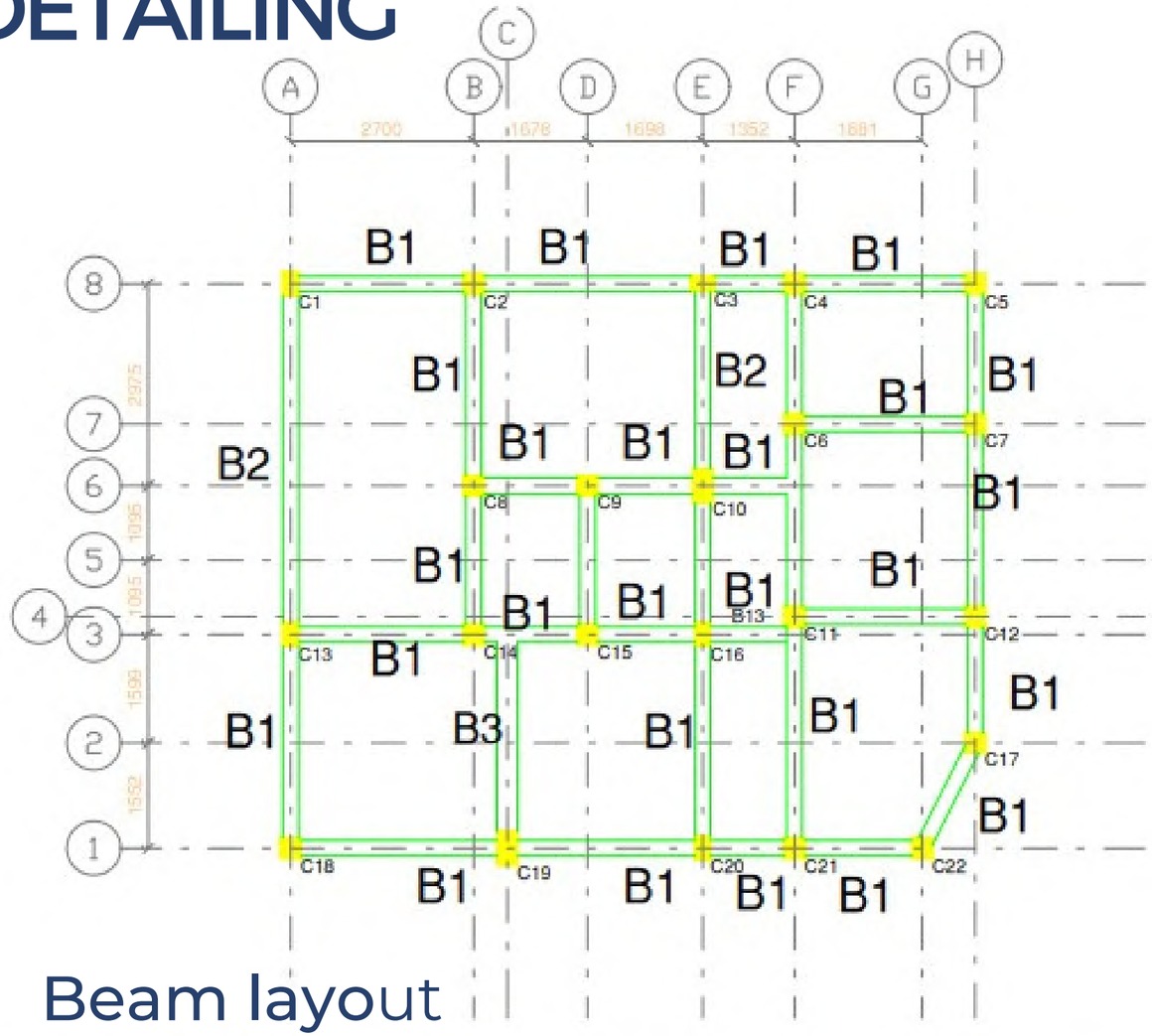


Bending moment

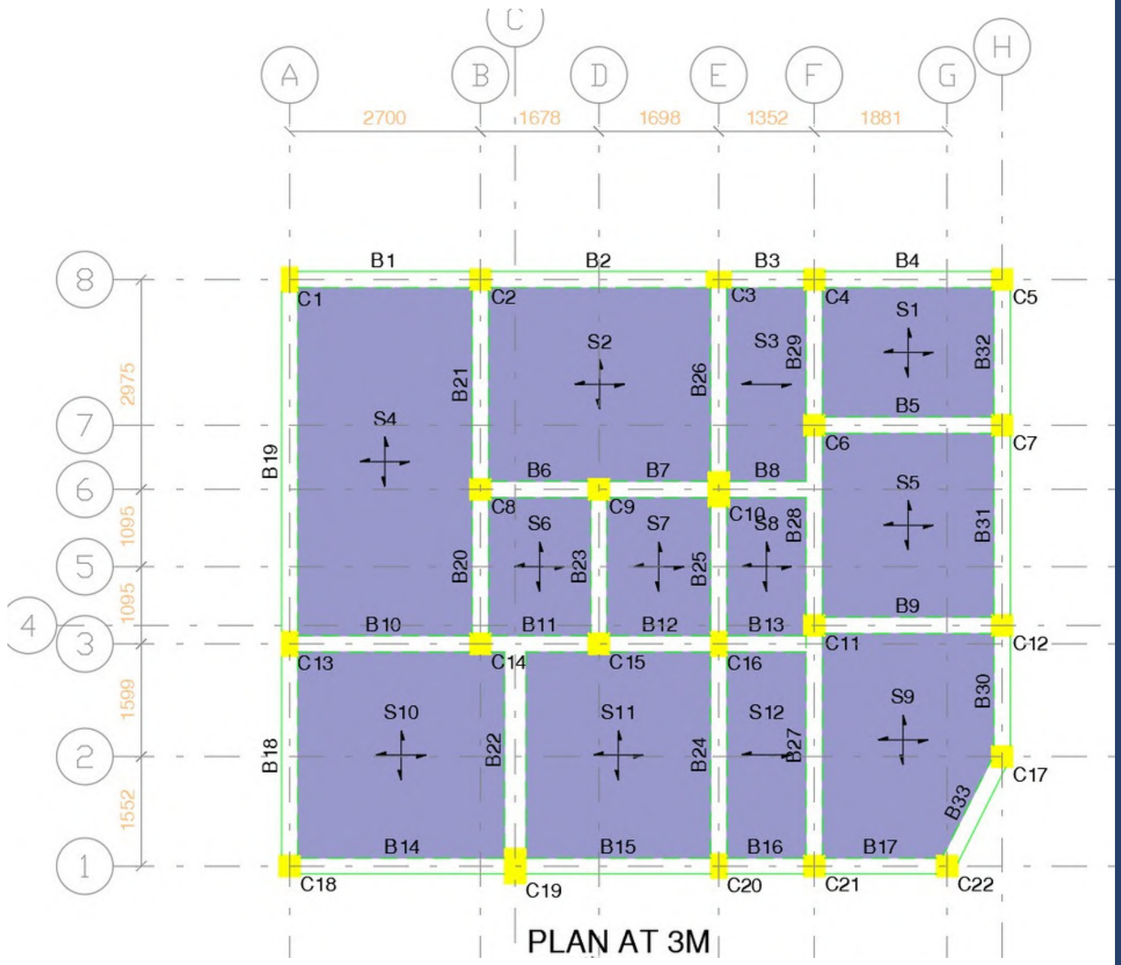


Column design

DETAILING



Beam layout

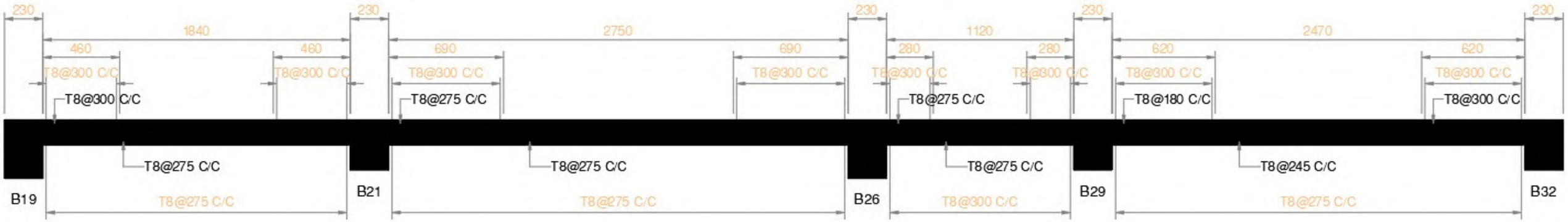


Column layout

BEAM SCHEDULE (M25:Fe500) (LEVEL: 3m)

BEAM NUMBERS	SIZE		BOTTOM REINFORCEMENT			TOP REINFORCEMENT			SHEAR STIRRUPS			SFR	DIAGONAL	REMARKS
	B	D	LEFT	MID SPAN	RIGHT	LEFT	MID SPAN	RIGHT	LEFT	MID SPAN	RIGHT			
B1	230	300	2-T20	2-T20	2-T20	2-T20	2-T20	2-T20	4-2L-T8@225 C/C	2-2L-T8@225 C/C	4-2L-T8@225 C/C	-	-	-
B2	230	350	2-T25	2-T25	2-T25	2-T25	2-T25	2-T25	5-2L-T8@260 C/C	3-2L-T8@260 C/C	5-2L-T8@260 C/C	-	-	-
B3	300	480	3-T25	3-T25	3-T25	3-T25	3-T25	3-T25	5-2L-T8@300 C/C	3-2L-T8@300 C/C	5-2L-T8@300 C/C	-	-	-

SLAB DETAILING AND SCHEDULE



SLAB S1
(TWO WAY) (150 THK)

SLAB S2
(TWO WAY) (150 THK)

SLAB S3
(ONE WAY) (150 THK)

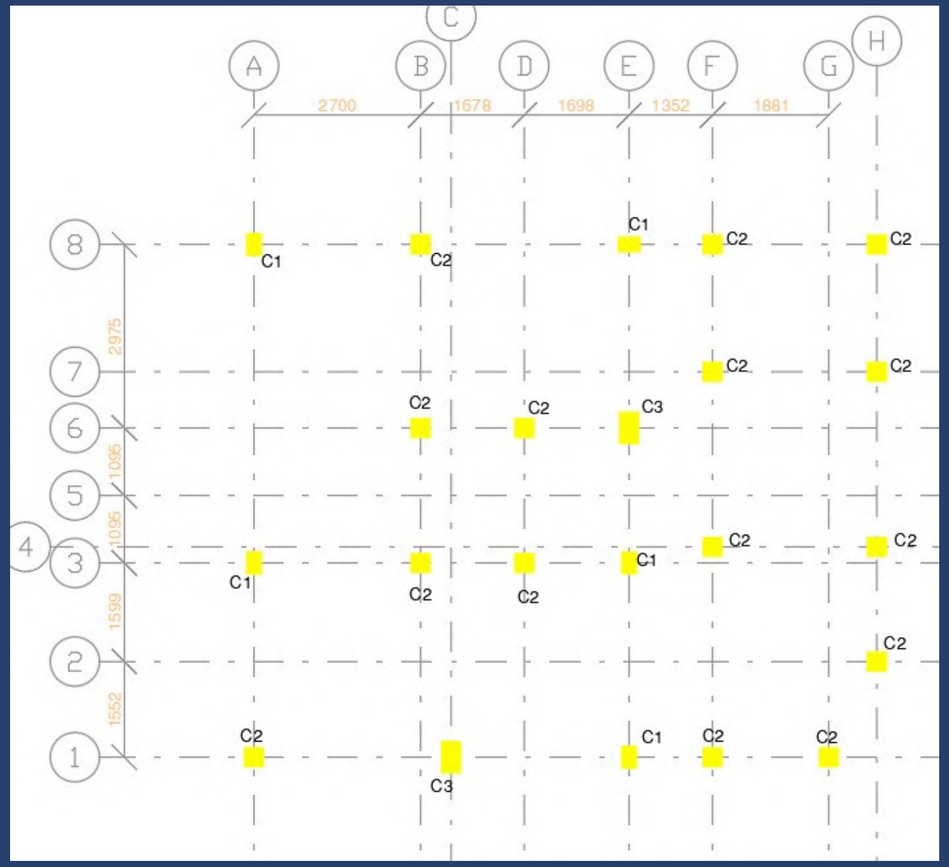
SLAB S4
(TWO WAY) (150 THK)

