

STRUCTURAL DESIGN PORTFOLIO

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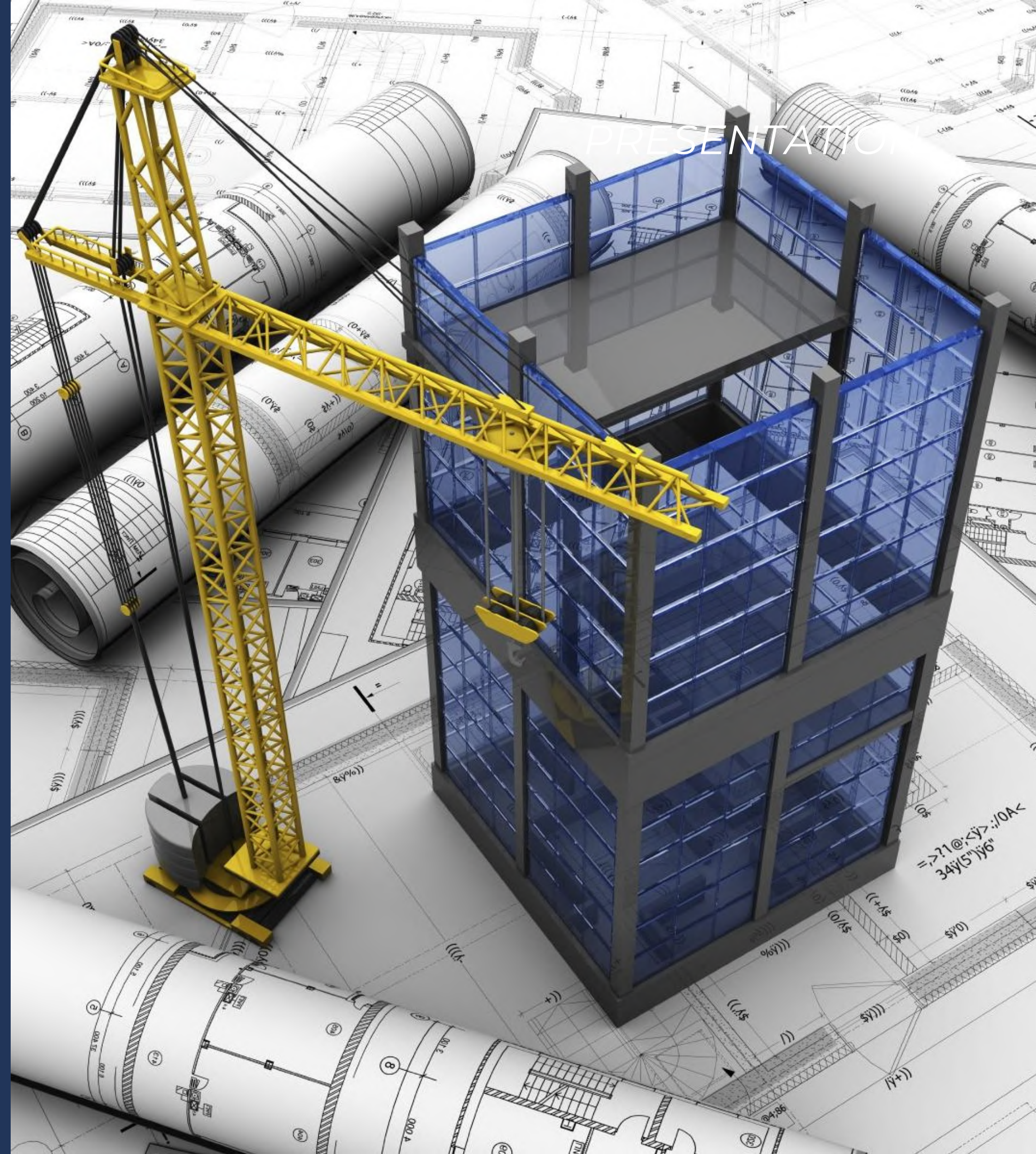


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AMALGAMATION PROJECT (Pg -3-10)

Residential Rcc building G+4

Software Used-AutoCAD, STAAD. Pro, STAAD Foundation, RCDC

HOSTEL PROJECT(Pg -11-19)

Commercial building G+3

Software Used-AutoCAD, STAAD. Pro, STAAD Foundation, RCDC

ASHISH HOTEL PROJECT(Pg -20-23)

Society Design (4, G+8 Towers) Software used: AutoCAD , CSi ETABS, CSi SAFE, RCDC

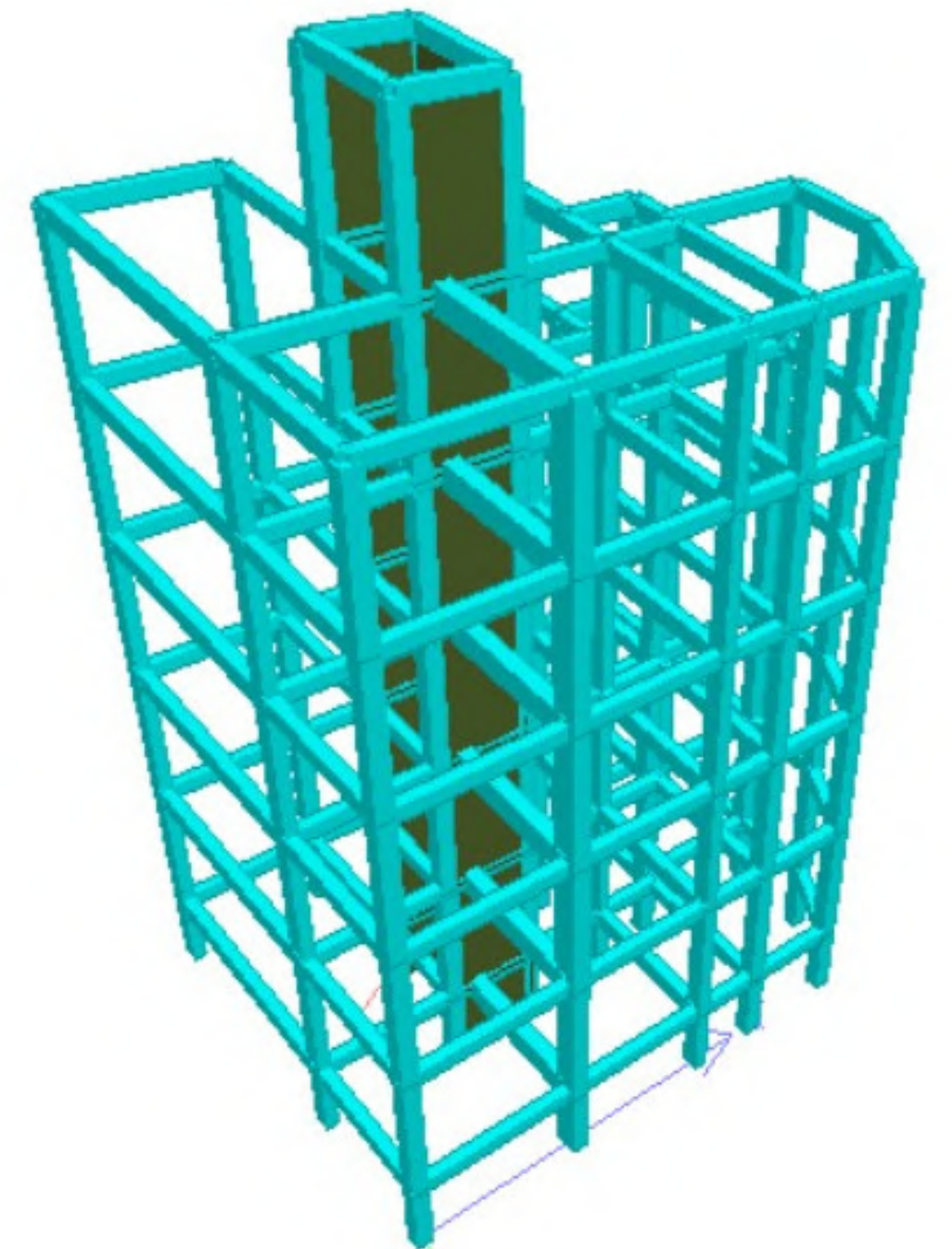


AMALGAMATION PROJECT

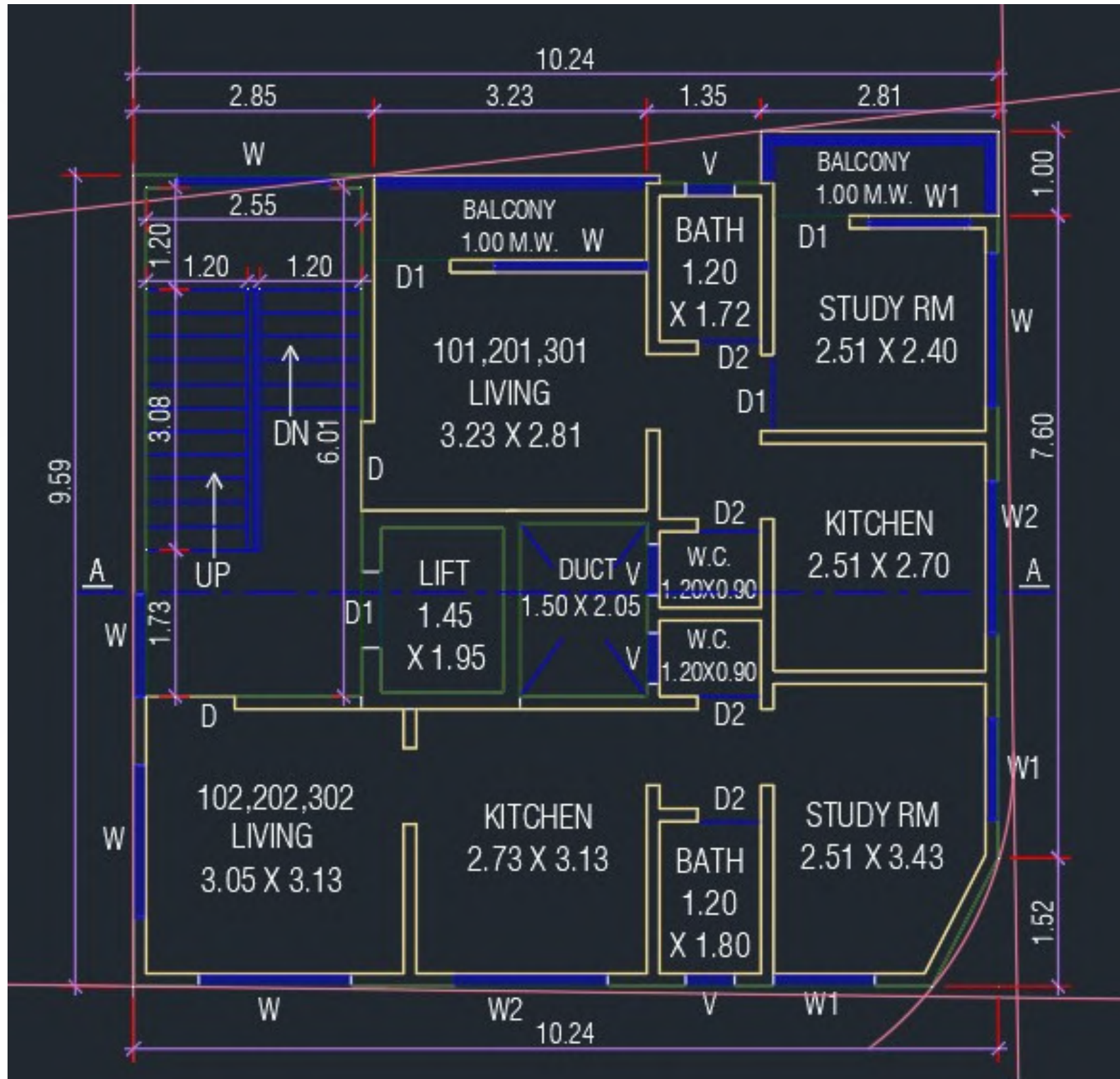
PROJECT STATEMENT- RCC Building (G+4) With Shear Wall

ZONE-III PUNE

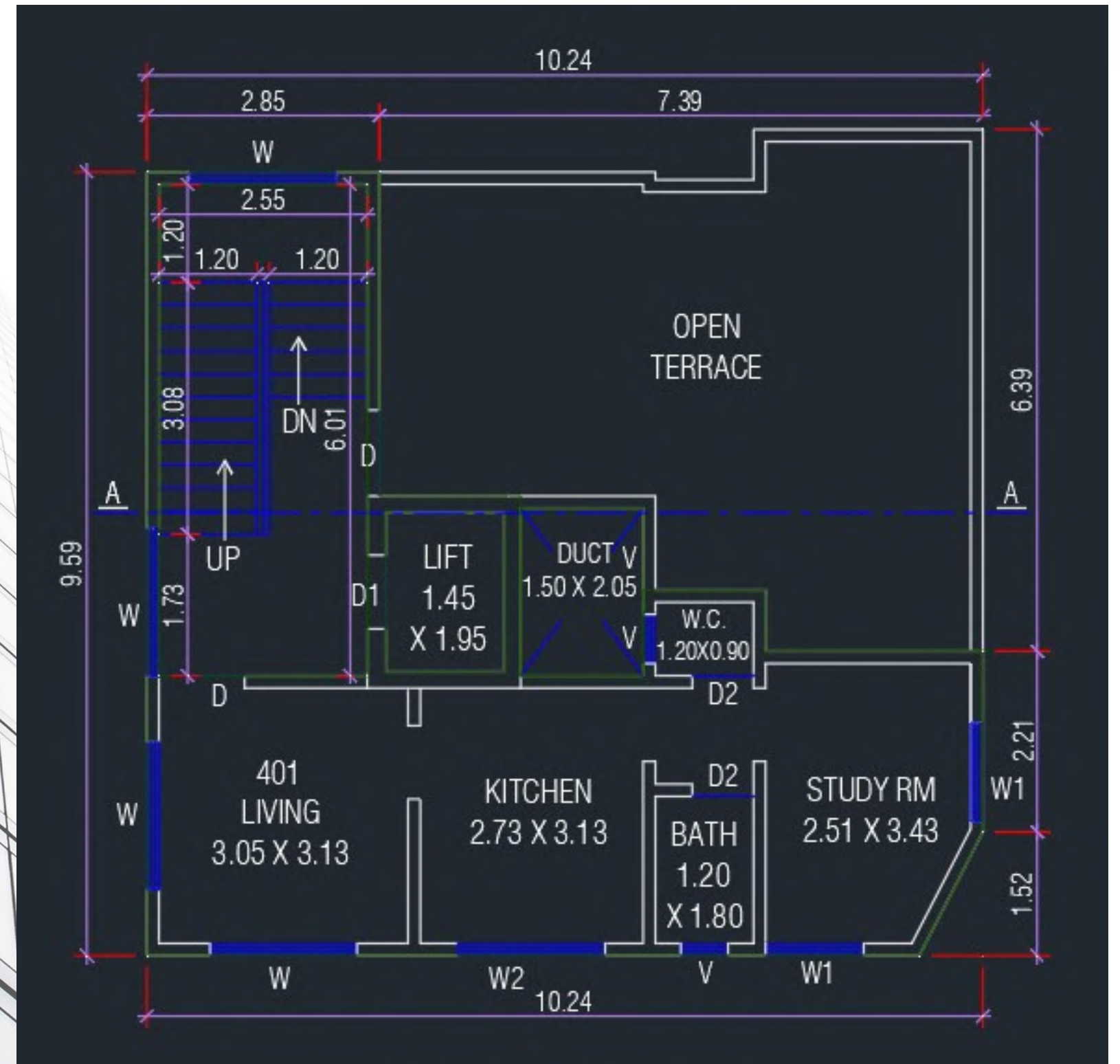
- Material Used
Concrete : M20 grade STEEL :FE500 grade
- Code Provision :
IS456:2021 for RCC DESIGN
IS:1893-2016 PART1 FOR SEISMIC DESIGN
IS:13920-2016 FOR DUCTILE DETAILING
IS:875 -2016 PART(1,2) FOR DEAD AND LIVE LOAD
- Load Considered
Dead load : 4.75 KN /M Live load :2 KN/M
Stair Load-7.5 KN /M Stair L.L-3 KN /M
- Height of floors- 2.85M, Parking +(G+4)



