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1. PREAMBLE

TABLE 1. GENERAL INFORMATION ABOUT THE STRUCTURE

1.	NATURE OF BUILDING	URBANEST
2.	TYPE OF STRUCTURE	Framed
3.	TOTAL NO. OF FLOORS	STILT+4
4.	PLINTH LEVEL	At Road Level
5.	TOTAL HEIGHT OF THE BUILDING	17.15m (Excluding Basement Height)

2. MODEL AND ANALYSIS

The Model of the structure is created using STAAD.PRO and the Structural analysis is carried out under the following considerations.

2.1 Material Used

Concrete = M25 (For Columns, RC Beams, Slabs)

Rebar = TMT500 (For Structural Members)

2.2 Member Properties

a) Column Sizes (in mm)

COLUMN NO.	UPTO PLINTH BEAM LEVEL	FROM PLINTH BEAM TO SECOND FLOOR LEVEL	FROM SECOND FLOOR TO TERRACE FLOOR LEVEL
C1	230X230	-	-
C2	380X380	230X380	230X380
C3	380X380	230X380	230X380
C4	380X450	230X450	230X450
C5	380X450	230X450	230X450
C6	380X530	230X530	230X530
C7	300X450	300X450	300X450
C8	300X530	300X530	300X530
C9	380X600	230X600	230X600
C10	380X600	230X600	230X600
C11	300X600	300X600	300X600
C12	300X600	300X600	300X600
C13	380X680	230X680	230X680

b) Slab size = 150,175,200 mm thickness.

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3. LIST OF CODES USED

1. IS 456 – 2000 - Plain and reinforced concrete- code of practice
2. IS 875 – (Part –I) -1987 Code of practice for design loads (other than earthquake) for buildings and structures - Dead loads
3. IS 875 – (Part- II) -1987 - Code of practice for design loads (other than earthquake) for buildings and structures. - Imposed loads.
4. IS 1893-1 –2016 – Criteria for Earthquake Resistant Design of Structures
5. IS 13920-2016- Ductile Detailing of Reinforced Concrete Structures Subjected to Seismic Forces -Code of Practice

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4. LOADING PARAMETERS

i. Self-Weight and dead load are considered in STAAD.Pro.

ii. Apart from self-weight, all other dead loads are considered as super dead loads.

TABLE 2. GRAVITY LOADS

S.No	Floor	Load Type		Load	Reference
1.	**Plinth Beam Level**	**Super Dead Load**	Brick Wall Load (9")	16.10kN/m	$H_w * t_w * \gamma_b$ H_w, Height of Wall = 4.120 m t_w Thickness of Wall = 0.23 m γ_b, Unit Weight of Brick = 20kN/m^3 =4.120*0.23*20*0.85 = 16.10 kN/m
		Live Load	Floor Load	10kN/m^2	As per IS -875(Part -2)-1987 (Table -1 Imposed Floor Loads for Different Occupancies) For Heavy Vehicles in Basement Passage.
2	**Stilt Floor Beam Level**	**Super Dead Load**	Brick Wall Load (9" 3.65m Ht)	14.27kN/m	$H_w * t_w * \gamma_b$ H_w, Height of Wall = 3.65 m t_w Thickness of Wall = 0.23 m γ_b, Unit Weight of Brick = 20kN/m^3 =3.65*0.23*20*0.85 = 14.27kN/m
			Slab Load(5")	4.625 kN/m^2	$T_s * \gamma_{slab}$ +1.5 F.F T_s, Thickness of Slab = 0.125m γ_{slab}, Unit Weight of Slab = 25kN/m^3 F.F-Floor Finish $T_s * \gamma_{slab}$ +1.5 F.F

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			Slab Load(6")	5.25 kN/m^2	T_s, Thickness of Slab = 0.150m γ_{slab}, Unit Weight of Slab = 25kN/m^3 F.F-Floor Finish
		Live Load	Floor Load	2 kN/m^2	For All Rooms and Kitchen, Toilet and Bath Rooms as per IS -875(Part -2)-1987 (Table -1 Imposed Floor Loads for Different Occupancies) For Corridors, Passages, Staircase, Office room For Typical Floor.
			Floor Load	2 kN/m^2	
3	**Typical Floor Roof Beam Level**	**Super Dead Load**	Brick Wall Load (9" – 3.65m Ht)	14.27kN/m	H_w * t_w * γ_b H_w, Height Of Wall = 3.65 m t_w Thickness of Wall = 0.23 m γ_b, Unit Weight of Brick = 20kN/m^3 =3.65*0.23*20*0.85 = 14.27 kN/m
			Slab Load(5")	4.625 kN/m^2	T_s * γ_{slab} +1.5 F.F T_s, Thickness of Slab = 0.125m γ_{slab}, Unit Weight of Slab = 25kN/m^3 F.F-Floor Finish
			Slab Load(6")	5.52 kN/m^2	T_s * γ_{slab} +1.5 F.F T_s, Thickness of Slab = 0.15m γ_{slab}, Unit Weight of Slab = 25kN/m^3 F.F-Floor Finish
		Live Load	Floor Load	2 kN/m^2	For Corridors, Passages, Staircase, Office room For Typical Floor.

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			Floor Load	2 kN/m^2	For All Rooms and Kitchen, Toilet and Bath Rooms
4	**Terrace Floor**	**Super Dead Load**	Brick Wall Load (9" – 3.65m Ht)	14.27kN/m	$H_w * t_w * \gamma_b$ H_w, Height Of Wall = 3.65 m t_w Thickness of Wall = 0.23 m γ_b, Unit Weight of Brick = 20kN/m^3 =3.65*0.23*20*0.85 = 14.27 kN/m
			Floor Finish	1.5 kN/m^2	
			Slab Load(5")	4.625 kN/m^2	$T_s * \gamma_{slab} + 1.5$ F.F T_s, Thickness of Slab = 0.125m γ_{slab}, Unit Weight of Slab = 25kN/m^3 F.F-Floor Finish
			Slab Load(5")	5.25 kN/m^2	$T_s * \gamma_{slab} + 1.5$ F.F T_s, Thickness of Slab = 0.15m γ_{slab}, Unit Weight of Slab = 25kN/m^3 F.F-Floor Finish
		Live Load	Floor Load	2 kN/m^2	Live Load For Terrace Floor.

