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DIGITALLY VERIFIED RECORD

DESIGN CALCULATION FOR PROPOSED STILT +5 FLOORS RESIDENTIAL APARTMENT AT SF 47/2A1, KALAPATTI WEST, KALAPATTI, COIMBATORE -641048

Project Detail :

Premier Developers, Proposed Stilt + 5 Floors Residential Apartment at SF No 47/2A1, Kalapatti West, Kalapatti, Coimbatore-641048

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REGD. No : TD/RSE/Gr-I/2025/02/002
31 B, OLD DAMU NAGAR, PULIYAKULAM,
COIMBATORE - 641 045

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Date: 21.08.2025

Revision: R0

DESIGN CRITERIA

1. Project Details:

With reference to the Architectural drawing, the details of this block as follows.

S.No	Description	Particulars
1.	Block Name	Apartment
2.	Type of Structure	RCC Structure
3.	Type of Foundation	Isolated Foundation
4.	Length of Structure	55.2 m
5.	Breadth of Structure	20.9m
6.	Height of Structure	18.3 m
7.	No. of Storeys	G+5 floors Only
8.	Structural System	Framed
9.	Seismic Consideration	SMRF

2. MATERIAL SPECIFICATIONS:

Concrete:

With reference to the tender document, the grade of concrete used for various structural elements are shown in Table 1.

Table 1: Grade of Concrete for structural elements

S.No	Elements	Grade of Concrete
1.	Foundation (a) Isolated Footing	M25
2.	(a) Plinth Beam (b) Tie Beam	M25 M25

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3.	Column below Plinth	M25
	(a). Super Structure Above First Floor	M20
	(b). below First Floor	M25
4.	Miscellaneous Structural Elements	M20
Minimum Cement content should be 300 kg/m^3 – M25 Grade of Concrete		

Reinforcement

Steel reinforcements used for all structural elements shall be High Yield Strength Deformed thermo- mechanically treated bars with yield stress of 550Mpa.

3. SUPERSTRUCTURE

- Soild Block wall (200mm thick) is considered for the design.

4. COVER TO REINFORCEMENTS

Clear Cover to Main Reinforcement (Table 3) are provided based on the above criteria as per IS:456-2000, Table-16 of page 47,

Table 3: Clear Cover details for various Structural Elements

S.No	Structural Elements	Clear cover
1.	Footing	75mm
2.	Columns	40 mm
3.	Beams	30 mm
4.	Slabs	20 mm

5. LOADS:

❖ **Dead Load**

Table 4 shows the unit weight of building materials considered for design in accordance with Table 1 of IS:875(Part I)-1987.

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Table 4: Unit Weight of Materials

S.No	Materials	Unit weight (kN/m^3)
1.	Reinforced Cement Concrete	25
2.	Plain Cement Concrete	24
3.	Steel Reinforcement	78.5
4.	Solid Block wall	24

❖ **Live Load**

The live loads considered for design in accordance with IS:875(Part II)-1987, Table1 Pg no 7-11 is listed in Table 5.

Table 5: Live Load for various buildings

S.No	Specifications	Live Load (kN/m^2)
Buildings		
1.	Imposed Loads on Hall,Kitchen,Bed,Residential	2

❖ **Seismic Load**

The structure has been analysed as per the guidelines given in IS:1893(Part I)-2016. The method used for analysis is Seismic Co-efficient Method and the forces are calculated for Dead Load plus percentage of Imposed Load.

Design Seismic Base Shear, $V_B = A_h * W$

Where,

A_h = Design Horizontal Seismic Coefficient

W = Seismic Weight of the building

Design Horizontal Seismic Co-efficient, $A_h = Z/2 * I/R * Sa/g$ (Values given in Table 8).

Table 8: Particulars of seismic factors for TamilNadu region

Length	L	:	55.02	m
Width (span)	W	:	20.09	m
Height	H	:	18.03	m
Seismic Zone		:	III	
Zone factor		:	0.16	(As per IS 1893: 2016), Table 3
Importance factor		:	1.50	(As per IS 1893: 2016), Table 8
Response reduction factor		:	5.00	(As per IS 1893: 2016), Table 9

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Critical damping		:	0.05
Type of structure		:	RCC
Height of the building		:	18.03 m
X direction Plinth level length		:	55.02
Z direction Plinth level length		:	20.09
Design Acceleration Specturm	(Z/2)/(R/I)	:	0.02
	Px		0.20
	Pz		0.21
	Sa/g		2.50

6. LOAD COMBINATIONS:

The structure has been analysed for the load combinations given in IS: 456 - 2000 (Table 18, pg. No 18) and IS:800-2007 (Cl no 5.3.3, Table 4, Pg no. 29) for RCC and steel structure respectively (Table 10). The loads are combined in accordance with the stipulations in IS: 875 (Part 5)-1987 Cl.no 8.1, Pg.no 16. Whenever Dead and Imposed Load is combined with Earthquake Load, the appropriate part of imposed load as specified in IS:1893-2016 is adopted for evaluating both Earthquake effects and Combined Load effects. The different load cases considered for design is shown in Table 9.

Table 9: Primary Load Cases

Number	Primary load cases	Type
1.	EQ +X	Seismic load along X direction
2.	EQ -X	
3.	EQ +Z	Seismic load along Z direction
4.	EQ -Z	
5.	DL	Dead load
6.	LL	Live load

Table10: Load Combinations as per IS 456: 2000, IS 800: 2007 & IS 1893 (Part-1): 2016

S.No	Load Combinations (For Strength)
7.	1.5 x (Dead load + Live load)
8.	1.5 x (Dead load + Seismic load in X- direction)
9.	1.5 x (Dead load - Seismic load in X- direction)

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10.	1.5 x (Dead load + Seismic load in Z- direction)
11.	1.5 x (Dead load - Seismic load in Z- direction)
12.	1.2 x (Dead load + Live load + Seismic load in X- direction)
13.	1.2 x (Dead load + Live load - Seismic load in X- direction)
14.	1.2 x (Dead load + Live load + Seismic load in Z- direction)
15.	1.2 x (Dead load + Live load - Seismic load in Z- direction)
16.	0.9x (Dead load) + 1.5 (Seismic load in X- direction)
17.	0.9x (Dead load) - 1.5 (Seismic load in X- direction)
18.	0.9x (Dead load) + 1.5 (Seismic load in Z- direction)
19.	0.9x (Dead load) - 1.5 (Seismic load in Z- direction)

Load Combinations (For Servicability)	
1.	(Dead Load+ Live Load)
2.	Dead Load+(EQ+X)
3.	Dead Load+(EQ-X)
4.	Dead Load+(EQ+Z)
5.	Dead Load+(EQ-Z)
6.	Dead Load+0.8(Live Load+(EQ+X))
7.	Dead Load+0.8(Live Load+(EQ-X))
8.	Dead Load+0.8(Live Load+(EQ+Z))
9.	Dead Load+0.8(Live Load+(EQ-Z))

7. ANALYSIS PROCEDURE:

The framing systems (including the sizes of various structural elements) have been worked out, on the basis of a preliminary structural analysis and also in co-ordination with relevant architectural & services requirements. Space frame analysis using STAAD. Pro software has been undertaken to obtain refined results for all load combinations. Table 11 shows the maximum deflection limits for the structure as per Indian Standards. For Seismic analysis carried out as per IS 1893:2016 of Cl no. 7.6 Equivalent Static Analysis has followed.

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Table 11: SERVICEABILITY REQUIREMENTS (Deflection Limits)

S.No	Description		Codal Value	Ref. Code Book
1.	Total deflection due to all loads incl. the effects of temperature creep and shrinkage (as-cast level)	<	L/250	IS:456 - 2000, Cl. No 23.2, Pg. No 37
2.	Total deflection due to all loads incl. the effects of temperature creep and shrinkage (after erection)	<	L/350 or 20mm (whichever is less)	IS:456 - 2000, Cl. No 23.2, Pg. No 37
3.	Storey Drift	<	H/250	IS:1893 – 2016, Cl no 7.11.1.1, Pg no.26
4.	Lateral Sway	<	H/500	IS:800- 2007, Cl no 5.6.1, Table 6

8. DESIGN METHODOLOGY:

Structural design for typical members has been done for the combination of loads that produces maximum stress in the structural elements and in turn requires maximum reinforcing steel provisions. The design of RCC Beams and Columns are taken from STAAD results. The design of Slabs and Isolated footing are done in Excel Worksheets with the results obtained from STAAD.

9. LIST OF CODES REFERED

Table 12(a): Loading Standards

S.No	Code Number	Title of the Code
1.	IS:875(Part I) : 1987	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures: Part I, Dead Loads-Unit weights of Building materials and stored material.
2.	IS:875(Part II) : 1987	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures: Part II, Imposed Loads.
3.	IS:875(Part III) : 2016	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures: Part III, Wind Loads.
4.	IS:875(Part IV) : 2021	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures: Part IV, Snow Loads.