ARCHITECTURAL PLAN



TYPICAL FIRST, SECOND & THIRD FLOOR PLAN

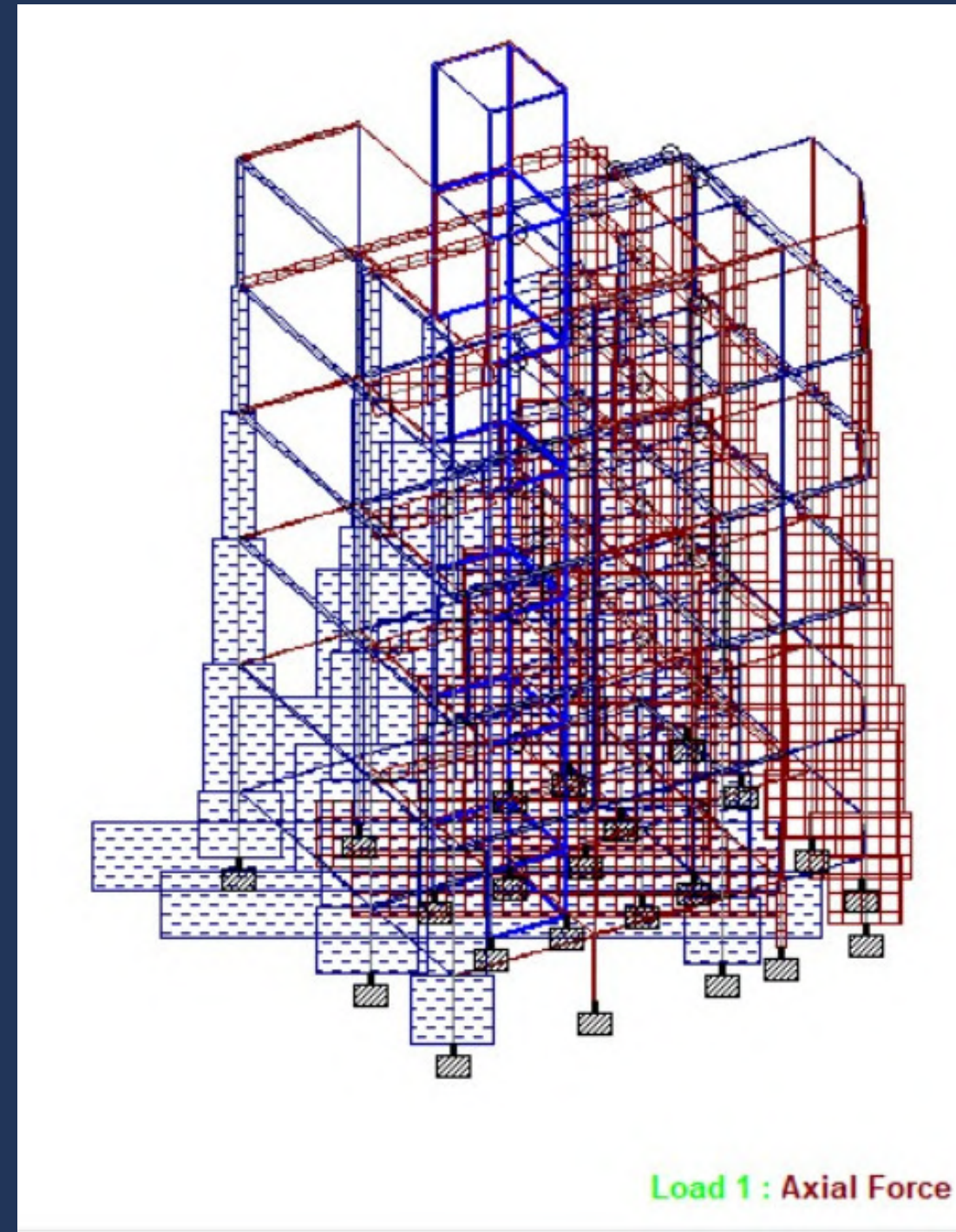


FOURTH FLOOR PLAN

STAAD.PRO DETAILS

Load & Definition

- D Seismic Definition (IS 1893 - 2002)**
 - D ZONE 0.16 RF 3 I 1 SS 2 ST 1 DM 0.05**
 - MEMBER WEIGHT
 - FLOOR WEIGHT
- D Pushover Definitions**
- D Direct Analysis Definition**
- L Load Cases Details**
 - L 1 : EQ+X**
 - 1893 LOAD X 1
 - L 2 : EQ-X**
 - L 3 : EQ-Z**
 - L 4 : EQ+Z**
 - L 5 : DEAD**
 - SELFWEIGHT Y -1
 - UNI GY -1.91 kN/m
 - UNI GY -11.2 kN/m
 - UNI GY -7.3 kN/m
 - UNI GY -6.8 kN/m
 - YRANGE 4.35 15.75 FLOAD -4.75 GY
 - YRANGE 1.5 15.75 FLOAD -2.75 XRANGE (
 - L 6 : LIVE**
 - YRANGE 1.5 15.75 FLOAD -2 GY
 - YRANGE 1.5 15.75 FLOAD -1 XRANGE 0 2.
 - C 7 : GENFRATED INDIAN CODE GENRAI STR**



Geometry Property Loading Shear Bending Deflection Concrete De

Beam no. = 372 Design code : IS-456

3#10 @ 270.00 0.00 To 1800.00 3#10 @ 270.00 1800.00

12 # 8 c/c 110.00 12 # 8

3#10 @ 30.00 0.00 To 2700.00

at 0.000 at 1350.000

Design Load		
Mz Kn Met	Dist. Met	Load
9.98	1.4	7
-13.75	0	18
-9.16	2.7	24

Design Par
 Fy(Mpa)
 Fc(Mpa)
 Depth(m)
 Width(m)
 Length(m)