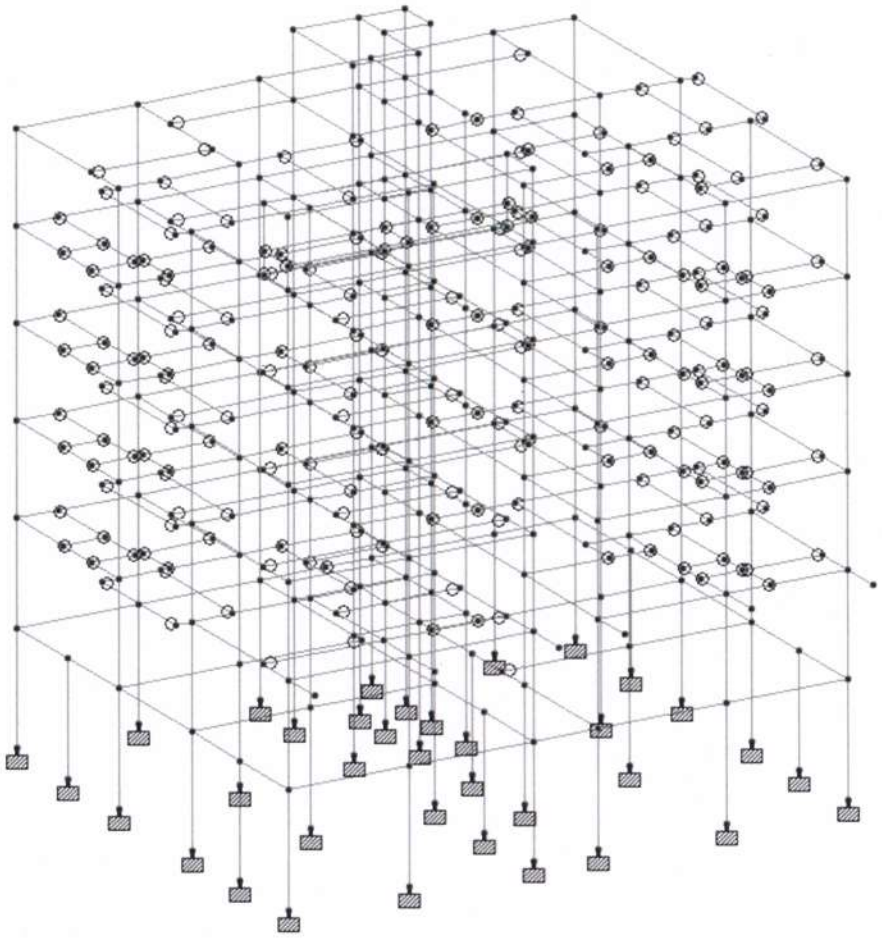
5. LOAD COMBINATION

The load combinations producing the most critical conditions on the frames are taken into account. The load combinations indicated in IS 875:1987 (Part 5) are adopted for the design of the framed structure. The load combinations with appropriate load factor a given below.