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5.	IS:875(Part V) : 2006	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures: Part V, Special Loads and Load Combinations.

Table 12 (b): Seismic Design

S.No	Code Number	Title of the Code
1.	IS:1893(Part I) : 2016	Criteria for earthquake resistant Design of structures: Part I, General Provision and Buildings.
2.	IS:1893(Part IV) :2018	Criteria for earthquake resistant Design of structures: Part IV, Industrial Structures including Stack-Like Structures.
3.	IS:4326: 2014	Code of Practice for Earthquake Resistant Design and Construction of Buildings.
4.	IS:13920: 2016	Code of Practice for Ductile Detailing of Reinforced Concrete Structures subjected to Seismic Forces.

Table 12 (c): Steel

S.No	Code Number	Title of the Code
1.	IS:800: 2007	Code of Practice for General Construction in Steel.
2.	IS:801: 1975	Code of Practice for use of Cold Formed Light Gauge Steel Structural Members in General Building Construction.
3.	IS:807 :2006	Design, Erection and Testing (Structural Portion) of Cranes and Hoists-Code of Practice.
4.	IS:808 : 2021	Dimensions for Hot Rolled Steel Beams, Columns, Channel and Angle Sections.
5.	IS:816 : 1969	Code of Practice for use of Metal Arc Welding for General Construction in Mild Steel.
6.	IS:1079 : 1984	Hot Rolled Carbon Steel Sheet and Strip.
7.	IS:1161 : 2014	Steel Tubes for Structural Purposes-Specifications.
8.	IS:1730 : 1989	Dimensions of Steel Plates, Sheets, Strips and Flats for General Engineering Purposes.
9.	IS:2062 : 2011	Hot Rolled Low, Medium and High Tensile Structural Steel.
10.	IS:3757 : 1985	Specification for High Strength Structural Bolts.
11.	IS:6623 : 2004	High Strength Structural Nuts-Specifications.

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12.	IS:9595 : 1996	Metal Arc Welding of Carbon and Carbon Manganese Steels-Recommendations.
13.	IS:12778 : 2004	Hot Rolled Parallel Flange Steel Sections for Beams, Columns and Bearing Piles-Dimensions and Section Properties.

Table 12 (d): Concrete

S.No	Code Number	Title of the Code
1.	SP:16 : 1980	Design Aids for Reinforced Concrete.
2.	SP:34 : 1987	Handbook of Concrete Reinforcement and Detailing.
3.	IS:456 : 2000	Code of Practice for Plain and Reinforced Concrete.
4.	IS:1080 : 1985	Code of Practice for Design and Construction of Shallow Foundation in Soils (other than raft, ring and shell).
5.	IS:1904 : 1999	Code of Practice for Design and Construction of Foundation in Soils-General Requirements.
6.	IS:2502 : 1963	Code of Practice for Bending and Fixing of Bars for Concrete Reinforcement.
7.	IS:6403 : 1981	Code of Practice for Determination of Bearing Capacity of Shallow Foundations.
8.	IS:8009 (Part I) : 2014	Code of Practice for Calculation of Settlements of Foundations: Part I, Shallow Foundations subjected to symmetrical static Vertical Loads.
9.	IS:8009 (Part II) : 1990	Code of Practice for Calculation of Settlements of Foundations: Part II, Deep Foundations subjected to symmetrical static Vertical Loads.
10.	IS:11089 : 1986	Code of Practice for Design and Construction of Ring Foundation.
11.	IS:13063 : 1991	Code of Practice for Structural Safety Building on Shallow Foundations on Rock.
12.	IS:13301 : 1992	Guidelines for vibration isolation for Machine Foundations.

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Table 12 (e): Reinforcement

S.No	Code Number	Title of the Code
1.	IS:432(Part I): 1982	Specification for Mild Steel and Medium Tensile Steel bars and hard-drawn Steel wire for Concrete Reinforcement: Part I, Mild Steel and Medium Tensile Steel bars.
2.	IS:1786: 2008	High Strength Deformed Steel bars and Wires for Concrete Reinforcement-Specification.

Table 12 (f): Masonry

S.No	Code Number	Title of the Code
1.	IS:1905: 2010	Code of Practice for Structural use of Reinforced Masonry.

Table 12 (g): Safety

S.No	Code Number	Title of the Code
1.	IS:1642: 2013	Code of Practice for Fire Safety of Buildings (General): Details of Construction.

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10. LOAD CALCULATION

General Loading Conditions:

(a) Imposed loads on Roof = 1.50KN/m^2

(b) Imposed loads on Hall, Kitchen. & Bed, Residential = 2.00KN/m^2

(d) Dead weight of R.C.C = 25KN/m^3

(e) Dead weight of Brick Work = 20KN/m^3

Loading on Slabs:

1. Loading on Roof slab:

Roof finished with lime concrete terracing = (0.10) (20) =2.000KN/m^2

S/W of slab 125mm thick = (0.125) (25) =3.75KN/m^2

Dead load = 5.75KN/m^2

Live load = 2KN/m^2

Total load on Roof = 7.75KN/m^2

2. Loading on Floor slabs:

Floor finish = 2.00KN/m^2

S/w of slab 125mm thick = 3.75KN/m^2

Dead load = 5.75KN/m^2

Live load = 2KN/m^2

Total load on Roof = 7.75KN/m^2

11. COLUMN DESIGN CALCULATION

Column Number = C6
Node Number = 25

Data:

Breadth, b = 300 mm

Depth, h = 750 mm

Effective Cover, d' = 40 mm

Effective Breadth, b' = 260.00 mm

Effective Depth, d or h' = 710.00 mm

Length of the column, L = 3.05 m

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Depth of Beam framing into column (Avg), Bd	= 0.38 m
Clear length, Lc or Lo	= 2.67 m
Effective length factor, β	= 1.00
Effective length of the column, L_{eff}	= 2.67 m
Axial Load (Factored), N	= 2170 kN
Moment about major axis (Factored), Mx	= 11 kNm
Moment about minor axis (Factored), My	= 5 kNm
Characteristic strength of concrete, fcu	= 25 N/mm^2
Characteristic strength of steel, f_y	= 550 N/mm^2

Step 1: Check for Slenderness ratio:

Leff/h	=	4.45	<10
Leff/b	=	8.90	<10
ea_x	=	0.00	mm
ea_y	=	0.00	mm

Slenderness limits for column, Lo < 60 b = 2.67 < 18.00

Step 2: Check for Moment due to minimum eccentricity:

Minimum Eccentricity [L/500 + D/30] or 20 (whichever is greater)

ex	=	25.34 mm
ey	=	20.00 mm

(i) Moment due to Minimum eccentricity M_{ex} = 54.99 kNm

(ii) Moment due to Minimum eccentricity M_{ey} = 43.40 kNm

Additional moments along X Direction M_{eax} = 0.00 kNm

Additional moments along Y Direction M_{eay} = 0.00 kNm

Final Moment in Bi-axial,

Mx	**=**	**54.99 kNm**
My	**=**	**43.40 kNm**

Step 3: Design Moment

Taking maximum of given moment and Mt due to minimum eccentricity.

Mx	=	54.99 kNm
My	=	43.40 kNm

Step 4: Converting Biaxial to uniaxial (as per BS8110 clause 3.8.4.5)

a. Mx/h' >= My/b'; using Mx ' =Mx+ β (h'/b') My

b. Mx/h'< My/b'; using My' = My+ β (b'/h') Mx

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Step 5:

Calculation of N/(bh fcu) = 0.60

Calculation of Beta, as per BS8110 Table3.22, β = 0.30

Step 6: Final Design Moments

Therefore, Converted Final Design Moment & Load,

My' = 51.06 kNm

N = 2170.00 kN

Step 7: Longitudinal Reinforcements

N/bh = 12.06 N/mm^2

Mx'/bh^2 or My'/ hb^2,

My'/hb^2 = 0.95 N/mm^2

For fy = 500 and fcu = 20 & d/h = 0.87, (BS 8110 Part 3: 1985)

Pt = 100Asc/bh = 0.80 %

Area of steel required, Asc = 1800.00 mm^2

Selected diameter of steel bar = 20 mm

No. of bars Required = 5.7 nos

No. of bars Provided = 6 nos

Provide 6Y20 as longitudinal reinforcement

Step 8: Lateral Ties

1. Pitch: (consider whichever is lesser of)

i. 16x smaller dia of main steel = 400.00 mm

ii. 200 mm

Therefore, Pitch = 200.00 mm

2. Diameter: (whichever is greater of)

i. 1/4 x largest dia of main steel = 8.00 mm

ii. 6mm

Therefore, diameter = 8.00 mm

Therefore, provide Y8 @200c/c as Lateral ties.

