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PLAN SHOWING THE PROPOSED CONSTRUCTION OF RESIDENTIAL BUILDING STILT +5 FLOORS AT OLD S.F.NO: 156/1B, T.S.NO:12/2, WARD NO:(U) 21, BLOCK NO:23, GANAPATHY NAGAR, GANAPATHY VILLAGE COIMBATORE NORTH TALUK, COIMBATORE DISTRICT & CORPORATION.

TYPICAL STRUCTURAL DESIGN CALCULATION

1. **General:**

Proposed building is Stilt +5 upper floors for residential purpose. Stilt floor is used for car parking. The floor height is 3.05m in upper floors.

2. **Design Basis:**

Latest Design codes of BIS- 456, 875 and 1893 are followed with SP-16 Design Aid book. A typical Frame was taken for analysis to arrive at the bending moment for column design. Since the building is 6stories. Wind force is taken into account. Live load reduction factor applied in design. Isolated foundation is proposed. Fe-500 steel is used as main steel and M20 grade concrete.

3. **Earthquake consideration:**

For better stability during earthquake, the columns are tied with plinth beams continuous lintels are specified for outer walls and column
Ties are closely spaced for better ductility. For building on stilt, minimum size of column is taken as 200mm (8")

4. **WIND LOAD:**

Vz	=	Vb x K1 x K2 x K3
Vb	=	39 m/sec in Coimbatore
K1	=	Probability Factor = 1
K2	=	Terrin, Height Factor = 1
p	=	0.6 x 39 x 39
	=	912.6 N/sq.m

J. PREM KUMAR
B.E. (CIVIL). M.E. (STRUCTURES)
COIMBATORE LPA/SE/GR-1/19/03/001
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Raja Annamalai Road, Saibaba Colony, Coimbatore

5. **Design Loads :**

Slab Thick 130 (5"Tk) = 3.175 kN/sq.m

Live Load = 2 kN/sq.m

Finishes = 1 kN/sq.m

= 7.175

Block work 200 thick for exterior walls

0.2 x 2.74 x 18 = 9.86 kN/m/floor

Beam 0.2 x 0.60 x 25 = 3.0 kN/m/floor

Column 0.2 x 0.60 x 2.74 x 25 = 8.22 kN/floor

These are taken for analysis with WL + LL +DL combination.

6. **SLAB DESIGN:**

Thickness = 127 mm (5" Tk) Concrete Mix Fck = M20

Cover =20 mm Steel Grade Fy = Fe500

Eff. Depth =99 mm

Panel = (5.38 x 6.5) m

One Way Slab = Ly/Lx = 5.38 / 3.1 = 1.73

Support Condition - Two Adjacent Edges Discontinuous

Short Span = ax = 0.084 (-BM at continuous edge) Table:91

=0.063 (+BM at midspan) in IS-456-2000

Long Span= ay = 0.047 (+BM at continuous edge)

=0.035 (+BM at midspan)

Designed for 0.084 co. efficient

Mu = 0.084 x 3.1 x 1.5 x 5.38 x 5.38 = 11.3 kN/m

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COIMBATORE LPA/SE/GR-1/19/03/001
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P_t = 0.748 % P_c = 0.000%

A_t = 0.748 x 200 x 424 / 100 = 634.3 mm^2 (bottom)

A_c = 0.000 x 200 x 424 / 100 = 0 mm^2 (top)

Provided 3 Nos. 16 = 603.17 mm^2

+ 2 Nos. 16 = 402.12 mm^2

= 1005.29 mm^2 (bottom)

Provided 2 Nos. 16 = 402.12 mm^2

+ 3 Nos. 16 = 603.17 mm^2

= 1005.29 mm^2 (top of support)

SHEAR DESIGN

Shear Force = $\frac{26.2 \times 5.38}{2}$ = 70.478 KN

Factored Shear Force = 1.5 x 70.478 = 105.72 KN

Eff. Depth , d = 424 mm

Shear Stress $\tau_v = \frac{Vu}{bd} = \frac{105.72 \times 10^3}{200 \times 424}$ = 1.246 N/mm^2

Table 20 of IS 456 : 2000, pg no. 73

$\tau_{c,max}$ = 2.8 N/mm^2

Shear to be carried out by stirrups $V_u - \tau_c bd$

From Table 61, P_t = 0.71 τ_c = 0.55 N/mm^2

$V_{us} = V_u - \tau_c bd$

$= (105.72 \times 10^3) - (0.55 \times 200 \times 424)$

= 59080 kN

$\frac{V_{us}}{d} = \frac{59.08}{42.4}$ = 1.39 kN/cm

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COIMBATORE LPA/SE/GR-1/19/03/001
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$$Mu = \frac{11.3 \times 1000 \times 1000}{1000 \times 99 \times 99} = 1.15 \text{ N/sq.m}$$

From Table – 3 of SP – 16, Pt = 0.204 %

Minimum Pt = 0.12 % as per code, for Fe-500

At = 0.204 x 1000 x 99 x 100 = 201.96 sq.mm/m

Provide 8 dia @ 152 c/c = 331 sq.mm/m Short span

Provide 8 dia @ 230 c/c = 219 sq.mm/m Long Span

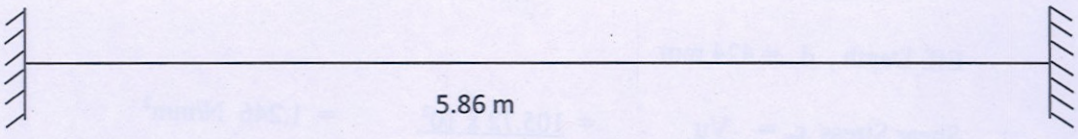
7. BEAM DESIGN

Effective Span = 5.38 m

Beam Size = 200 x 457 mm

$F_{ck} = M_{20}$

Udl = 26.2 KN/m



Max. Bending Moment at Mid Span for Udl $= \frac{Wl^2}{12}$

$= \frac{26.2 \times 5.38^2}{12}$

$= 63.19$ kNm

$Mu = 63.19 \times 1.5 \times 10^{-6}$

$= 94.785 \times 10^{-6}$ Nmm

$$\frac{Mu}{bd^2} = \frac{63.19 \times 1.5 \times 10^{-6}}{200 \times 424 \times 424}$$