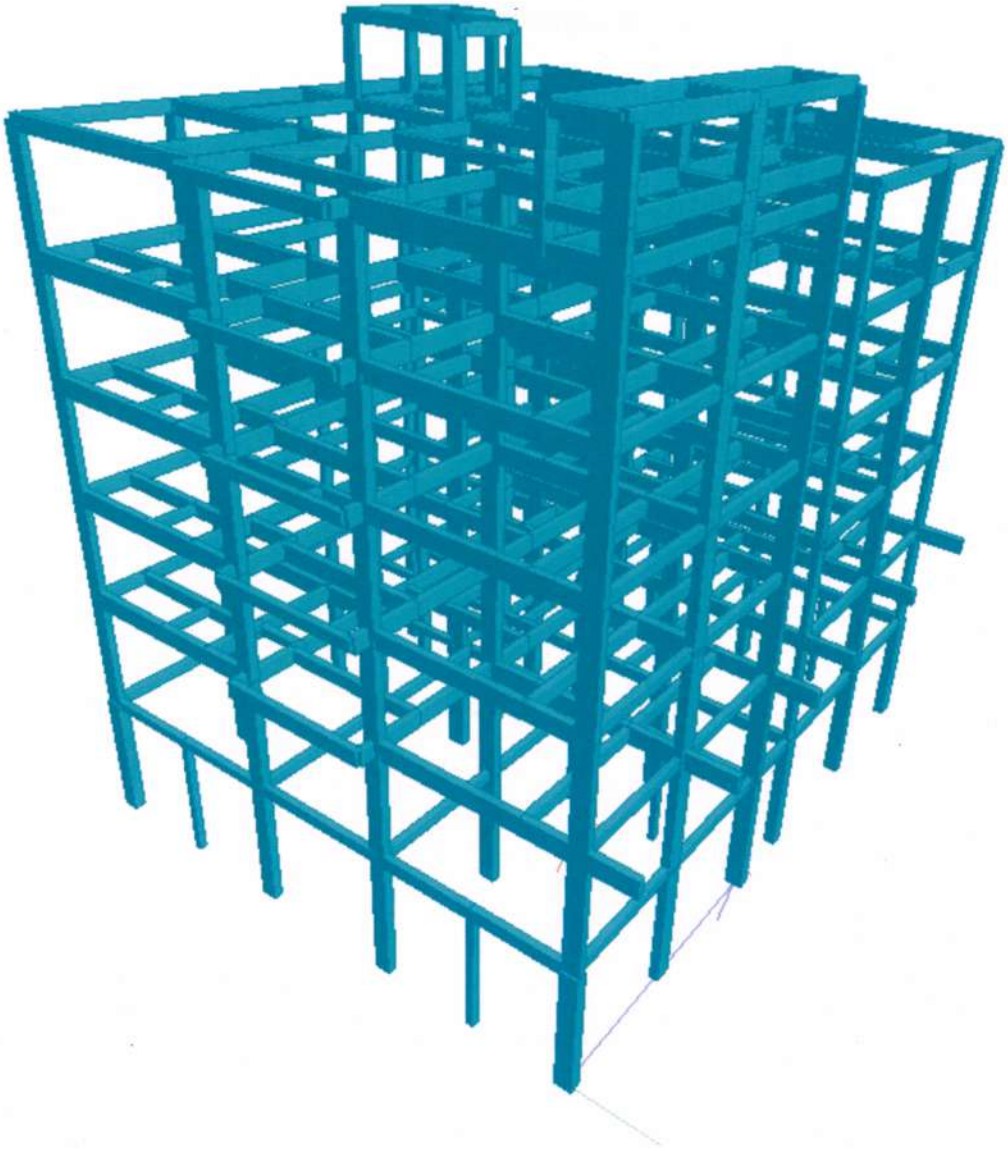
- D.L + L.L
- 1.5DL+1.5LL

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6. STAAD IMAGES

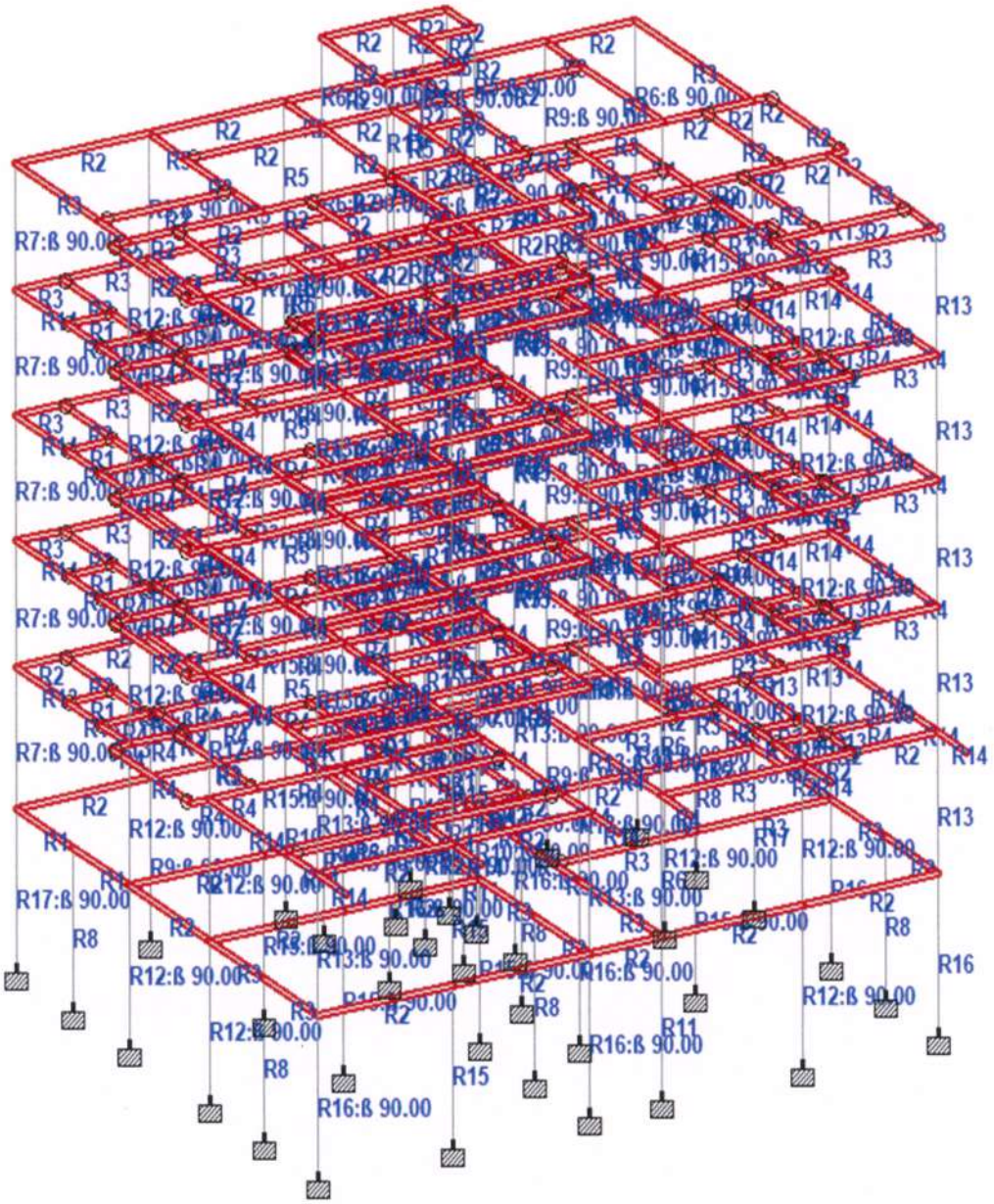


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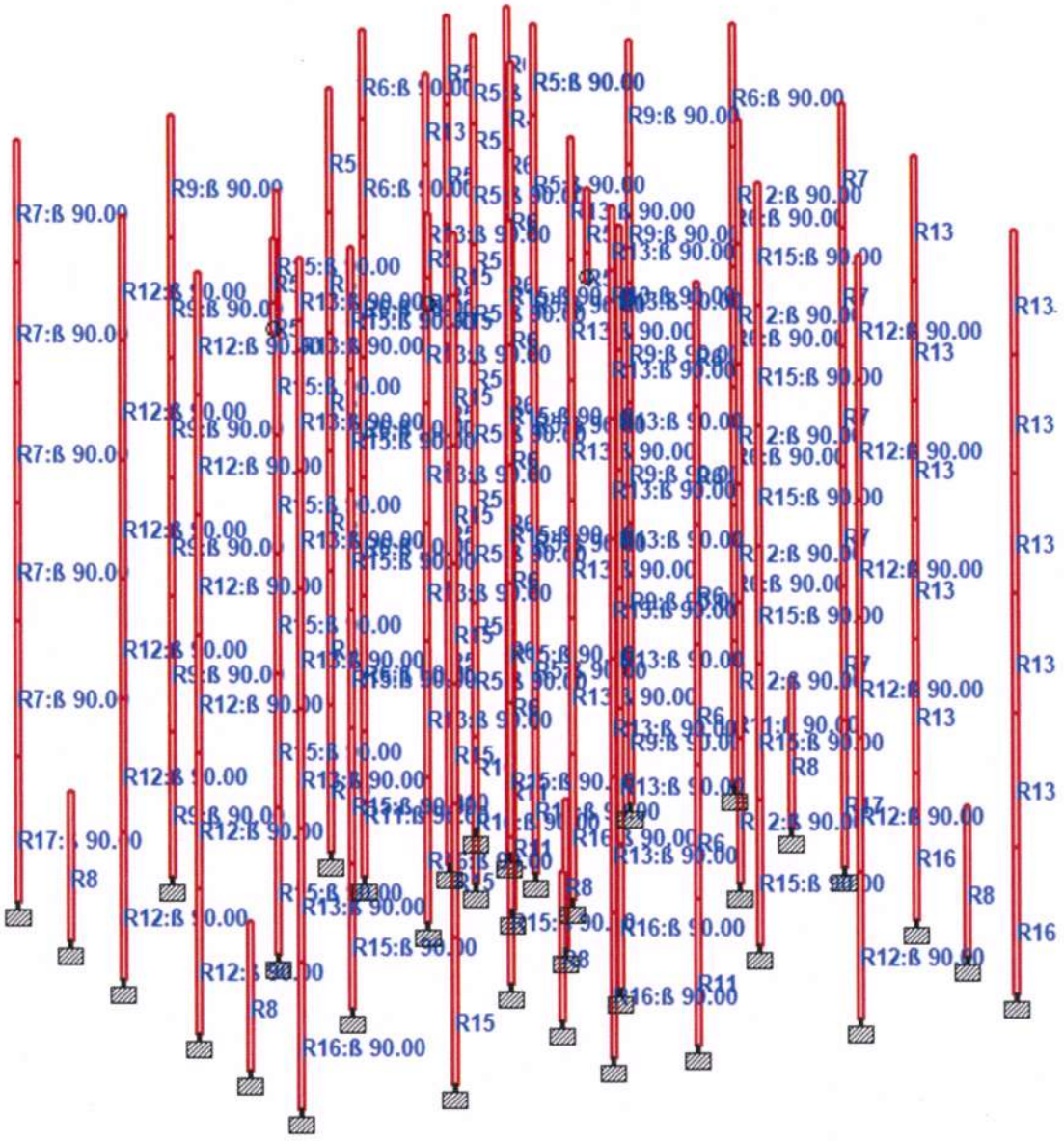
a) WHOLE STRUCTURE

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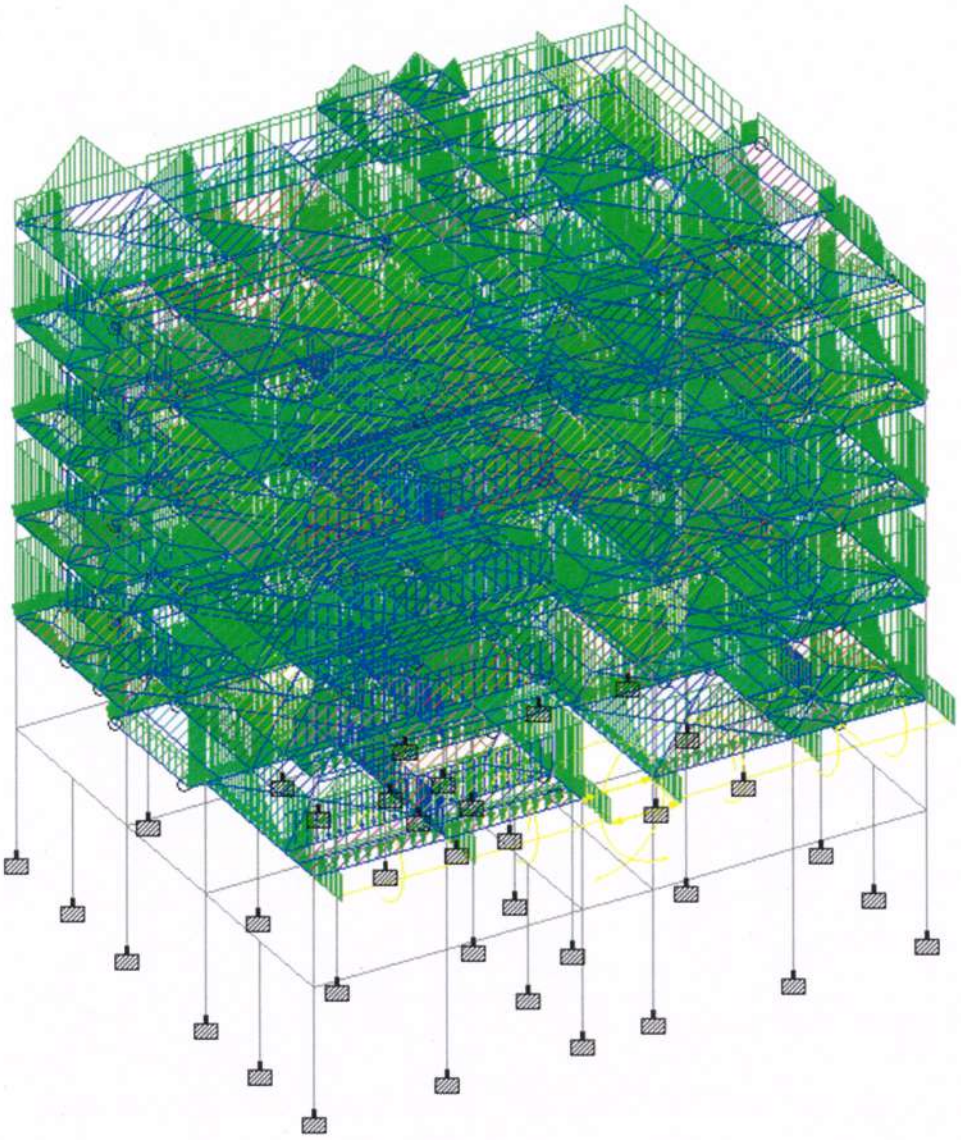
b) PROPERTIES OF THE STRUCTURE