12. FOOTING DESIGN CALCULATION

Footing ID = F1

Data:

Column / Pedestal size

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Breadth = 300 mm

Depth = 900 mm

Fck = 20 N/mm^2

Fy = 500 N/mm^2

Axial Load Px = 1700 kN

Step 1:

Self-weight of the footing = 75 kN

Total load, P = 1785 kN

Safe bearing Capacity of Soil SBC = 350 kN/m^2

Step 2:

Area of the footing = Total load / SBC,

A = 5.10 m^2

Equal spacing in both directions as 'x'

x required = 839 mm

x provided = 839 mm

Size of Footing

Required L = 2.58 m

Required B = 1.98 m

Provided B = 2.13 m

Provided L = 2.74m

Net upward pressure,

p =305.85 kN/m2

< SBC. Hence safe

Step 3: Bending Moment calculation

For per meter strip, Mu (Long) = 161.50 kN.m

Depth (d) required = 483.80 mm

d provided = 600 mm

d effective = 530 mm

Step 4: Steel Ast calculation

Ast required = 725 mm^2

Selected bar dia = 10 mm

Spacing Required = 150 mm c/c

Spacing Provided = 100 mm c/c

Ast provided = 785 mm^2

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Step 5:Check For Shear

1. One way shear:

From Critical Xn for One Way Shear,

Vu = 141.80 KN

ζv = 0.27 N/mm^2

pt = 0.148 %

ζc = 0.286 N/mm^2

$\zeta v < \zeta c$

Hence safe in one way shear

2. Two-way shear:

From Critical Xn for Two Way Shear,

Vu = 1640.67 KN

ζv = 0.68 N/mm^2

ζc = k*0.28*sqrt (fck)

ζc = 1 N/mm^2

$\zeta v < \zeta c$

Hence safe in Two-way shear

13. BEAM DESIGN CALCULATION

Beam Number = B201

Data:

Breadth, B		= 200	mm
Overall Depth, D		= 450	mm
Clear Cover, d'		= 25	mm
Effective Depth, d		= 404.5	mm
	fy	= 550	N/mm^2
	fck	= 20	N/mm^2
Sagging Moments, Mu		= 75	kNm
End moments LHS	M1	= 100	kNm
RHS	M2	= 76	kNm
Shear at END, Vu		= 170	kN
$K = Mu/(bd^2)$		= 3.06	Mpa

The section is Singly Reinforced.

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Step 1: For Sagging moments

Mu	=	75	kNm
$k = (Mu/bd^2)$	=	2.292	Mpa
Ast required	=	505	mm^2
Ast min	=	138	mm^2
Selected diameter of bar	=	16 mm	
Nos required	=	2.5	Nos
Nos provided	=	3	Nos
Ast provided	=	603	mm^2

Provide 3Y16 as Bottom Steel Reinforcement

Step 2:For End moments LHS

Mu	=	100	kNm
$k = (Mu/bd^2)$	=	3.056	Mpa
Ast required	=	735.59	mm^2
Ast min	=	138	mm^2

Selected diameter of bar = 16 mm,

Nos required	=	3.7	Nos
Nos provided	=	4	Nos
Ast provided	=	804	mm^2

Provide 4Y16 as Top Steel Reinforcement at LHS

Step 3:For End moments RHS

Mu	=	76	kNm
k = (Mu/bd2)	=	2.322	Mpa
Ast required	=	513.28	mm^2
Ast min	=	138	mm^2

Selected diameter of bar = 16 mm

Nos required	=	2.6	Nos
Nos provided	=	3	Nos
Ast provided	=	603	mm^2

Provide 3Y16 as Top Steel Reinforcement at RHS

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31 B, OLD DAMU NAGAR, PULIYAKULAM,
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Step 4:Top Steel @ Middle

(20% of Maximum Mt)

Ast required = 120.6 mm^2

Selected diameter of bar = 16 mm

Nos required = 1.1 Nos

Nos provided = 2 Nos

Provide 2Y16 as Top Steel Reinforcement at Middle

Step 5: Shear Reinforcement

Vu	=	170.00	kN
ζv	=	2.101	N/mm2
pt	=	0.893	%
ζc	=	0.600	N/mm2
ζc max	=	3.578	N/mm2

If,

i. ζv <ζc, mini shear,

ii. ζc <ζv >ζcmax, design shear,

iii. ζv >ζcmax, Increase Depth.

In this case here, **DESIGN SHEAR** is required.

Selected No. of Legs = 2 and selected diameter of bar = 8 mm

Asv = 100.531 mm^2

Design Shear Force, Vus = 121.465 kN

Spacing of shear reinforcement (Sv) as per

i. Mini Shear Reinforcement,	=	854	mm
ii. Design Shear-Vertical Stirrups,	=	227.56	mm
iii. Maximum spacing 0.75xd,	=	303.375	mm
iv. Not greater than 300mm,	=	300	mm

Provide whichever is lesser.

Therefore, Provide 2 Legged Y8@150c/c



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14. SLAB DESIGN CALCULATION

Clear Spans

Shorter span c/c	B	=	3.55	m
Longer span c/c	L	=	3.55	m
Width of support, b		=	230	mm
Clear Cover of slab		=	20	mm
Slenderness Ratio Ly / Lx,	(ly/lx)	=	1.00	< 2

Design as two-way slab.

Load Calculation:

Assume the thickness of the slab	=	125.00	mm
Self-Weight of slab	=	3.125	KN/m^2
Weathering course / Floor finishing finish	=	2.000	KN/m^2
Wall load	=	0.000	KN/m^2
Live Load (Access provided) L.L	=	2.000	KN/m^2
Total Load T.L	=	7.125	KN/m^2
Factored Load	=	10.688	KN/m^2

Effective Spans:

Shorter span: (Lx)

Clear span + effective depth	=	3.418968 m
Centre to centre of supports	=	3.55 m
Effective span	=	3.418968 m

Longer span: (Ly)

Clear span + effective depth	=	3.653968 m
Center to centre of supports	=	3.78 m
Effective span	=	3.653968 m
Aspect Ratio Ly / Lx	=	1.07 < 2

Bending Moment Coefficients:

+ ve Alpha – x	=	0.047
- ve Alpha - x	=	0.062
+ ve Alpha - y	=	0.044
- ve Alpha - y	=	0.000

Bending Moments:

Positive moment along shorter direction, M_x+ve = 5.84 KNm / m

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Negative moment along shorter direction, M_x-ve	=	7.79	KNm / m
Positive moment along Longer direction, M_y+ve	=	5.43	KNm / m
Negative moment along Longer direction, M_y-ve	=	0.00	KNm / m

Depth of Slab:

Compressive Strength of Concrete, fck	=	20.00	N /mm^2
Grade of steel, fy	=	500.00	N /mm^2
Moment of Resistance Constant, q	=	2.76	
Provided Overall Depth, D	=	125	mm
Provided Effective Depth, dx	=	100	mm
dy	=	90	mm

Area of Steel Reinforcement:

Ast required at midspan along x- direction, Ast +ve x	=	168	mm^2
Ast required at midspan along y- direction, Ast +ve y	=	179	mm^2
Ast required at support along x- direction, Ast -ve x	=	224	mm^2
Ast required at support along y- direction, Ast -ve y	=	0	mm^2
Minimum Ast required, Ast min	=	150.00	mm^2

Spacing of Steel Reinforcement:

8.00 mm diameter bar at midspan along x- direction	=	299	mm c/c
8.00 mm diameter bar at midspan along y- direction	=	281	mm c/c
8.00 mm diameter bar at support along x- direction	=	224	mm c/c
8.00 mm diameter bar at support along y- direction	=	335	mm c/c

Distribution Steel:

Minimum Ast required = 150 mm^2

Assuming, 10.00mm diameter bars,

Spacing Required = 524 mm c/c

Therefore, provide 10.00mm diameter distribution bars at 200 mm c/c

Ast Provided = 393 Sq.mm

Bottom	Steel Provided	In Lx	Y	8	100
		In Ly	Y	8	150
Top	Steel Provided	In Lx	Y	8	100
		In Ly	Y	8	150

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Check for Deflection:

Ast Provided = 502 mm^2

M/bd^2 = 0.58

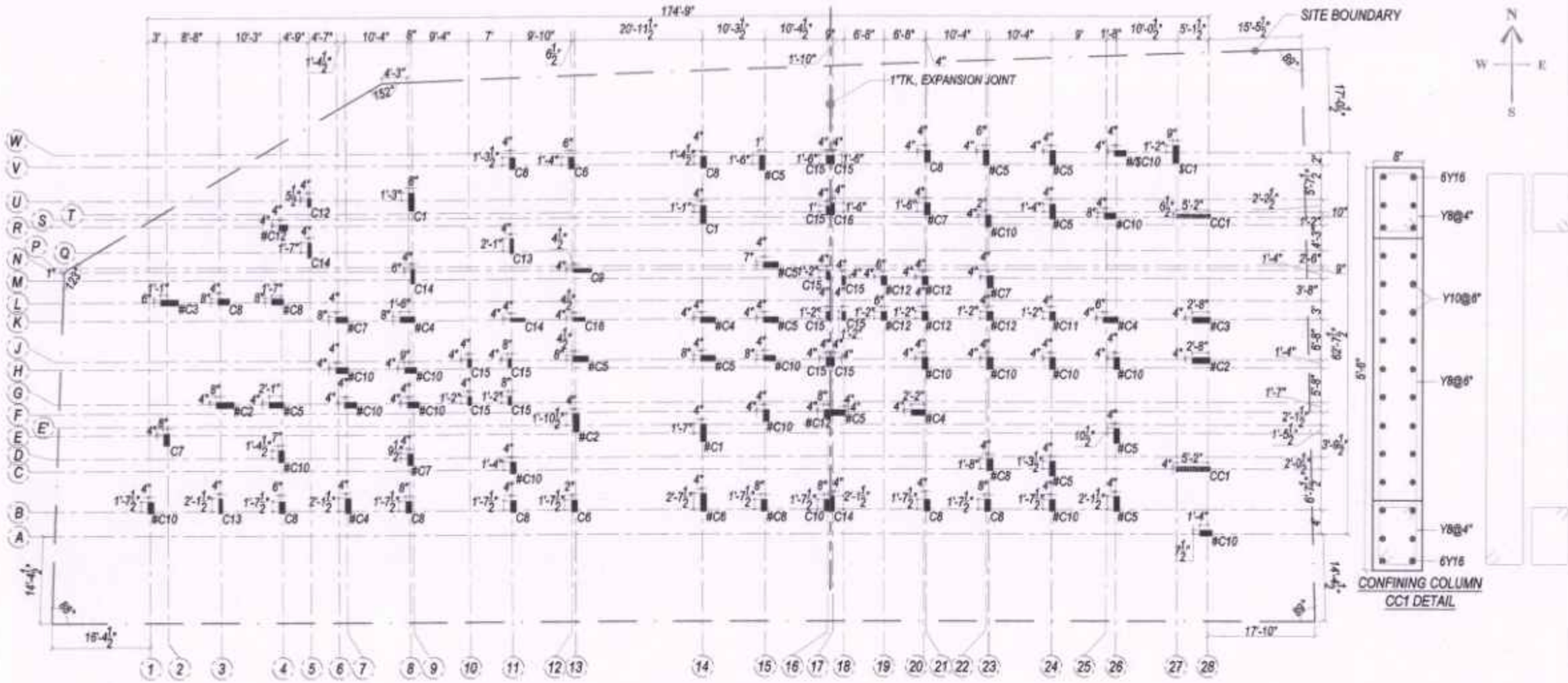
Actual Span / Effective depth Ratio = 36

Design service stress, fs	=	112
Modification factor	=	2.00
Allowable Span /Effective depth Ratio =		52.00

Hence SAFE in Deflection.

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FOR GOOD LIFE OF BUILDING, MAINTAIN PROPER COVER FOR ALL STRUCTURAL ELEMENTS AS PER STANDARDS GIVEN IN GENERAL NOTES.



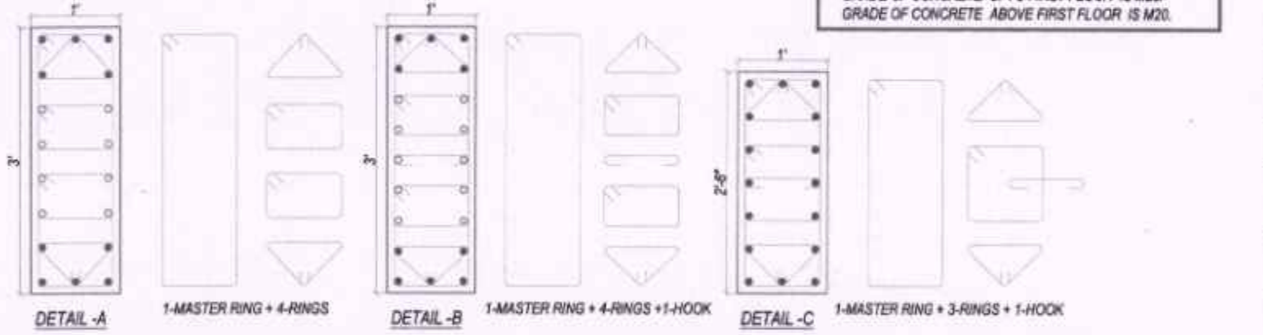
CONFINING COLUMN
CC1 DETAIL

CENTERLINE, COLUMN LAYOUT

SCHEDULE OF COLUMN

COLUMN TYPE	FOUNDATION TO FIRST FLOOR LVL				REMARKS
	SIZE	REINFORCEMENT	DETAILS	RINGS	
C1	12" X 36"	10Y25 + 8Y20	A	Y8@6"	-
C2	12" X 36"	10Y20 + 10Y16	B	Y8@6"	-
C3	12" X 36"	20Y16	B	Y8@6"	-
C4	12" X 30"	16Y20	C	Y8@6"	-
C5	12" X 30"	18Y16	D	Y8@6"	-
C6	12" X 24"	14Y20	E	Y8@6"	-
C7	12" X 24"	6Y20 + 8Y16	E	Y8@6"	-
C8	12" X 24"	6Y20 + 6Y16	F	Y8@6"	-
C9	8" X 36"	18Y20	G	Y8@6"	-
C10	12" X 24"	14Y16	H	Y8@6"	-
C11	12" X 18"	4Y20 + 6Y16	J	Y8@6"	-
C12	12" X 18"	10Y16	J	Y8@6"	-
C13	8" X 30"	14Y20	K	Y8@6"	-
C14	8" X 30"	16Y16	L	Y8@6"	-
C15	8" X 18"	4Y20 + 4Y16	M	Y8@6"	-
C16	8" X 24"	12Y16	N	Y8@6"	-

NOTES:
- ● - INDICATES LARGER DIAMETER OF RODS
- ○ - INDICATES SMALLER DIAMETER OF RODS
- REFER ARCH DRG FOR EXACT LVL AND DIMENSION
- #-INDICATES COLUMN REDUCTION FROM FIRST FLOOR FFL
- $-INDICATES COLUMN TERMINATES AT FIFTH FLOOR FFL



IMPORTANT NOTES:

GRADE OF CONCRETE UPTO FIRST FLOOR IS M25.
GRADE OF CONCRETE ABOVE FIRST FLOOR IS M20.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FEET & INCHES, UNLESS OTHERWISE SPECIFIED.
2. DRAWING SHOULD NOT BE SCALED, FOLLOW FIGURED DIMENSIONS.
3. ANY DISCREPANCY IN DRAWING SHALL BE BRING TO NOTICE OF STRUCTURAL CONSULTANT BEFORE EXECUTION OF WORK.
4. SCOPE OF STRUCTURAL CONSULTANT ENDS, WITH THE ISSUE OF STRUCTURAL DRAWINGS. EXECUTION OF WORK AS PER DRAWING SHOULD BE ENSURED BY PMC / CLIENT.
5. THIS DRAWING SHOULD BE READ ALONG WITH THE RELEVANT ARCHITECTURAL DRAWING.
6. IF THERE IS ANY REVISION IN DRAWING, FURTHER C ONSTRUCTION SHALL BE EXECUTED AS PER THE LATEST REVISED DRAWING, ON THE ISSUE OF LATEST REVISION.
7. GRADE OF CONCRETE SHALL BE M25
   GRADE OF STEEL SHALL BE Fe500
8. CLEAR COVER FOR
   FOOTING: SIDE : 75mm
   FOOTING: TOP & BOTTOM : 50mm
   PEDESTAL,COLUMN : 40mm
   BEAM : 25mm
   SLAB : 20mm
9. LAP LENGTH OF BARS : 50Ø, AT COLUMN LAPPING PROVIDE 100mm SPACING OF TIES, NO LAPPING ALLOWED AT BEAM-COLUMN JOINT.
10. DEVELOPMENT LENGTH (Ld) FOR REINFORCEMENT BARS
    IN COMPRESSION : 40Ø
    IN TENSION : 50Ø
11. IN CASE OF BEAM REINFORCEMENT, NO LAPPING SHALL BE ALLOWED IN FOLLOWING PLACES
    (a) TOP ROD NEAR COLUMN, L/4 ON EITHER SIDES OF COLUMN
    (b) TOP ROD OF CANTILEVER BEAM ALONG THE LENGTH AND ALSO DEVELOPMENT LENGTH, BEYOND COLUMN
    (c) BOTTOM ROD AT MID SPAN OF BEAM
12. REMOVAL OF SHUTTERING / FORM WORK
    (a) COLUMN : 24 HOURS
    (b) BEAM SIDES : 24 HOURS
    (c) BEAM BOTTOM : LESS THAN 6M SPAN : 14 DAYS
    : MORE THAN 6M SPAN : 28 DAYS
    (d) SLAB : LESS THAN 6M SPAN : 14 DAYS
    : MORE THAN 6M SPAN : 28 DAYS
    HOWEVER 7 DAYS STRENGTH OF CONCRETE SHOULD BE 65% OF THE TARGET STRENGTH, TO REMOVE FORM WORK.
13. THIS BUILDING IS DESIGNED FOR STILT + FIVE FLOORS + HEADROOM.