$= 94.785 \times 10^{-6}$ N/mm^2

From Table 48 of SP 16, d' / d = 33 / 424 = 0.077

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Sp 16, pg no. 179, from table 62, Fy = 415 N/mm^2

Provide 8mm dia two legged vertical stirrups at 150 mm c/c (at end section)

8mm dia two legged vertical stirrups at 200 mm c/c (at mid section)

8. COLUMN DESIGN:

Column size = 200 x 380

Maximum load on column in basement P = 600 kN

PU=1.5x600=900kN

Maximum Bending moment = 23 kNm MU=1.5x23=34.5kNm

Cover =40mm

d'/d=0.126

Fck = M25= 25N/sq.mm fy = Fe500

Provide bars equally all sides

Refer chart 48 of SP-16

$$\frac{pu}{Fck\ x\ bx\ d} = \frac{900\ x1000}{25\ x200\ x380} = 0.47$$

$$\frac{Mu}{Fck\ x\ b\ d^2} = \frac{34.5\ x10^6}{25\ x200\ x380\ x380} = 0.047$$

$$\frac{p}{Fck\ x\ b\ xd^2} = 0.04\ p\% = 0.04 \times 25 = 1\%$$

Minimum steel = 1%

$$As = \frac{1\ x200\ x\ 380}{100} = 760\ sq.mm$$

Provide 8 Nos 16 dia = 1608.49 $sq.mm$

Tie 8@203c/c and link 8 @ 203c/c.

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B.E. (CIVIL). M.E. (STRUCTURES)
COIMBATORE LPA/SE/GR-1/19/03/001
REGISTERED STRUCTURAL ENGINEER GR
13A, SM Towers, 1st Floor, Jawah
Raja Annamalai Road, Saibaba Col

9. **FOOTING DESIGN:**

Maximum load on column P = 600 kN Fck = M20

Add 5% Footing load = 630 kN

S.B.C of Soil at 340 kN/sq.m at depth = 3 m

$$\text{Area} = \frac{630}{340}$$

$$= 1.85 \text{ sq.m}$$

Assume footing base of 1.68 X 1.37 m and depth = 381 mm

Eff. Depth = 330 mm

So, Pressure on soil is

$$\frac{600}{1.68\ X\ 1.37} = 260.94 \text{ kN/sq.m} < 340 \text{ kN/sq.m}$$

$$M = \frac{260.94\left(\frac{1.68}{2} - \frac{0.38}{2}\right)^2}{2}$$

$$= 54.73 \text{ KNm}$$

$$Mu = 54.73 \text{ X } 1.5$$

$$= 82.09 \text{ KNm}$$

$$\frac{Mu}{bd^2} = \frac{82.09\ x(10)^6}{1000x(330)^2}$$

$$= 0.78 \text{ N/sq.m}$$

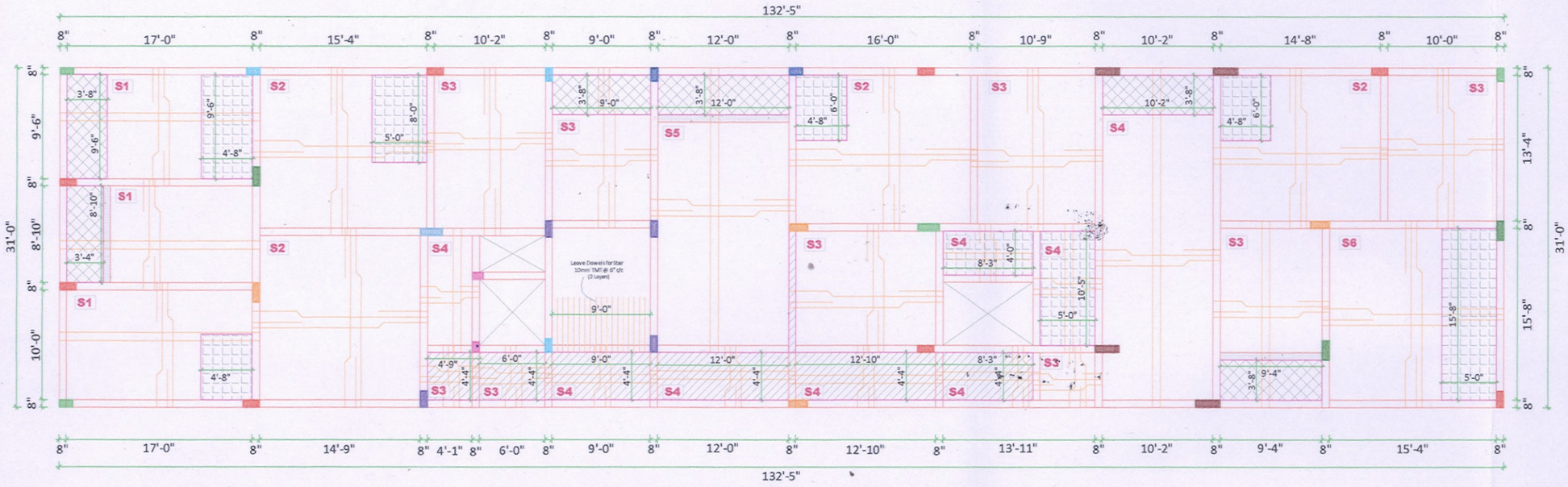
Fck = 20 N/sq.mm

From Table-3 of SP – 16, min pt% = 0.19%

$$At = \frac{0.19 \text{ X } 1000 \text{ X } 330}{100} = 627 \text{ sq.mm}$$

Provide 10 dia @ 125 c/c = 628 sq.mm

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Raja Annamalai Road, Saibaba Colony, Coimbatore - 641 043.