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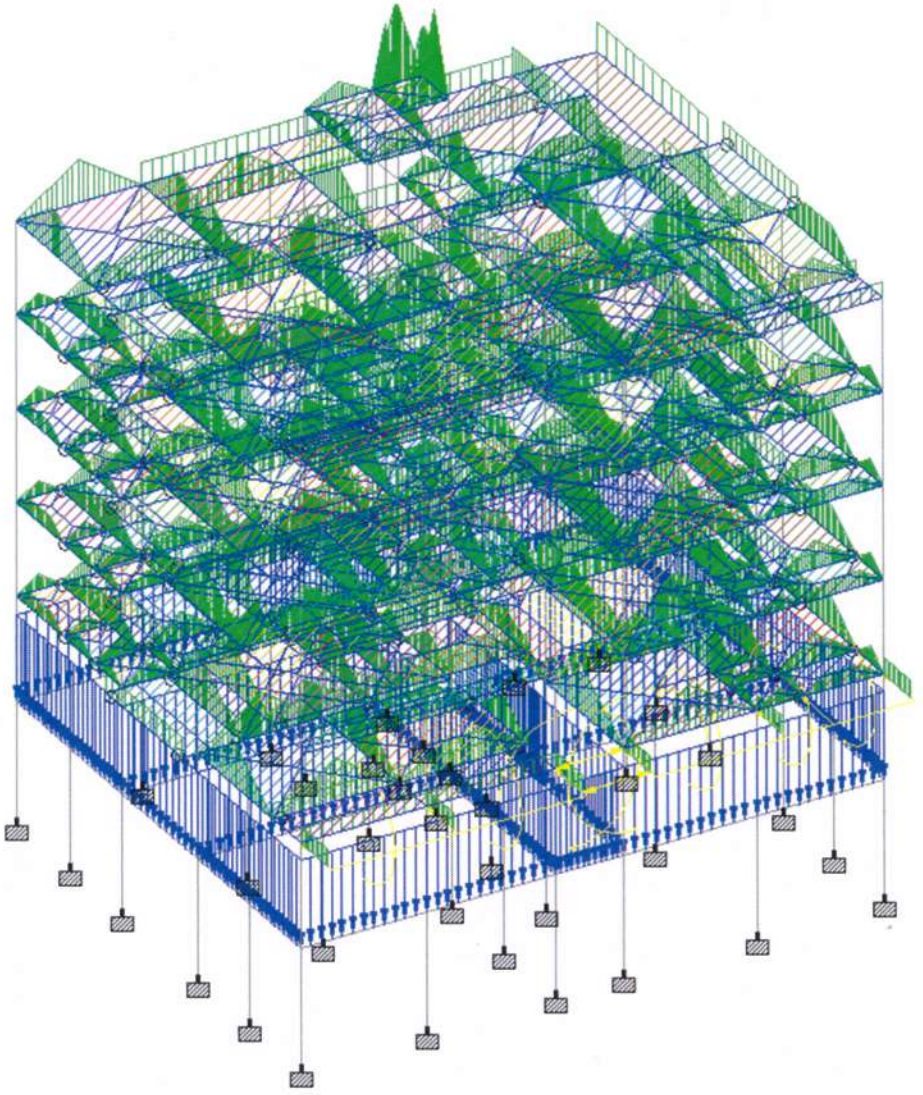
c) COLUMN MOMENT & AREA of Steel (Ast)

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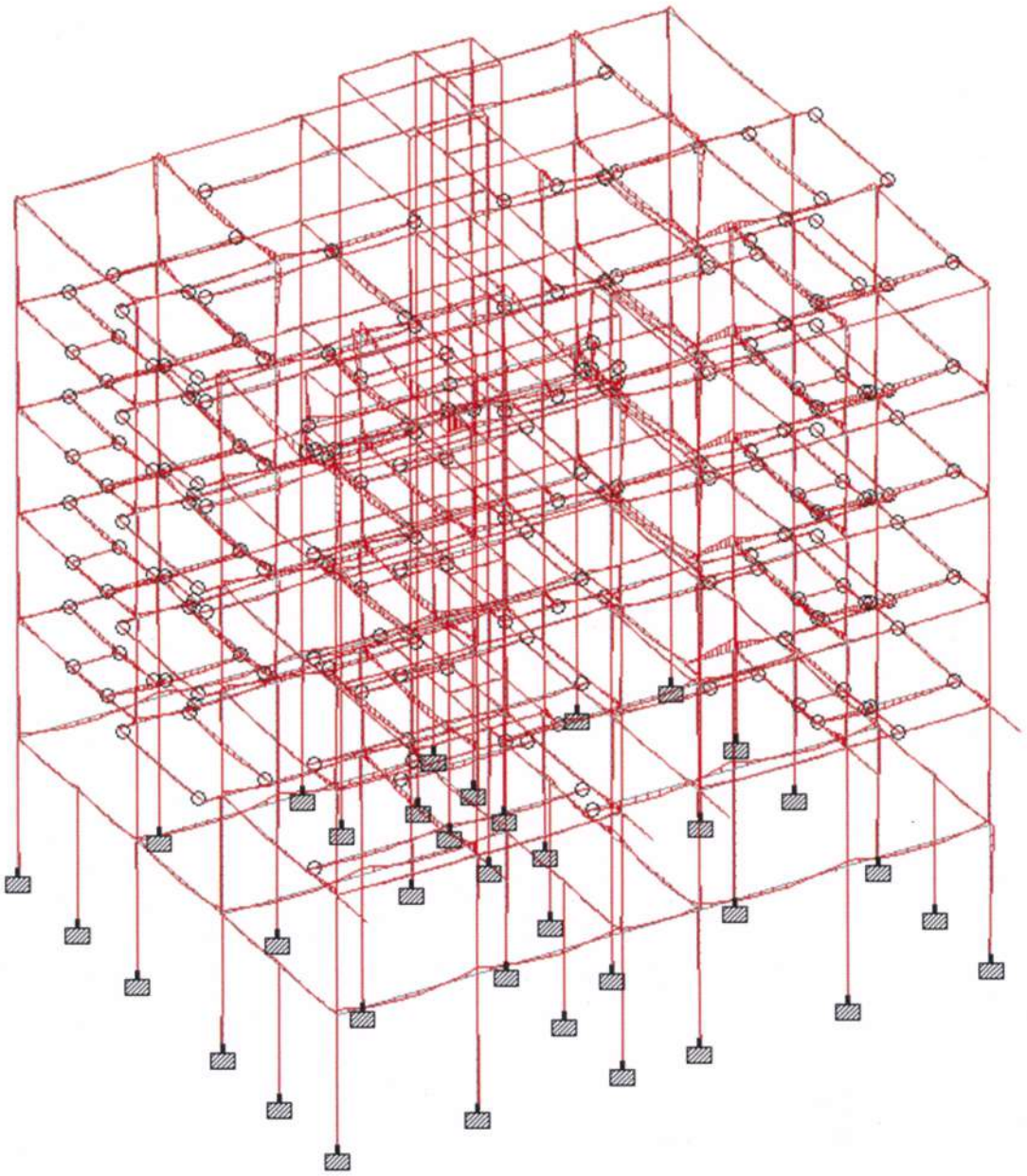
d) DEAD LOAD OF STRUCTURE