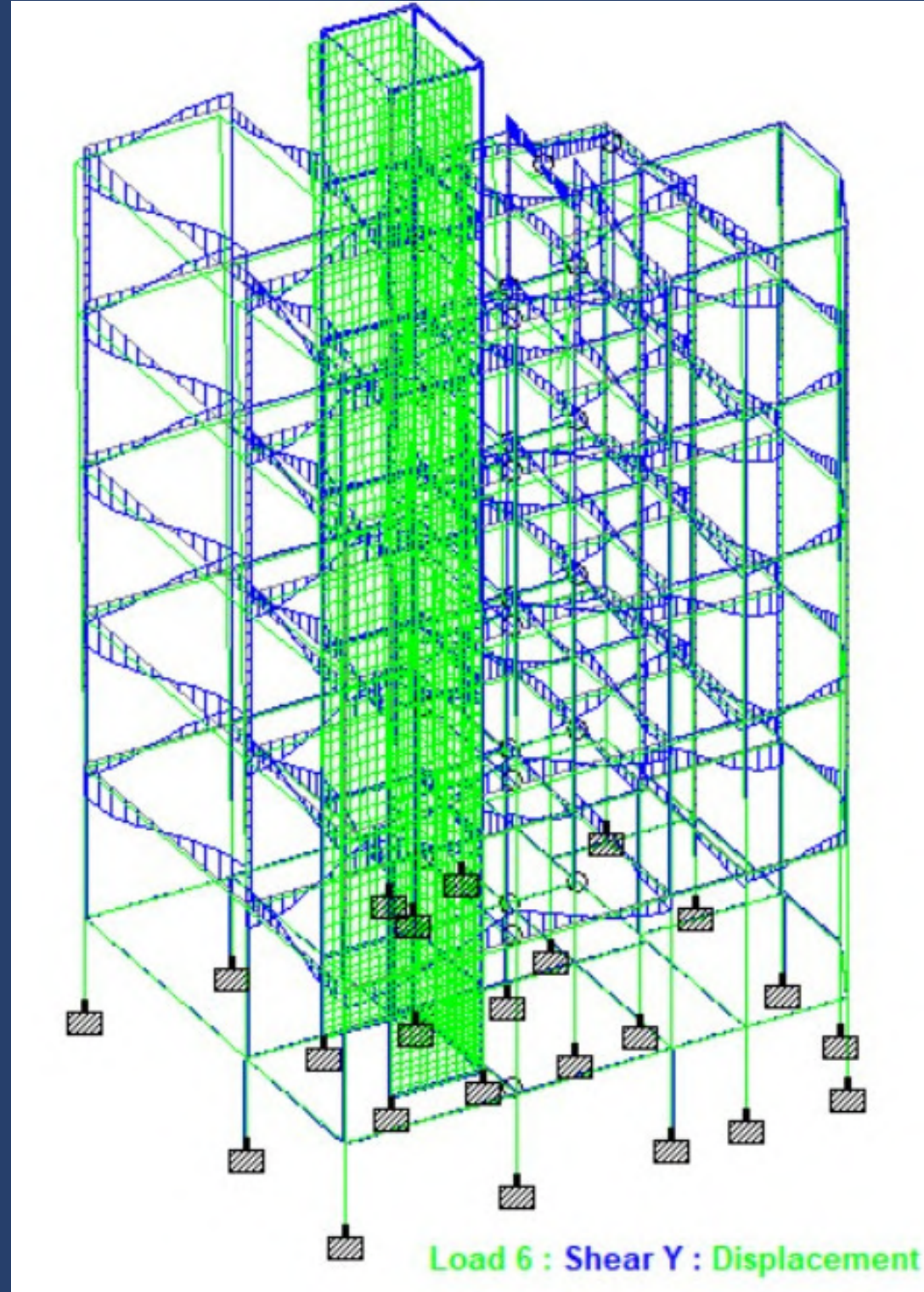
Print

Load assigned

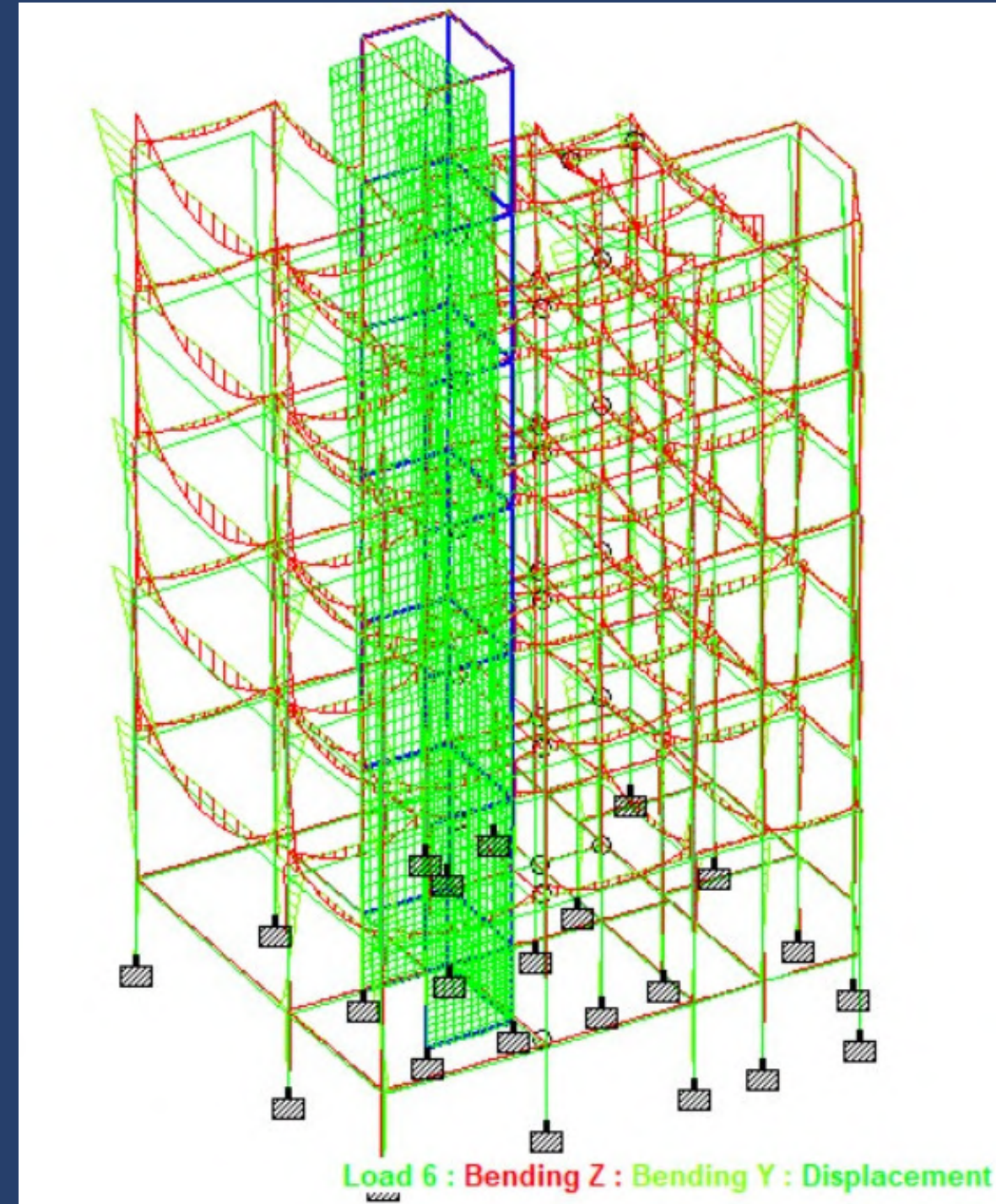
Base Shear

Beam design

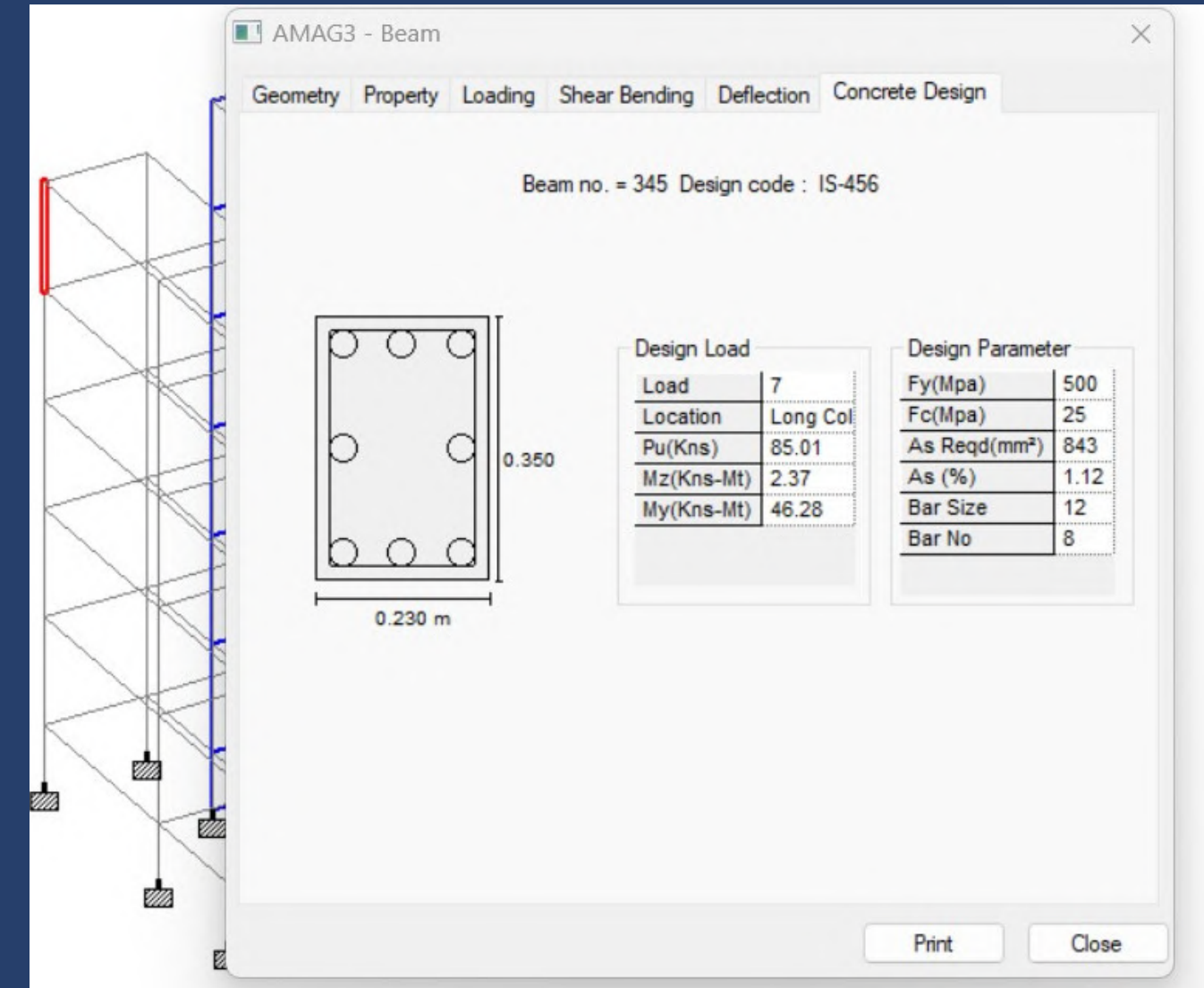
SHEAR FORCE, BENDING MOMENT AND CONCRETE DESIGN



Shear Force

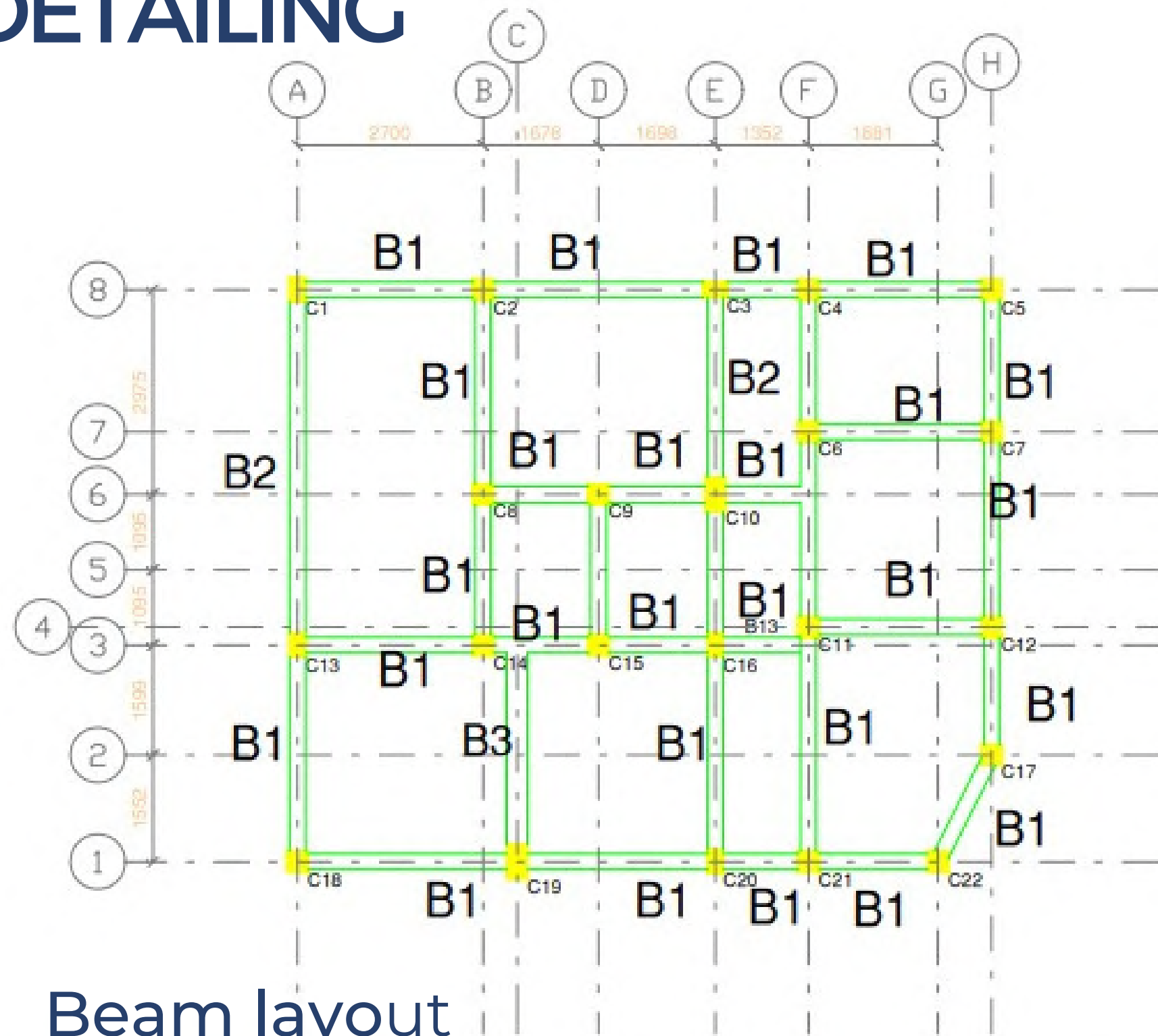


Bending moment

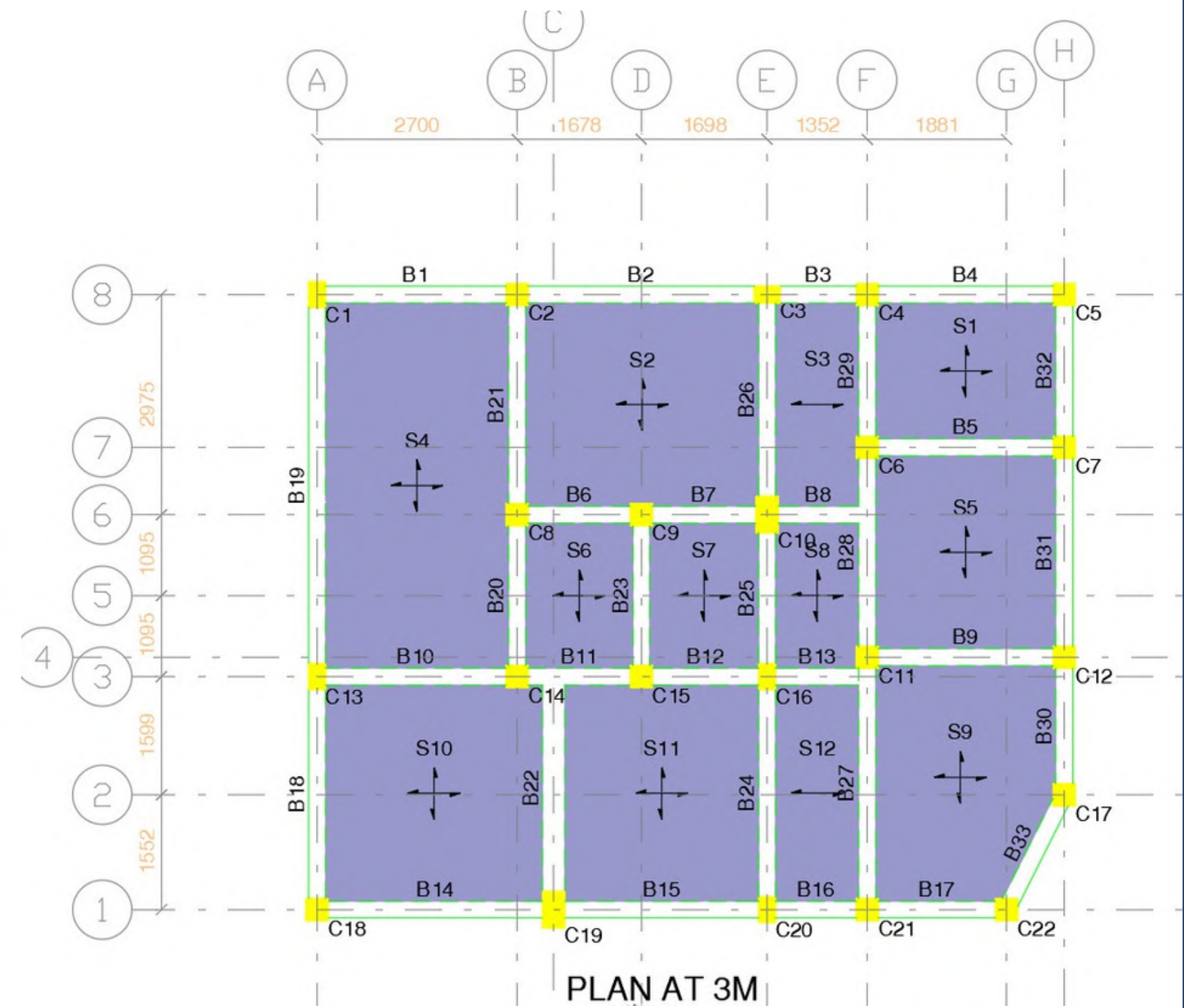


Column design

DETAILING



Beam layout

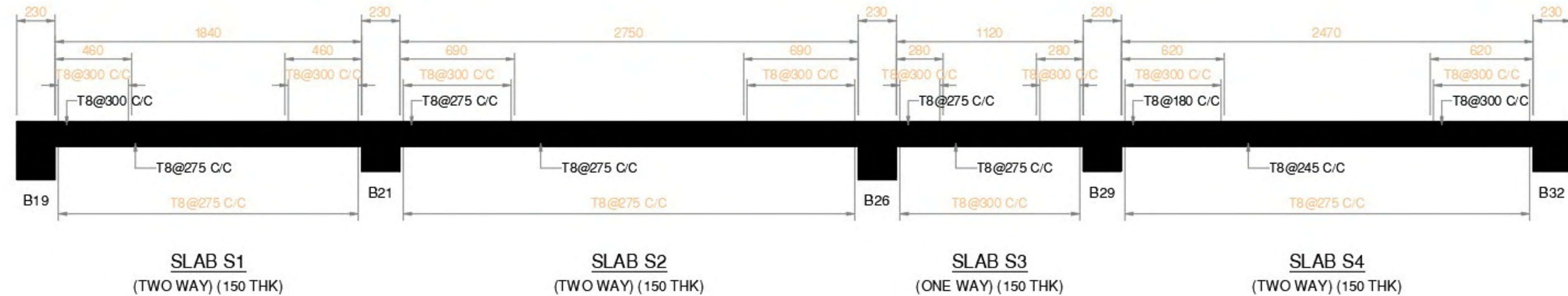


Column layout

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

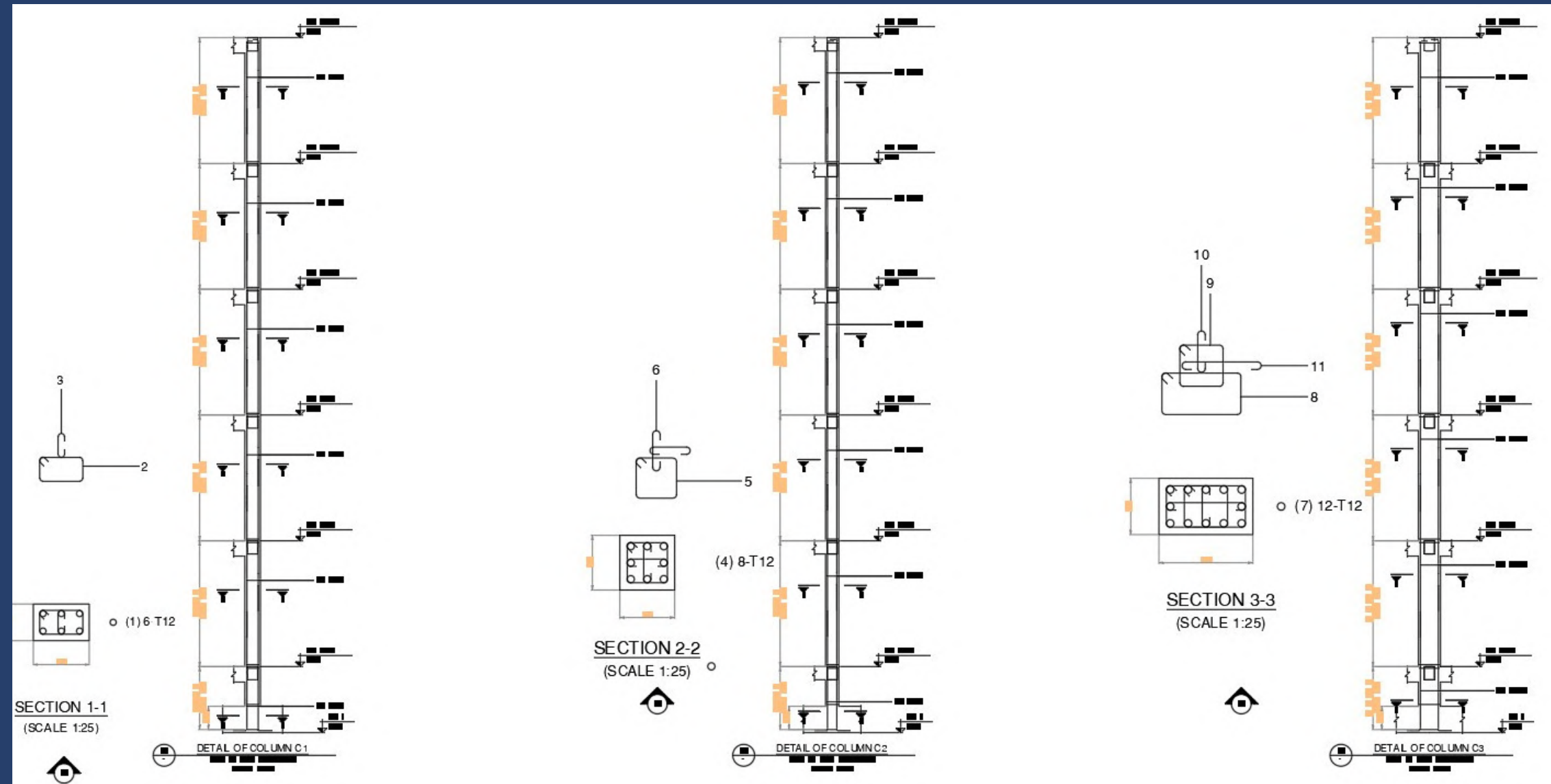
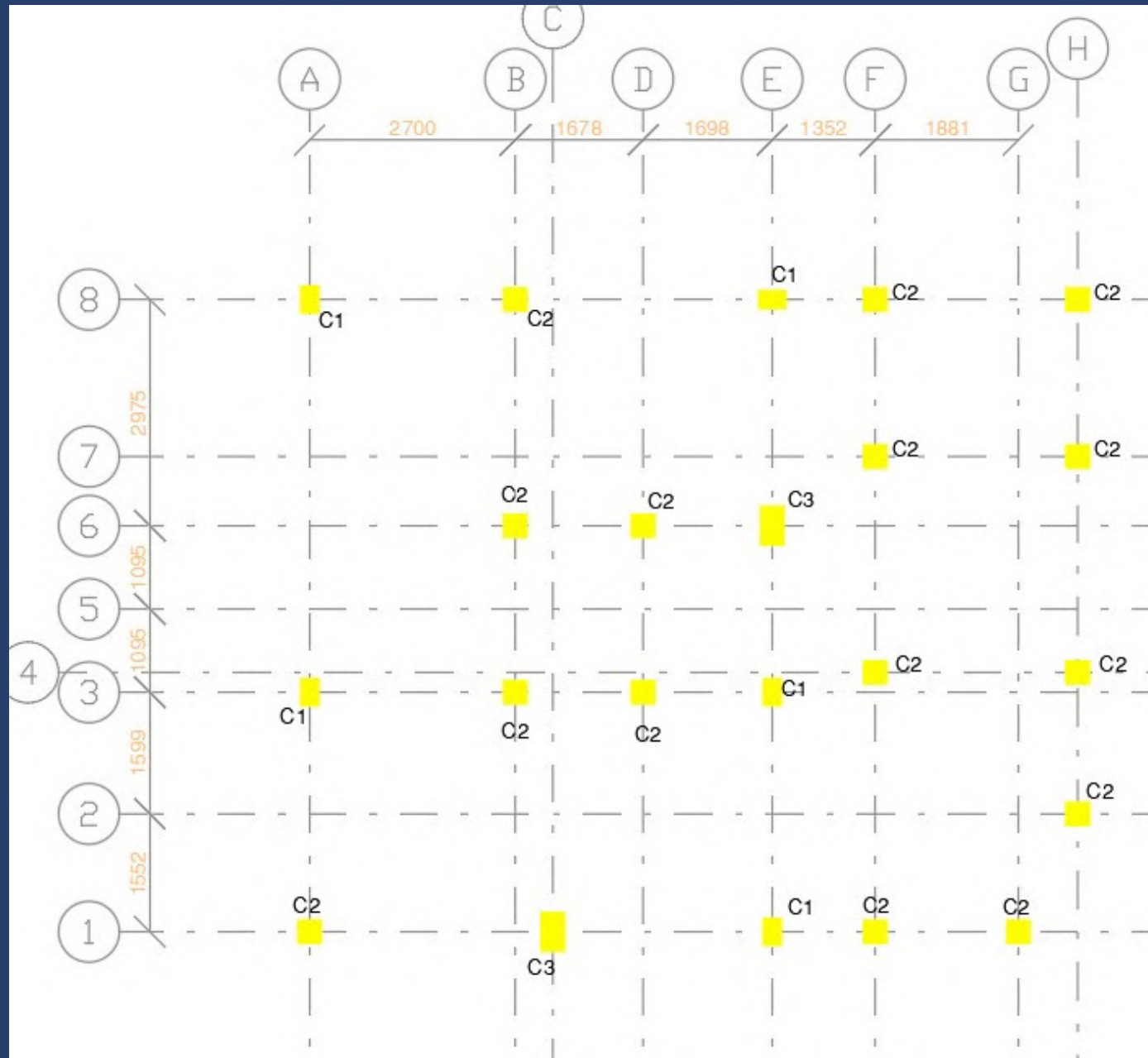