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COIMBATORE - 641 045

R. No	DATE	REVISIONS / DETAILS	INITIAL

PROJECT
PROPOSED APARTMENT BUILDING @ KALAPATTI, COIMBATORE

CLIENT
Ms.PREMIER DEVELOPERS

ARCHITECT
arch DESIGN STUDIO

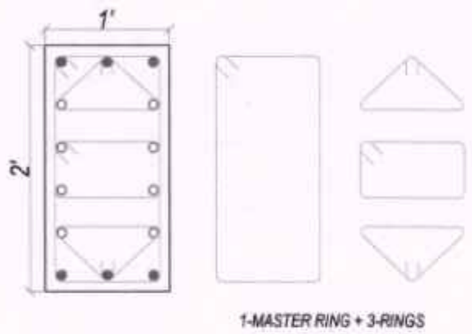
STRUCTURAL CONSULTANT
Archetype
Er.S. JAGADESH KANNAN,M.E(Struct),PE,MIE,FIV,
Archetype Design Services Private Limited
No. 31, "JK Towers" Old Damu Nagar, Puliyakulam,
Coimbatore - 641045,Tamilnadu, India
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Web: www.archetypepl.com
Landline: 0422-2334487

TITLE
CENTERLINE LAYOUT & COLUMN DETAILS

DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A2	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-01-SH-01	

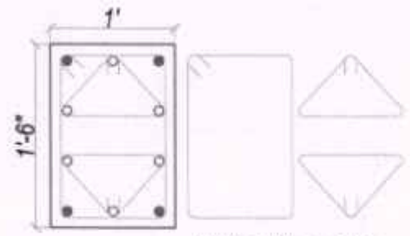
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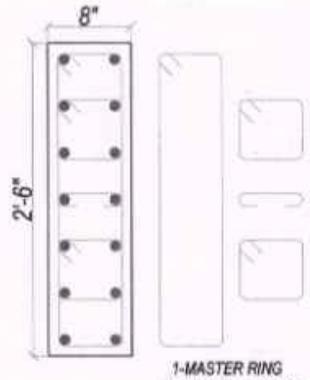
1-MASTER RING + 3-RINGS

DETAIL -H



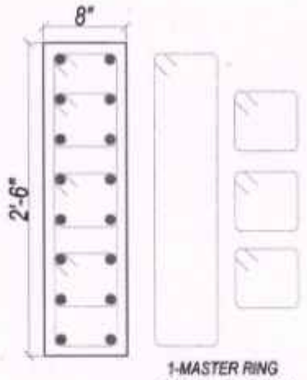
1-MASTER RING + 2-RINGS

DETAIL -J



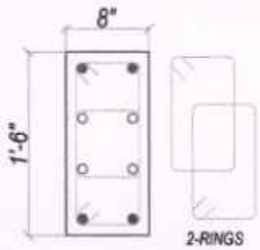
1-MASTER RING
+ 2-RINGS + 1-HOOK

DETAIL - K



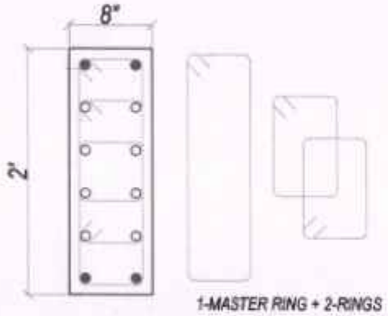
1-MASTER RING
+ 2-RINGS + 1-HOOK

DETAIL - L



2-RINGS

DETAIL - M



1-MASTER RING + 2-RINGS

DETAIL - N

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COIMBATORE - 641 045

IMPORTANT NOTES:

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R. No	DATE	REVISIONS / DETAILS	INITIAL

PROJECT
PROPOSED APARTMENT BUILDING @ KALAPATTI, COIMBATORE

CLIENT
Ms.PREMIER DEVELOPERS

ARCHITECT
arc DESIGN STUDIO

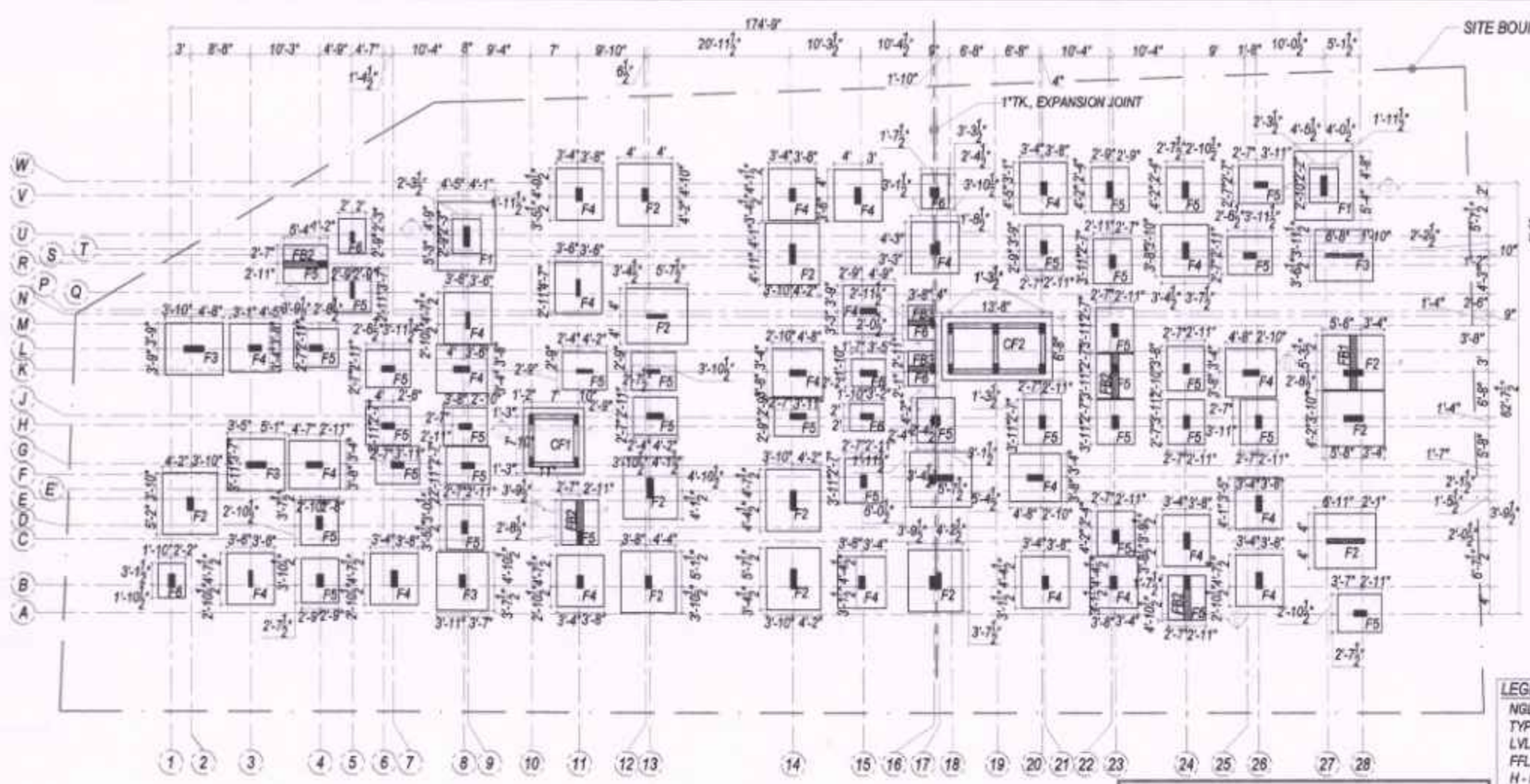
STRUCTURAL CONSULTANT
Archetype
Er.S. JAGADESH KANNAN,M.E(Struct),PE,MIE,FIV,
Archetype Design Services Private Limited
No. 31, "J.K.Towers" Old Damu Nagar, Puliyakulam,
Coimbatore - 641045,Tamilnadu, India
Mobile: Website: www.archetypepl.com
Landline: 0422-2324467

TITLE
COLUMN SECTIONAL DETAILS

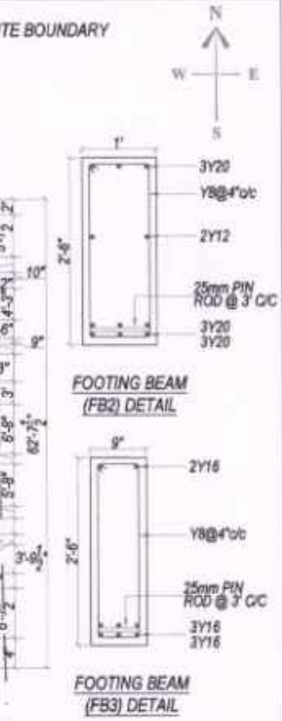
DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A3	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-01-SH-02	