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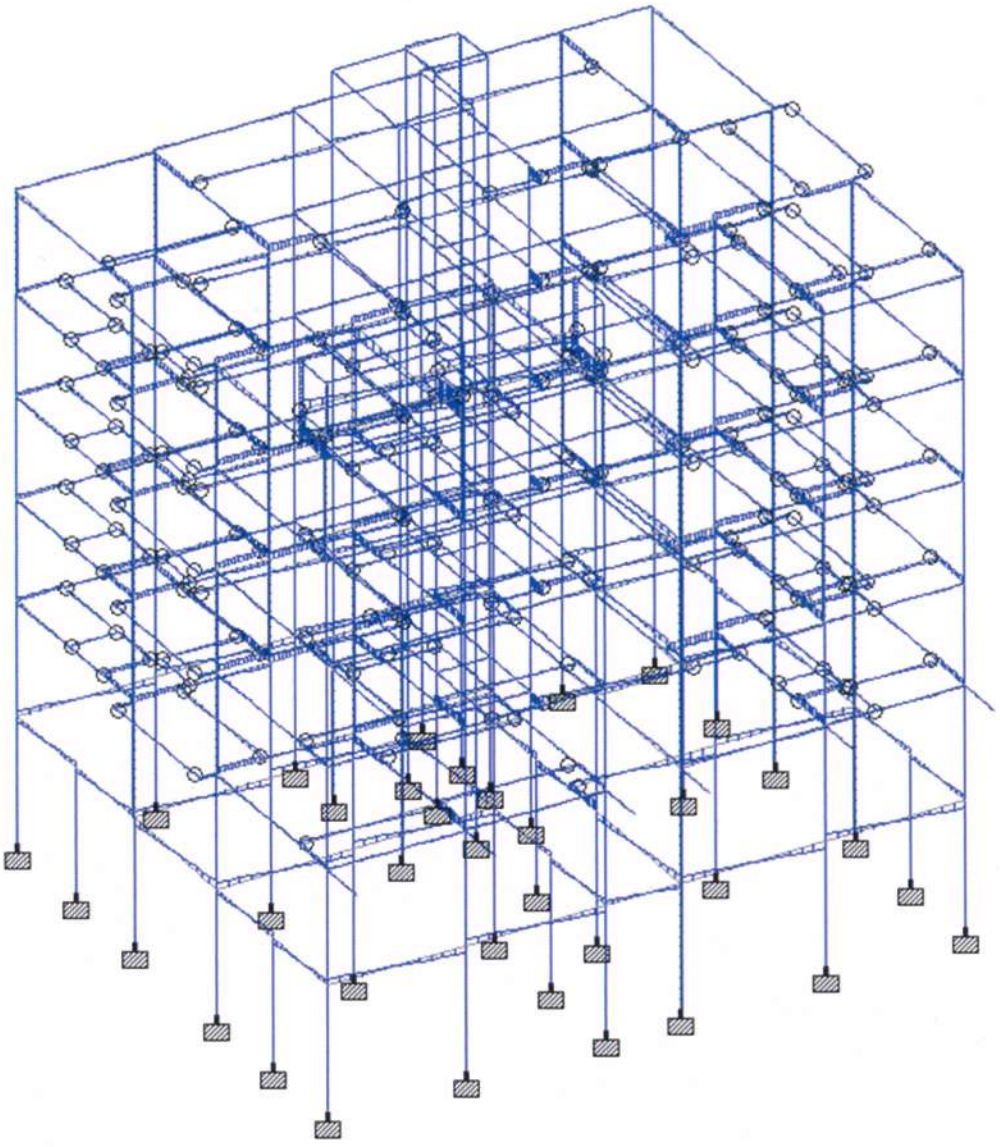
e) LIVE LOAD OF STRUCTURE

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f) BENDING MOMENT OF BEAMS

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g) SHEAR FORCE OF BEAMS

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7. DESIGN OF FOOTING

ISOLATED FOOTING DESIGN

Data

Grade of concrete	f_{ck} =	25	N/mm^2
Grade of steel	f_y =	500	N/mm^2
Lateral load at X-axis	Hx =	10	kN
Lateral load at Z -axis	Hz =	10	kN
Axial load	P =	55	kN
Moment at column base (about X axis)	M_x =	10	kNm
Moment at column base (about Z axis)	M_z =	10	kNm
$M_{x1} = M_x + H_z.D$	M_{x1} =	13.00	kNm
$M_{z1} = M_z + H_x.D$	M_{z1} =	13.00	kNm
Net S.B.C of soil	=	400.00	kN/m^2
Gross S.B.C of soil	q_a =	481.00	kN/m^2
Column dimension along X- axis	=	230.00	mm
Column dimension along Z- axis	=	230.00	mm
Unit weight of Soil	=	18.00	kN/m^3
Depth of footing below NGL	=	4.50	m
Volume of footing	=	0.383	m^3
Volume of filling	=	5.363	m^3
Weight of footing	=	9.577	kN
Weight of filling	=	96.534	kN
Clear cover	=	50.00	mm
Moment of resistance	=	0.133	$f_{ck}bd^2$

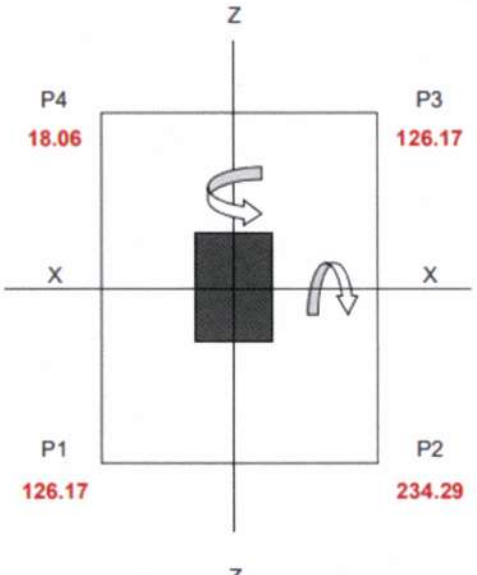
PAGE 1

Area of footing

Weight of footing + backfill	=	192.93	% of P_u
Eccentricity along Z direction	e_z =	62.07	mm
Eccentricity along X direction	e_x =	62.07	mm
Width assumed (B, dim. || X axis)	=	1.13	m
Length of the footing required (L, dim. || Z axis)	=	0.30	m
Length of the footing provided (L, dim. || Z axis)	=	1.13	m
Area of footing required	=	0.33	m^2
Area of footing provided	=	1.2769	m^2
Cantilever Projection in the shorter direction	=	0.450	m
Cantilever Projection in the longer direction	=	0.450	m

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Pressure Values at all four corners



$P1 = P/A + 6*M_x/B*L^2 - 6*M_y/L$

$P2 = P/A + 6*M_x/B*L^2 + 6*M_y/L$

$P3 = P/A - 6*M_x/B*L^2 + 6*M_y/L$

$P4 = P/A - 6*M_x/B*L^2 - 6*M_y/L$

PAGE 2

Pressure calculation about X - axis

Maximum upward intensity of Soil pressure	q_{max} =	234.289	kN/m^2
Minimum upward intensity of Soil pressure	q_{min} =	18.057	kN/m^2
Length of footing in contact with soil	L =	1.130	m
Maximum loss of contact	=	0.0%	
Effective area of footing	=	1.277	m^2
Effective upward intensity of Soil pressure	q_{max}	234.29	kN/m^2
Overturning moment (M)	=	13.00	kN.m
Eccentricity of resultant vertical force	=	0.24	m
Factor of Safety against overturning	F.S =	14.872	
Factored Maximum pressure(Pmax) for M_x	P_{max-x} =	226.783	kN/m^2
Factored Minimum pressure(Pmin) for M_x	P_{min-x} =	-97.564	kN/m^2