SECTION A-A

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

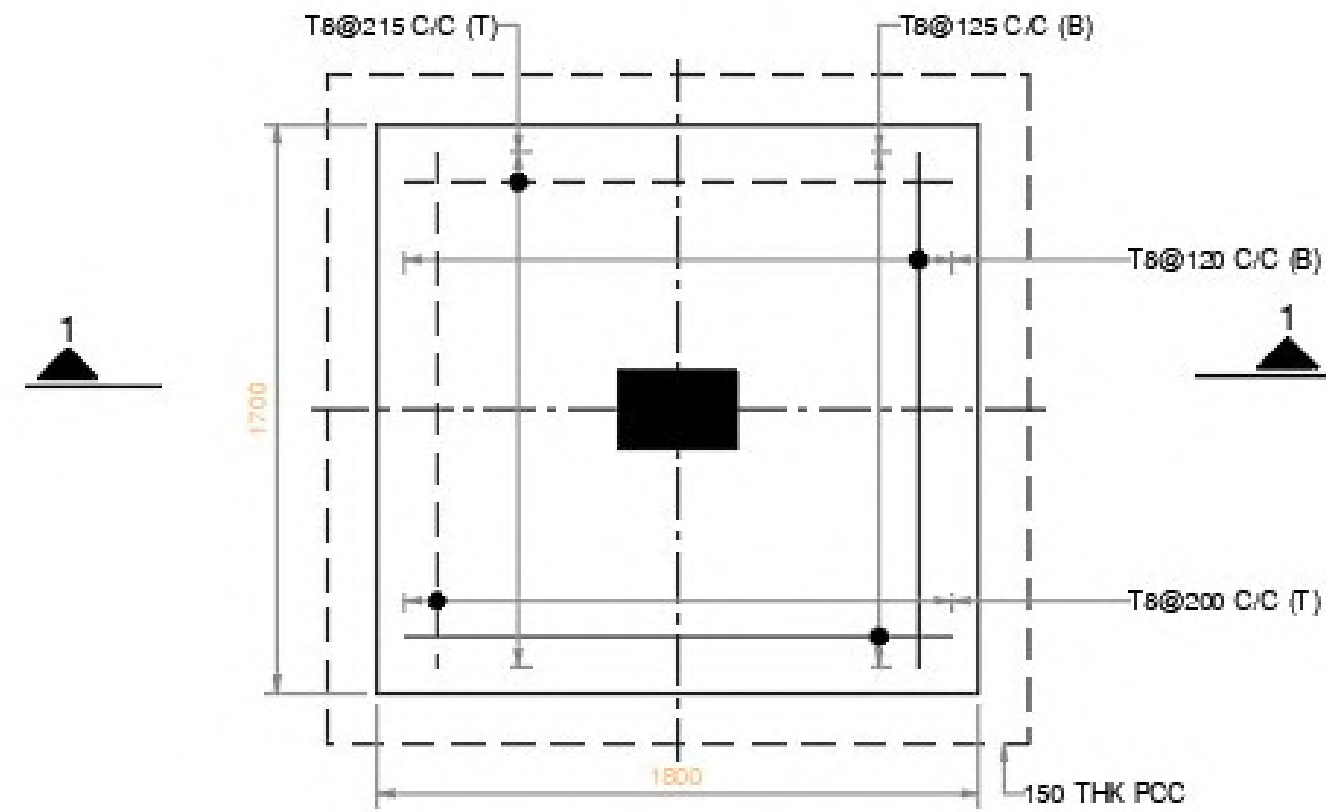
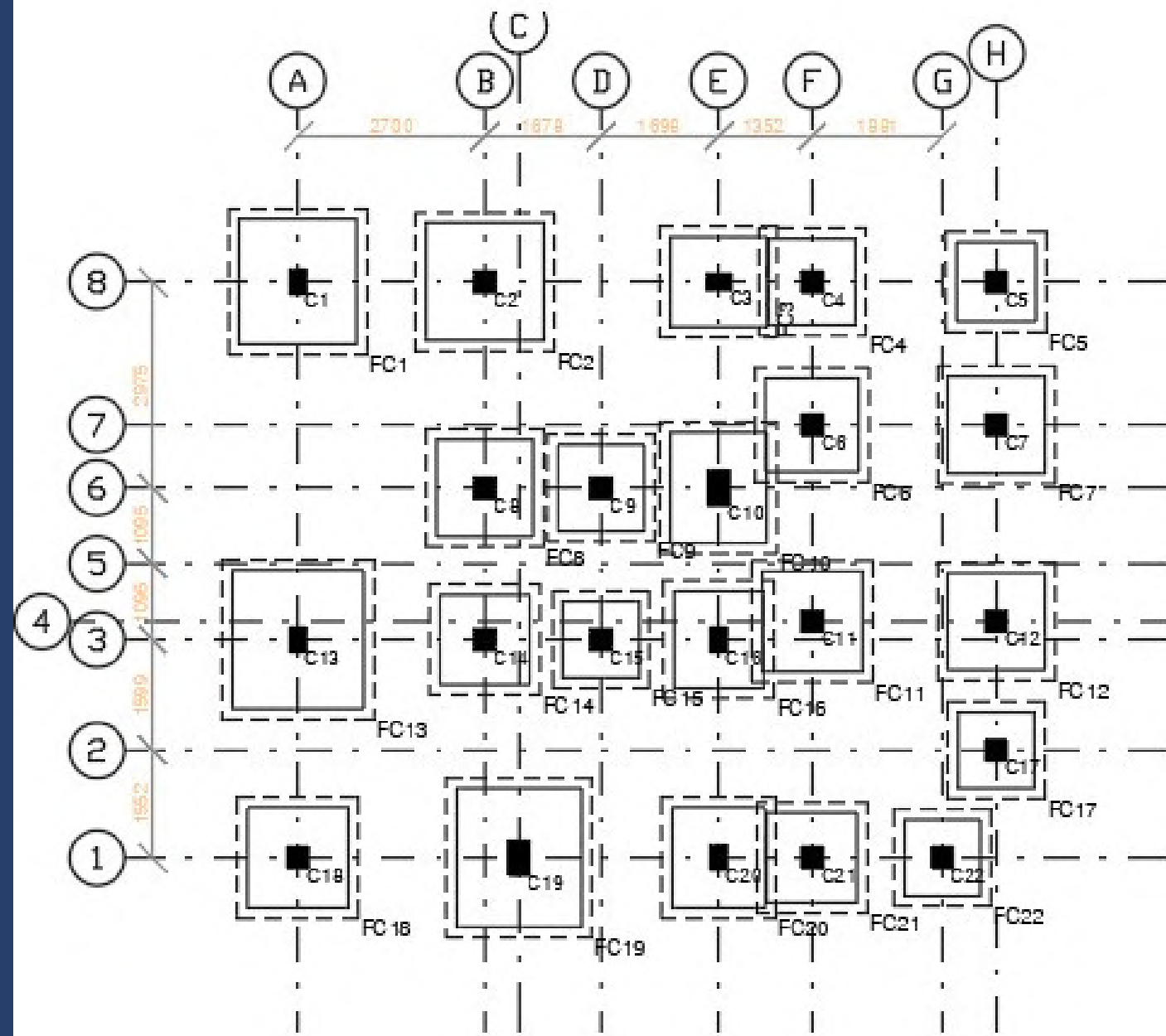
SLAB MARKED	SLAB THICKNESS	BOTTOM REINFORCEMENT				TOP REINFORCEMENT					REMARKS
		ALONG SHORT SPAN		ALONG LONG SPAN		OVER LONG SUPPORT		OVER SHORT SUPPORT		DISTRIBUTION	
		FULL LENGTH	CURTAILED	FULL LENGTH	CURTAILED	CONTINUOUS SUPPORT	END SUPPORT	CONTINUOUS SUPPORT	END SUPPORT		
S1, S2, S5, S10	150	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

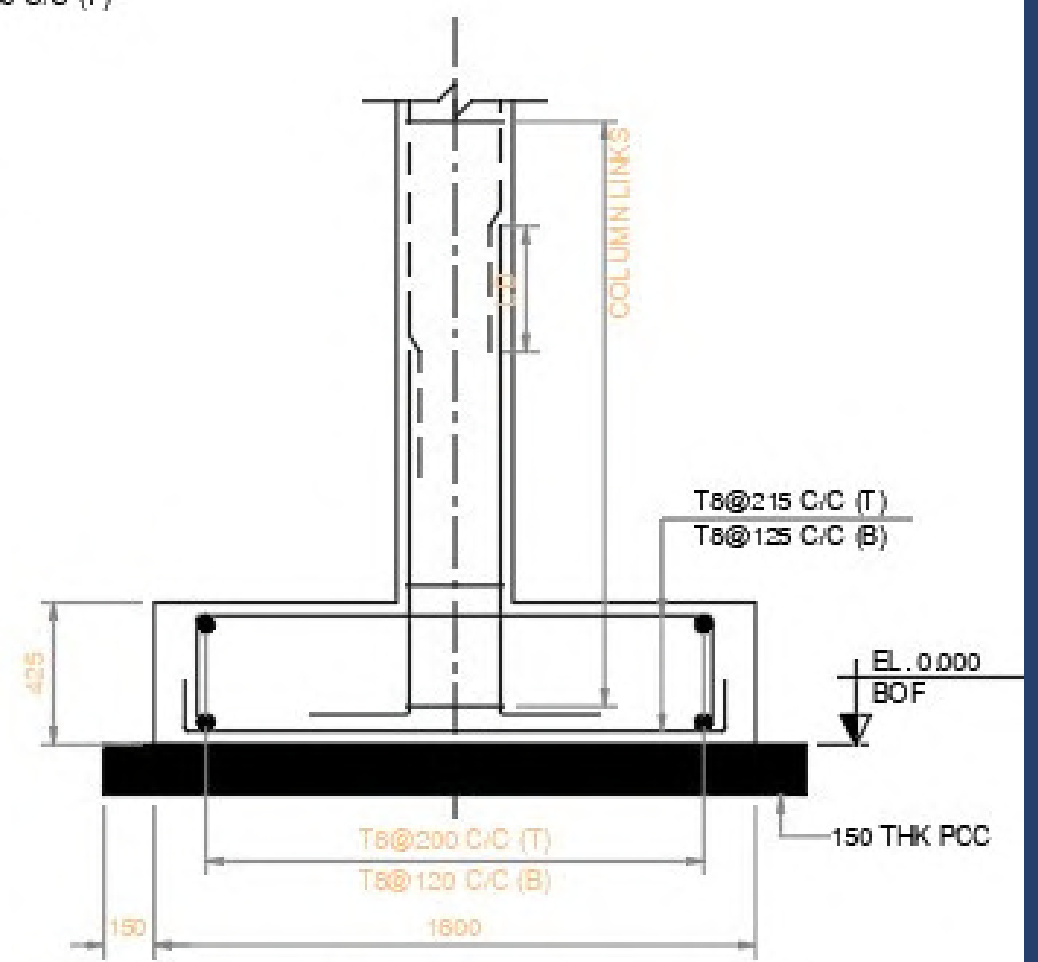


SL.NO	COLUMN.NO	COLUMN SIZE	R/F	TIES DETAIL	TIES	CONC.GRADE
1	C1	230 X 350	6-T12	A	T8@175 C/C	M25
2	C2	300 X 300	8-T12	B	T8@175 C/C	M25
3	C3	300 X 500	12-T12	C	T8@175 C/C	M25

FOOTING AND SCHEDULE



FOOTING FC1- PLAN
(SCALE 1:25)



SECTION 1-1
DETAIL OF FOOTING FC1
(SCALE 1:25)

FOOTING SCHEDULE (M25:Fe500)

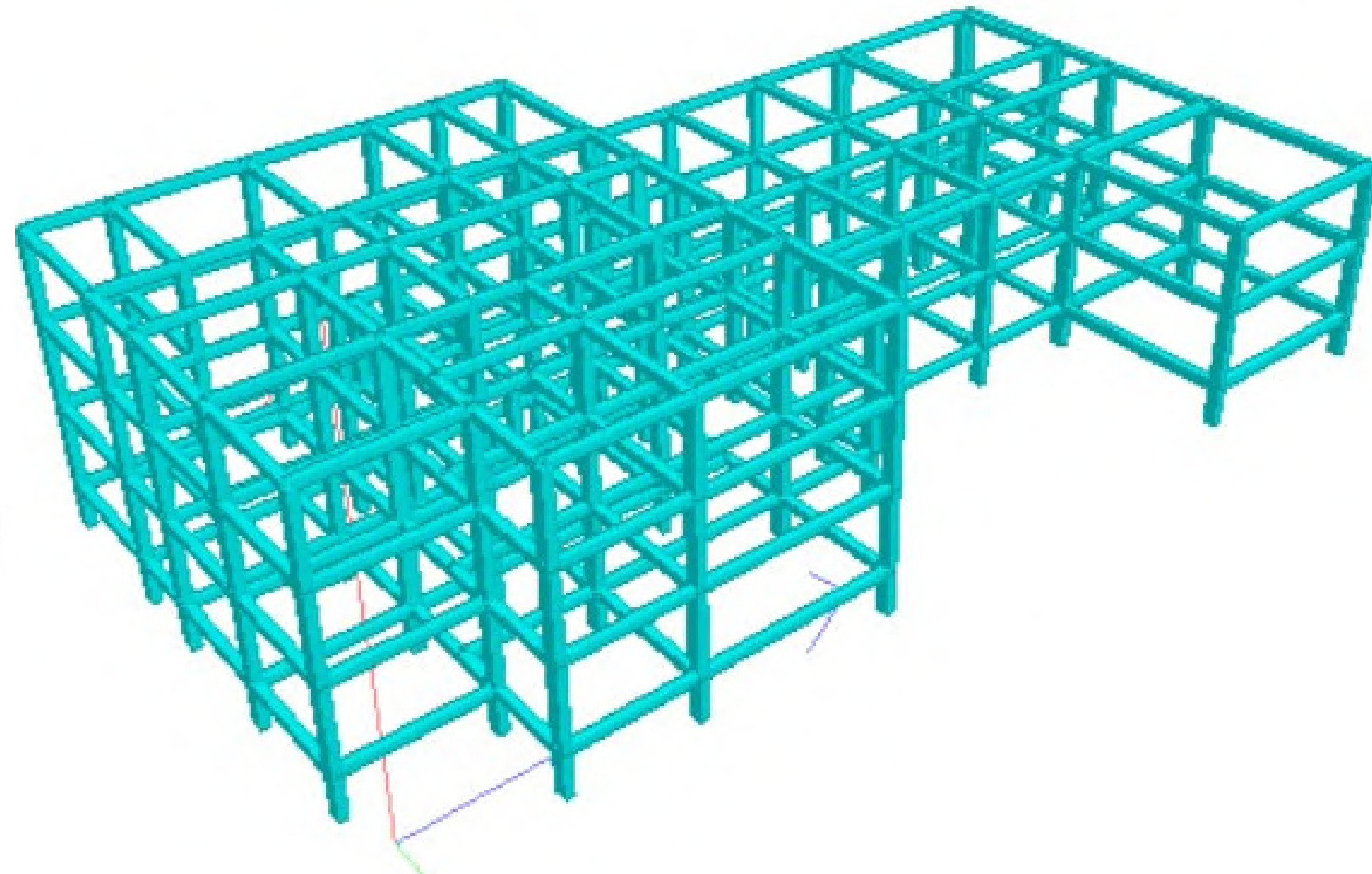
FOOTING NUMBERS	COLUMN NUMBERS	FOOTING TYPE	FOOTING DIMENSION				FOOTING REINFORCEMENT				
			STEP	L	B	D1	D2	BOTTOM		TOP	
								ALONG B	ALONG L	ALONG B	ALONG L
FC1	C1	Pad	-	1800	1700	425	-	T8@120 C/C	T8@125 C/C	T8@200 C/C	T8@215 C/C
FC19	C19	Pad	-	2000	1800	450	-	T8@120 C/C	T8@115 C/C	T8@200 C/C	T8@200 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@250 C/C	T8@260 C/C