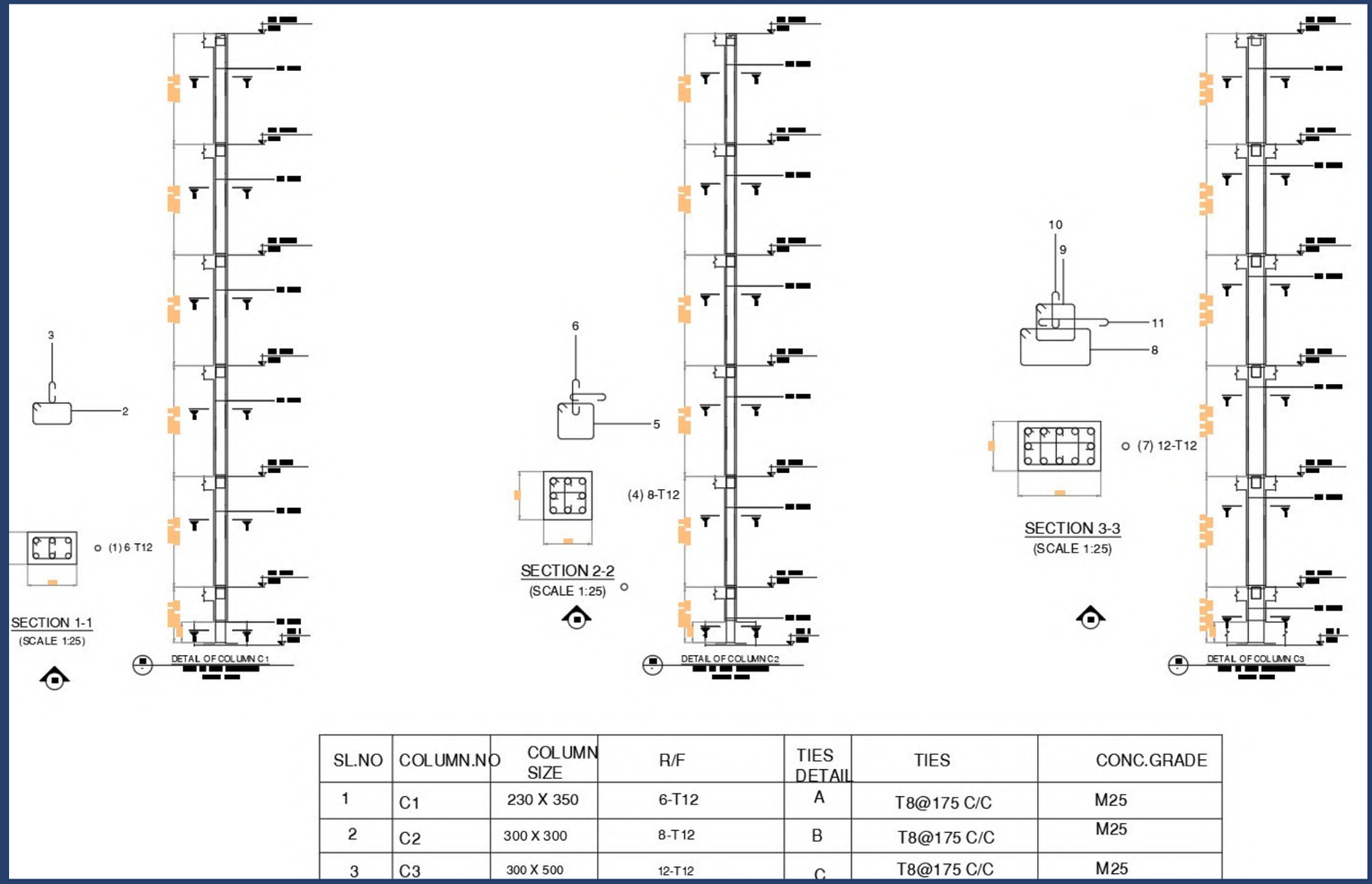
SECTION A-A

SLAB SCHEDULE (M25 : FE500) (LEVEL : 3M)

SLAB MARKED	SLAB THICKNESS	BOTTOM REINFORCEMENT				TOP REINFORCEMENT					REMARKS
		ALONG SHORT SPAN		ALONG LONG SPAN		OVER LONG SUPPORT		OVER SHORT SUPPORT		DISTRIBUTION	
		FULL LENGTH	CURTAILED	FULL LENGTH	CURTAILED	CONTINUOUS SUPPORT	END SUPPORT	CONTINUOUS SUPPORT	END SUPPORT		
S1, S2, S5, S10	150	T8 @ 275 C/C	---	T8 @ 275 C/C	---	T8 @ 275 C/C	T8 @ 300 C/C	T8 @ 275 C/C	T8 @ 300 C/C	T8 @ 300 C/C	---
S3, S12	150	T8 @ 275 C/C	---	T8 @ 300 C/C	---	T8 @ 275 C/C	---	---	T8 @ 300 C/C	T8 @ 300 C/C	---
S4	150	T8 @ 245 C/C	---	T8 @ 275 C/C	---	T8 @ 180 C/C	T8 @ 300 C/C	T8 @ 275 C/C	T8 @ 300 C/C	T8 @ 300 C/C	---
S6, S7, S8	150	T8 @ 275 C/C	---	T8 @ 275 C/C	---	T8 @ 275 C/C	---	T8 @ 275 C/C	---	T8 @ 300 C/C	---
S9	150	T8 @ 275 C/C	---	T8 @ 275 C/C	---	--	T8 @ 300 C/C	---	T8 @ 300 C/C	T8 @ 300 C/C	---
S11	150	T8 @ 275 C/C	---	T8 @ 275 C/C	---	T8 @ 275 C/C	---	T8 @ 275 C/C	T8 @ 300 C/C	T8 @ 300 C/C	---

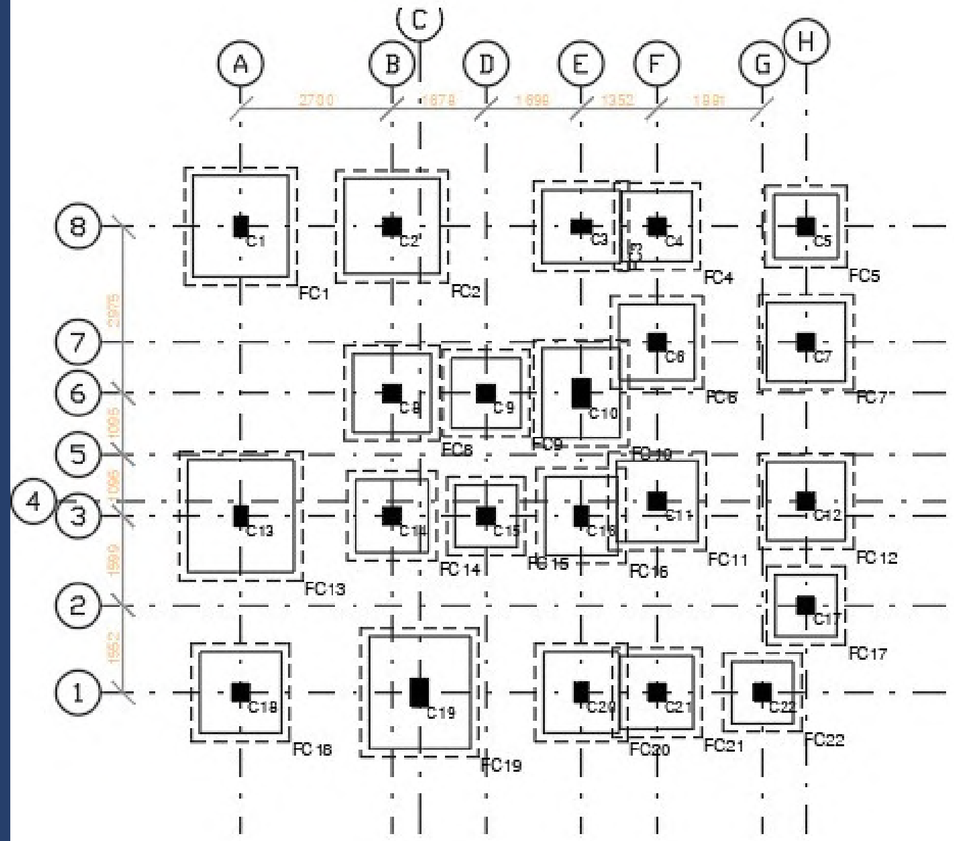
COLUMN LAYOUT & DETAILING

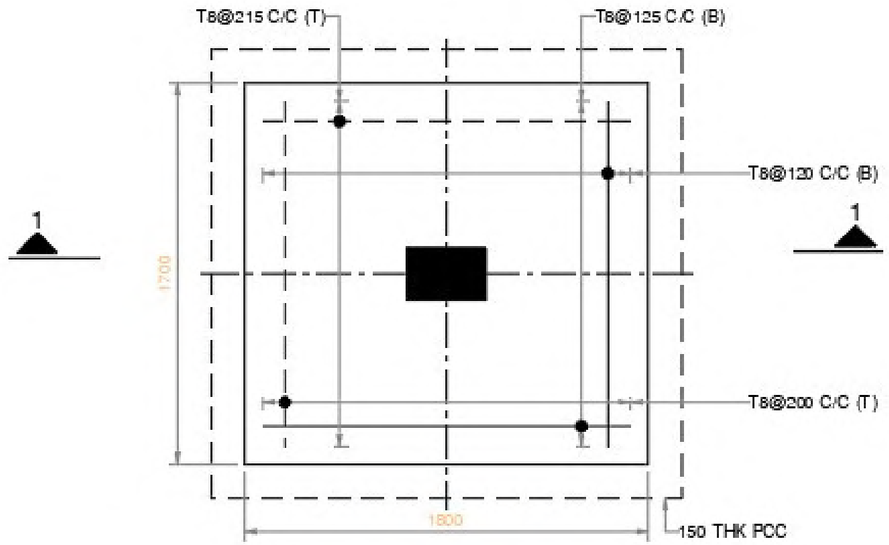




SL.NO	COLUMN.NO	COLUMN SIZE	R/F	TIES DETAIL	TIES	CONC.GRADE
1	C1	230 X 350	6-T12	A	T8@175 C/C	M25
2	C2	300 X 300	8-T12	B	T8@175 C/C	M25
3	C3	300 X 500	12-T12	C	T8@175 C/C	M25

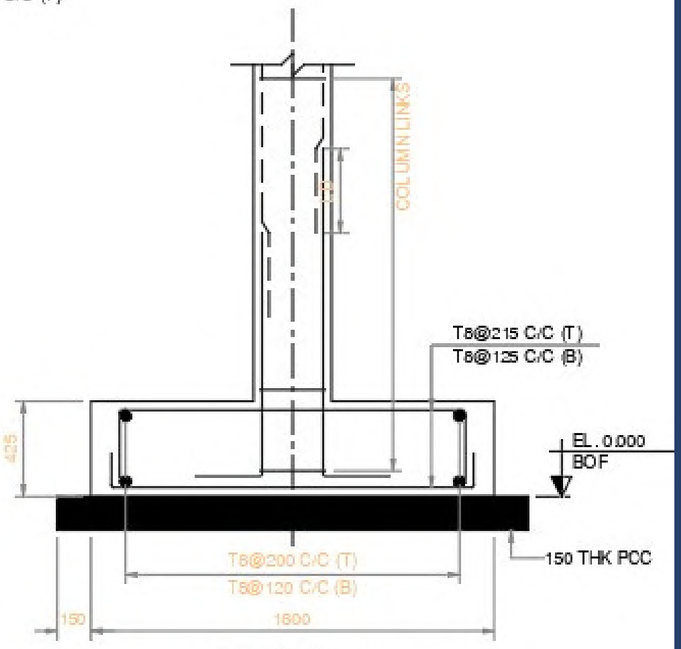
FOOTING AND SCHEDULE





FOOTING FC1- PLAN

(SCALE 1:25)