TYPICAL FLOOR ROOF SLAB LAYOUT & DETAILS

SLAB TYPE	TK	SHORT SPAN	LONG SPAN	REMARK
S1	5" TK	8 TMT @ 6" C/C	8 TMT @ 9" C/C	ONE WAY SLAB
S2	5" TK	8 TMT @ 6" C/C	8 TMT @ 6" C/C	TWO WAY SLAB
S3	4½" TK	8 TMT @ 6" C/C	8 TMT @ 6" C/C	TWO WAY SLAB
S4	4½" TK	8 TMT @ 6" C/C	8 TMT @ 9" C/C	ONE WAY SLAB
S5	5" TK	10 TMT @ 5" C/C	8 TMT @ 9" C/C	ONE WAY SLAB
S6	5" TK	10 TMT @ 7" C/C	10 TMT @ 7" C/C	TWO WAY SLAB

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Raja Annamalai Road, Saibaba Colony, Coimbatore - 641 043.

LEGEND:

- BALCONY & UTILITY SUNK BY 5"
- CORRIDOR SUNK BY 3"
- TOILET SUNK BY 4"
- CONCEALED BEAM

NOTES:

01. ALL DIMENSIONS ARE IN **"FEET & INCHES"** UNLESS OTHERWISE SPECIFIED.
02. ALL LEVELS ARE IN " **FEET**".
03. ALL LEVELS ARE FROM FINISHED FLOOR LEVEL (FFL).
04. CONCRETE : M20 (1:1½:3) GRADE FOR BEAM & SLAB
05. STEEL : Fe 500
06. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:
    a) FOR SLABS - ¾" (20 mm)
07. REINFORCEMENT IN THE SLABS SHALL BE CRANKED AT 0.25L FROM SUPPORT AND EXTRA RODS SHALL BE FOR 0.25L LENGTH UNLESS SPECIFIED OTHERWISE WHERE L IS CLEAR SPAN.
08. USE 57 Ø FOR DEVELOPMENT LENGTH.
09. PROVIDE A LAP LENGTH OF 50 Ø MINIMUM FOR BEAMS & SLAB REINFORCEMENTS, WHERE Ø IS DIAMETER OF MAIN BARS.
10. ALL TOILET SUNKEN SIZES MENTIONED ARE AFTER CONCRETING DIMENSION NOT SHUTEERING DIMENSION.
11. LEAVE DOWEL RODS BOTH TOP & BOTTOM FOR STAIRCASE.
12. FOR STAIRCASE DETAILS REFER SEPARATE DRAWING.
13. T.O.C - TOP OF CONCRETE, TK - THICKNESS, LVL - LEVEL.
14. FOR SLAB PROJECTION DETAILS REFER ELEVATION AND WORKING DRAWING.
15. ALL DIMENSIONS & SECTIONS SHOULD BE CHECKED BY THE SITE ENGINEER BEFORE CONSTRUCTION.
16. **DO NOT SCALE THE DRAWING, FOLLOW THE GIVEN DIMENSIONS ONLY.**

S E W N

DRAWING TITLE:

TYPICAL FLOOR ROOF SLAB DETAILS

PROJECT TITLE :

STERLING HEIGHTS

CLIENT NAME :

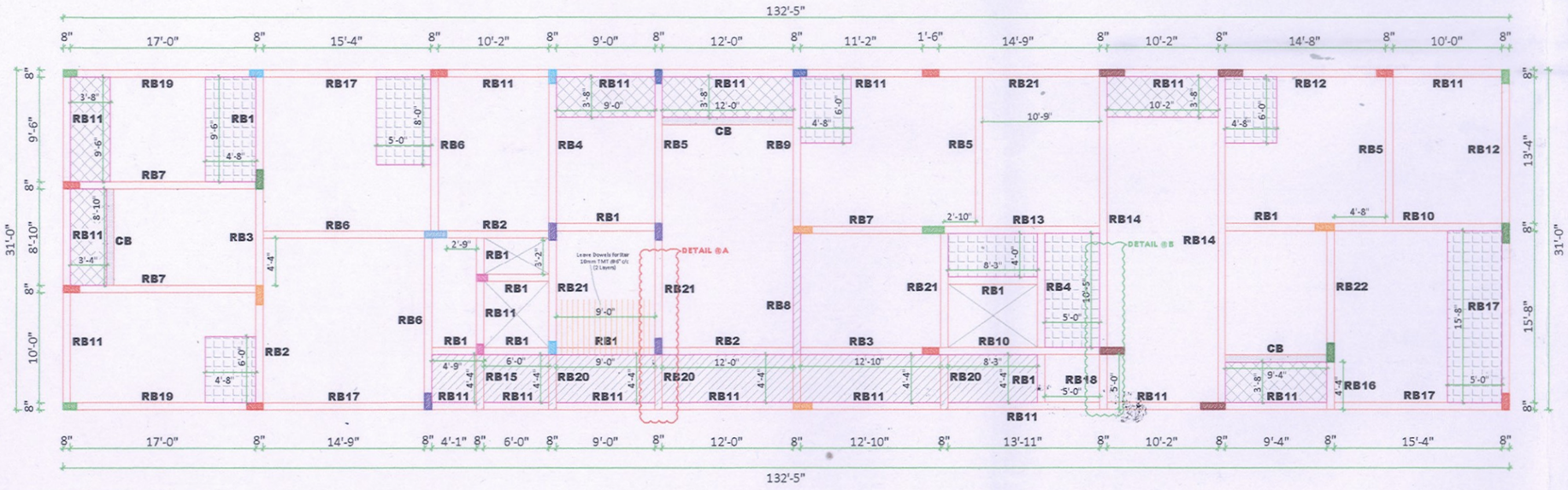
MARUTHAM

CONSULTANTS :

INFINUSTECH
ENGINEERING * ARCHITECTURE
13 A, 1ST FLOOR, JAWAHAR NAGAR,
RAJA ANNAMALAI ROAD,
COIMBATORE - 641 011.
Mobile : 98455 33324
Email : infinustech@gmail.com