Pressure calculation about Z - axis

Maximum upward intensity of Soil pressure	q_{max} =	234.289	kN/m^2
Minimum upward intensity of Soil pressure	q_{min} =	18.057	kN/m^2
Length of footing in contact with soil	L =	1.130	m
Maximum loss of contact	=	0.0%	
Effective area of footing	=	1.277	m^2

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Bending moment about X - axis

Pressure Intensity at the face of the Column		=	97.618 kN/m²
Bending moment about X-axis		=	21.02 kNm
Design Bending moment	M_{ux}	=	21.02 kNm

Bending moment about Z - axis

Pressure Intensity at the face of the Column		=	97.62 kN/m²
Bending moment about Z-axis		=	21.01 kNm
Design Bending moment	M_{uy}	=	21.01 kNm
Effective depth required along longer span	d_{req}	=	74.79 mm
Effective depth required along shorter span	d_{req}	=	74.77 mm
Overall depth required		=	129.79 mm
Overall depth provided	D	=	300.00 mm
Overall depth at the end		=	300.00 mm
Effective depth provided along longer span		=	245.00 mm
Effective depth provided along shorter span		=	235.00 mm

PAGE 3

Area of reinforcement

Longer span

Percentage of reinforcement required		=	0.072 %
Area of reinforcement required		=	200.14 mm²
Mimimum area of reinforcement required		=	406.80 mm²
Diameter of reinforcement		=	10 mm
Spacing of reinforcement required		=	218.2 mm
Spacing provided		=	200.0 mm
Area of reinforcement provided		=	443.9 mm²
Percentage of reinforcement provided		=	0.160 %

Provide 10 mm diameter bars at 200 mm C/C spacing

Shorter span

Percentage of reinforcement required		=	0.079 %
Area of reinforcement		=	208.83 mm²
Mimimum area of reinforcement		=	406.80 mm²
Diameter of reinforcement		=	10 mm
Spacing of reinforcement required		=	218.2 mm
Spacing provided		=	200.0 mm

Area of reinforcement provided		=	443.9 mm²
Percentage of reinforcement provided		=	0.167 %

Provide 10 mm diameter bars at 200 mm C/C spacing

Check for one way Shear

Longer span:

PAGE 4

Shear force V1		=	45719.01 N
Nominal shear stress		=	0.165 N/mm²
Permissible Shear stress for Pt		=	0.300 N/mm²

Safe in one way Shear

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8. DESIGN OF BEAMS

SECONDARY BEAM DESIGN

Beam No / Moment Location		Max.BM (M_u)		Max. SF (V_u)	Beam Size/Span		MAIN REINFORCEMENT											R REINFORCE	
							Bottom Reinforcement					Top Reinforcement						Dia of bar	S_p
		Bottom	Top		b	D	Thro# (Ist Layer)		Curtail (IInd Layer)		Total Layer	Thro# (Ist Layer)		Thro# (IInd Layer)		Curtail (IInd Layer)		Total Layer		
		kNm	kNm	kN	mm	mm	No	Dia	No	Dia		No	Dia	No	Dia	No	Dia		mm	mm^2
FFRB1	S		75	115	230	450	2	16			1	2	16			2	12	2	8	200
	M	86			230	450	2	16	2	12	2	2	16					1	8	200
	S		95	100	230	450	2	16			1	2	16			2	12	2	8	200
FFRB2	S		60	80	230	450	2	16			1	2	16			2	12	2	8	200
	M	35			230	450	2	16			1	2	16					1	8	200
	S		75	85	230	450	2	16			1	2	16			2	12	2	8	200
FFRB3	S		60	75	230	380	2	16			1	2	16			2	12	2	8	200
	M	30			230	380	2	16			1	2	16					1	8	200
	S		65	75	230	380	2	16			1	2	16			2	12	2	8	200
FFRB4	S		75	85	230	380	2	16			1	2	16			2	12	2	8	200
	M	40			230	380	2	16			1	2	16					1	8	200
	S		55	75	230	380	2	16			1	2	16					1	8	200
FFRB5	S		20	50	230	380	2	16			1	2	16					1	8	200
	M	20			230	380	2	16			1	2	16					1	8	200
	S		30	55	230	380	2	16			1	2	16					1	8	200
	S		1	85	230	450	2	16			1	2	16					1	8	200

PAGE 1

SECONDARY BEAM DESIGN

FFRB6	M	90			230	450	2	16	2	16	2	2	16					1	8	200
	S		135	135	230	450	2	16			1	2	16			2	20	2	8	200
FFRB7	S		55	70	230	450	2	16			1	2	16			2	20	2	8	200
	M	25			230	450	2	16			1	2	16					1	8	200
	S		60	70	230	450	2	16			1	2	16					1	8	200
FFRB8	S		35	25	230	450	2	16			1	2	16					1	8	200
	M	10			230	450	2	16			1	2	16					1	8	200
	S		45	40	230	450	2	16			1	2	16			2	20	2	8	200
FFRB9	S		173	145	230	530	2	16			1	2	16			2	20	2	8	200
	M	75			230	530	2	16			1	2	16					1	8	200
	S		1	1	230	530	2	16			1	2	16					1	8	200
FFRB10	S		1	50	230	380	2	12			1	2	12					1	8	200
	M	50			230	380	2	12	2	12	2	2	12					1	8	200
	S		1	50	230	380	2	12			1	2	12					1	8	200
FFRB11	S		1	25	230	300	2	12			1	2	12					1	8	175
	M	15			230	300	2	12			1	2	12					1	8	175
	S		1	25	230	300	2	12			1	2	12					1	8	175
FFRB12	S		15	35	230	300	2	12			1	2	12					1	8	175
	M	10			230	300	2	12			1	2	12					1	8	175
	S		10	25	230	300	2	12			1	2	12					1	8	175

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S ELAMATHI, M TECH(Struc)..AMIE MISE
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SECONDARY BEAM DESIGN

FFRB13	S		1	151	230	530	2	20			1	2	16					1	8	200
	M	210			230	530	2	20	2	20	2	2	16					1	8	200
	S		1	121	230	530	2	20			1	2	16					1	8	200
FFRB14	S		20	70	230	300	2	12			1	2	12					1	8	175
	M	20			230	300	2	12			1	2	12					1	8	175
	S		45	85	230	300	2	12			1	2	12			2	16	2	8	175
FFRB15	S		5	70	230	530	2	20			1	2	20					1	8	200
	M	25			230	530	2	20			1	2	20					1	8	200
	S		50	85	230	530	2	20			1	2	20			2	16	2	8	200
FFRB16	S		125	160	230	530	2	20			1	2	20			2	16	2	8	200
	M	105			230	530	2	20			1	2	20					1	8	200
	S		174	165	230	530	2	20			1	2	20			2	20	2	8	200
FFRB17	S		210	220	230	530	2	20			1	2	20			2	20	2	10	200
	M	135			230	530	2	20	2	16	2	2	20					1	10	200
	S		1	105	230	530	2	20			1	2	20					1	10	200
FFRB18	S		125	180	230	530	2	16			1	2	16			2	16	2	8	150
	M	105			230	530	2	16	2	12	2	2	16					1	8	150
	S		135	150	230	530	2	16			1	2	16			2	16	2	8	150
FFRB19	S		75	115	230	530	2	16			1	2	16			2	16	2	8	200
	M	60			230	530	2	16			1	2	16					1	8	200