SECTION 1-1

DETAIL OF FOOTING FC1

(SCALE 1:25)

FOOTING SCHEDULE (M25:Fe500)

FOOTING NUMBERS	COLUMN NUMBERS	FOOTING TYPE	FOOTING DIMENSION					FOOTING REINFORCEMENT			
								BOTTOM		TOP	
			STEP	L	B	D1	D2	ALONG B	ALONG L	ALONG B	ALONG L
FC1	C1	Pad	-	1800	1700	425	-	T8@120 C/C	T8@125 C/C	T8@200 C/C	T8@215 C/C
FC19	C19	Pad	-	2000	1800	450	-	T8@120 C/C	T8@115 C/C	T8@200 C/C	T8@200 C/C
FC20	C20	Pad	-	1450	1350	350	-	T8@165 C/C	T8@150 C/C	T8@245 C/C	T8@270 C/C
FC21	C21	Pad	-	1300	1300	325	-	T8@190 C/C	T8@165 C/C	T8@260 C/C	T8@260 C/C

HOSTEL PROJECT

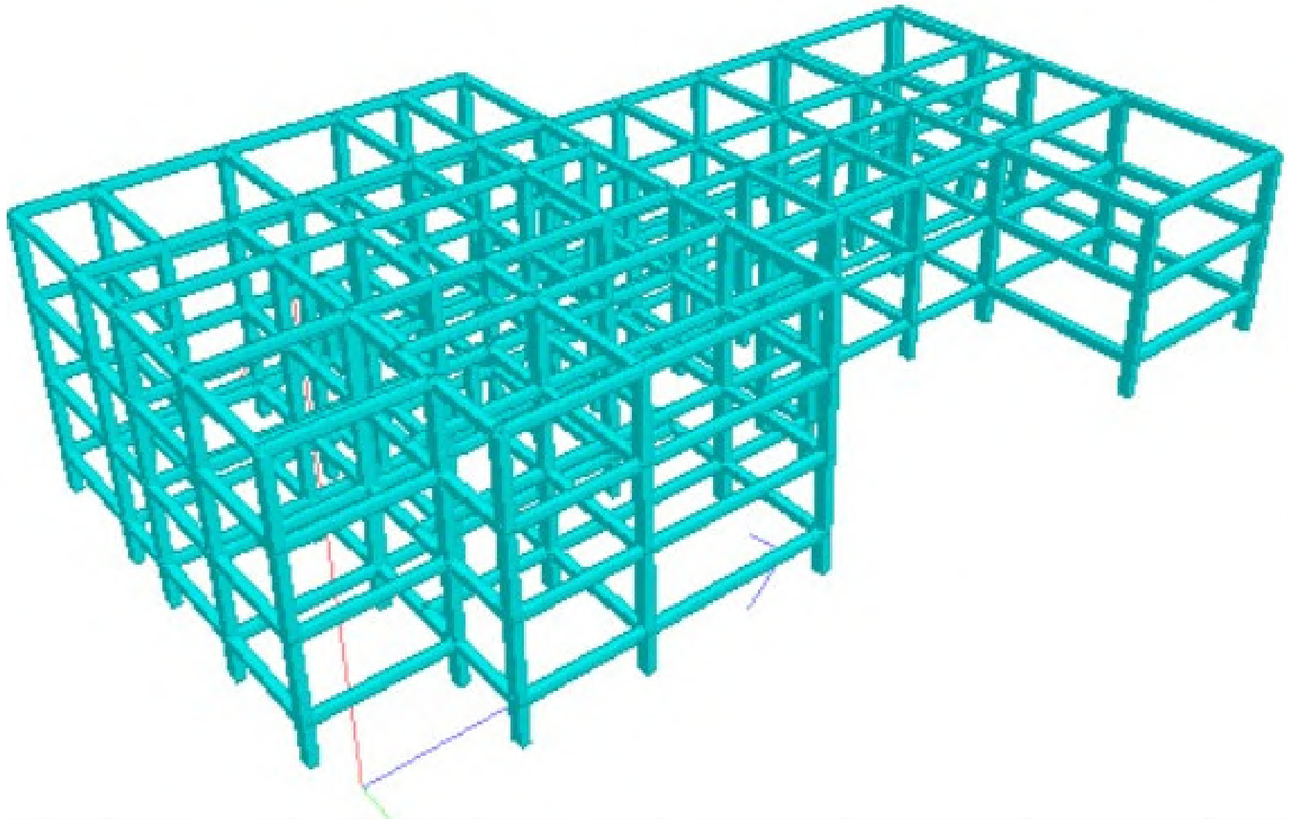
PROJECT STATEMENT- RCC Building (G+3)

ZONE-III PUNE

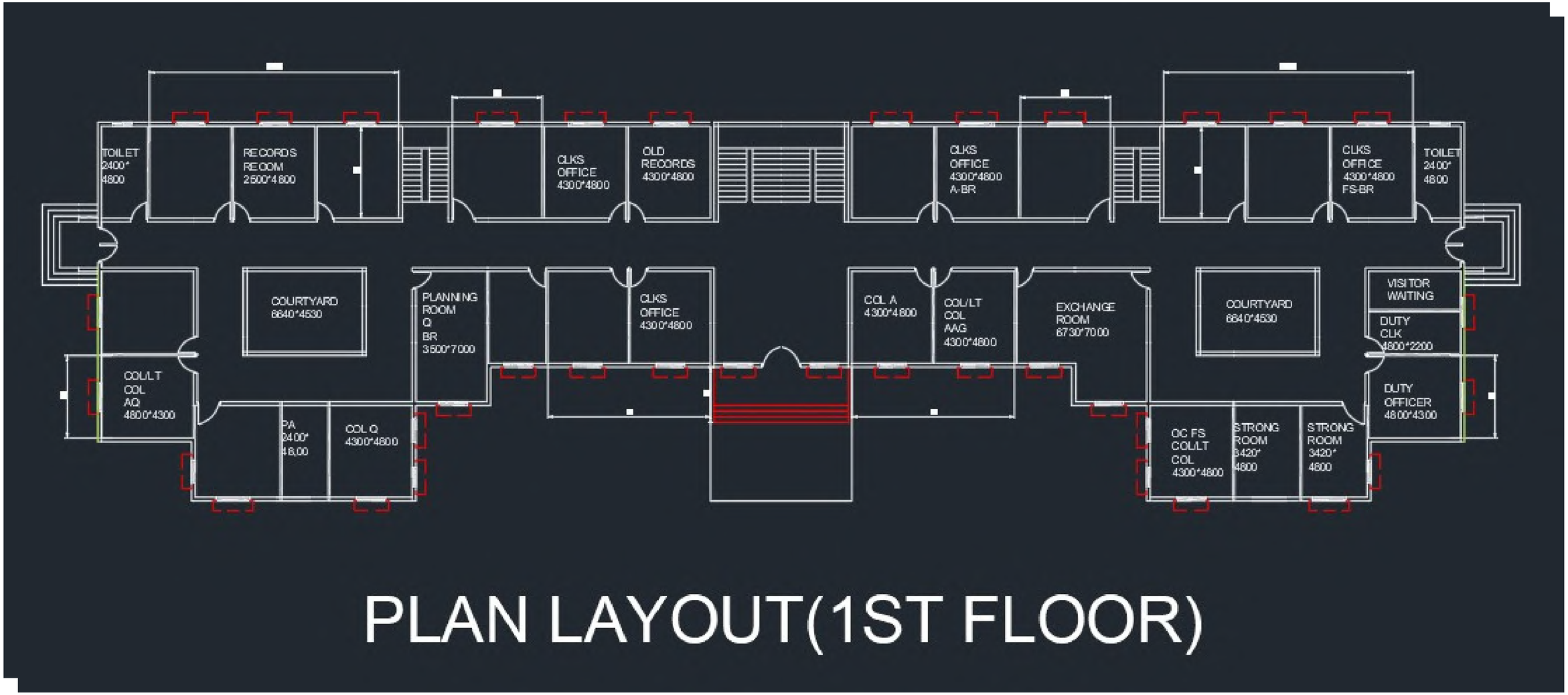
- Material Used
  Concrete : M20 grade STEEL :FE500 grade

- Code Provision :
  IS456:2021 for RCC DESIGN
  IS:1893-2016 PART1 FOR SEISMIC DESIGN
  IS:13920-2016 FOR DUCTILE DETAILING
  IS:875 -2016 PART(1,2) FOR DEAD AND LIVE LOAD

- Load Considered
  Dead load : 4.75 KN /M Live load :2 KN/M
  Stair Load-7.5 KN /M Stair L.L-3 KN /M
- Height of floors- 2.85M