DATE	DRAWING NO	DRAWN BY	CHECKED BY	SCALE
22.05.24	----------	KARTHICK K	NANDHINI	NTS

A2 - Sheet



NOTES:

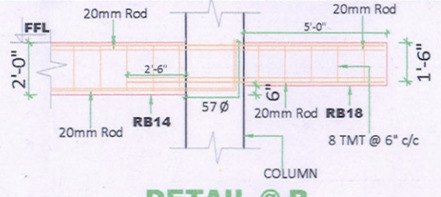
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02. ALL LEVELS ARE IN "**FEET**".
03. ALL LEVELS ARE FROM FINISHED FLOOR LEVEL(FFL).
04. CONCRETE : **M20 (1:1½:3)** GRADE FOR BEAM
05. STEEL : **Fe 500**
06. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:
    a) FOR BEAMS - **1" (25 mm)**
    b) FOR SLABS - **¾" (20 mm)**
07. PROVIDE A LAP LENGTH OF **50 Ø** MINIMUM FOR BEAMS REINFORCEMENTS, WHERE **Ø** IS DIAMETER OF MAIN BARS.
08. USE **57 Ø** FOR DEVELOPMENT LENGTH.
09. LEAVE DOWEL RODS BOTH TOP & BOTTOM FOR STAIRCASE.
10. FOR STAIRCASE DETAILS REFER SEPARATE DRAWINGS.
11. DRAWING TO BE READ IN CONJUNCTION WITH OTHER RELEVANT PLAN & ELEVATION DRAWINGS.
12. ALL DIMENSIONS & SECTIONS SHOULD BE CHECKED BY THE SITE ENGINEER BEFORE CONSTRUCTION.
13. **DO NOT SCALE THE DRAWING, FOLLOW THE GIVEN DIMENSIONS ONLY.**

BEAM REINFORCEMENT DETAILS:

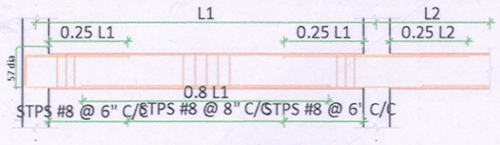
BEAM TYPE	END SECTION	MID SECTION
BEAM - RB1	8" / 12" / 3 - 12 Ø (-) / 8mmTMT@6"c/c / 2 - 12 Ø (-)	8" / 12" / 2 - 12 Ø (-) / 8mmTMT@8"c/c / 3 - 12 Ø (-)
BEAM - RB2	8" / 12" / 2 - 12 Ø (-) / 1 - 16 Ø (+) / 8mmTMT@6"c/c / 2 - 12 Ø (-)	8" / 12" / 2 - 12 Ø (-) / 8mmTMT@8"c/c / 1 - 16 Ø (+) / 2 - 12 Ø (-)
BEAM - RB3	8" / 15" / 2 - 12 Ø (-) / 1 - 16 Ø (+) / 8mmTMT@6"c/c / 2 - 12 Ø (-)	8" / 15" / 2 - 12 Ø (-) / 8mmTMT@8"c/c / 1 - 16 Ø (+) / 2 - 12 Ø (-)
BEAM - RB4	8" / 15" / 2 - 16 Ø (-) / 1 - 12 Ø (+) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	8" / 15" / 2 - 16 Ø (-) / 8mmTMT@8"c/c / 1 - 12 Ø (+) / 2 - 16 Ø (-)
BEAM - RB5	8" / 15" / 3 - 16 Ø (-) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	8" / 15" / 2 - 16 Ø (-) / 8mmTMT@8"c/c / 3 - 16 Ø (-)
BEAM - RB6	8" / 15" / 4 - 16 Ø (-) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	8" / 15" / 2 - 16 Ø (-) / 8mmTMT@8"c/c / 4 - 16 Ø (-)
BEAM - RB7	8" / 15" / 5 - 16 Ø (-) / 8mmTMT@6"c/c / 3 - 16 Ø (-)	8" / 15" / 3 - 16 Ø (-) / 8mmTMT@8"c/c / 4 - 16 Ø (-)
BEAM - RB8	8" / 15" / 6 - 16 Ø (-) / 8mmTMT@6"c/c / 3 - 16 Ø (-)	8" / 15" / 3 - 16 Ø (-) / 8mmTMT@8"c/c / 6 - 16 Ø (-)
BEAM - RB9	8" / 15" / 6 - 16 Ø (-) / 8mmTMT@6"c/c / 3 - 16 Ø (-)	8" / 15" / 3 - 16 Ø (-) / 8mmTMT@8"c/c / 3 - 16 Ø (-)

BEAM TYPE	END SECTION	MID SECTION
BEAM - RB10	8" / 18" / 6 - 16 Ø (-) / 8mmTMT@6"c/c / 3 - 16 Ø (-)	8" / 18" / 3 - 16 Ø (-) / 8mmTMT@8"c/c / 4 - 16 Ø (-)
BEAM - RB11	8" / 18" / 3 - 12 Ø (-) / 8mmTMT@6"c/c / 2 - 12 Ø (-)	8" / 18" / 2 - 12 Ø (-) / 8mmTMT@8"c/c / 3 - 12 Ø (-)
BEAM - RB12	8" / 18" / 2 - 12 Ø (-) / 1 - 16 Ø (+) / 8mmTMT@6"c/c / 2 - 12 Ø (-)	8" / 18" / 2 - 12 Ø (-) / 8mmTMT@8"c/c / 1 - 16 Ø (+) / 2 - 12 Ø (-)
BEAM - RB13	8" / 24" / 5 - 20 Ø (-) / 8mmTMT@6"c/c / 3 - 20 Ø (-)	8" / 24" / 3 - 20 Ø (-) / 8mmTMT@6"c/c / 5 - 20 Ø (-)
BEAM - RB14	8" / 24" / 6 - 20 Ø (-) / 8mmTMT@6"c/c / 4 - 20 Ø (-)	8" / 24" / 4 - 20 Ø (-) / 8mmTMT@6"c/c / 6 - 20 Ø (-)
BEAM - RB15	8" / 15" / 3 - 12 Ø (-) / 8mmTMT@6"c/c / 2 - 12 Ø (-)	CANTILEVER
BEAM - RB16	8" / 18" / 5 - 20 Ø (-) / 8mmTMT@6"c/c / 3 - 20 Ø (-)	CANTILEVER
BEAM - RB17	8" / 18" / 2 - 16 Ø (-) / 1 - 12 Ø (+) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	8" / 18" / 2 - 16 Ø (-) / 8mmTMT@8"c/c / 1 - 12 Ø (+) / 2 - 16 Ø (-)