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SECONDARY BEAM DESIGN

	S		85	100	230	530	2	16			1	2	16			2	12	2	8	200
FFRB20	S		30	60	230	530	2	16			1	2	16			2	12	2	8	150
	M	15			230	530	2	16			1	2	16					1	8	150
	S		10	45	230	530	2	16			1	2	16					1	8	150
FFRB21	S		1	46	230	380	2	12			1	2	12					1	8	200
	M	45			230	380	2	12	2	12	2	2	12					1	8	200
	S		1	46	230	380	2	12			1	2	12					1	8	200
FFRB23	S		10	70	230	530	2	16			1	2	16					1	8	200
	M	25			230	530	2	16			1	2	16					1	8	200
	S		50	85	230	530	2	16			1	2	16			2	20	2	8	200
FFRB24	S		145	170	230	530	2	16			1	2	16			2	20	2	8	200
	M	105			230	530	2	16	2	20	2	2	16					1	8	200
	S		125	150	230	530	2	16			1	2	16			2	20	2	8	200
FFRB25	S		115	10	230	530	2	16			1	2	16			2	20	2	8	200
	M	75			230	530	2	16			1	2	16					1	8	200
	S		85	85	230	530	2	16			1	2	16					1	8	200
FFRB26	S		60	210	230	600	2	20			1	2	25	2	25			2	8	125
	M	150			230	600	2	20	2	20	2	2	25	2	25			2	8	125
	S		350	265	230	600	2	20			1	2	25	2	25			2	8	125
	S		260	215	230	600	2	20			1	2	25	2	25			2	8	150

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SECONDARY BEAM DESIGN

FFRB27	M	100			230	600	2	20			1	2	25	2	25			2	8	150
	S		131	160	230	600	2	20			1	2	25	2	25			2	8	150
FFRB28	S		35	60	230	600	2	20			1	2	25	2	25			2	8	200
	M	15			230	600	2	20			1	2	25	2	25			2	8	200
	S		1	45	230	600	2	20			1	2	25	2	25			2	8	200
FFRB29	S		1	107	230	450	2	16			1	2	16					1	8	200
	M	145			230	450	2	16	2	20	2	2	16					1	8	200
	S		1	107	230	450	2	16			1	2	16					1	8	200
FFRB31	S		125	140	230	450	2	16			1	2	16			2	20	2	8	200
	M	105			230	450	2	16			2	2	16					1	8	200
	S		1	45	230	450	2	16			1	2	16					1	8	200
FFRB32	S		1	15	230	380	2	12			1	2	12					1	8	200
	M	10			230	380	2	12			1	2	12					1	8	200
	S		1	15	230	380	2	12			1	2	12					1	8	200
FFRB33	S		5	80	230	450	2	16			1	2	16					1	8	200
	M	90			230	450	2	16	2	12	2	2	16					1	8	200
	S		105	125	230	450	2	16			1	2	16			2	12	2	8	200
FFRB34	S		105	120	230	450	2	16			1	2	16			2	12	2	8	200
	M	85			230	450	2	16	2	12	2	2	16					1	8	200
	S		1	80	230	450	2	16			1	2	16					1	8	200

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SECONDARY BEAM DESIGN

FFRB35	S		1	136	230	530	2	20			1	2	20					1	8	200
	M	215			230	530	2	20	2	20	2	2	20					1	8	200
	S		1	125	230	530	2	20			1	2	20					1	8	200
FFRB36	S		165	95	230	450	2	20			1	2	20			2	20	2	8	200
	M	50			230	450	2	20			1	2	20					1	8	200
	S		75	95	230	450	2	20			1	2	20					1	8	200
FFRB37	S		80	100	230	450	2	20			1	2	20					1	8	200
	M	50			230	450	2	20			2	2	20					1	8	200
	S		65	95	230	450	2	20			1	2	20					1	8	200
FFRB39	S		95	95	230	450	2	16			1	2	16			2	16	2	8	200
	M	50			230	450	2	16			1	2	16					1	8	200
	S		60	80	230	450	2	16			1	2	16			2	16	2	8	200
FFRB40	S		70	85	230	380	2	16			1	2	16			2	16	2	8	200
	M	50			230	380	2	16			1	2	16					1	8	200
	S		80	90	230	380	2	16			1	2	16			2	16	2	8	200

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9. CONCLUSION

1. All the Columns are designed using Staad pro and manually checked using Excel sheets.

2. The design of Beams and Slabs and other Structural elements were done using Excel sheets where the Moments & Shear forces values are taken from Staad pro.

Er.S.ELAMATHI, M.TECH(Struc)., AMIE ,MISE
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COGIPRO DESIGN AND CONSTRUCTIO
9/832/1,Rasi Nagar,Chinna Andankovil R
Opp to Rasi Apartment,Karur 639 0

FOOTING SCHEDULE :

TYPE	L	B	D	BOTTOM REINFORCEMENT		COLUMN SIZE	NO OF FOOTINGS
				SHORT	LONG		
F1	3'9"	3'9"	1'0"	Y10@8"C/C	Y10@8"C/C	0'9"X0'9"	12
F2	4'9"	4'9"	1'6"	Y10@5"C/C	Y10@5"C/C	1'3"X1'3"	04
F3	6'0"	5'9"	1'9"	Y12@6"C/C	Y12@6"C/C	1'6"X1'3"	08
F4	7'0"	6'6"	2'3"	Y12@5"C/C	Y12@5"C/C	1'6"X1'0"	04
F5	6'3"	5'9"	1'9"	Y12@6"C/C	Y12@6"C/C	1'9"X1'3"	04
F6	7'9"	7'0"	2'3"	Y12@5"C/C	Y12@5"C/C	1'9"X1'0"	08
F7	7'0"	6'3"	2'0"	Y12@6"C/C	Y12@6"C/C	2'0"X1'3"	14
F8	9'0"	8'0"	2'9"	Y12@4"C/C	Y12@4"C/C	2'0"X1'0"	10
						TOTAL	64

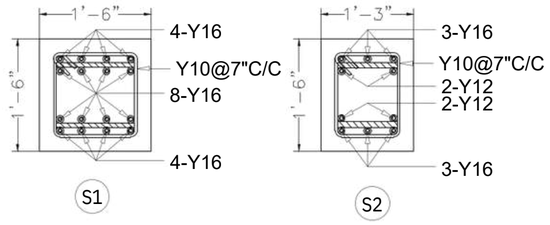
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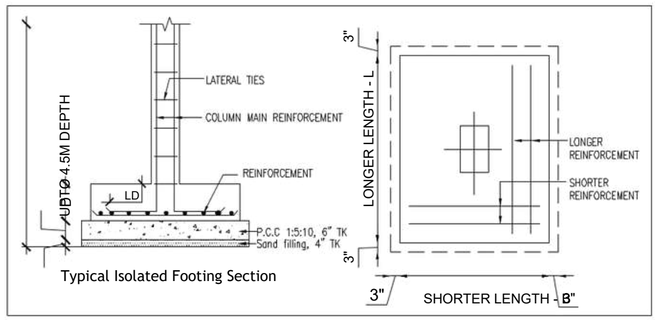
RAFT FOOTING SCHEDULE :

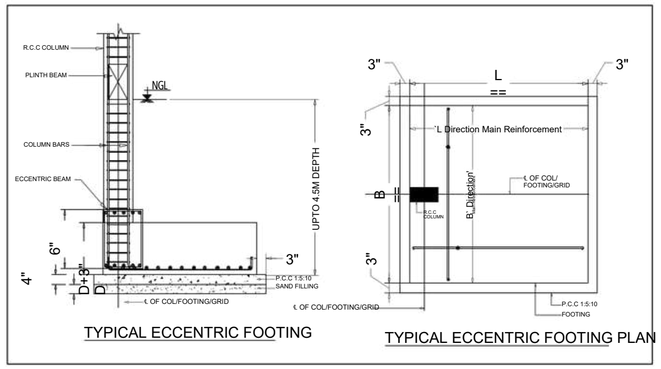
TYPE	L	B	D	BOTTOM/TOP REINFORCEMENT		NO.OF COLUMNS	NO.OF FOOTINGS
				SHORT	LONG		
RFT–1	13'0"	12'6"	2'3"	Y12@5"C/C	Y12@5"C/C	04	01