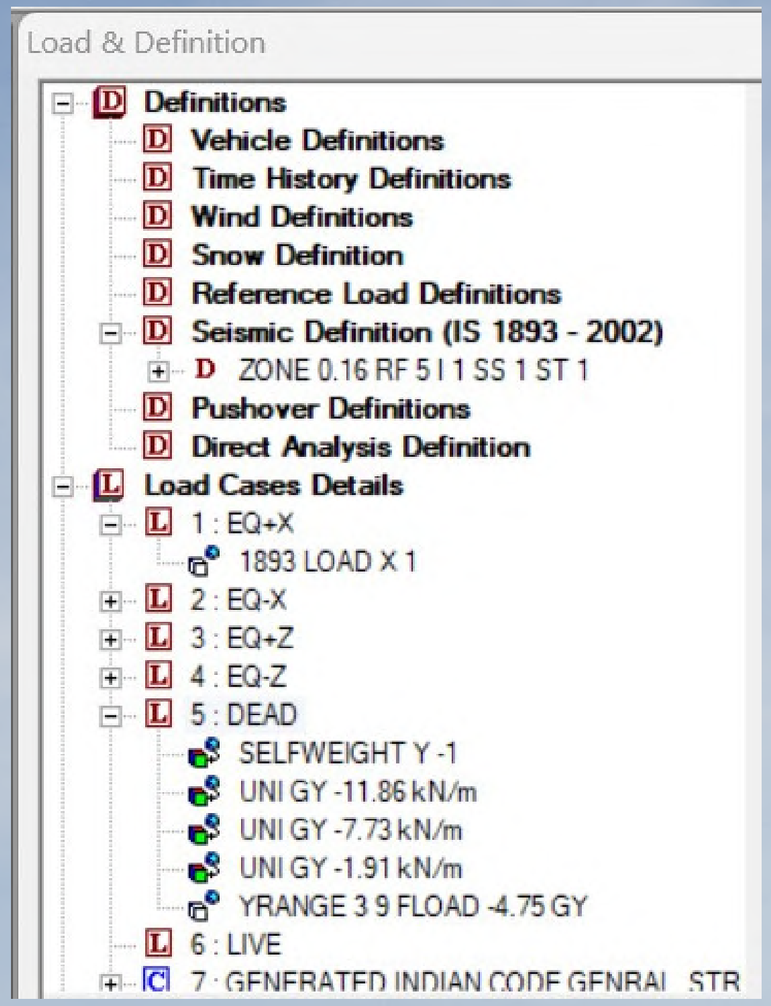


ARCHITECTURAL PLAN

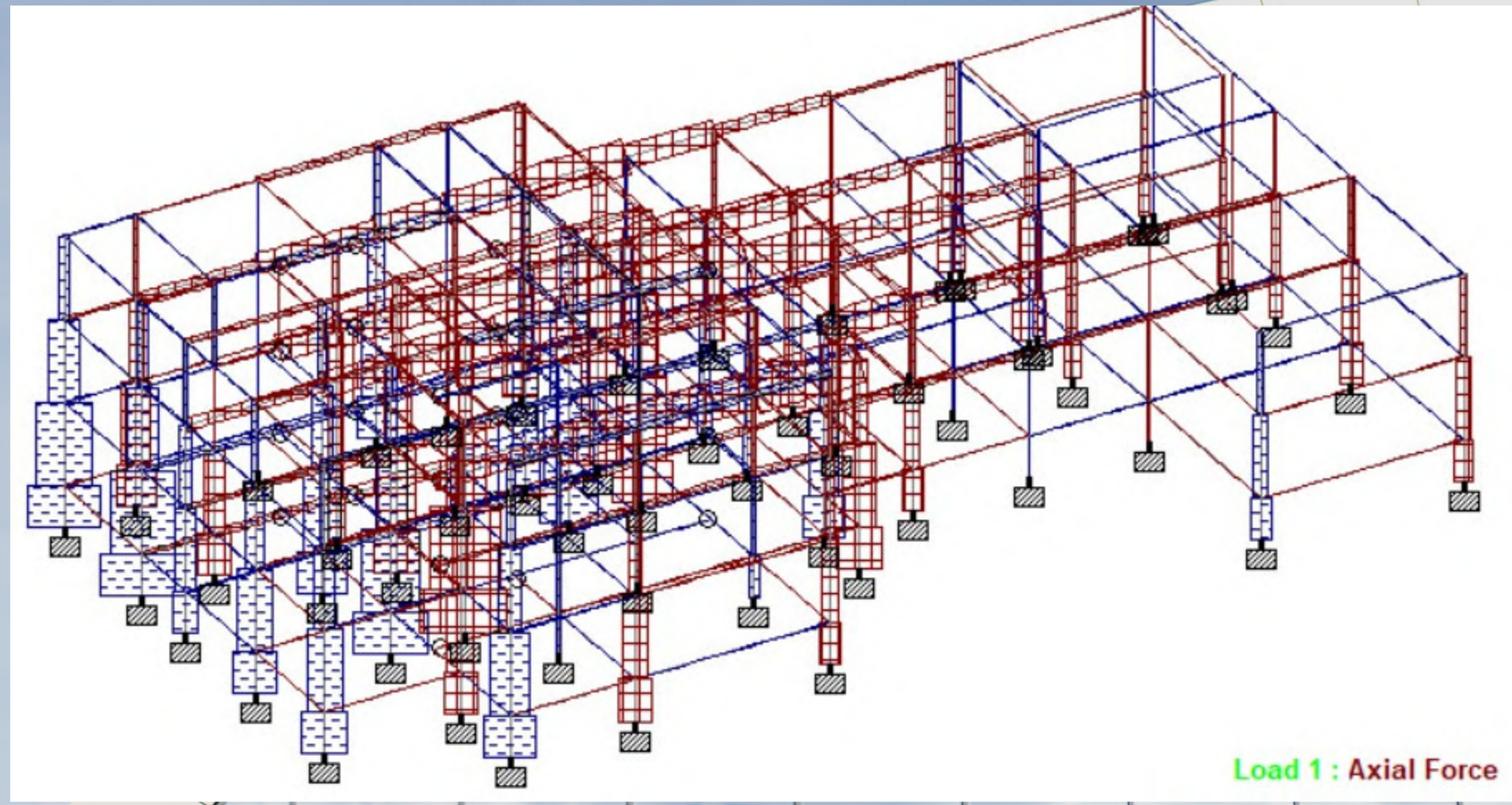


PLAN LAYOUT(1ST FLOOR)