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FOOTING LAYOUT



FOOTING BEAM (FB2) DETAIL

FOOTING BEAM (FB3) DETAIL

LEGENDS:

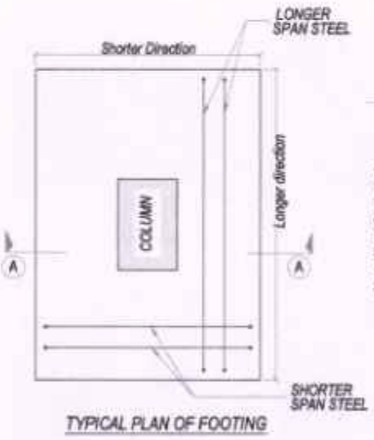
NGL - NATURAL GROUND LEVEL
TYP., - TYPICAL
LVL - LEVEL
FFL - FLOOR FINISH LEVEL
H - HORIZONTAL REINFORCEMENT
V - VERTICAL REINFORCEMENT
TK - THICKNESS
GF - GROUND FLOOR

NOTES:

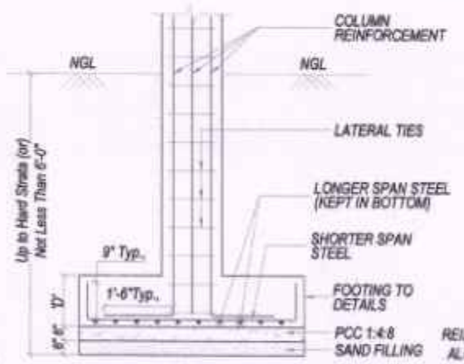
- INDICATES LIFT RCC WALL

IMPORTANT NOTES:

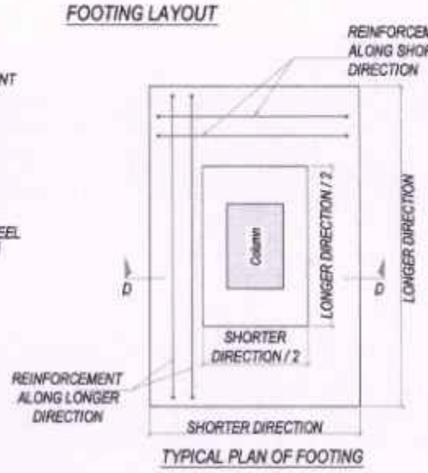
a. GRADE OF CONCRETE UPTO FIRST FLOOR IS M25, GRADE OF CONCRETE ABOVE FIRST FLOOR IS M20.
b. SUMP,SEPTIC TANK BASE SLAB LEVEL SHOULD NOT GO BELOW THE FOOTING BASE SLAB LEVEL.



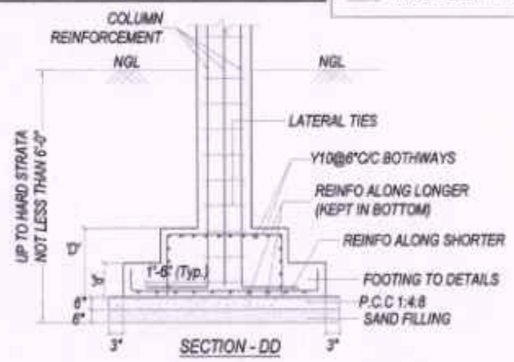
TYPICAL PLAN OF FOOTING



SECTION - A



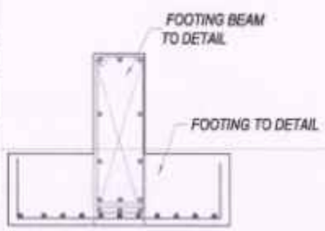
TYPICAL PLAN OF FOOTING



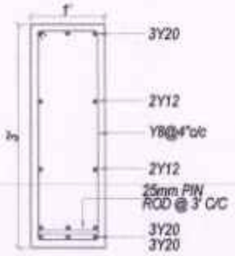
SECTION - DD

SCHEDULE OF FOOTINGS

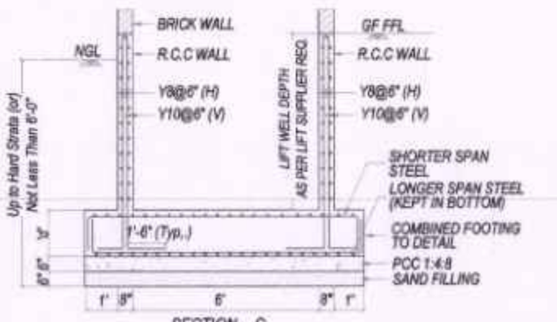
FOOTING TYPE	FOOTING SIZE	DEPTH		BOTTOM STEEL		TOP STEEL		REMARKS
		'D'	'd'	SHORTER	LONGER	SHORTER	LONGER	
F1	10'0" x 8'6"	36"	18"	Y12@5"C/C	Y12@5"C/C	-	-	
F2	9'0" x 8'0"	27"	-	Y12@5"C/C	Y12@5"C/C	-	-	-
F3	8'6" x 7'6"	24"	-	Y12@4"C/C	Y12@4"C/C	-	-	-
F4	7'6" x 7'0"	24"	-	Y12@4"C/C	Y12@4"C/C	-	-	-
F5	6'6" x 5'6"	21"	-	Y10@6"C/C	Y10@6"C/C	-	-	-
F6	5'0" x 4'0"	15"	-	Y10@5"C/C	Y10@5"C/C	-	-	-
CF1	9'6" x 9'0"	33"	-	Y12@4"C/C	Y12@4"C/C	Y12@4"C/C	Y12@4"C/C	COMBINED FOOTING
CF2	16'3" x 9'3"	33"	-	Y12@4"C/C	Y12@4"C/C	Y12@4"C/C	Y12@4"C/C	COMBINED FOOTING



SECTION - B



FOOTING BEAM (FB1) DETAIL



SECTION - C

GENERAL NOTES:

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3. ANY DISCREPANCY IN DRAWING SHALL BE BRING TO NOTICE OF STRUCTURAL CONSULTANT BEFORE EXECUTION OF WORK.
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5. THIS DRAWING SHOULD BE READ ALONG WITH THE RELEVANT ARCHITECTURAL DRAWING.
6. IF THERE IS ANY REVISION IN DRAWING, FURTHER C ONSTRUCTION SHALL BE EXECUTED AS PER THE LATEST REVISED DRAWING, ON THE ISSUE OF LATEST REVISION.
7. GRADE OF CONCRETE SHALL BE M25
   GRADE OF STEEL SHALL BE Fe500
8. CLEAR COVER FOR
   FOOTING: SIDE : 75mm
   FOOTING: TOP & BOTTOM : 50mm
   PEDESTAL,COLUMN : 40mm
   BEAM : 25mm
   SLAB : 20mm
9. LAP LENGTH OF BARS : 50Ø, AT COLUMN LAPPING PROVIDE 100mm SPACING OF TIES, NO LAPPING ALLOWED AT BEAM-COLUMN JOINT.
10. DEVELOPMENT LENGTH (Ld) FOR REINFORCEMENT BARS
    IN COMPRESSION : 40Ø
    IN TENSION : 50Ø
11. IN CASE OF BEAM REINFORCEMENT, NO LAPPING SHALL BE ALLOWED IN FOLLOWING PLACES
    (a) TOP ROD NEAR COLUMN, L/4 ON EITHER SIDES OF COLUMN
    (b) TOP ROD OF CANTILEVER BEAM ALONG THE LENGTH AND ALSO DEVELOPMENT LENGTH, BEYOND COLUMN
    (c) BOTTOM ROD AT MID SPAN OF BEAM
12. REMOVAL OF SHUTTERING / FORM WORK
    (a) COLUMN : 24 HOURS
    (b) BEAM SIDES : 24 HOURS
    (c) BEAM BOTTOM : LESS THAN 6M SPAN : 14 DAYS
        : MORE THAN 6M SPAN : 28 DAYS
    (d) SLAB : LESS THAN 6M SPAN : 14 DAYS
        : MORE THAN 6M SPAN : 28 DAYS
    HOWEVER 7 DAYS STRENGTH OF CONCRETE SHOULD BE 65% OF THE TARGET STRENGTH, TO REMOVE FORM WORK.
13. SBC CONSIDERED FOR THIS BUILDING IS 350Kn/m² FOR 1.50m DEPTH AS PER SOIL REPORT

Er. S. JAGADESH KANNAN ME(Struct), PE, MIE, FIV.,
CHARTERED CIVIL ENGINEER (M-1630045)
REGISTERED STRUCTURAL ENGINEER
REGD. No: TD/RSE/Gr-1/2025/02/002
31 B, OLD DAMU NAGAR, PULIYAKULAM,
COIMBATORE - 641 045