HOSTEL PROJECT

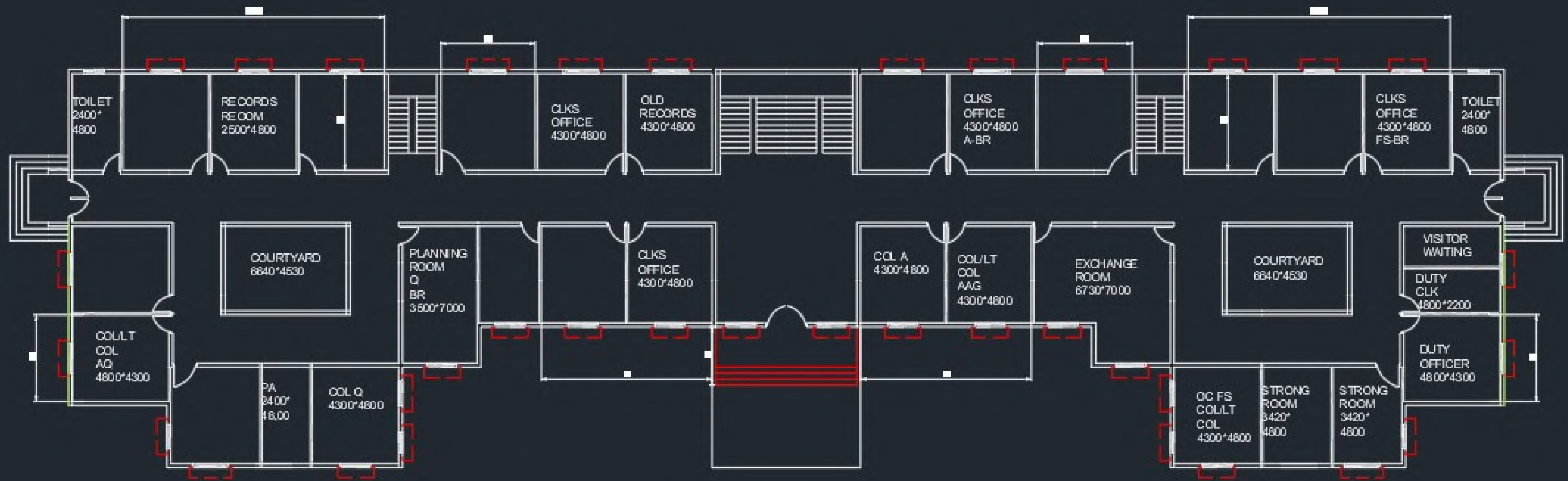
PROJECT STATEMENT- RCC Building (G+3)

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

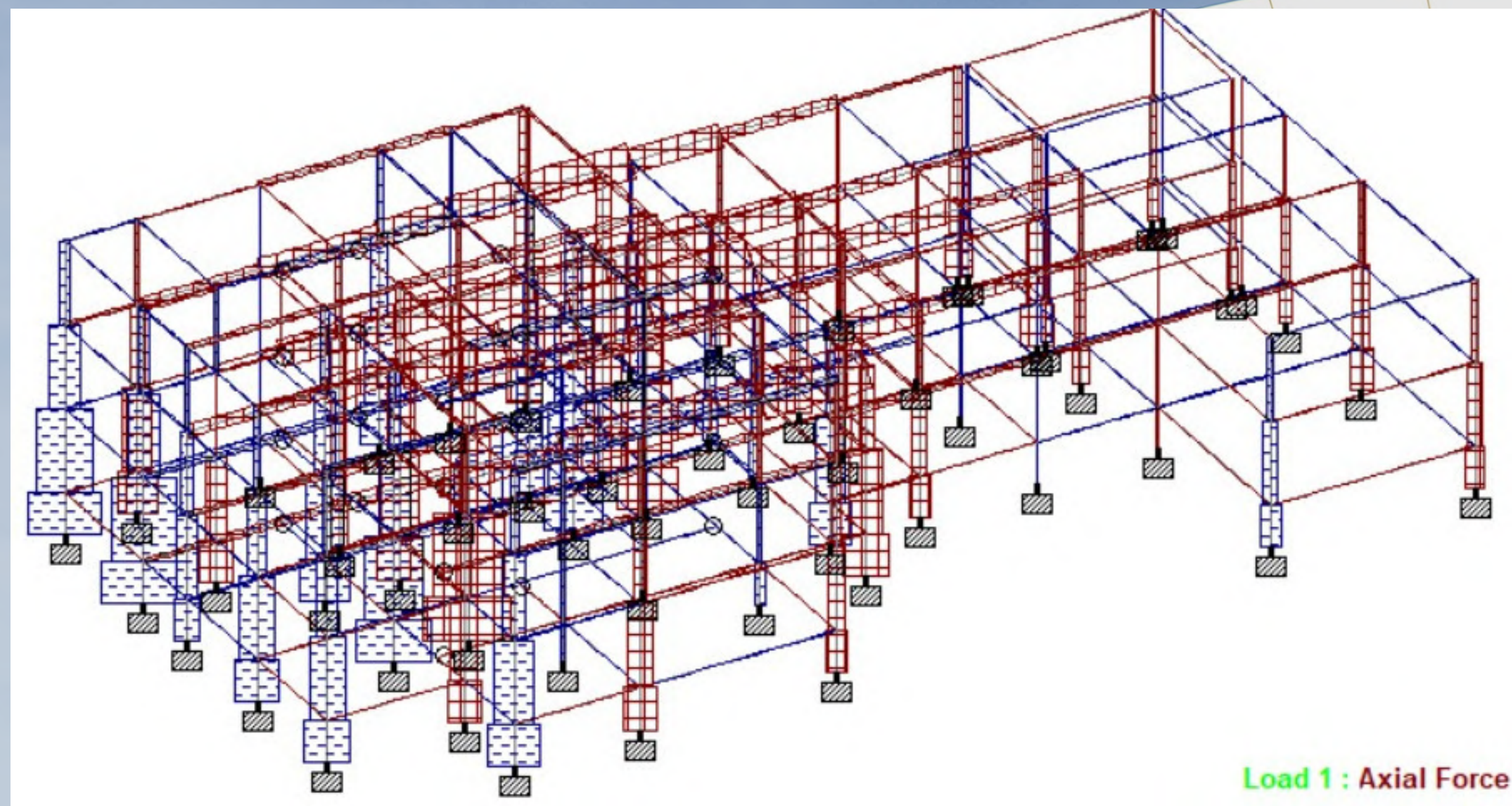


PLAN LAYOUT(1ST FLOOR)

STAAD.PRO DETAILS

Load & Definition

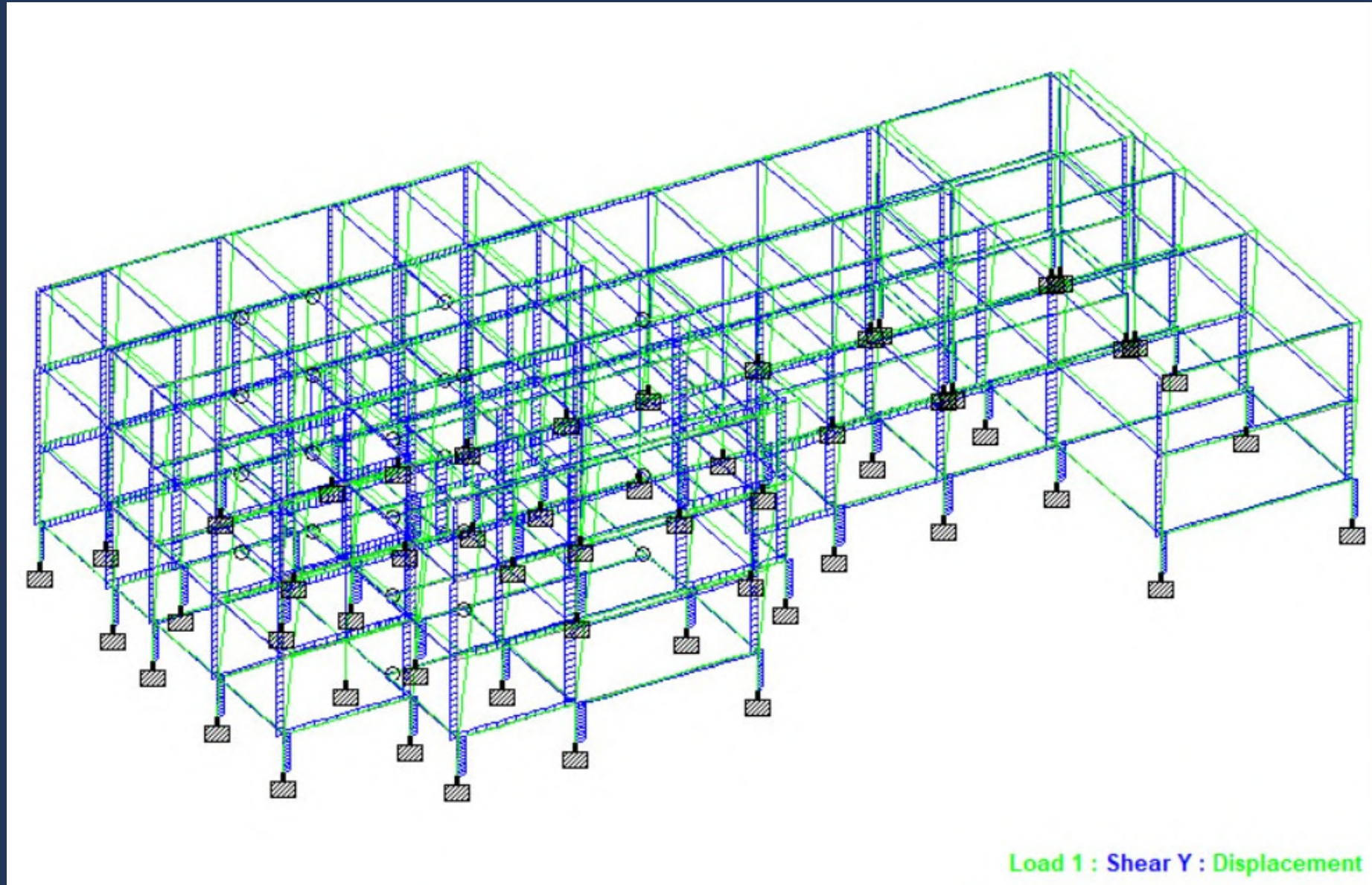
- D** Definitions
 - D** Vehicle Definitions
 - D** Time History Definitions
 - D** Wind Definitions
 - D** Snow Definition
 - D** Reference Load Definitions
 - D** Seismic Definition (IS 1893 - 2002)
 - D** ZONE 0.16 RF 5 | 1 SS 1 ST 1
 - D** Pushover Definitions
 - D** Direct Analysis Definition
- L** Load Cases Details
 - L** 1 : EQ+X
 - 1893 LOAD X 1
 - L** 2 : EQ-X
 - L** 3 : EQ+Z
 - L** 4 : EQ-Z
 - L** 5 : DEAD
 - SELFWEIGHT Y -1
 - UNI GY -11.86 kN/m
 - UNI GY -7.73 kN/m
 - UNI GY -1.91 kN/m
 - YRANGE 3 9 FLOAD -4.75 GY
 - L** 6 : LIVE
 - C** 7 : GENERATED INDIAN CODE GENRAI STR