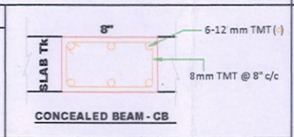
BEAM TYPE	END SECTION	MID SECTION
BEAM - RB18	8" / 18" / 6 - 20 Ø (-) / 8mmTMT@6"c/c / 4 - 20 Ø (-)	CANTILEVER
BEAM - RB19	8" / 18" / 3 - 16 Ø (-) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	8" / 18" / 2 - 16 Ø (-) / 8mmTMT@8"c/c / 3 - 16 Ø (-)
BEAM - RB20	8" / 15" / 4 - 16 Ø (-) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	CANTILEVER
BEAM - RB21	8" / 18" / 4 - 16 Ø (-) / 8mmTMT@6"c/c / 2 - 16 Ø (-)	8" / 18" / 2 - 16 Ø (-) / 8mmTMT@8"c/c / 3 - 16 Ø (-)
BEAM - RB22	8" / 18" / 5 - 20 Ø (-) / 8mmTMT@6"c/c / 3 - 20 Ø (-)	8" / 18" / 3 - 20 Ø (-) / 8mmTMT@8"c/c / 3 - 20 Ø (-)



DETAIL @ B

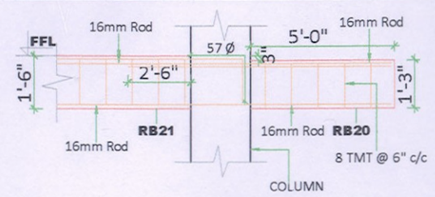


TYPICAL CURTAILMENT DETAILS



CONCEALED BEAM - CB





DETAIL @ A

LEGEND:

- BALCONY & UTILITY SUNK BY 5"
- CORRIDOR SUNK BY 3"
- TOILET SUNK BY 4"
- CONCEALED BEAM

DRAWING TITLE:

TYPICAL FLOOR ROOF BEAM DETAILS

PROJECT TITLE :

STERLING HEIGHTS

CLIENT NAME :

MARUTHAM

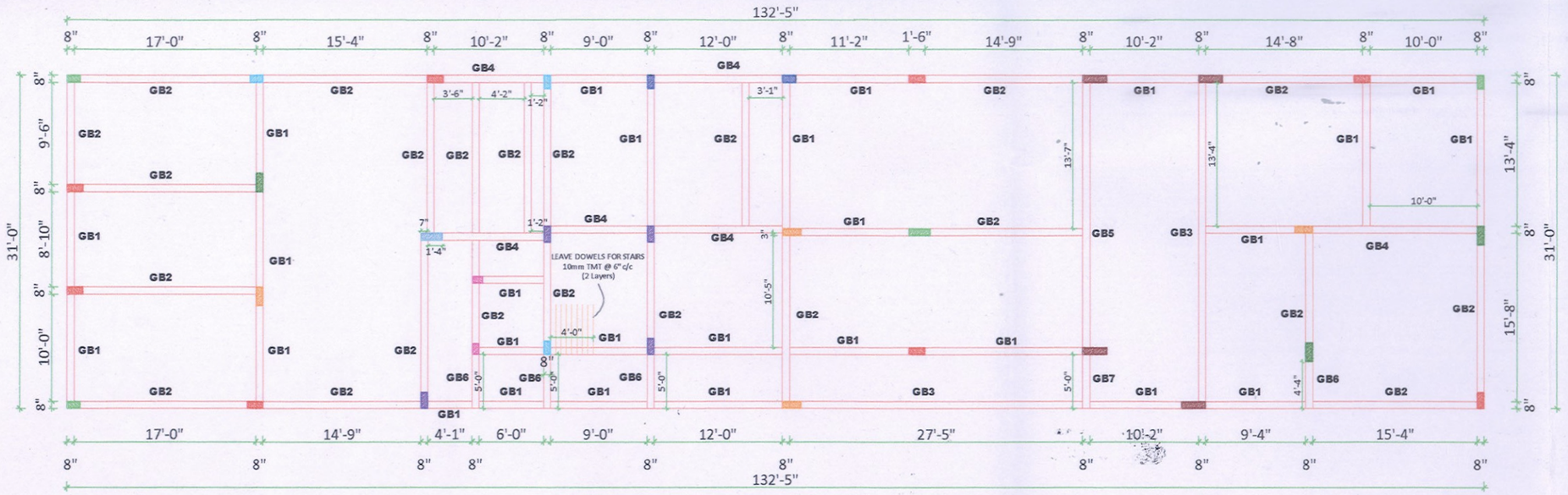
CONSULTANTS :

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INFINUSTECH
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13 A, 1ST FLOOR, JAWAHAR NAGAR,
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COIMBATORE - 641 011.
Mobile : 98455 33324
Email : infinustech@gmail.com