STAAD. PRO DETAILS

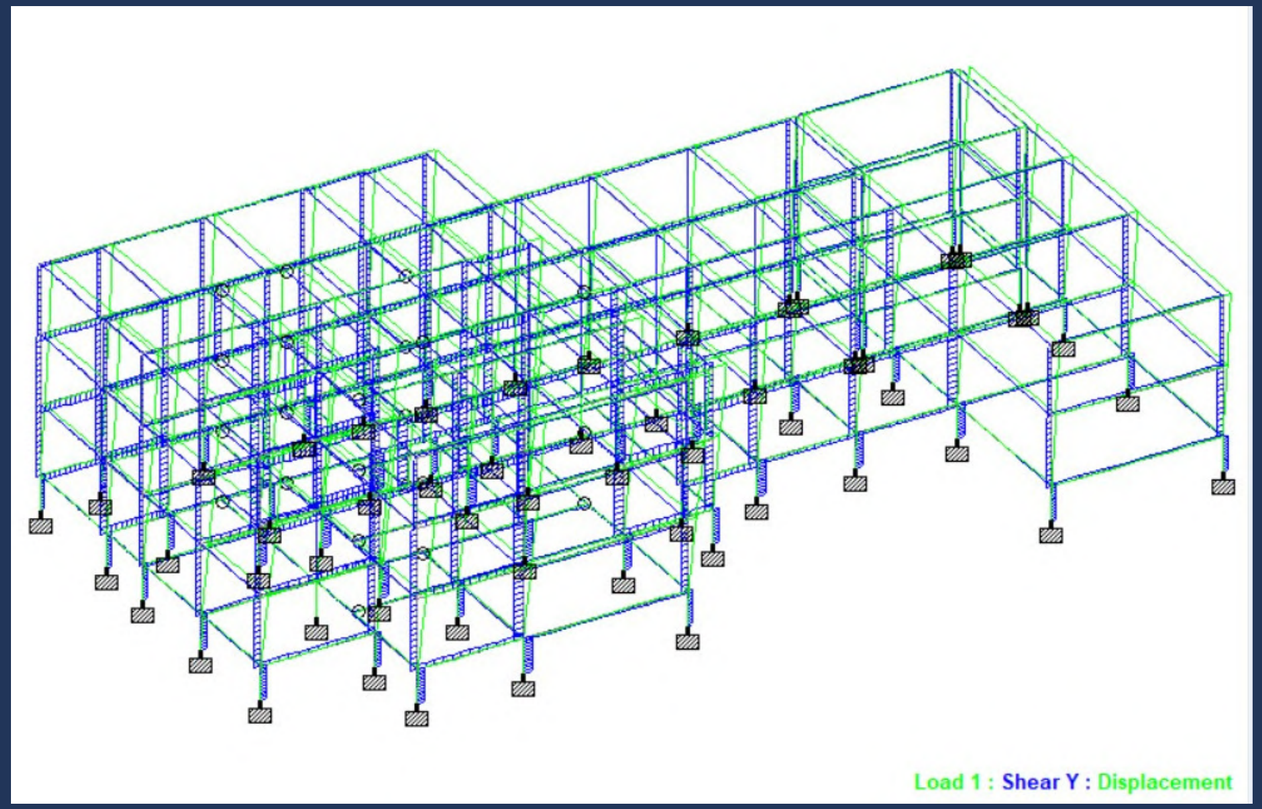


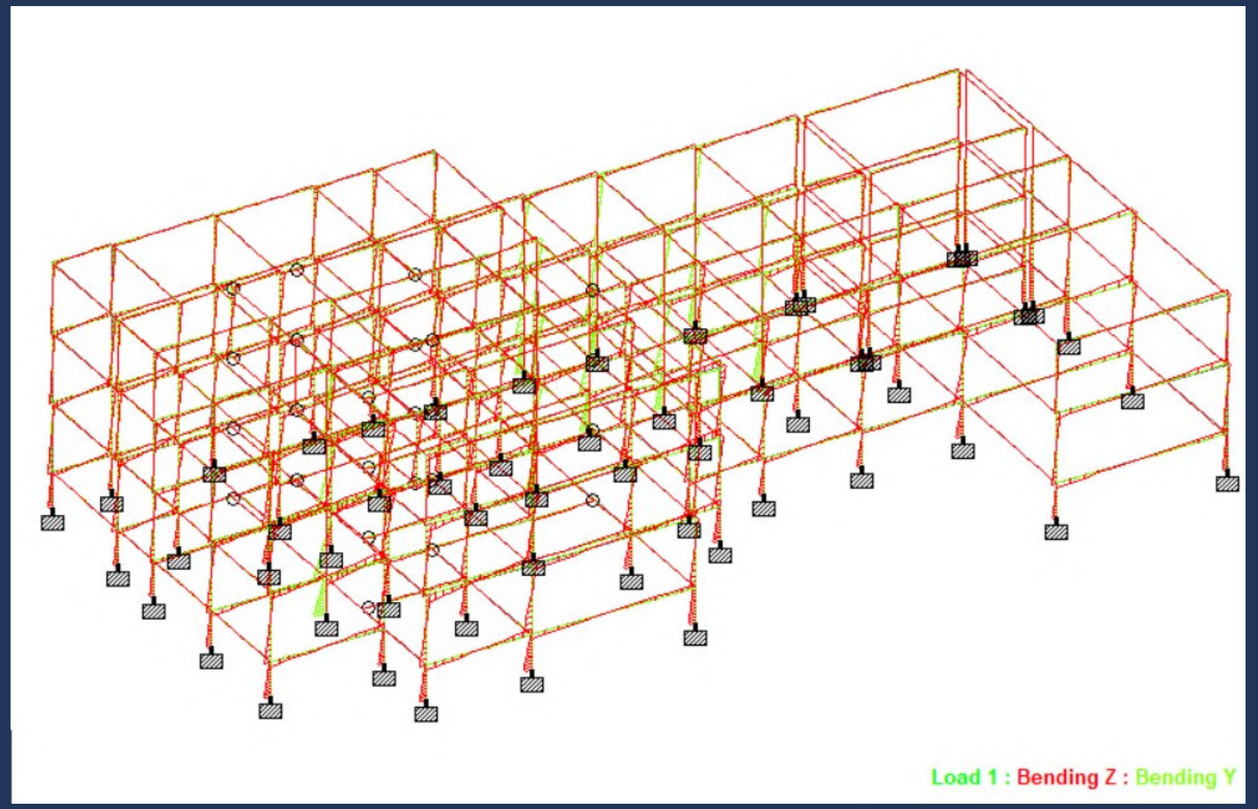
Load assigned



Base Shear

SHEAR FORCE & BENDING MOMENT

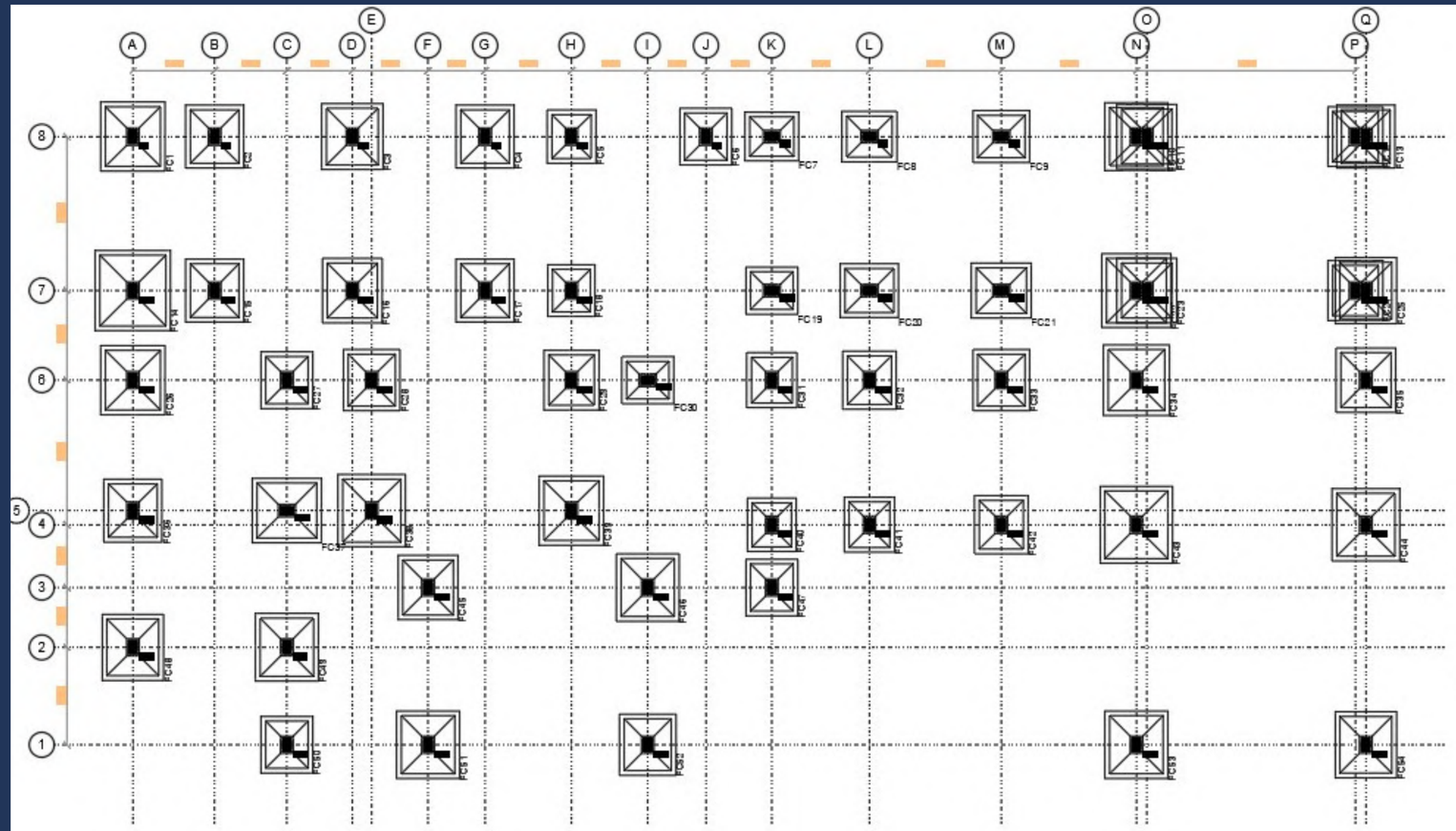


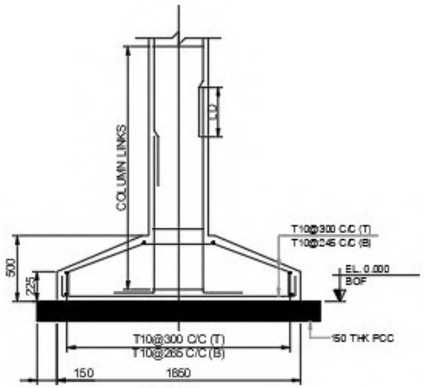


SHEAR FORCE

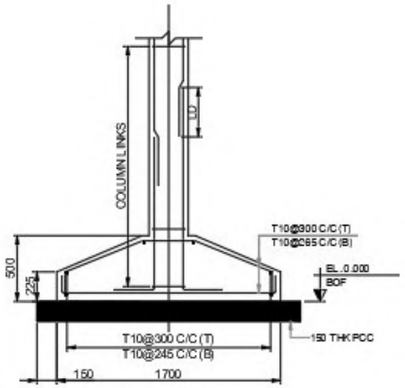
BENDING MOMENT

DETAILING

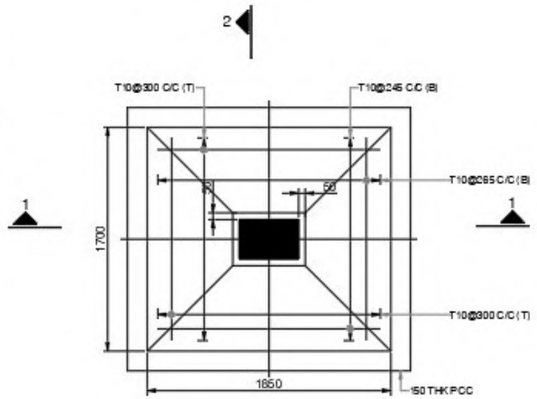




SECTION 1-1
DETAIL OF FOOTING FC10
(SCALE 1:25)



SECTION 2-2
DETAIL OF FOOTING FC10
(SCALE 1:25)



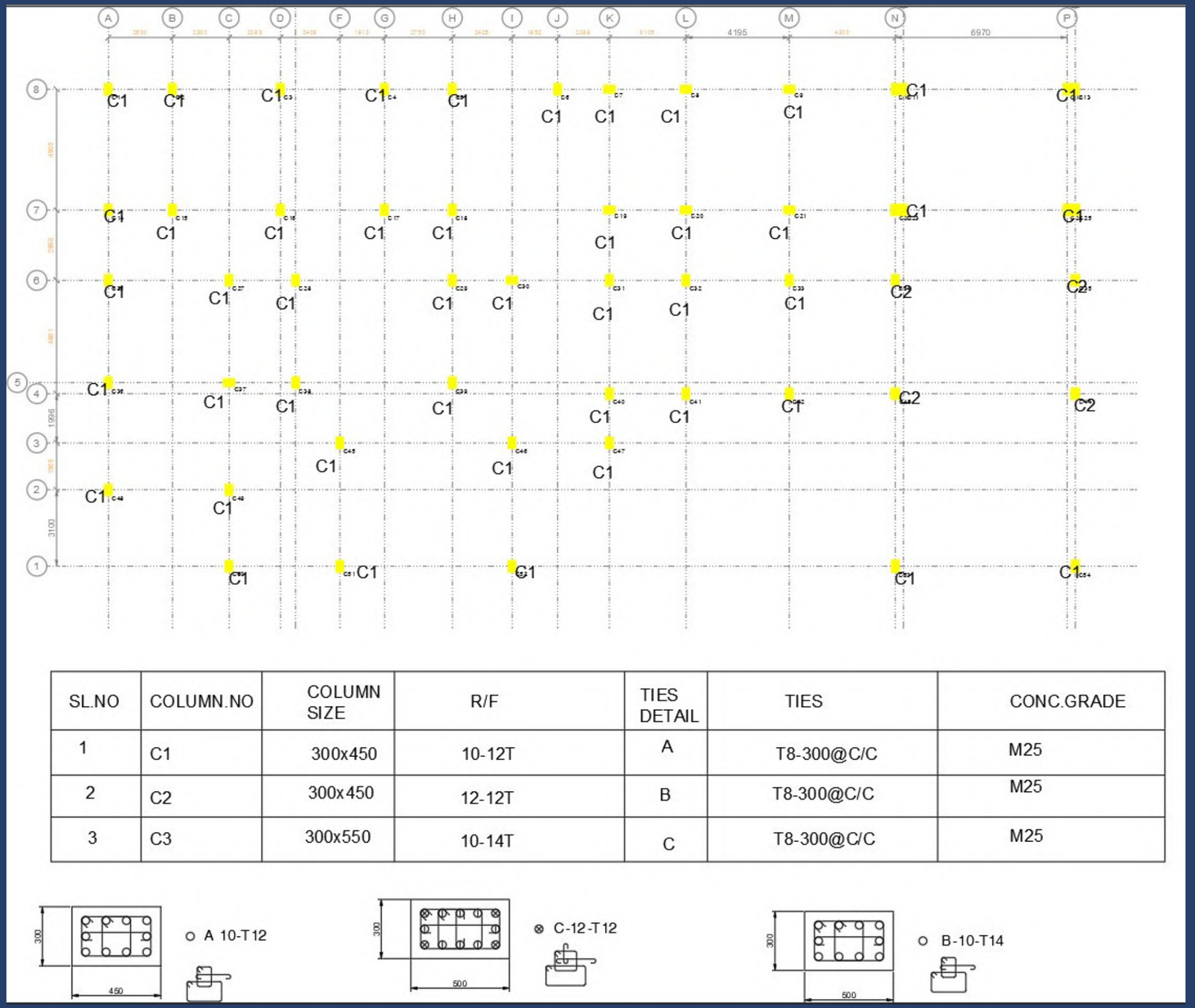
FOOTING FC10 - PLAN
(SCALE 1:25)

FOOTING DETAILING

FOOTING SCHEDULE (M25:Fe500)

FOOTING NUMBERS	COLUMN NUMBERS	FOOTING TYPE	FOOTING DIMENSION					FOOTING REINFORCEMENT				STIRRUPS		SFR	REMARKS
			STEP	L	B	D1	D2	BOTTOM		TOP		ALONG B	ALONG L		
								ALONG B	ALONG L	ALONG B	ALONG L				
FC9	C9	Sloped	-	1500	1350	400	200	T10@300 C/C	T10@300 C/C	T10@300 C/C	T10@300 C/C	-	-	-	-
FC11	C11	Sloped	-	1750	1600	300	150	T10@300 C/C	T10@300 C/C	T10@300 C/C	T10@300 C/C	-	-	-	-
FC16	C16	Sloped	-	1750	1600	475	225	T10@300 C/C	T10@230 C/C	T10@300 C/C	T10@300 C/C	-	-	-	-
FC54	C54	Sloped	-	1800	1650	500	225	T10@300 C/C	T10@275 C/C	T10@300 C/C	T10@300 C/C	-	-	-	-

COLUMN LAYOUT AND DETAILING

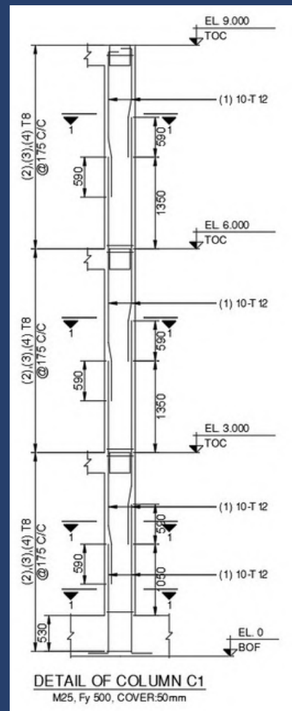


SL.NO	COLUMN.NO	COLUMN SIZE	R/F	TIES DETAIL	TIES	CONC.GRADE
1	C1	300x450	10-12T	A	T8-300@C/C	M25
2	C2	300x450	12-12T	B	T8-300@C/C	M25
3	C3	300x550	10-14T	C	T8-300@C/C	M25