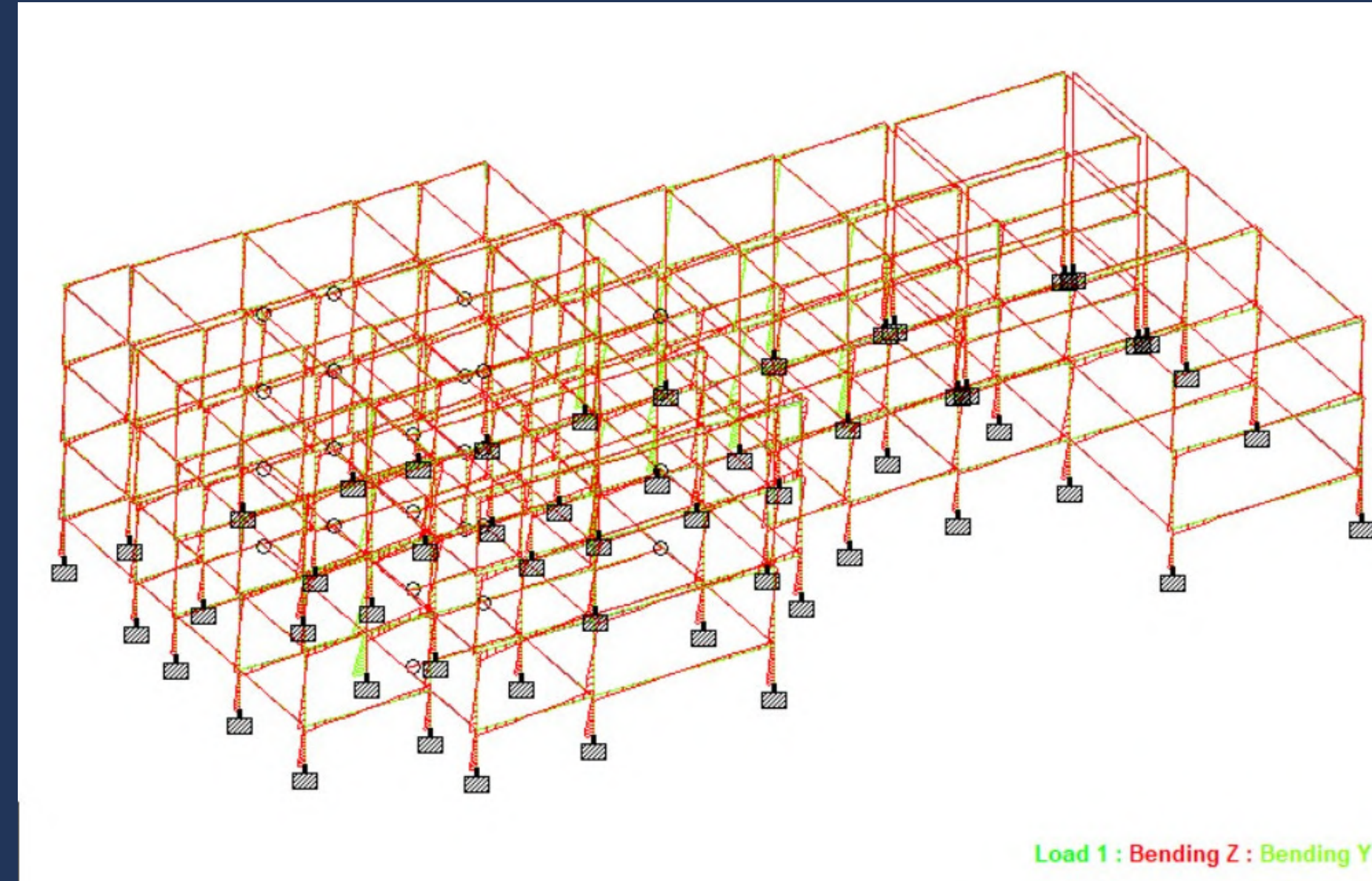
Load assigned

Base Shear

SHEAR FORCE & BENDING MOMENT

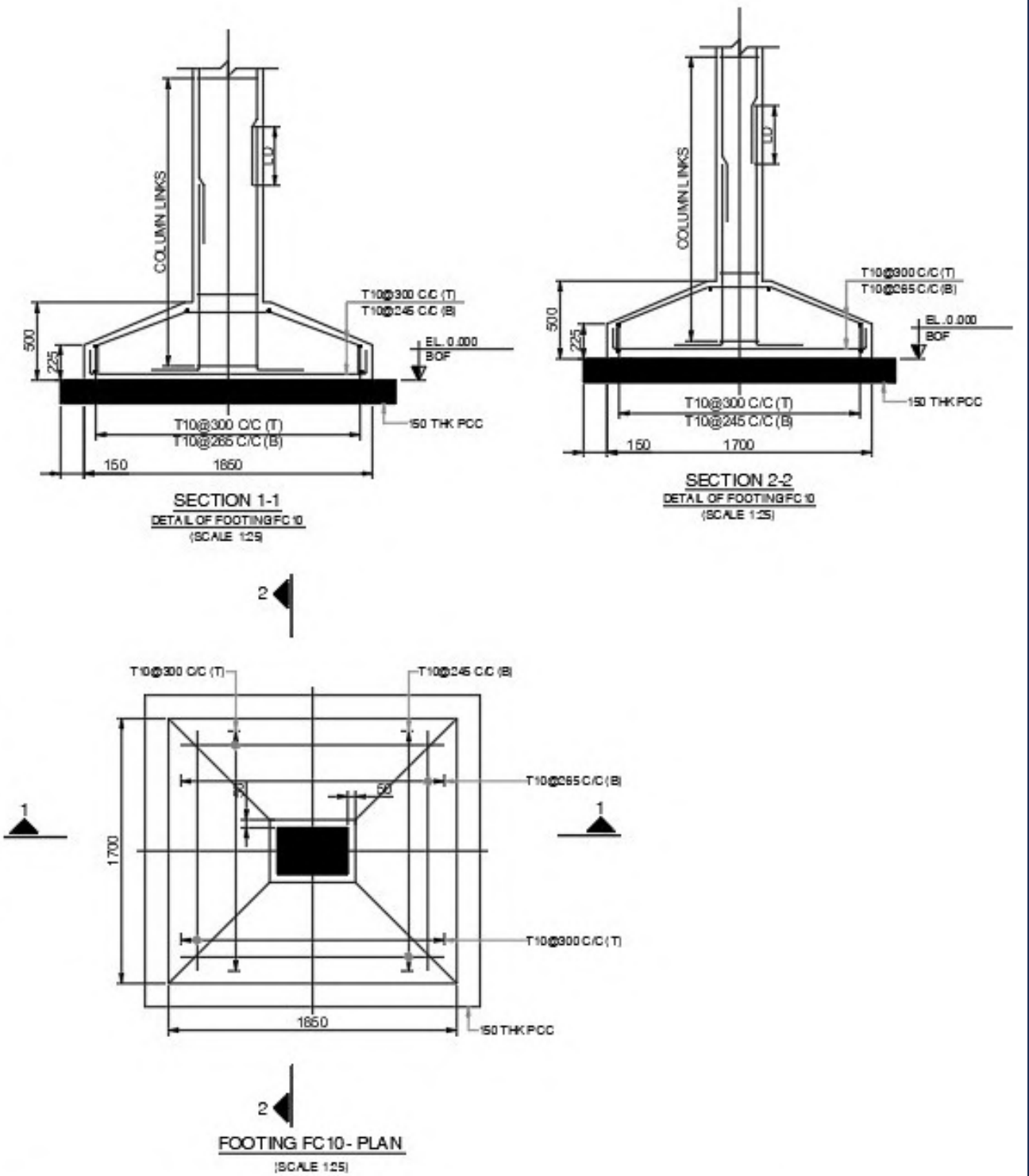
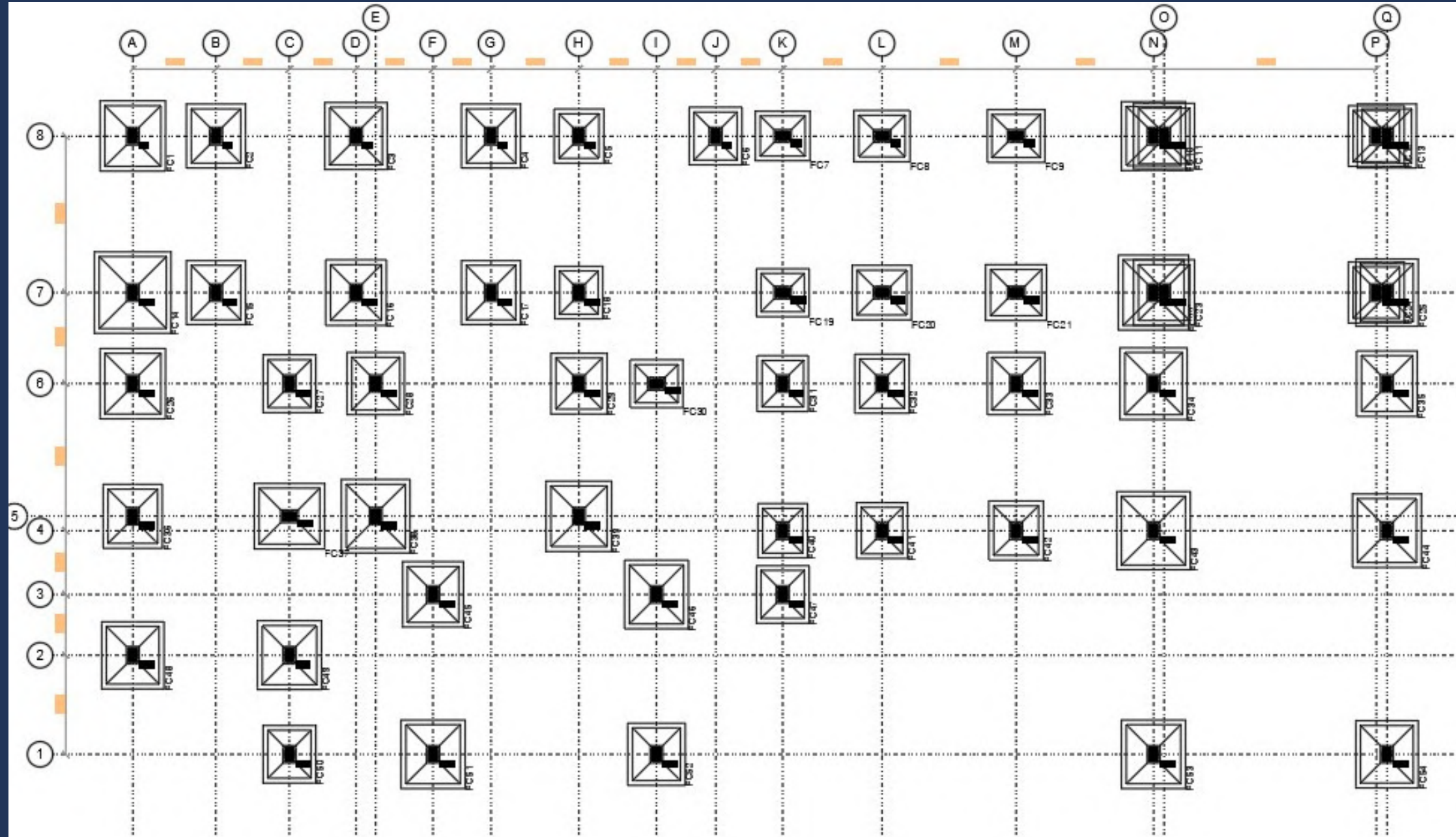


SHEAR FORCE



BENDING MOMENT

DETAILING

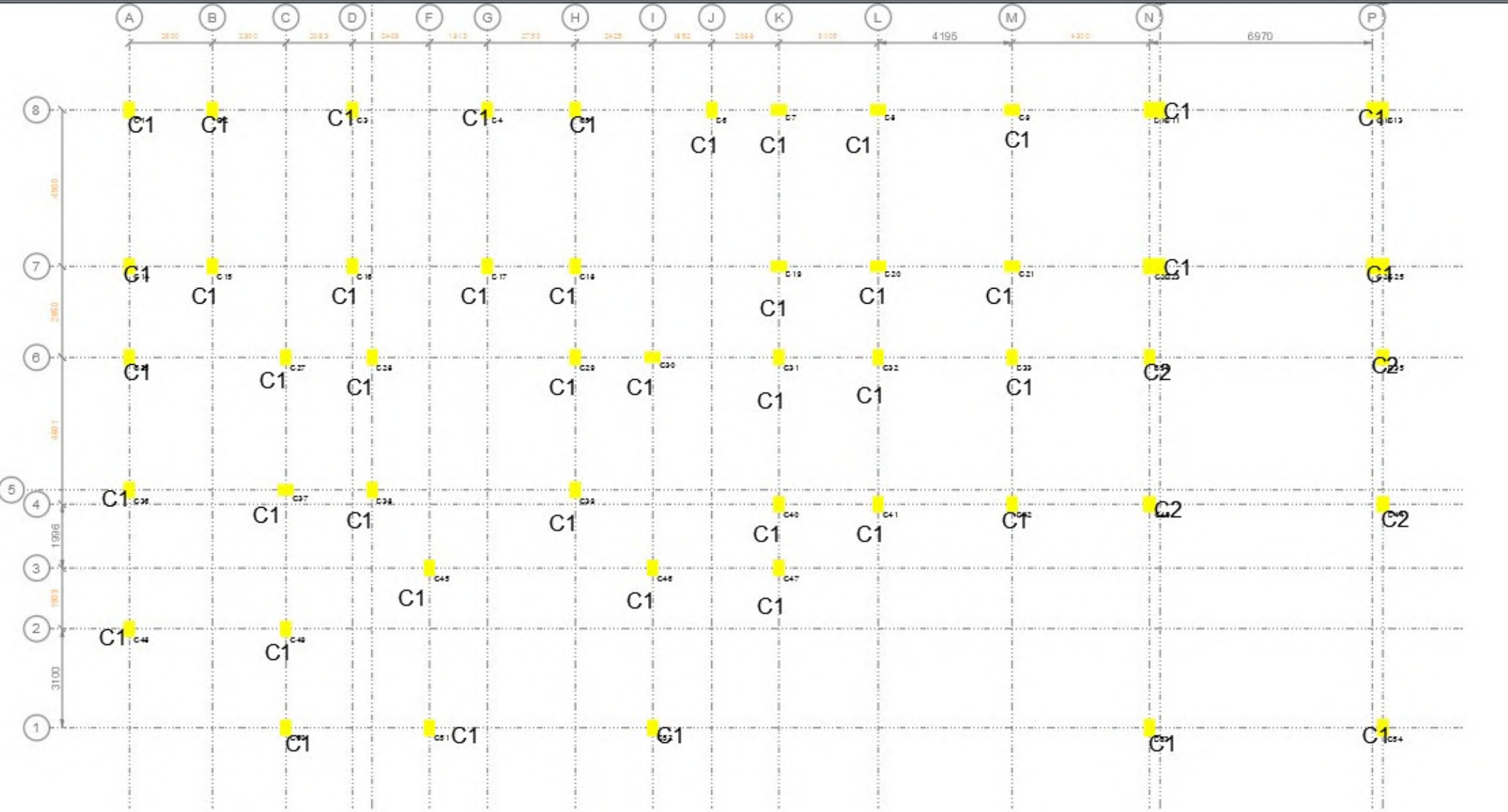


FOOTING DETAILING

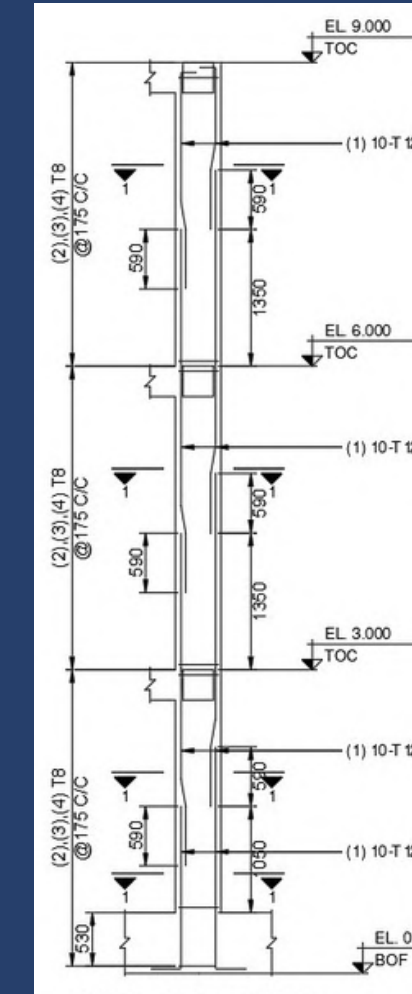
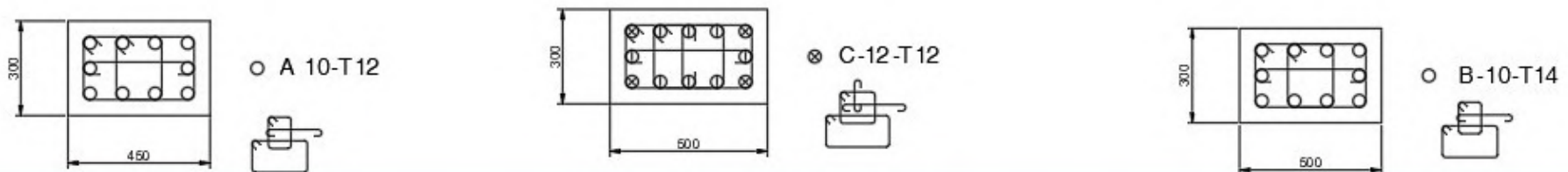
FOOTING SCHEDULE (M25:Fe500)

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	-	-	-	-

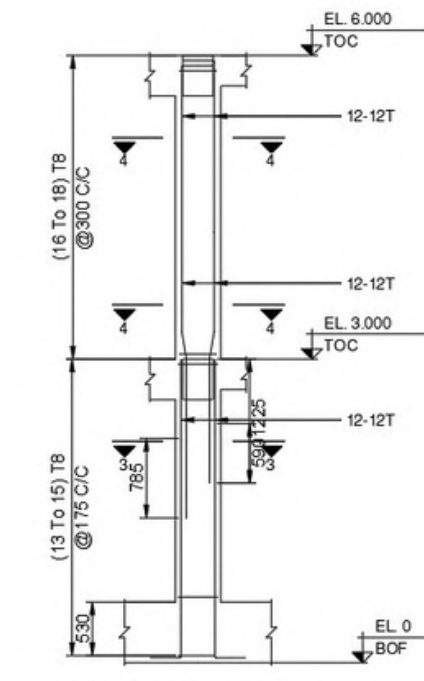
COLUMN LAYOUT AND DETAILING



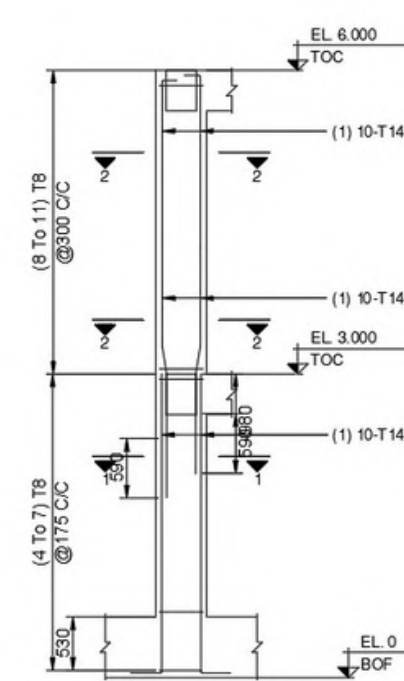
SLNO	COLUMN.NO	COLUMN SIZE	R/F	TIES DETAIL	TIES	CONC.GRADE
1	C1	300x450	10-12T	A	T8-300@C/C	M25
2	C2	300x450	12-12T	B	T8-300@C/C	M25
3	C3	300x550	10-14T	C	T8-300@C/C	M25