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A2 - Sheet

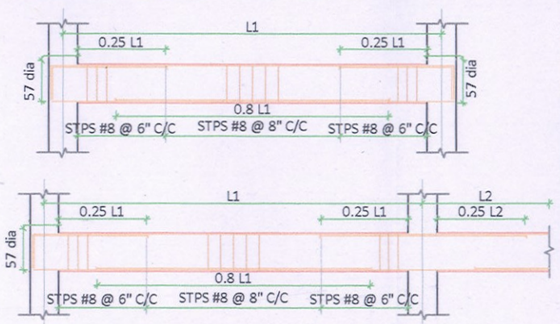


GRADE BEAM LAYOUT

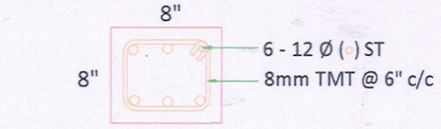
BEAM REINFORCEMENT DETAILS:

BEAM TYPE	END SECTION	MID SECTION
BEAM - GB1	12" × 8": 3 - 12 Ø (○), 8mmTMT@6"c/c, 2 - 12 Ø (○)	12" × 8": 2 - 12 Ø (○), 8mmTMT@8"c/c, 3 - 12 Ø (○)
BEAM - GB2	15" × 8": 3 - 12 Ø (○), 8mmTMT@6"c/c, 2 - 12 Ø (○)	15" × 8": 2 - 12 Ø (○), 8mmTMT@8"c/c, 3 - 12 Ø (○)
BEAM - GB3	24" × 8": 2 - 12 Ø (○), 1 - 16 Ø (●), 8mmTMT@6"c/c, 2 - 12 Ø (○)	24" × 8": 2 - 12 Ø (○), 8mmTMT@8"c/c, 1 - 16 Ø (●), 2 - 12 Ø (○)
BEAM - GB4	15" × 8": 2 - 16 Ø (○), 1 - 12 Ø (●), 8mmTMT@6"c/c, 2 - 16 Ø (○)	15" × 8": 2 - 16 Ø (○), 8mmTMT@8"c/c, 1 - 12 Ø (●), 2 - 16 Ø (○)
BEAM - GB5	24" × 8": 2 - 16 Ø (○), 1 - 12 Ø (●), 8mmTMT@6"c/c, 2 - 16 Ø (○)	24" × 8": 2 - 16 Ø (○), 8mmTMT@6"c/c, 1 - 12 Ø (●), 2 - 16 Ø (○)

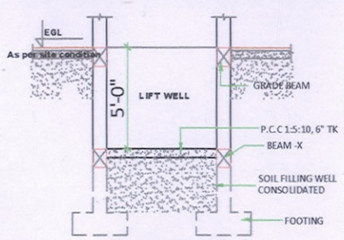
BEAM TYPE	END SECTION	MID SECTION
BEAM - GB6	15" × 8": 2 - 16 Ø (○), 1 - 12 Ø (●), 8mmTMT@6"c/c, 2 - 16 Ø (○)	CANTILEVER
BEAM - GB7	24" × 8": 2 - 16 Ø (○), 1 - 12 Ø (●), 8mmTMT@6"c/c, 2 - 16 Ø (○)	CANTILEVER



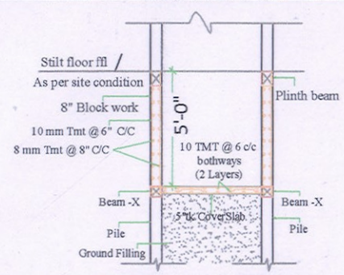
TYPICAL CURTAILMENT DETAILS



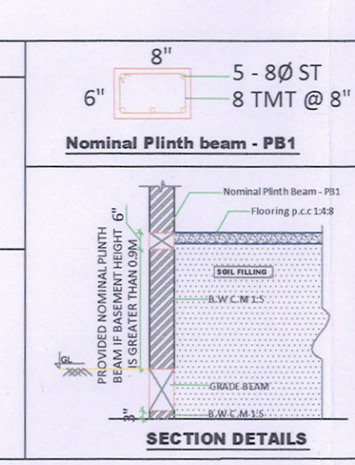
BEAM -X



LIFT PIT DETAILS



LIFT SECTION DETAILS



Nominal Plinth beam - PB1

SECTION DETAILS

NOTES:

01. ALL DIMENSIONS ARE IN **"FEET & INCHES"** UNLESS OTHERWISE SPECIFIED.
02. ALL LEVELS ARE IN " **FEET**".
03. ALL LEVELS ARE FROM FINISHED FLOOR LEVEL(FFL).
04. CONCRETE : **M20 (1:1½:3)** GRADE FOR BEAM
05. STEEL : **Fe 500**
06. CLEAR COVER TO MAIN REINFORCEMENT SHALL BE AS FOLLOWS:
    a) FOR BEAMS - **1" (25 mm)**.
07. PROVIDE A LAP LENGTH OF **50 Ø** MINIMUM FOR BEAMS REINFORCEMENTS, WHERE **Ø** IS DIAMETER OF MAIN BARS.
08. USE **57 Ø** FOR DEVELOPMENT LENGTH.
09. LEAVE DOWEL RODS BOTH TOP & BOTTOM FOR STAIRCASE.
10. FOR STAIRCASE DETAILS REFER SEPARATE DRAWINGS.
11. DRAWING TO BE READ IN CONJUNCTION WITH OTHER RELEVANT PLAN & ELEVATION DRAWINGS.
12. ALL DIMENSIONS & SECTIONS SHOULD BE CHECKED BY THE SITE ENGINEER BEFORE CONSTRUCTION.
13. **DO NOT SCALE THE DRAWING, FOLLOW THE GIVEN DIMENSIONS ONLY.**

S E W

J. PREM KUMAR
B.E. (CIVIL). M.E. (STRUCTURES)
COIMBATORE LPA/SE/GR-1/[illegible]
REGISTERED STRUCTURAL ENGINEER
13A, SM Towers, 1st Floor, [illegible]
Raja Annamalai Road, Saibaba Colony, Coimbatore - 641 [illegible]

DRAWING TITLE:

GRADE BEAM LAYOUT & DETAILS

PROJECT TITLE :

PROPOSED RESIDENTIAL APARTMENT BUILDING "STERLING HEIGHTS "@ COIMBATORE

CLIENT NAME :