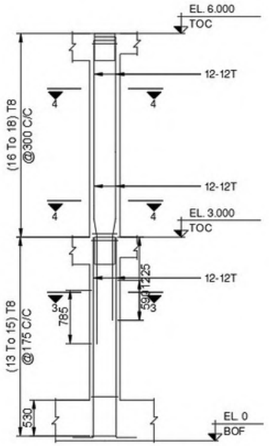
○ A 10-T12

⊗ C-12-T12

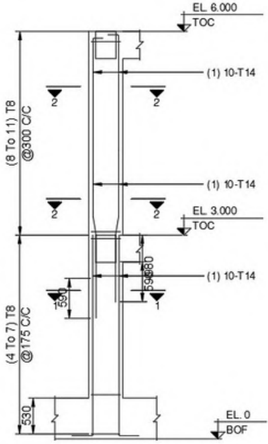
○ B-10-T14



DETAIL OF COLUMN C1
M25, Fy 500, COVER:50mm

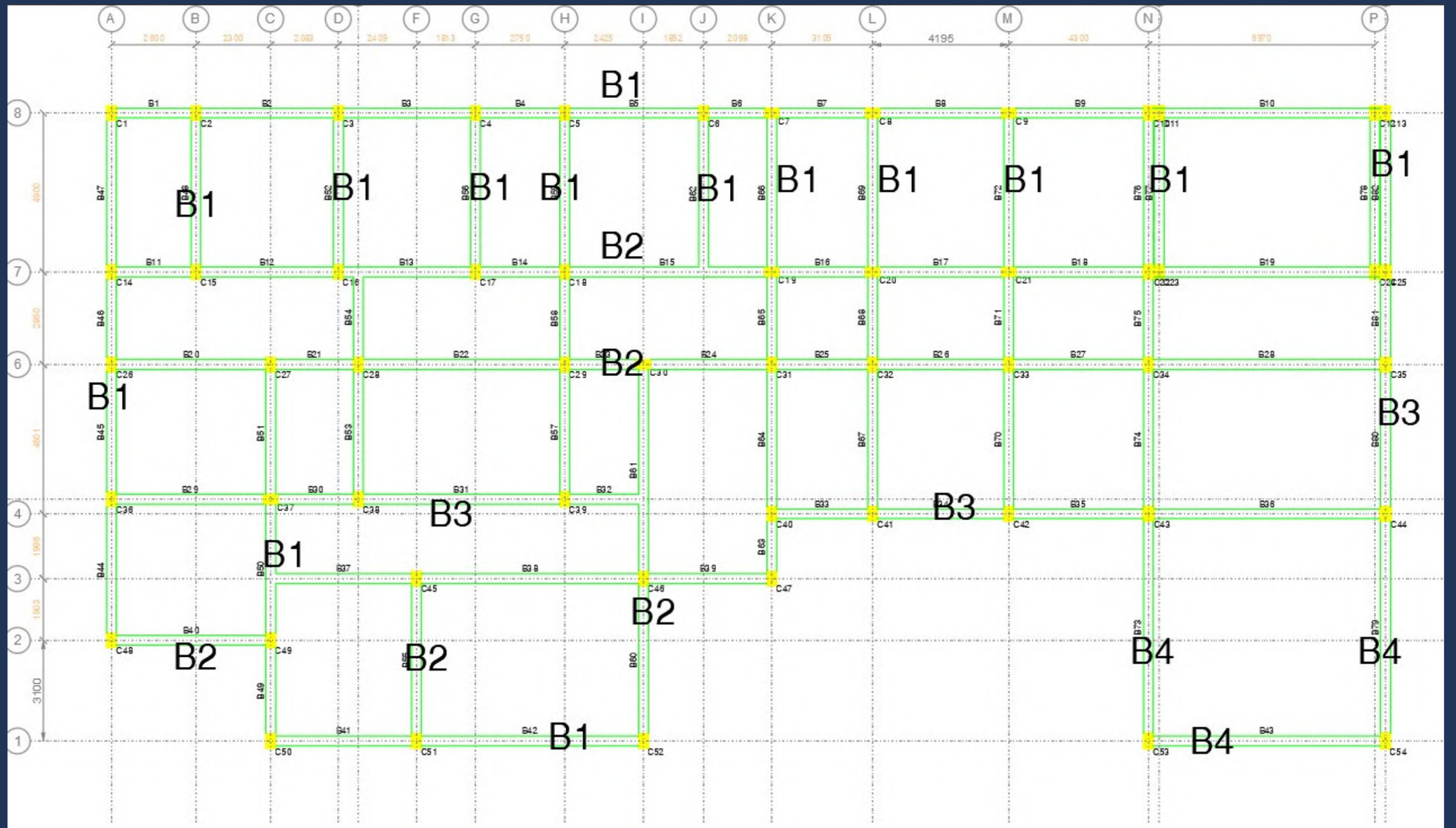


DETAIL OF COLUMN C2
M25, Fy 500, COVER:50mm



DETAIL OF COLUMN C3

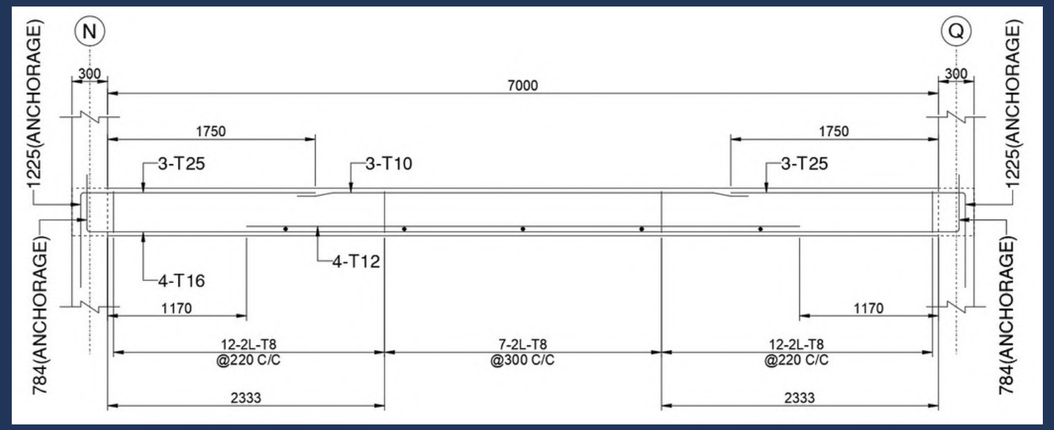
BEAM LAYOUT AND DETAILING

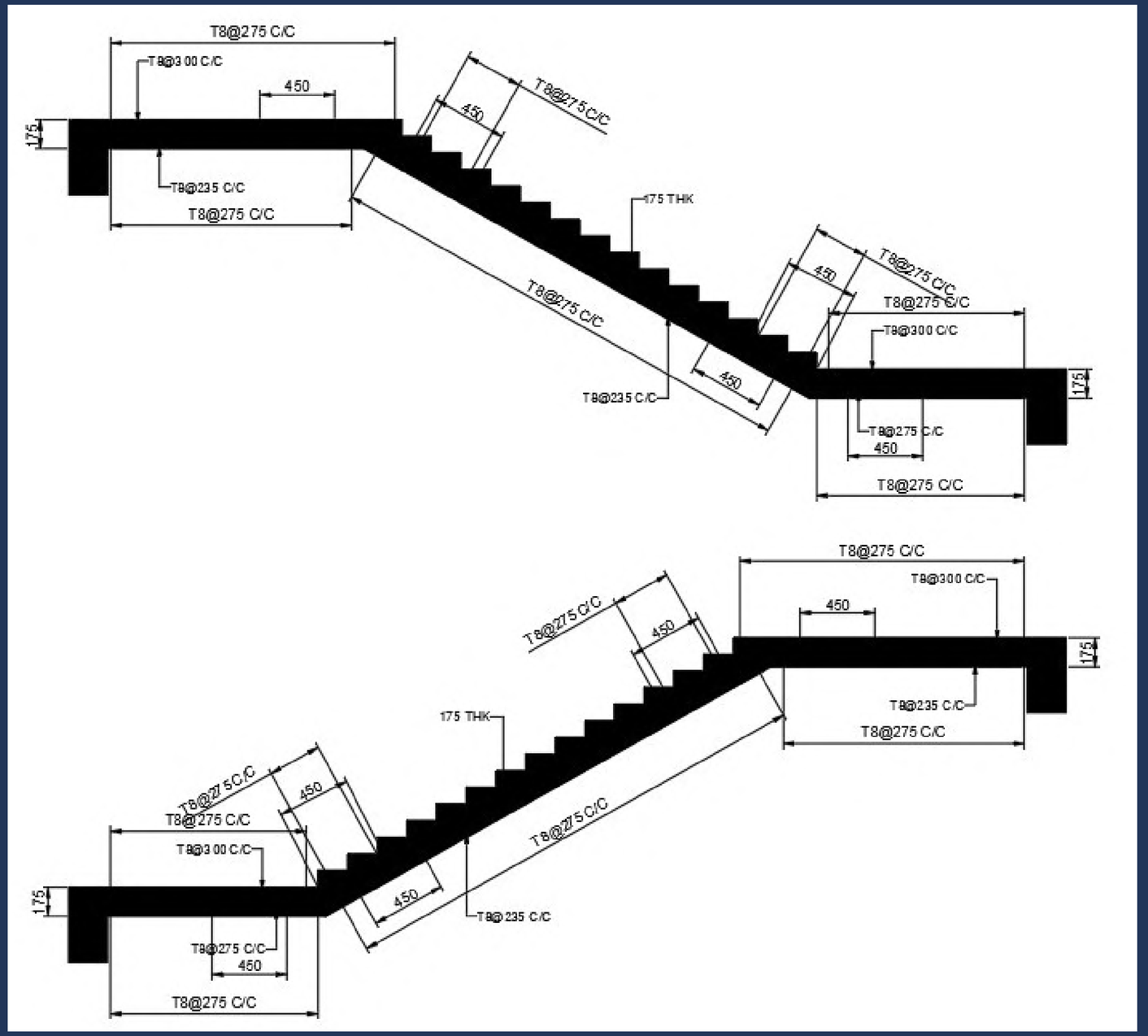


BEAM SCHEDULE (M25:Fe500) (LEVEL: 3m)

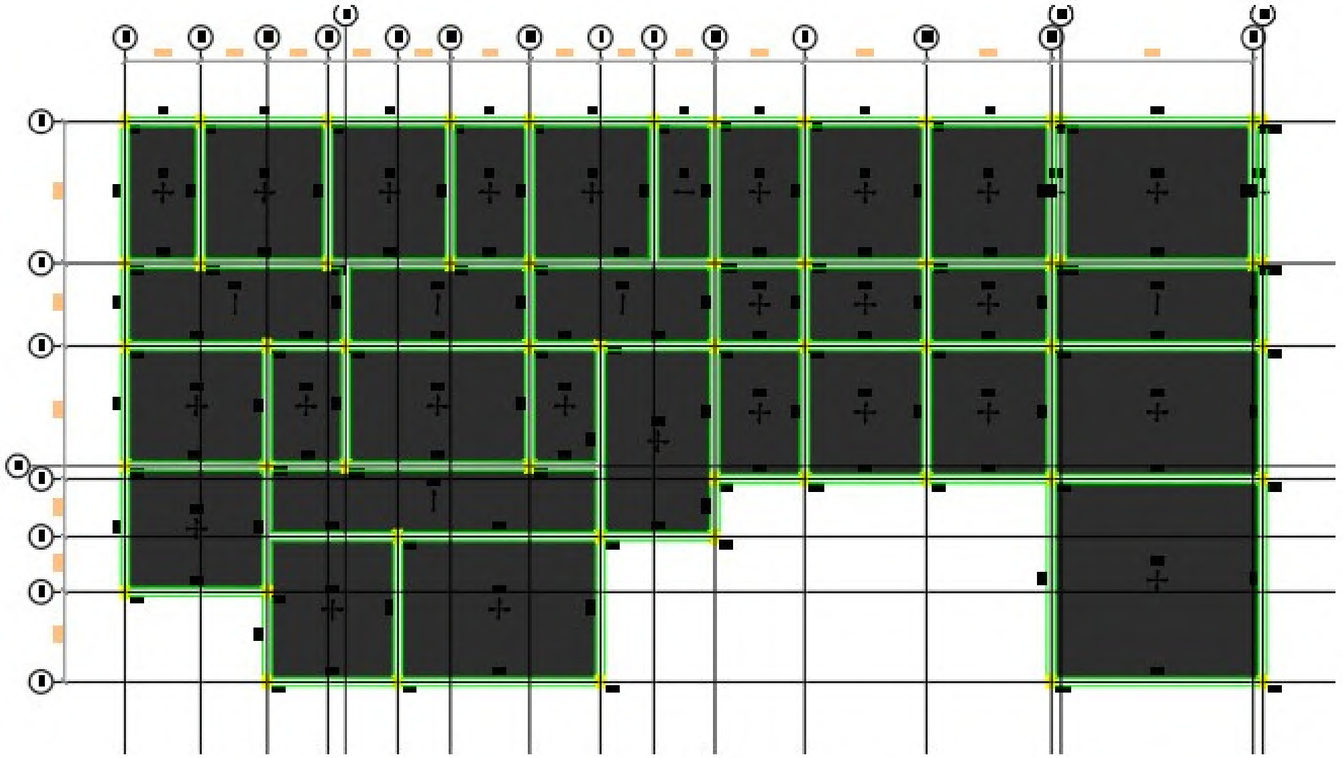
BEAM NUMBERS	SIZE		BOTTOM REINFORCEMENT			TOP REINFORCEMENT			SHEAR STIRRUPS			SFR	DIAGONAL	REMARKS
	B	D	LEFT	MID SPAN	RIGHT	LEFT	MID SPAN	RIGHT	LEFT	MID SPAN	RIGHT			
B1	300	300	4-T8	4-T8	4-T8	3-T10	3-T10	3-T16	7-2L-T8@130 C/C	3-2L-T8@225 C/C	5-2L-T8@225 C/C	-	-	-
B2	300	300	4-T12	4-T12	4-T12	3-T20	3-T20	3-T12	17-2L-T8@130 C/C	15-2L-T8@130 C/C	17-2L-T8@130 C/C	-	-	-
B3	300	300	3-T10	3-T10	3-T10	3-T16	3-T10	3-T16	7-2L-T8@225 C/C	5-2L-T8@225 C/C	7-2L-T8@225 C/C	-	-	-
B4	300	400	4-T16	+ 4-T16 4-T12	4-T16	3-T25	3-T10	3-T25	12-2L-T8@220 C/C	7-2L-T8@300 C/C	12-2L-T8@220 C/C	-	-	-

BEAM AND STAIRCASE DETAILING





SLAB LAYOUT



PLAN AT 3M

SLAB SCHEDULE (M25 : FE500) (LEVEL : 3M)

SLAB NUMBERS	THK	TYPE	BOTTOM REINFORCEMENT		TOP REINFORCEMENT		DISTRIBUTION	REMARKS
			SHORT SPAN (BENT UP)	LONG SPAN (BENT UP)	SS CONT.	LS CONT.		
S1, S4, S7, S16 S17, S18, S21 S23, S24, S25 S26 S2 S3 S5, S9 S28 S8 S22 S20 S13, S19	175	2 Way	T8 @ 235	T8 @ 235	T8 @ 300	T8 @ 300	T8 @ 275	...
S6, S10, S12 S14, S15, S29	175	1 Way	T8 @ 235		T8 @ 300		T8 @ 275	...
S30 S33 S32 S27S31	175	2 Way	T8 @ 180	T8 @ 215	T8 @ 210	T8 @ 255	T8 @ 275	...