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

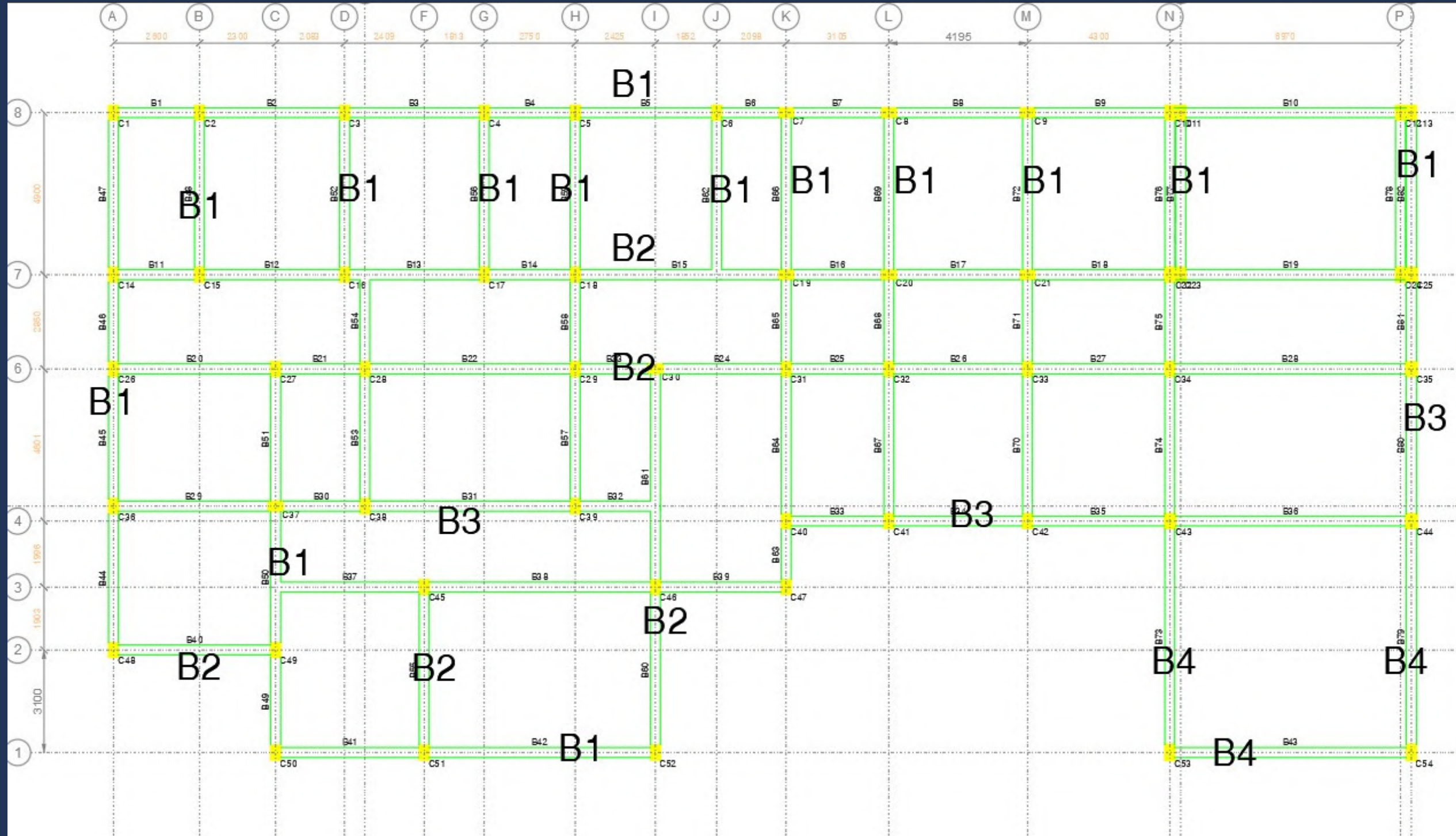


DETAIL OF COLUMN C2
M25, Fy 500, COVER 50mm



DETAIL OF COLUMN C3

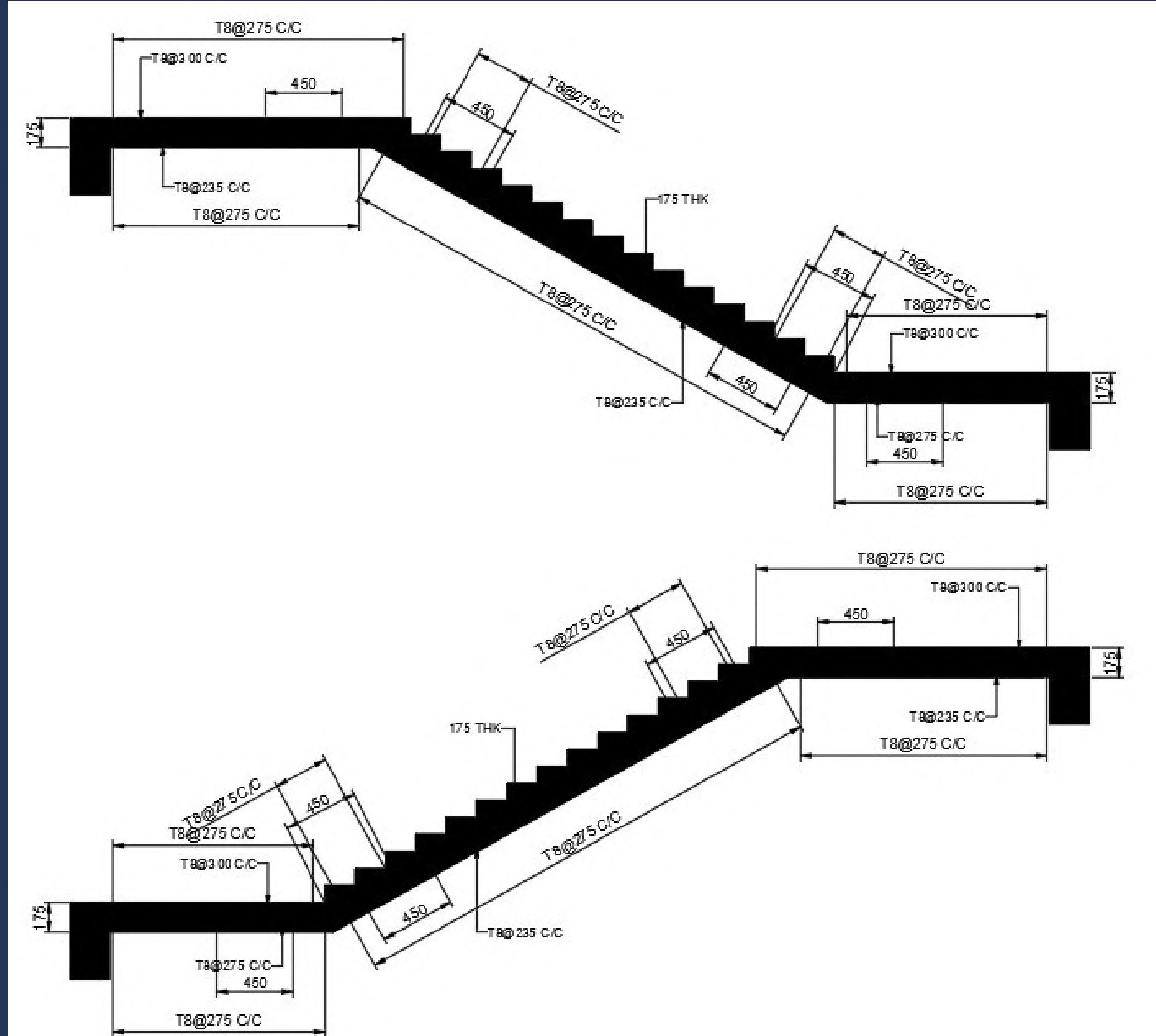
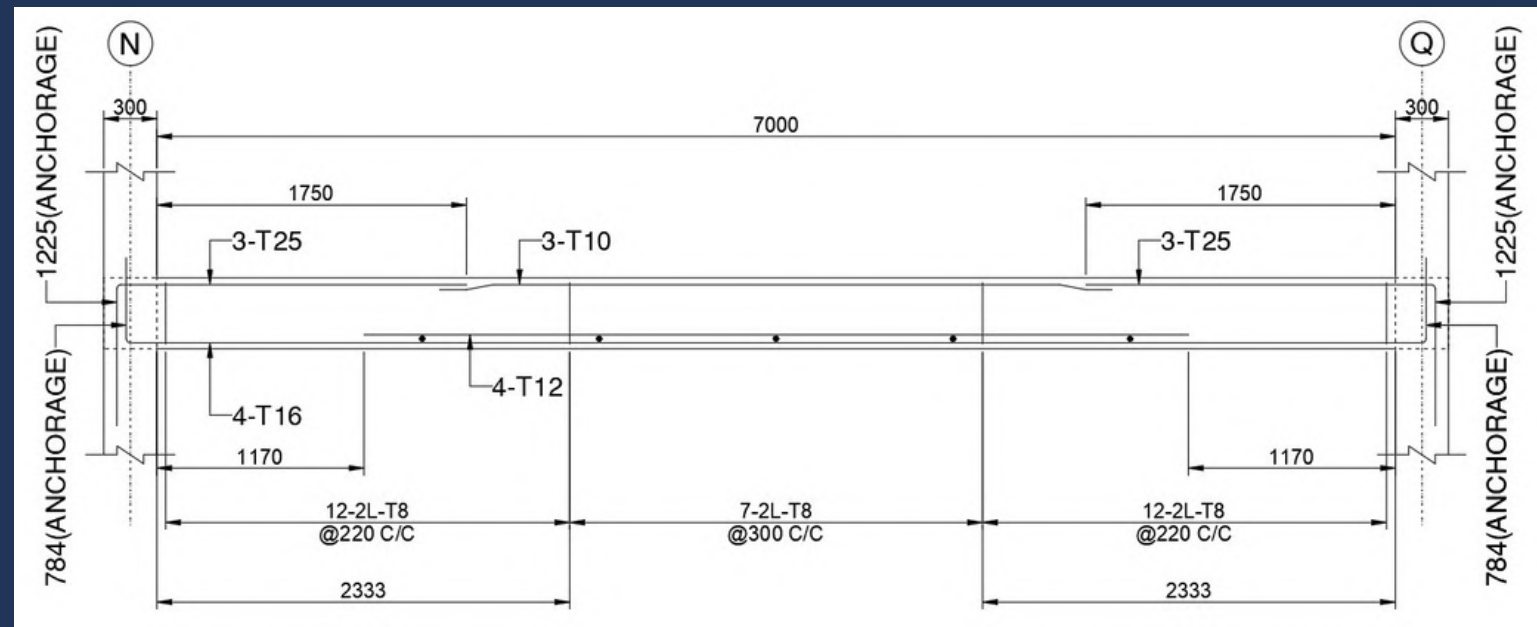
BEAM LAYOUT AND DETAILING



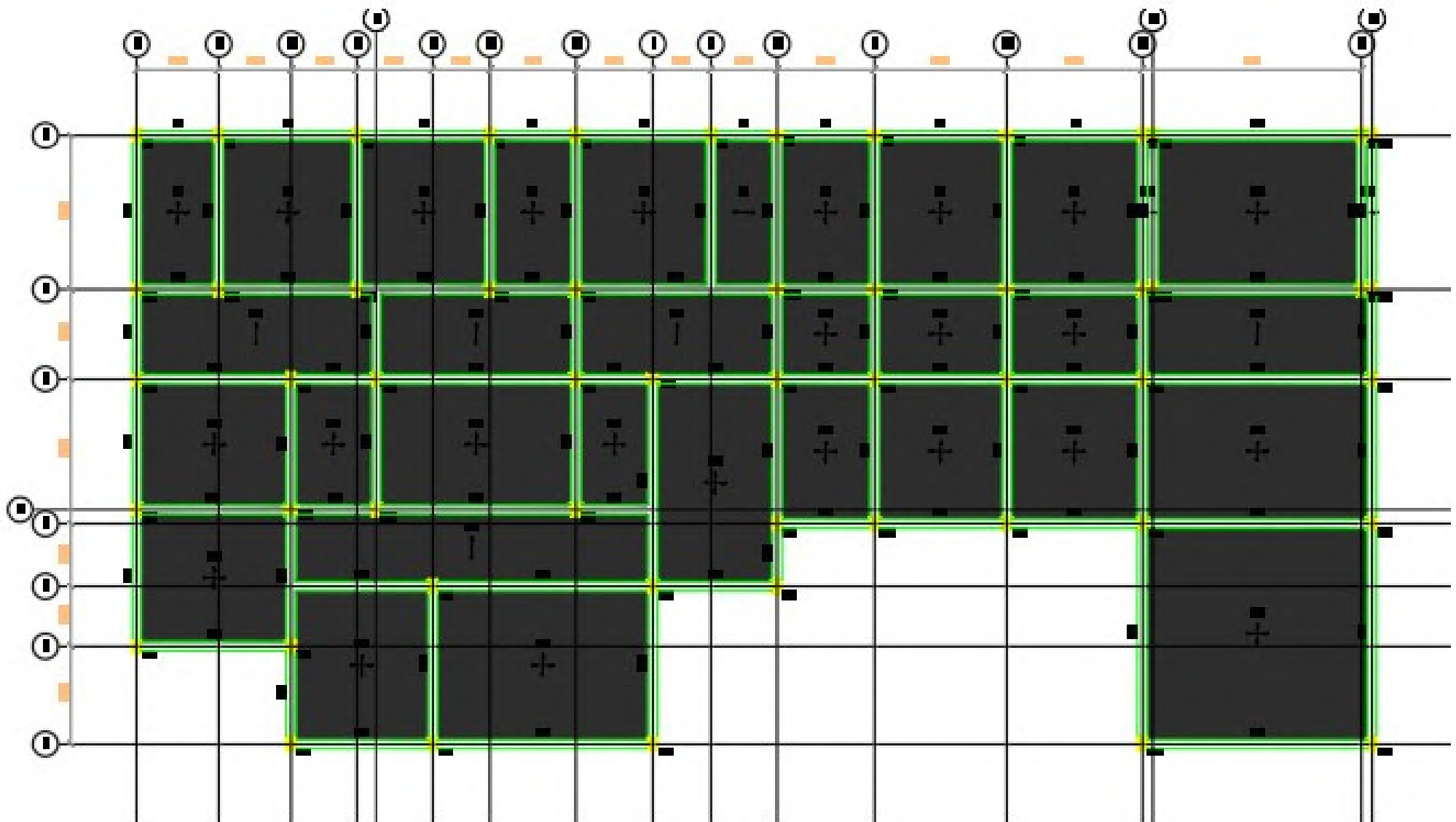
BEAM SCHEDULE (M25:Fe500) (LEVEL: 3m)

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 S28, S2, S3, S5, S8 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, S27S1	175	2 Way	T8 @ 180	T8 @ 215	T8 @ 210	T8 @ 255	T8 @ 275	...