R. No	DATE	REVISIONS / DETAILS	INITIAL

PROJECT
PROPOSED APARTMENT BUILDING @ KALAPATTI, COIMBATORE

CLIENT
Ms.PREMIER DEVELOPERS

ARCHITECT
arc DESIGN STUDIO

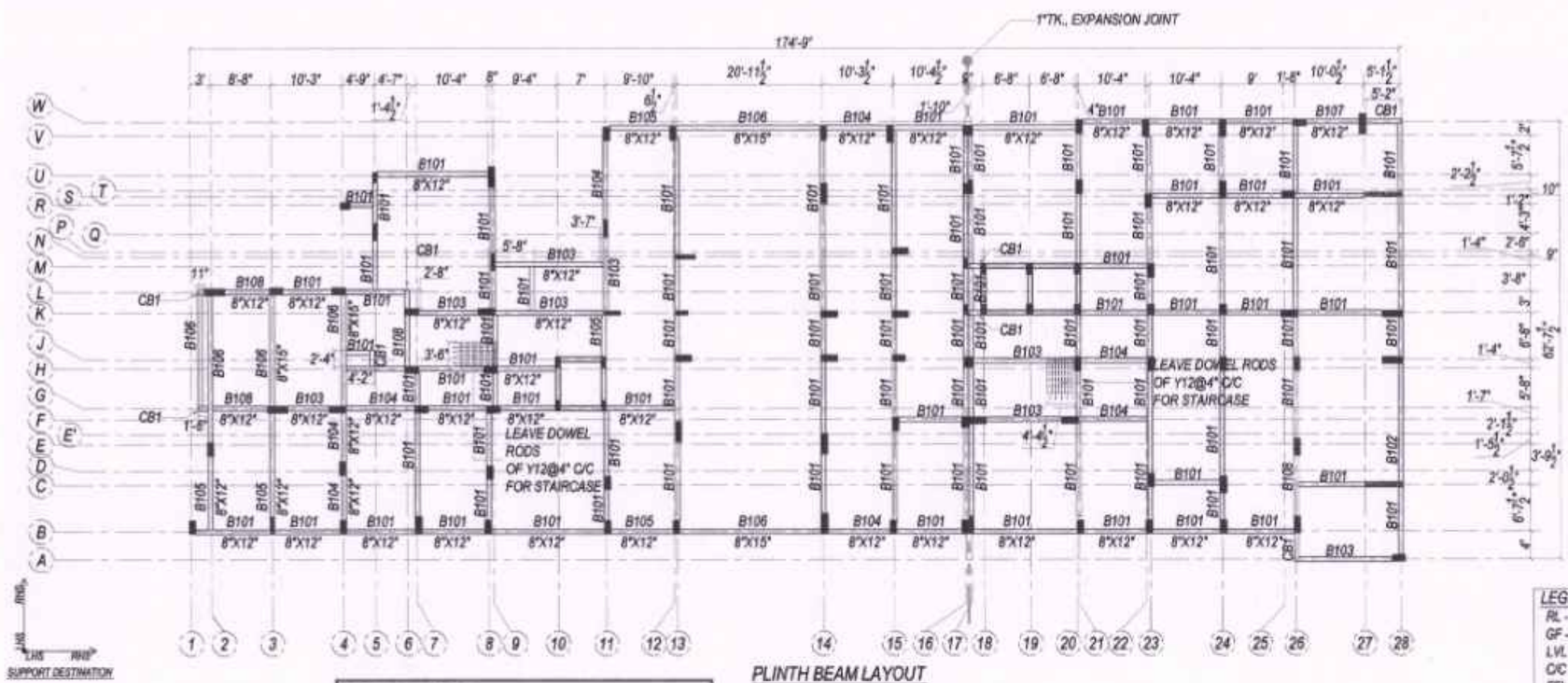
STRUCTURAL CONSULTANT
Archetype™ Er.S. JAGADESH KANNAN,M.E(Struct),PE,MIE,FIV.
Archetype Design Services Private Limited
No.31, "JK Towers" Old Damu Nagar, Puliyakulam,
Coimbatore - 641045,Tamilnadu, India
email: jk@archetypepl.com
Web: www.archetypepl.com
Landline: 0422-2334487

TITLE
FOOTING LAYOUT & DETAILS

DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A2	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-02	

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FOR GOOD LIFE OF BUILDING, MAINTAIN PROPER COVER FOR ALL STRUCTURAL ELEMENTS AS PER STANDARDS GIVEN IN GENERAL NOTES.



PLINTH BEAM LAYOUT

IMPORTANT NOTES:

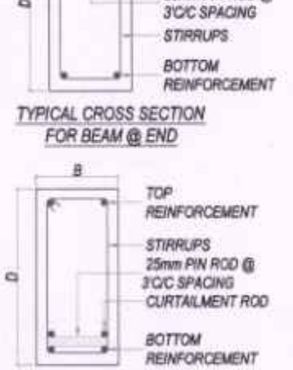
GRADE OF CONCRETE UPTO FIRST FLOOR IS M25.
GRADE OF CONCRETE ABOVE FIRST FLOOR IS M20.

LEGENDS

RL - ROAD LEVEL
GF - GROUND FLOOR
LVL - LEVEL
C/C - CENTER TO CENTER
FFL - FLOOR FINISH LEVEL
NGL - NATURAL GROUND LEVEL

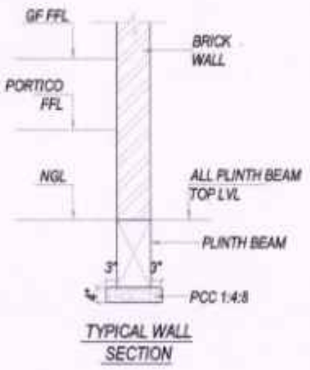
SCHEDULE OF PLINTH BEAM

PLINTH BEAM	C/S @ LHS	C/S @ MID SPAN	C/S @ RHS
B101	2Y12 / Y8@6" / 2Y12	2Y12 / Y8@8" / 2Y12	2Y12 / Y8@6" / 2Y12
B102	2Y12 / Y8@6" / 2Y12	2Y12 / Y8@8" / 2Y12	2Y12 / Y8@6" / 2Y12
B103	2Y16 / Y8@6" / 2Y16	2Y16 / Y8@8" / 3Y16	2Y16 / Y8@6" / 2Y16
B104	2Y16 / Y8@6" / 2Y12	2Y12 (LAP) / Y8@8" / 2Y12	2Y12 / Y8@6" / 2Y12
B105	2Y12 / Y8@6" / 2Y12	2Y16 (LAP) / Y8@8" / 2Y12	2Y16 / Y8@6" / 2Y12
B106	2Y16 / Y8@6" / 2Y16	2Y16 / Y8@8" / 2Y16	2Y16 / Y8@6" / 2Y16
B107	2Y12 / Y8@6" / 2Y12	2Y12 / Y8@8" / 2Y12	2Y12 2Y12 / Y8@6" / 2Y12
B108	2Y12 2Y12 / Y8@6" / 2Y12	2Y12 / Y8@8" / 2Y12	2Y12 / Y8@6" / 2Y12

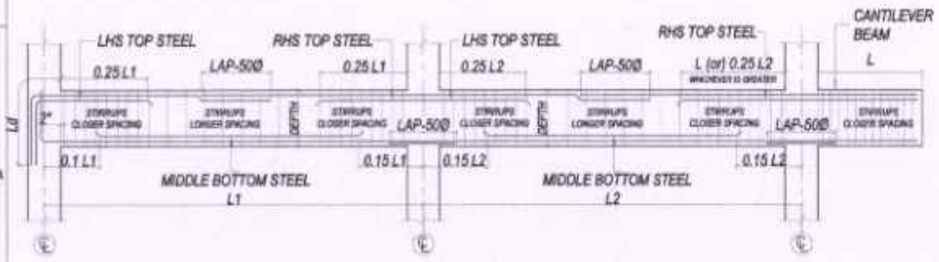


TYPICAL CROSS SECTION FOR BEAM @ END

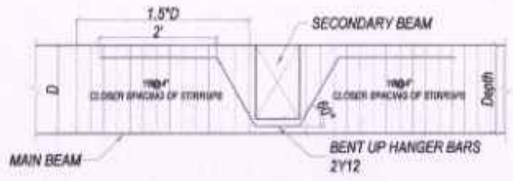
TYPICAL CROSS SECTION FOR BEAM @ MIDDLE



TYPICAL WALL SECTION



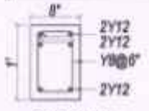
TYPICAL LAPPING & CURTAILMENT DETAILS OF A CONTINUOUS BEAM



TYPICAL HANGER BAR DETAILS

NOTES

ALL PLINTH BEAM TOP ARE AT SAME LEVEL
- INDICATES LIFT ROC WALL



CB1 DETAIL

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8. CLEAR COVER FOR
   FOOTING: SIDE : 75mm
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   BEAM : 25mm
   SLAB : 20mm
9. LAP LENGTH OF BARS : 50Ø, AT COLUMN LAPPING PROVIDE 100mm SPACING OF TIES, NO LAPPING ALLOWED AT BEAM-COLUMN JOINT.
10. DEVELOPMENT LENGTH (Ld) FOR REINFORCEMENT BARS
    IN COMPRESSION : 40Ø
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    HOWEVER 7 DAYS STRENGTH OF CONCRETE SHOULD BE 65% OF THE TARGET STRENGTH, TO REMOVE FORM WORK.
13. SUPPORT DESTINATION
    LHS - LEFT HAND SIDE SUPPORT
    RHS - RIGHT HAND SIDE SUPPORT