ASHISH HOTEL (SONIPATH) PROJECT

PROJECT STATEMENT- Commercial building (G+8)

With Shear Wall

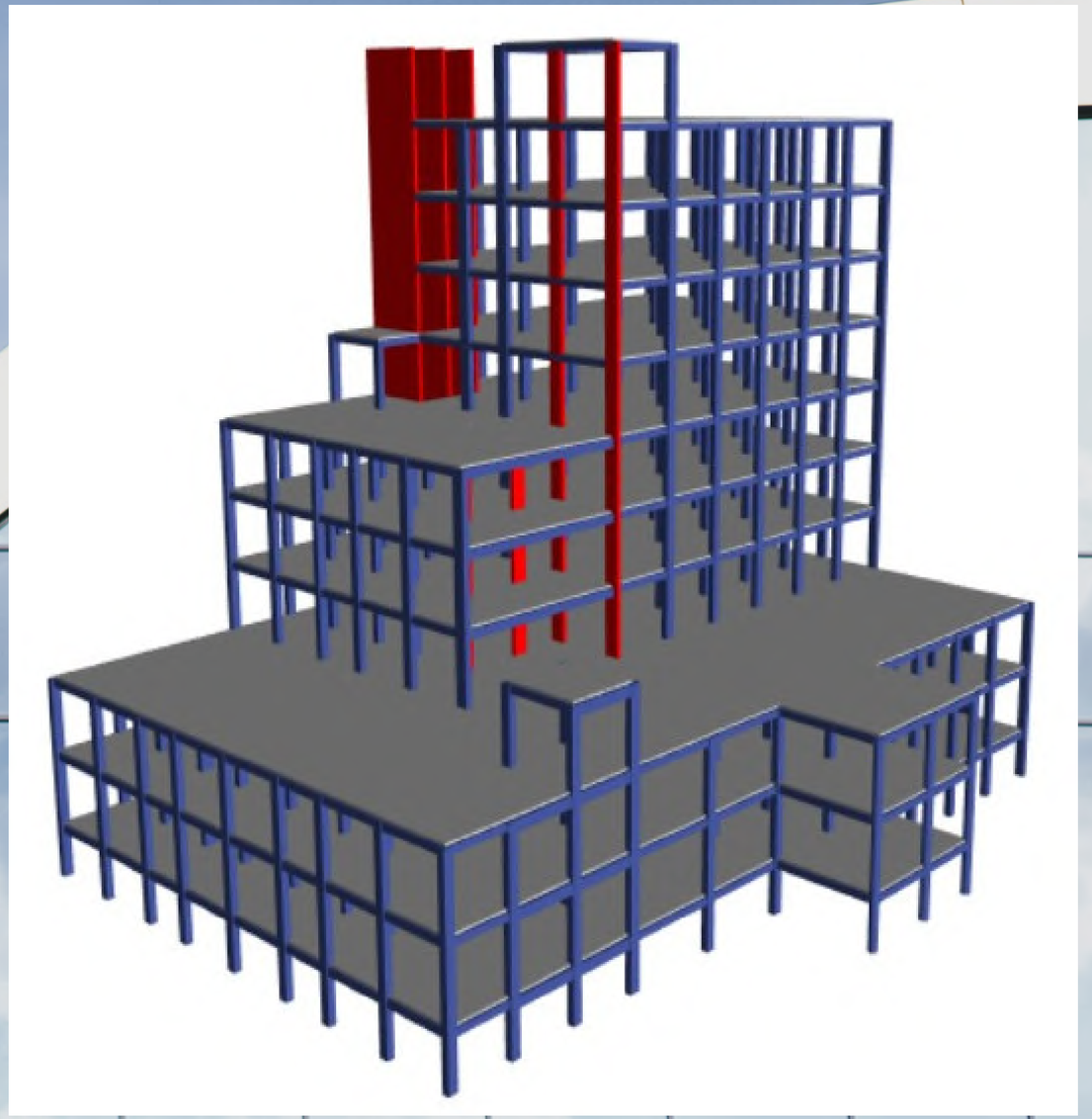
ZONE- IV HARYANA (Dynamic analysis)

- Material Used
  Concrete : M20 grade STEEL :FE500 grade

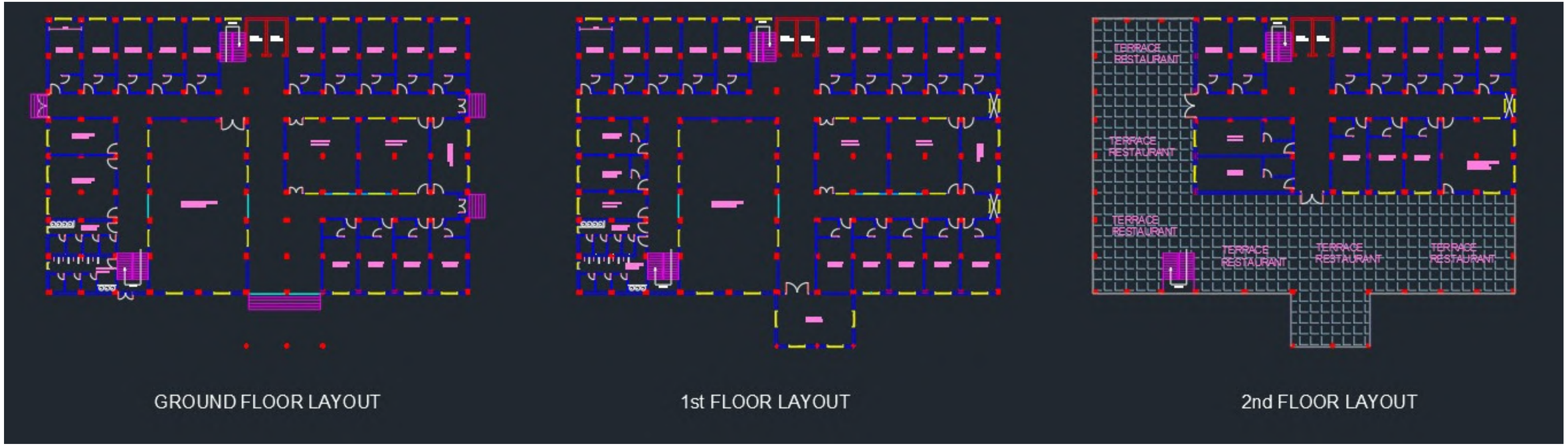
- Code Provision :
  IS456:2021 for RCC DESIGN
  IS:1893-2016 PART1 FOR SEISMIC DESIGN
  IS:13920-2016 FOR DUCTILE DETAILING
  IS:875 -2016 PART(1,2) FOR DEAD AND LIVE LOAD

- Load Considered
  Dead load : 4.75 KN /M Live load :4 KN/M
  Stair Load-7.5 KN /M Stair L.L-3 KN /M
  ACC Brick Wall:4KN/M
  Parapet wall load :1.91 KN/M

- Height of floors- 3.5M, Parking +(G+8)