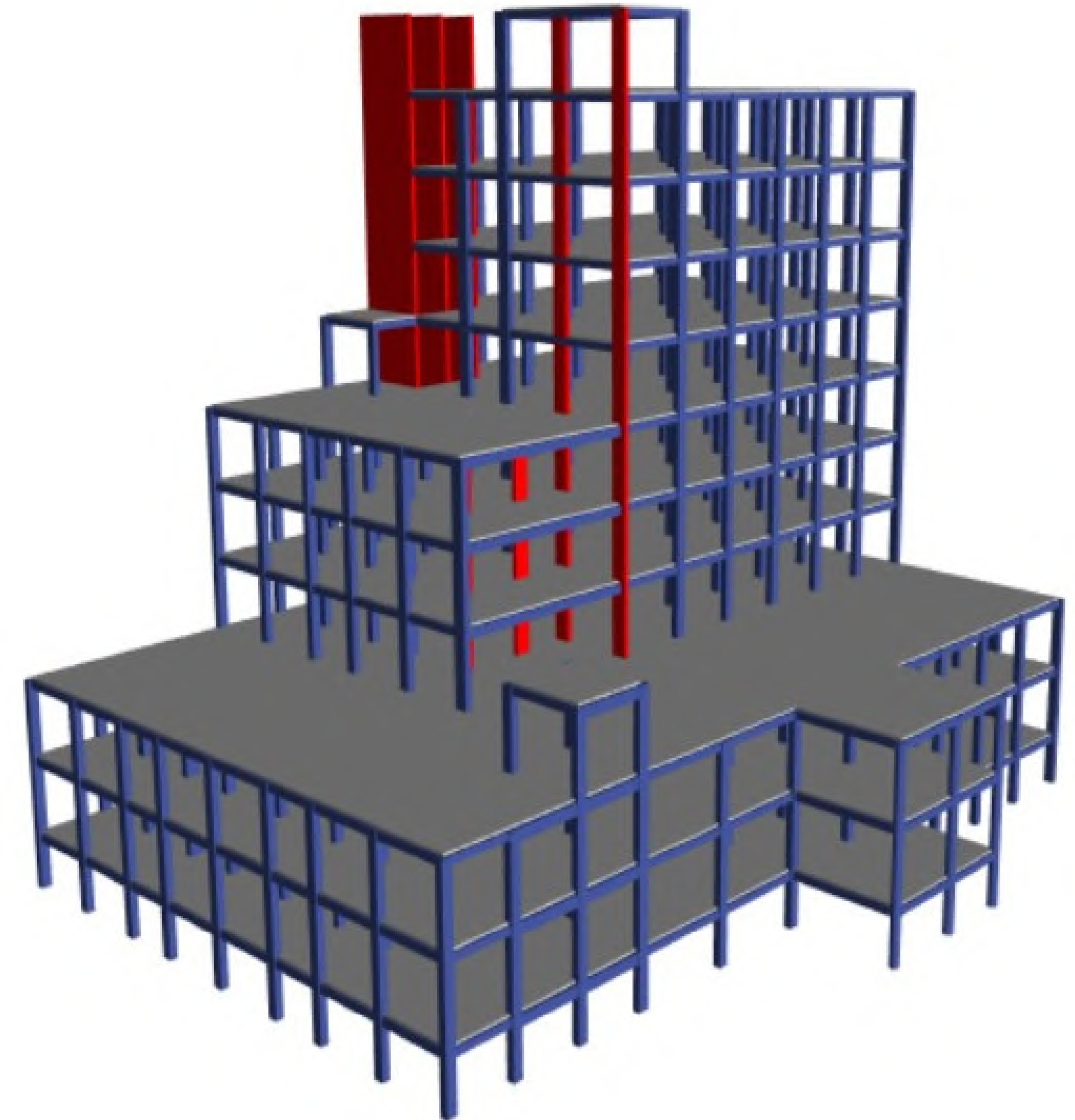
ASHISH HOTEL (SONIPATH) PROJECT

PROJECT STATEMENT- Commercial building (G+8)

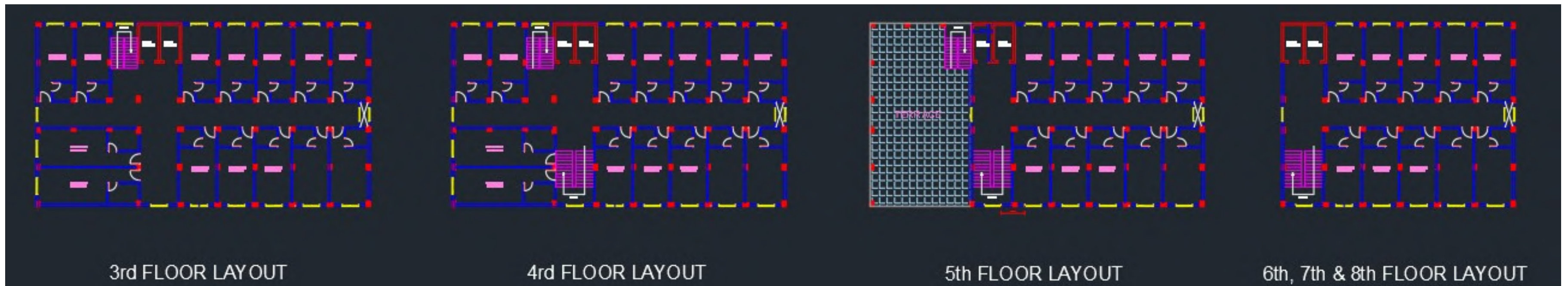
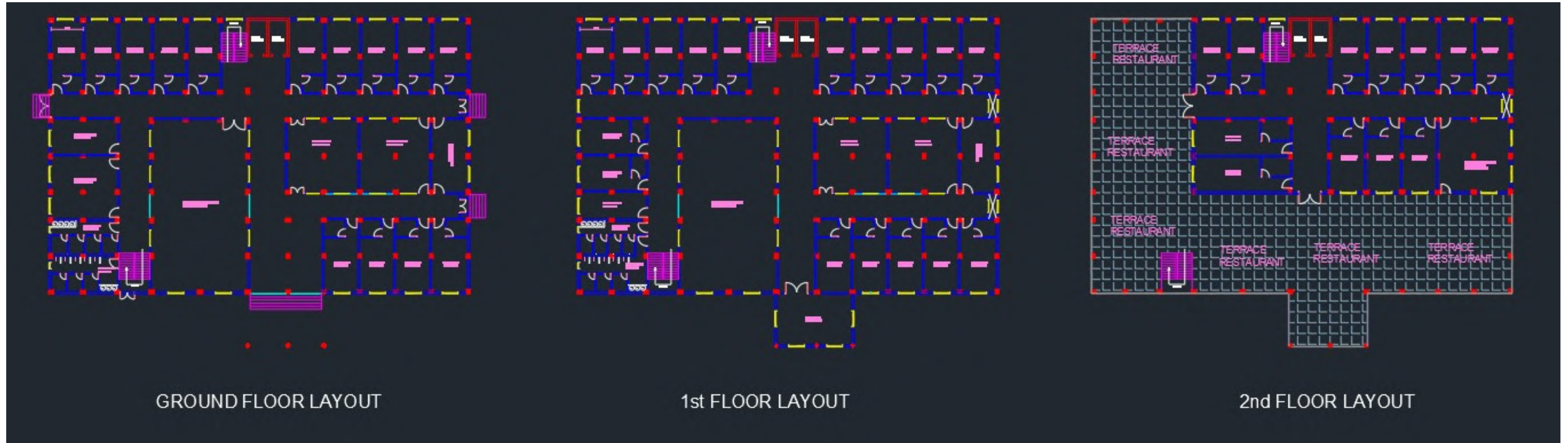
With Shear Wall

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



ETABS DETAILS

Define Load Patterns

Loads

Load	Type	Self Weight Multiplier	Auto Lateral Load
EQX	Seismic	0	IS1893 2002
Dead	Dead	1	
Live	Live	0	
EQX	Seismic	0	IS1893 2002
EQY	Seismic	0	IS1893 2002

Seismic Load Pattern - Indian IS1893:2002

Direction and Eccentricity

- X Dir
- Y Dir
- X Dir + Eccentricity
- Y Dir + Eccentricity
- X Dir - Eccentricity
- Y Dir - Eccentricity

Ecc. Ratio (All Diaph.)

Overwrite Eccentricities

Seismic Coefficients

Seismic Zone Factor, Z

- Per Code
- User Defined

Site Type

Importance Factor, I

Story Range

Top Story

Bottom Story

Time Period

- Approximate Ct (m) =
- Program Calculated
- User Defined T =

Factors

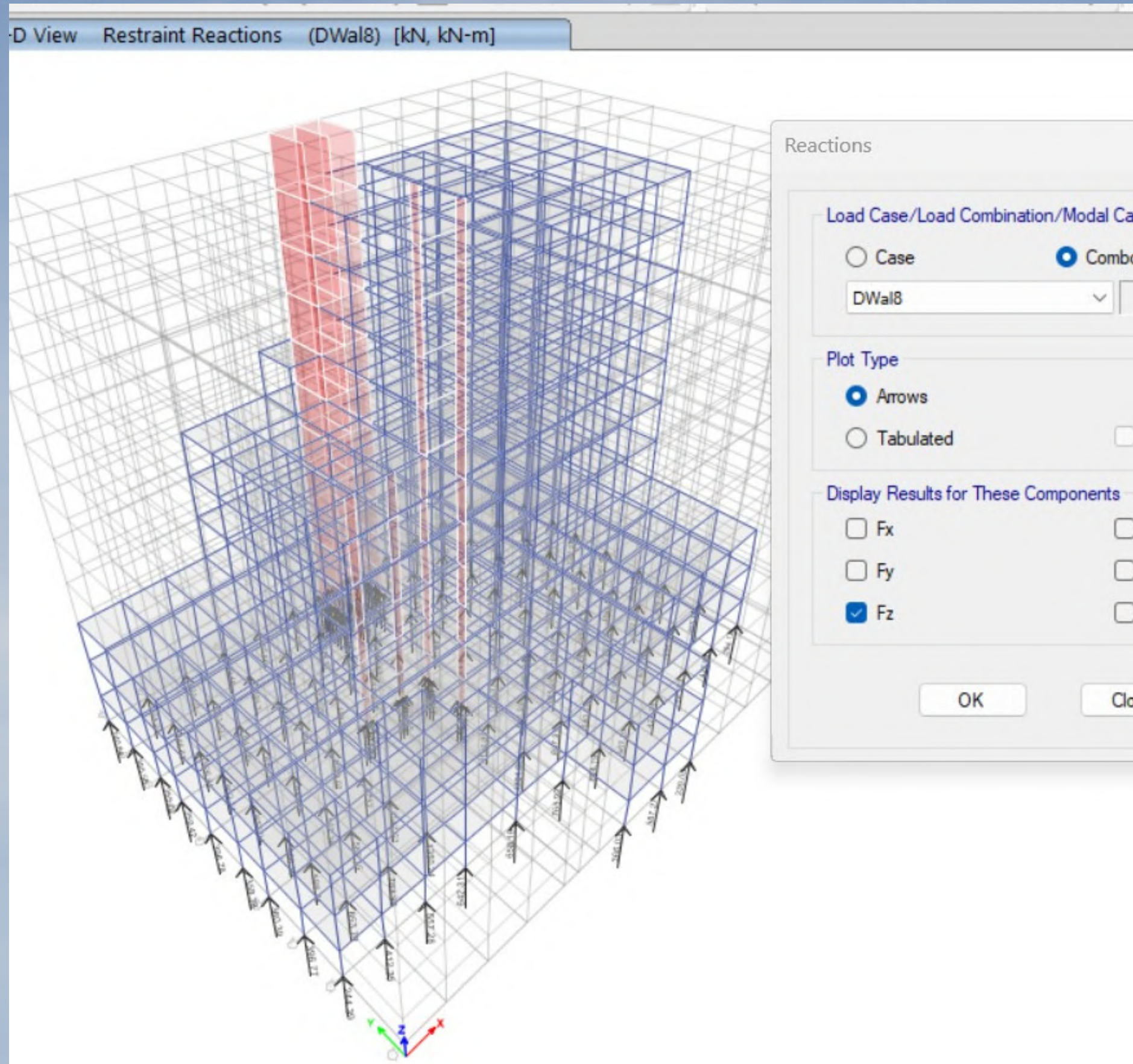
Response Reduction, R

Load Cases

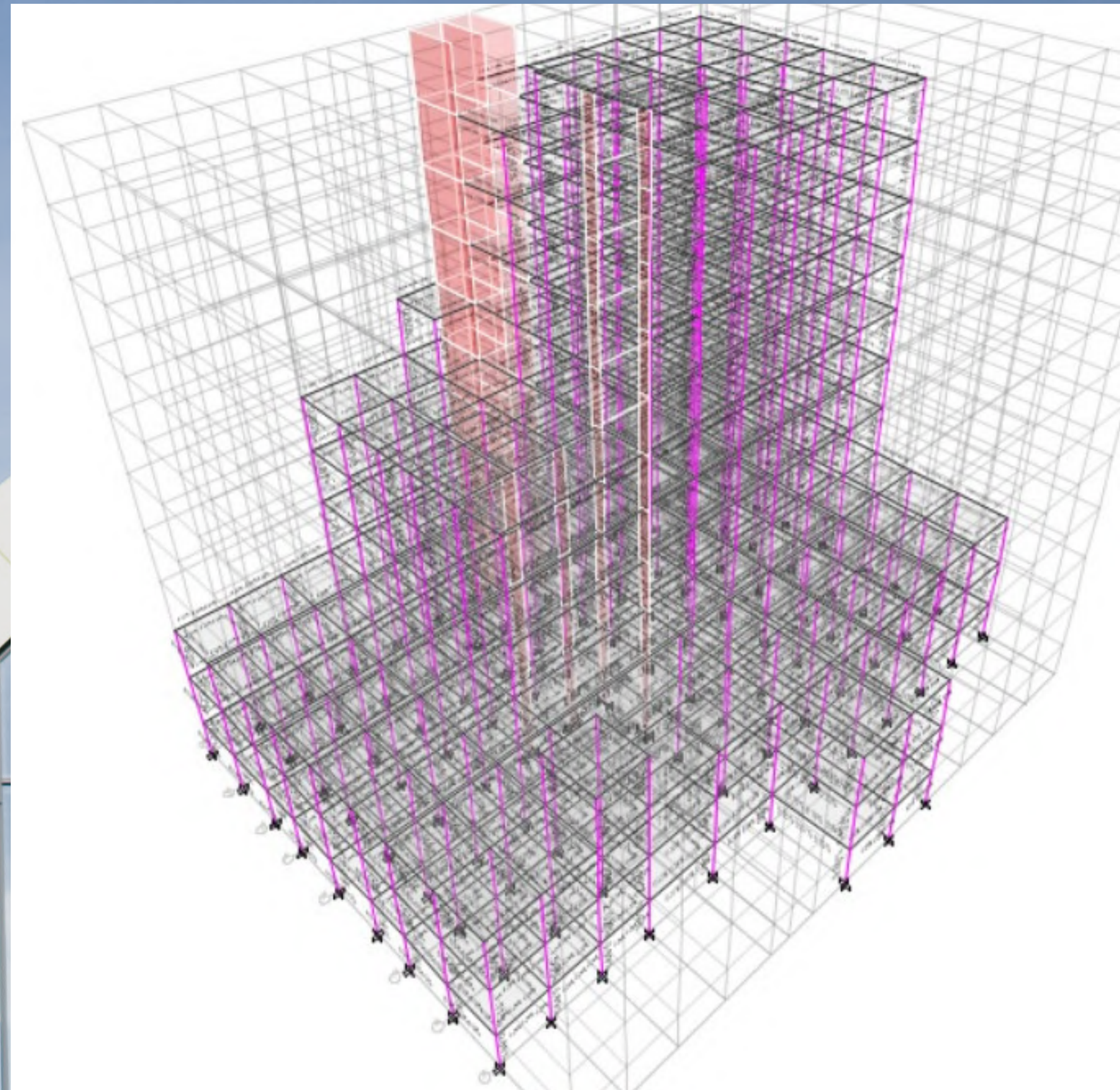
Load Case Name	Load Case Type
Dead	Linear Static
Live	Linear Static
EQX	Linear Static
EQY	Linear Static
RS	Response Spectrum

Load assigned

ETABS DETAILS



Base Shear



Members Passed

THANK YOU