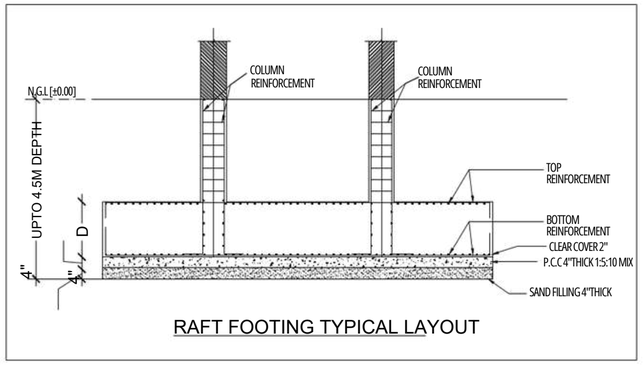
Er.S.ELAMATHI, M.TECH(Struc). AMIE MISE
Dist.Panel Engineer Class1A(G1/16558/2017)
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STRAP BEAM DETAIL:









General Notes :-

1. ALL DIMENSIONS ARE IN FEET & INCHES UNLESS OTHERWISE MENTIONED.
2. DO NOT SCALE THE DRAWINGS, FOLLOW FIGURED DIMENSION ONLY.
3. USE M25 GRADE CONCRETE & Fe500 STEEL.
4. USE CLEAR COVER :
   * 40MM FOR COLUMN.
   * 25MM FOR BEAMS.
   * FOR FOOTING(75MM–SIDE FACE)&(50MM–BOTTOM).
5. THIS BUILDING IS DESIGNED FOR STILT+4 FLOOR ONLY.
6. SBC OF SOIL CONSIDERED =400kN@4.5M.
7. DEVELOPMENT/LAP LENGTH FOR BARS IN TENSION = 57 DIA.
8. THIS DRAWINGS SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURAL DRAWINGS.
9. THE CONSULTANT IS NOT RESPONSIBLE FOR THE FAILURES DUE TO IMPROPER EXECUTION OF WORK AT SITE.
10. THE CUSTOMER IS RESPONSIBLE FOR ACCURATE LOCATIONS OF BUILDING LINES AND BENCH MARKS AT THE BUILDING SITE.

REV	DESCRIPTION	DATE	BY

FOR DISCUSSION	
FOR APPROVAL	✓
FOR CONSTRUCTION	

N

CLIENT :-
--
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PROJECT TITLE :-
M/s. VP Appartment.,
--

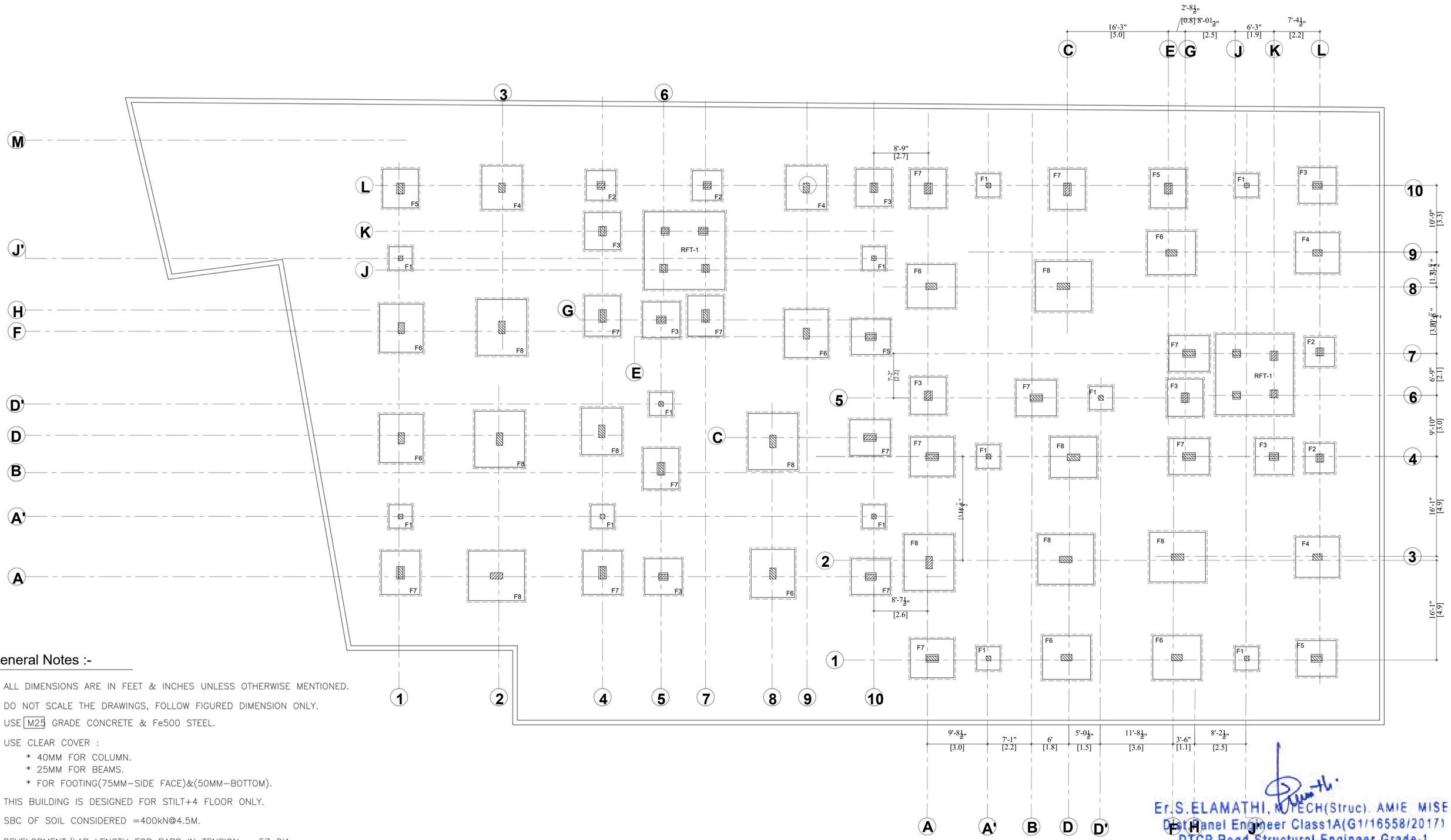
ARCHITECT NAME :-
M/s.Cogipro.,
--

DRAWING TITLE :-
Footing Reinforcement Detail.

STRUCTURAL CONSULTANTS

DRAWING NO
MS/2545/FRD/02.A
R0

DESIGN BY :	HARIHARAN.P	APPD BY :	S.ARUN KUMAR
DRAWN BY :	GUNAL.M	DATE :	26.08.2024
CHKD BY :	KANIMOZHI.A	SH.SIZE : A3	SCALE NTS



General Notes :-

1. ALL DIMENSIONS ARE IN FEET & INCHES UNLESS OTHERWISE MENTIONED.
2. DO NOT SCALE THE DRAWINGS, FOLLOW FIGURED DIMENSION ONLY.
3. USE M25 GRADE CONCRETE & Fe500 STEEL.
4. USE CLEAR COVER :
   * 40MM FOR COLUMN.
   * 25MM FOR BEAMS.
   * FOR FOOTING(75MM–SIDE FACE)&(50MM–BOTTOM).
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7. DEVELOPMENT/LAP LENGTH FOR BARS IN TENSION = 57 DIA.
8. THIS DRAWINGS SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT
9. THE CONSULTANT IS NOT RESPONSIBLE FOR THE FAILURES DUE TO IMPROPER EXECUTION OF WORK AT SITE.
10. THE CUSTOMER IS RESPONSIBLE FOR ACCURATE LOCATIONS OF BUILDING LINES AND BENCH MARKS AT THE BUILDING SITE.

FOOTING LAYOUT

URBANEST

TYPICAL FLOOR

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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

Verified RealEstate
3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai 600 097, India
hello@verified.realestate
+91 9996 12 9996

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.