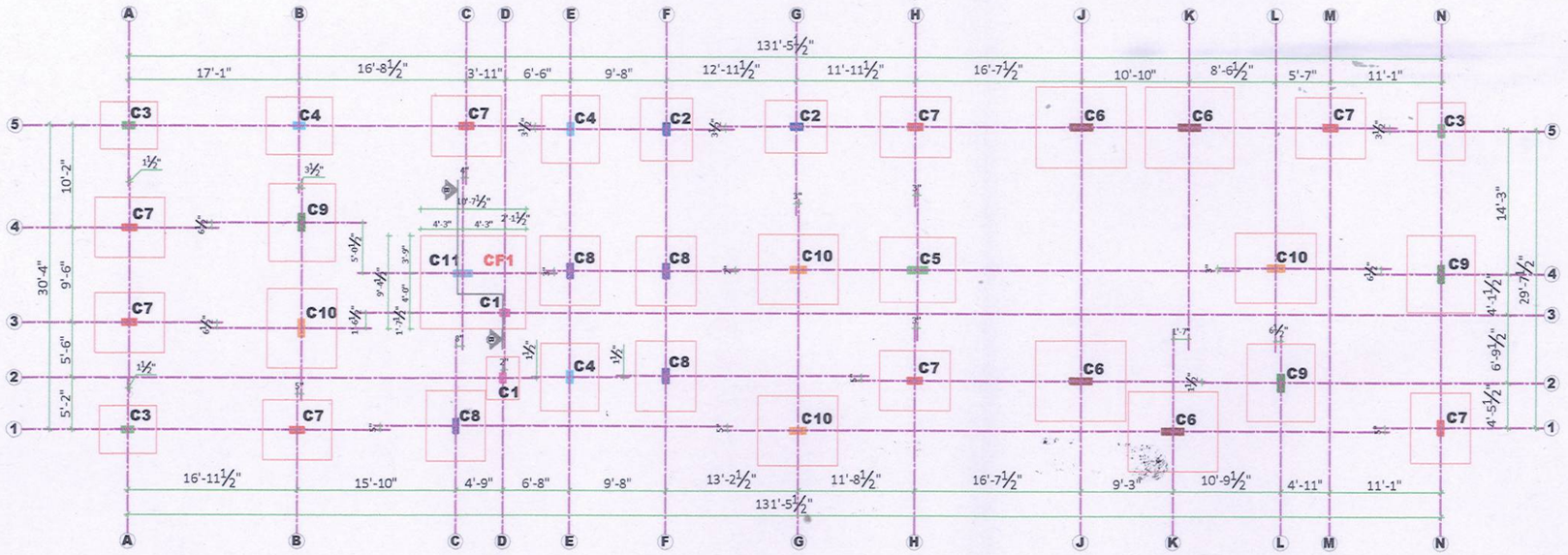
MARUTHAM DEVELOPERS, COIMBATORE.

CONSULTANTS :

INFINUSTECH
ENGINEERING * ARCHITECTURE
13 A, 1ST FLOOR , JAWAHAR NAGAR,
RAJA ANNAMALAI ROAD,
COIMBATORE - 641 011.
Mobile : 98455 33324
Email : infinustech@gmail.com

DATE	DRAWING NO	DRAWN BY	CHECKED BY	SCALE
16.05.24	---------	DIVYA P	NANDHINI K	NTS

A1 - Sheet

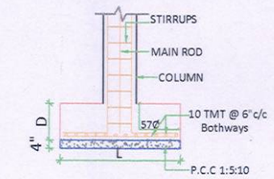


01. ALL DIMENSIONS ARE IN **"FEET & INCHES"** UNLESS OTHERWISE SPECIFIED.
02. ALL LEVELS ARE IN **"FEET"**.
03. ALL LEVELS ARE FROM FINISHED FLOOR LEVEL (FFL).
04. CONCRETE : **M20 (1:1½:3)** GRADE FOR FOOTING AND **M25 (1:1:2)** GRADE FOR COLUMN
05. STEEL : **Fe 500**
06. CLEAR COVER TO MAIN REINFORCEMENT :
    a) FOR FOOTINGS - **2" (50mm)**
    b) FOR COLUMNS - **1½ " (40mm)**
07. USE **57 Ø** FOR DEVELOPMENT LENGTH AS SHOWN IN FOOTING CROSS SECTION.
08. PROVIDE A LAP LENGTH OF **50 Ø** MINIMUM FOR COLUMN & FOOTING REINFORCEMENTS, WHERE Ø IS DIAMETER OF MAIN BARS.
09. SBC ADOPTED FOR THE DESIGN - **340 kN/m²** AT A DEPTH OF 3 m FROM EXISTING GROUND LEVEL
10. THE STRUCTURE IS DESIGNED FOR **STILT+5** FLOOR ONLY.
11. DRAWING TO BE READ IN CONJUNCTION WITH OTHER RELEVANT ARCHITECTURE DRAWINGS.
12. ALL DIMENSIONS & SECTIONS SHOULD BE CHECKED BY THE SITE ENGINEER BEFORE CONSTRUCTION.
13. **DO NOT SCALE THIS DRAWING, FOLLOW GIVEN DIMENSIONS ONLY.**

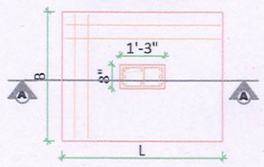
COLUMN / FOOTING REINFORCEMENT DETAILS:

COLUMN TYPE	COLUMN SIZE	GRIDS	COLUMN REINFORCEMENT (STILT & FIRST)	FOOTING SIZE (L X B X D) & REINFORCEMENT	MIX	Total No. of Columns
C1	8"X12"	D2,D3	12" / 8" — 8 - 12 Ø (-) ; 8mm TMT @ 7" c/c (1 Tie + 1 Link)	4'3" x 3'3" x 1'0" 10mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	02
C2	8"X15"	F5,G5	15" / 8" — 8 - 16 Ø (-) ; 8mm TMT @ 8" c/c (1 Tie + 1 Link)	6'3" x 5'3" x 1'6" 10mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	02
C3	8"X15"	A1,A5,N5	15" / 8" — 4 - 12 Ø (-) ; 4 - 16 Ø (-) ; 8mm TMT @ 8" c/c (1 Tie + 1 Link)	5'9" x 4'9" x 1'3" 10mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	03
C4	8"X15"	B5,E2,E5	15" / 8" — 10 - 16 Ø (-) ; 8mm TMT @ 8" c/c (2 Ties)	6'9" x 5'9" x 1'9" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	03
C5	8"X24"	H4	24" / 8" — 10 - 20mm Ø (-) ; 8mmØ TMT @ 8"c/c (2 Ties)	7'6" x 6'6" x 2'0" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	01
C6	8"X27"	J2,J5,K1,K5	27" / 8" — 14 - 25mm Ø (-) ; 8mmØ TMT @ 8"c/c (3 Ties)	9'0" x 8'0" x 2'3" 12mmØ TMT @ 4"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	04
C7	8"X18"	A3,A4,B1,C5, H2,H5,M5,N1	18" / 8" — 10 - 16mm Ø (-) ; 8mmØ TMT @ 8"c/c (2 Ties)	7'0" x 6'0" x 1'9" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	08
C8	8"X18"	C1,E4,F2,F4	18" / 8" — 12 - 16mm Ø (-) ; 8mmØ TMT @ 8"c/c (2 Ties + 1 Link)	7'0" x 6'0" x 1'9" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	04
C9	8"X21"	B4,L2,N4	21" / 8" — 12 - 16mm Ø (-) ; 8mmØ TMT @ 8"c/c (2 Ties + 1 Link)	7'9" x 6'9" x 1'9" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	03
C10	8"X21"	B3,G1,G4,L4	21" / 8" — 10 - 20mm Ø (-) ; 8mmØ TMT @ 8"c/c (2 Ties)	8'0" x 7'0" x 2'0" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	04
C11	8"X24"	C4	24" / 8" — 12 - 20mm Ø (-) ; 8mmØ TMT @ 8"c/c (2 Ties + 1 Link)	8'6" x 7'6" x 2'0" 12mmØ TMT @ 5"c/c (Both ways)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	01
				TOTAL NO. OF COLUMNS	-	35

FOOTING TYPE	COLUMN TYPE	GRIDS	FOOTING SIZE (L X B X D) & REINFORCEMENT	MIX	TOTAL NO. OF COLUMNS
CF1	C1,C11	C4,D3	10'7½" x 9'4½" x 2'0" 12 mmØ TMT @ 5"c/c Both ways (2 layers)	FOR FOOTING M20(1:1½:3) FOR COLUMN M25(1:1:2)	02

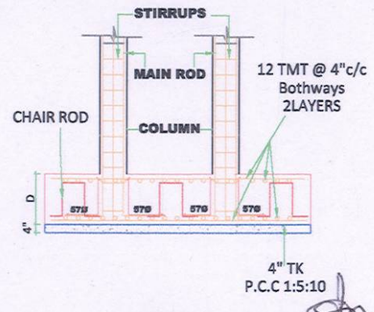


SECTION A-A

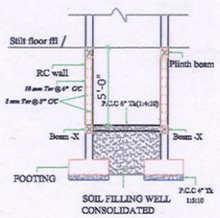


PLAN

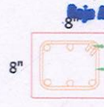
TYPICAL FOOTING DETAILS



SECTION BB

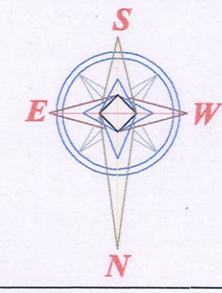


LIFT PIT DETAILS



BEAM -X

J. PREM KUMAR
B.E. (CIVIL), M.E. (STRUCTURES)
COIMBATORE LPA/SE/GR-1/19/03/001
REGISTERED STRUCTURAL ENGINEER GRADE-1
13A, SM Towers, 1st Floor, Jawahar Nagar,
Raja Annamalai Road, Selvaka Colony, Coimbatore - 641 043.



DRAWING TITLE:
COLUMN,CENTER LINE & FOOTING LAYOUT & DETAILS

PROJECT TITLE :
PROPOSED RESIDENTIAL APARTMENT BUILDING "STERLING HEIGHTS " @ COIMBATORE.

CLIENT NAME :
MARUTHAM DEVELOPERS, COIMBATORE.

DATE	REV NO	DESCRIPTION	REV BY

CONSULTANTS :

INFINUSTECH
ENGINEERING * ARCHITECTURE
13 A, 1ST FLOOR, JAWAHAR NAGAR,
RAJA ANNAMALAI ROAD,
COIMBATORE - 641 011.
Mobile : 98455 33324
Email : infinustech@gmail.com

DATE	DRAWING NO	DRAWN BY	CHECKED BY	SCALE
14.05.24	------	ABISHA J	NANDHINI	NTS

A2 - Sheet



our services doesn't just end there

Buying & Selling Services

Property Buying Assistance, Property Selling Support, Market Price Analysis, Owner Outreach and Negotiation.

Legal & Documentation Services

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Property Valuation & Cost Estimation

Guideline Value, Apartment Composite Value, Stamp Duty & Registration Fees Calculator, Building Value Calculator, Capital Gains Calculator, Area Unit Converter, Length Unit Converter

Ownership, Compliance & Legal Verification

Encumbrance Certificate (EC) Search, Find Your SRO, Temple Property Check, WAQF Property Check, View Patta/Chitta, View FMB, Patta Analyzer, EC Analyzer

Zoning & Land Use Analysis

Land Use Zone Finder, CRZ Zone Check, Aquifer Zone Check, CBA Check, EWS Check, Road Width Check, Proposed Road Widening Check, FSI Calculator

Property Documentation & Workflow Tools

Forms & Templates, Document Generator, Document Translation, Dictionary

Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

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