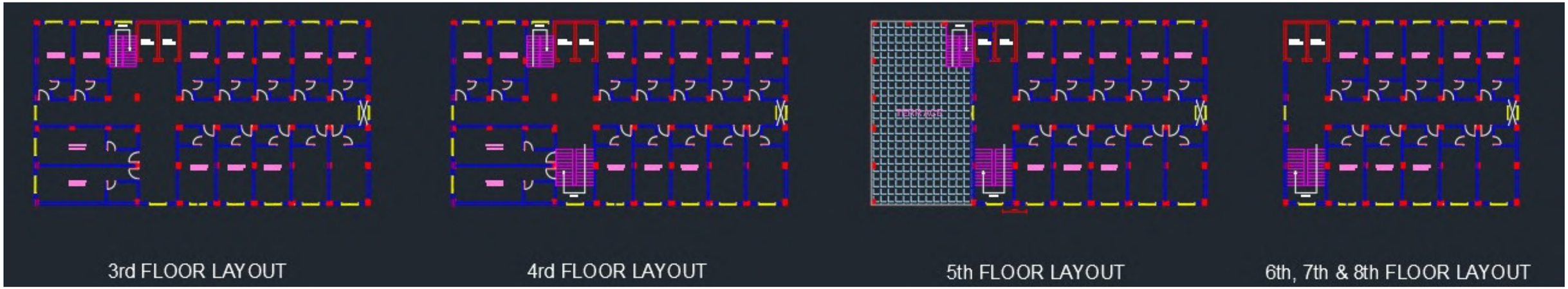
ARCHITECTURAL PLAN



GROUND FLOOR LAYOUT

1st FLOOR LAYOUT

2nd FLOOR LAYOUT



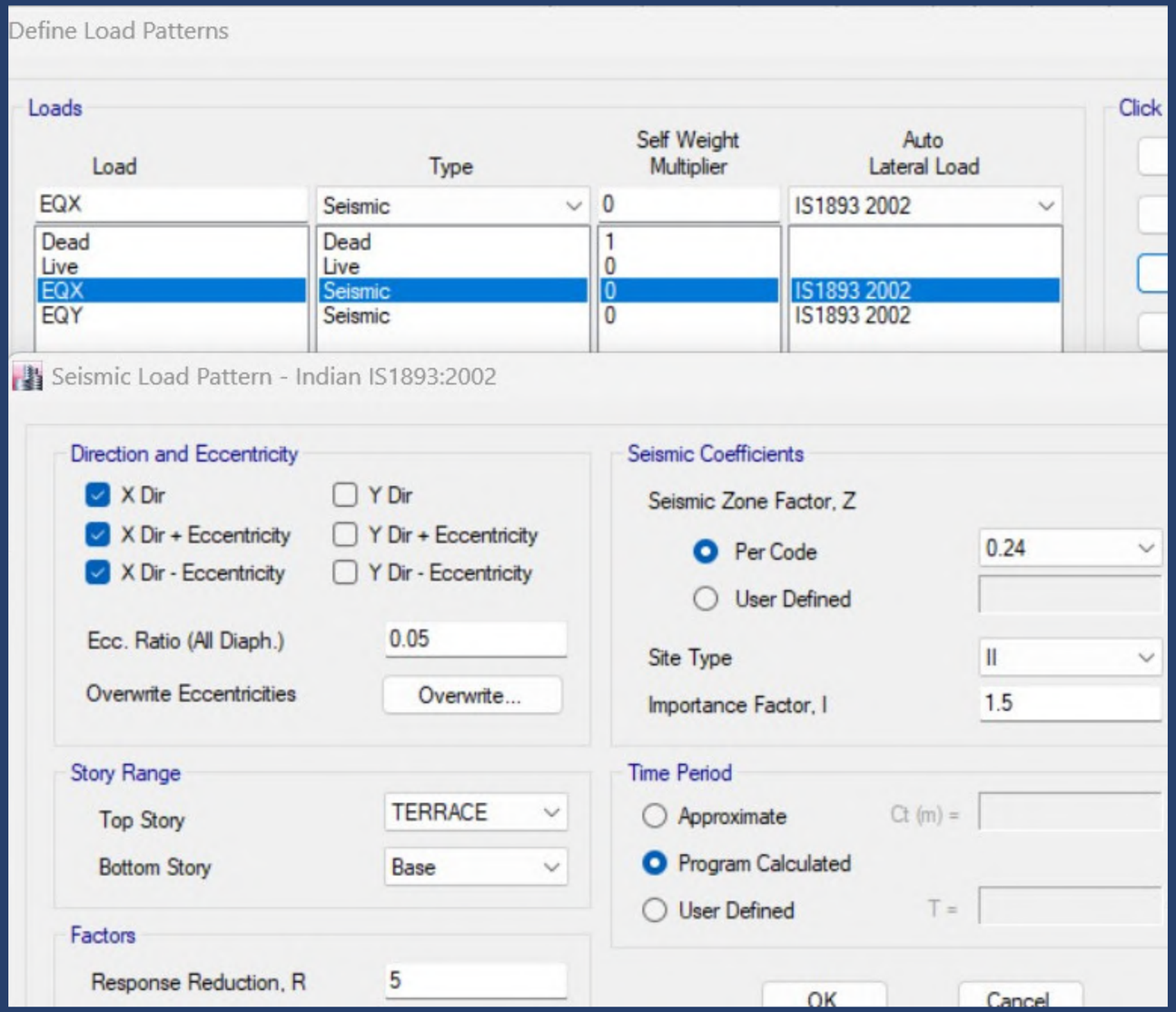
3rd FLOOR LAYOUT

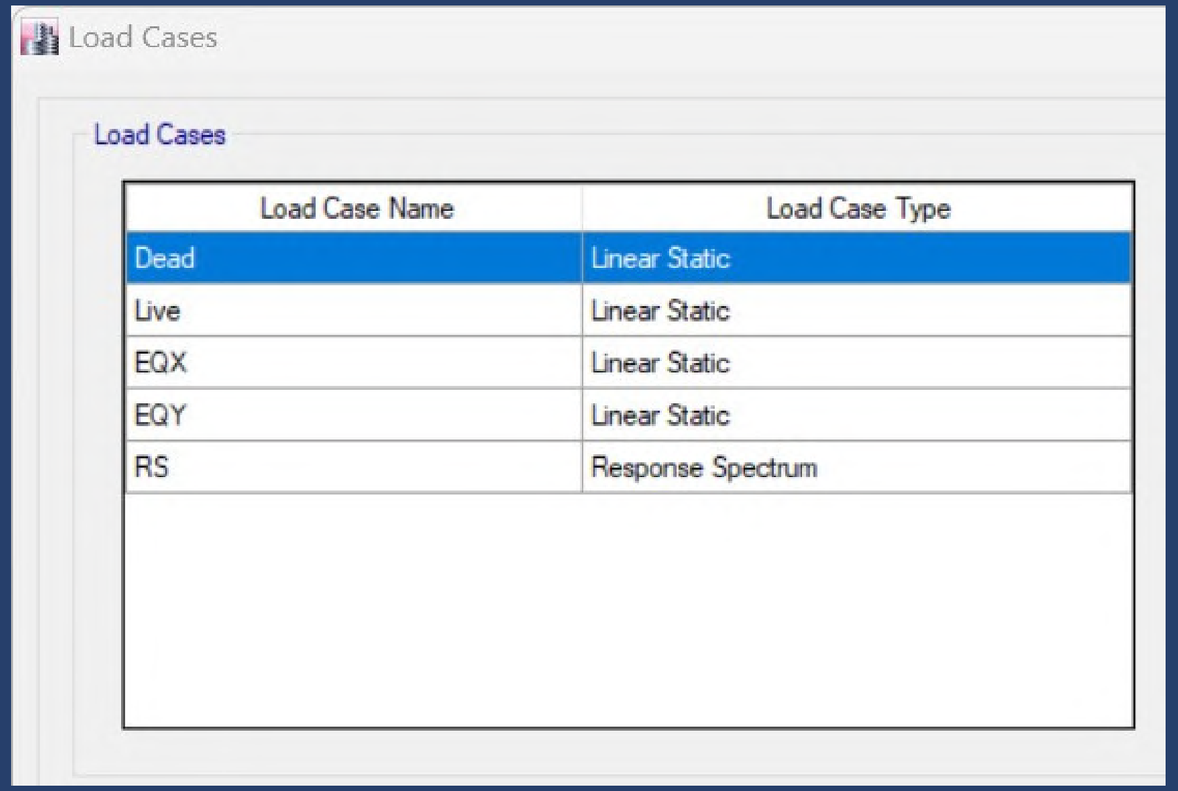
4rd FLOOR LAYOUT

5th FLOOR LAYOUT

6th, 7th & 8th FLOOR LAYOUT

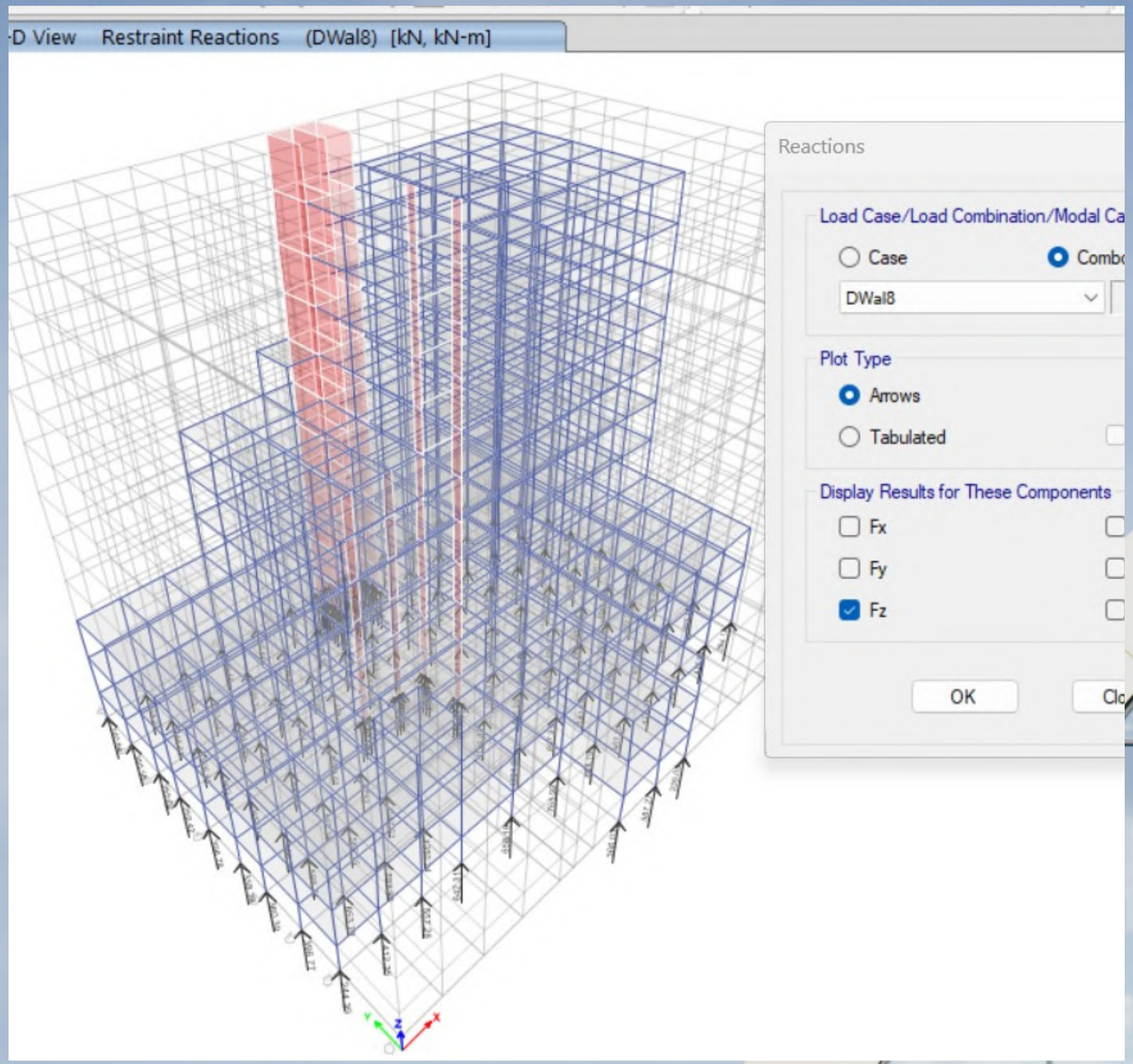
ETABS DETAILS



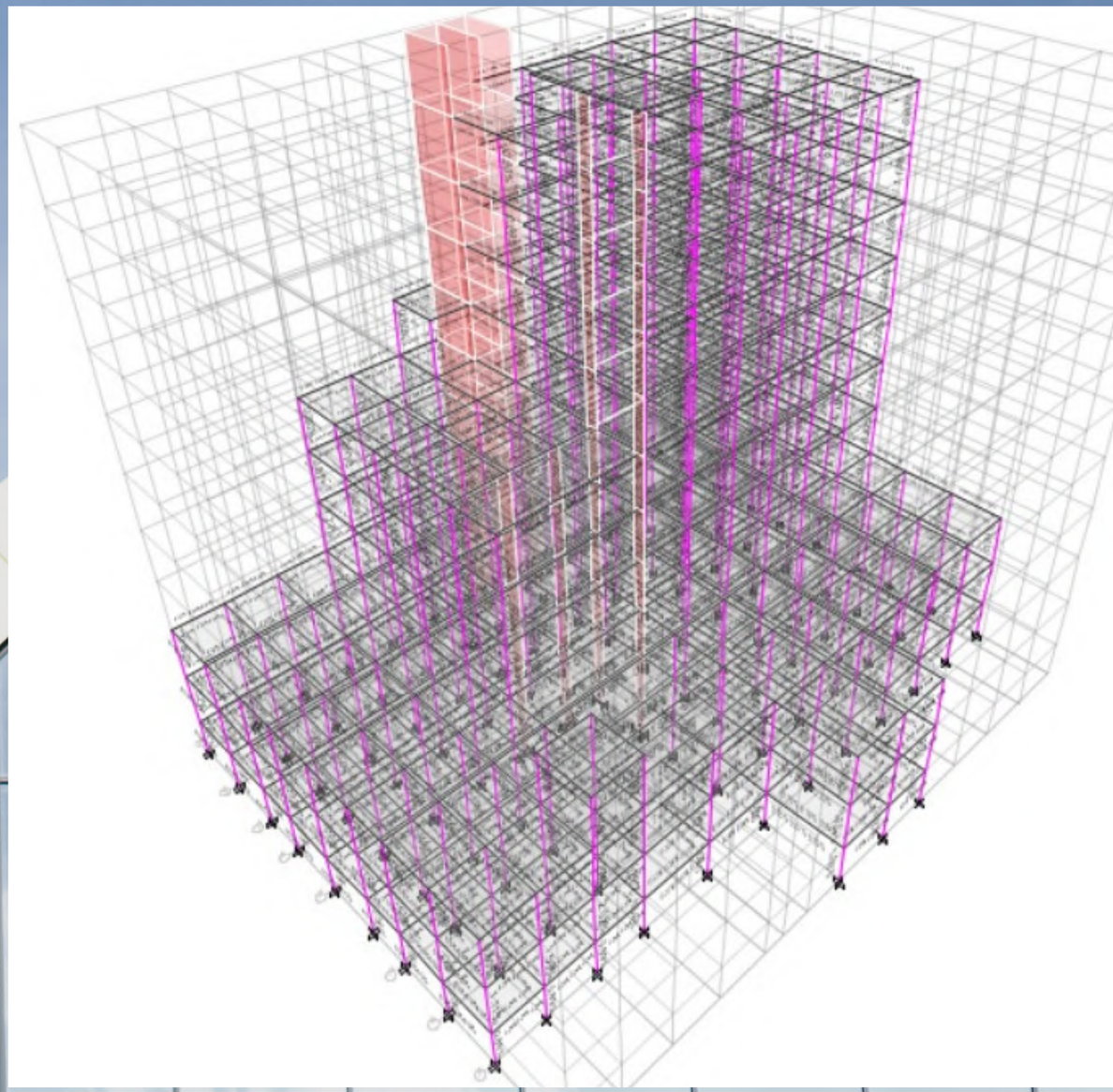


Load assigned

ETABS DETAILS



Base Shear



Members Passed

THANK YOU