Er. S. JAGADESH KANNAN ME(Struct), PE, MIE, FIV.,
CHARTERED CIVIL ENGINEER (M-1630045)
REGISTERED STRUCTURAL ENGINEER
REGD. No : TD/RSE/Gr-I/2025/02/002
31-B, OLD DAMU NAGAR, PULIYAKULAM,
COIMBATORE - 641 045

R. No	DATE	REVISIONS / DETAILS	INITIAL

PROJECT
PROPOSED APARTMENT BUILDING @ KALAPATTI, COIMBATORE

CLIENT
Mr.PREMIER DEVELOPERS

ARCHITECT
arq ran DESIGN STUDIO

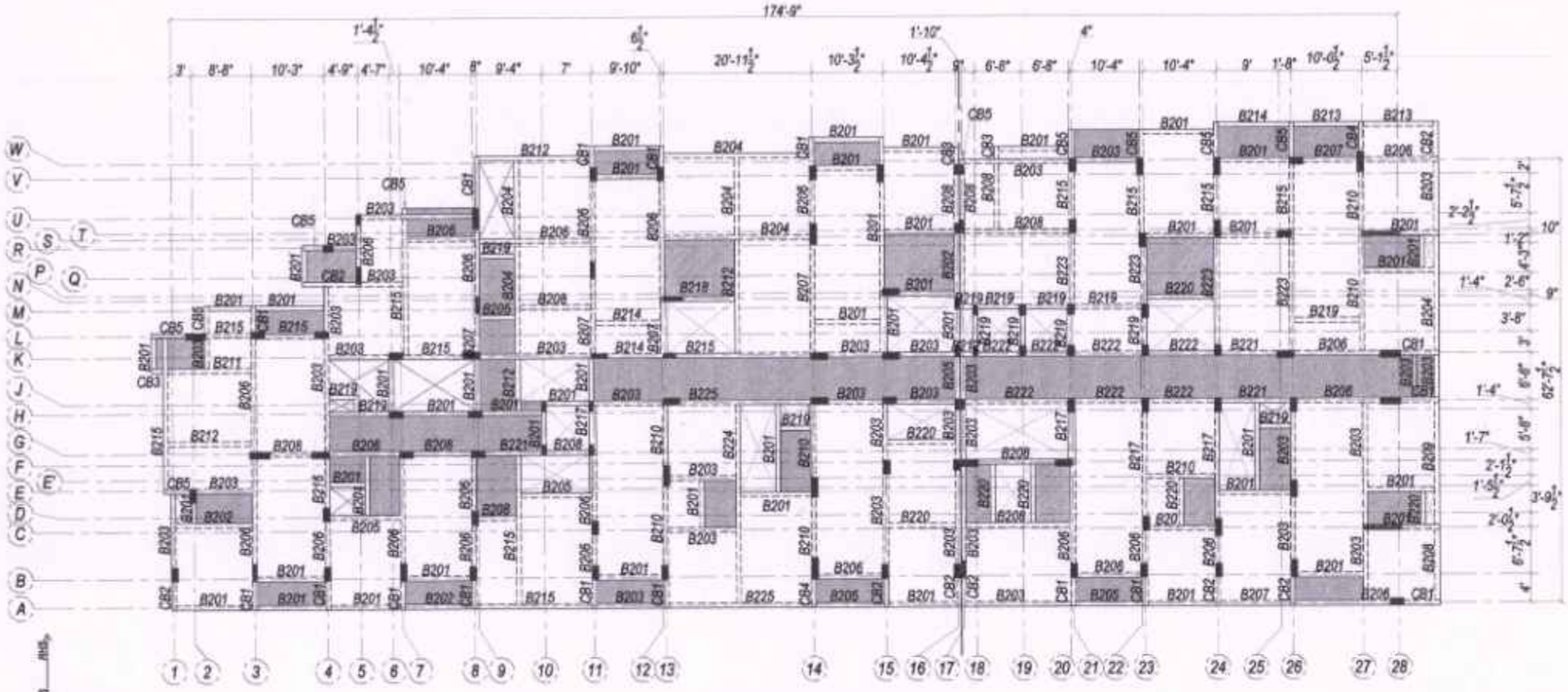
STRUCTURAL CONSULTANT
Archetype
TM Er.S. JAGADESH KANNAN,M.E.(Struct),PE,MIE,FIV.,
Archetype Design Services Private Limited
No. 31, "JK Towers" Old Damu Nagar, Puliyakulam,
Coimbatore - 641045,Tamilnadu, India.
email: jk@archetypeopl.com
Web: www.archetypeopl.com
Landline: 0422-2334487

TITLE
PLINTH BEAM LAYOUT & DETAILS

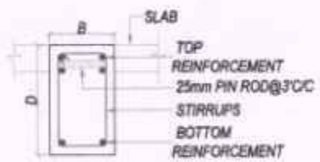
DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A2	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-03	

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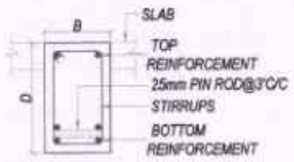
FOR GOOD LIFE OF BUILDING, MAINTAIN PROPER COVER FOR ALL STRUCTURAL ELEMENTS AS PER STANDARDS GIVEN IN GENERAL NOTES.



TYPICAL FLOOR BEAM LAYOUT



TYPICAL CROSS SECTION OF BEAM AT SUPPORT



TYPICAL CROSS SECTION OF BEAM AT MID

NOTES:

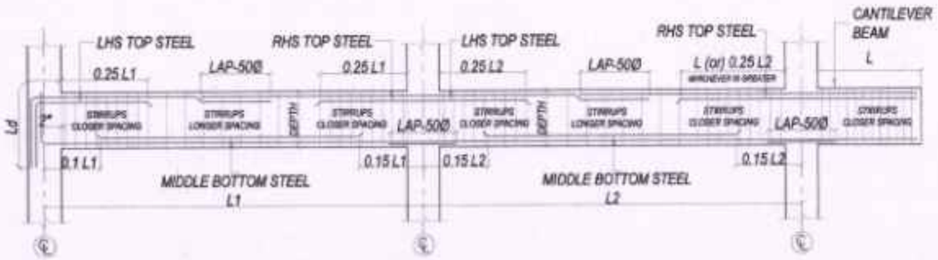
- INDICATES SLAB SUNKEN BY 2"
- INDICATES INVERTED BEAM

IMPORTANT NOTES:

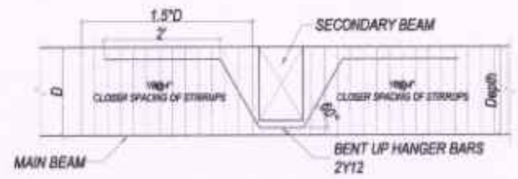
GRADE OF CONCRETE UPTO FIRST FLOOR IS M25.
GRADE OF CONCRETE ABOVE FIRST FLOOR IS M20.

LEGENDS

GF - GROUND FLOOR
LVL - LEVEL
C/C - CENTER TO CENTER
SSL - STRUCTURAL SLAB LEVEL
C/S - CROSS SECTION
FF - FIRST FLOOR



TYPICAL LAPPING & CURTAILMENT DETAILS OF A CONTINUOUS BEAM



TYPICAL HANGER BAR DETAILS

Er. S. JAGADESH KANNAN ME(Struct), PE, MIE, FIV.,
CHARTERED CIVIL ENGINEER (M-1630045)
REGISTERED STRUCTURAL ENGINEER
REGD. No : TD/RSE/Gr-I/2025/02/002
31 B, OLD DAMU NAGAR, PULIYAKULAM,
COIMBATORE - 641 045

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8. CLEAR COVER FOR
   FOOTING: SIDE : 75mm
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   BEAM : 25mm
   SLAB : 20mm
9. LAP LENGTH OF BARS : 50Ø, AT COLUMN LAPPING PROVIDE 100mm SPACING OF TIES, NO LAPPING ALLOWED AT BEAM-COLUMN JOINT.
10. DEVELOPMENT LENGTH (Ld) FOR REINFORCEMENT BARS
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    LHS - LEFT HAND SIDE SUPPORT
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R. No	DATE	REVISIONS / DETAILS	INITIAL

PROJECT
PROPOSED APARTMENT BUILDING @ KALAPATTI, COIMBATORE

CLIENT
Ms.PREMIER DEVELOPERS

ARCHITECT
arQron DESIGN STUDIO

STRUCTURAL CONSULTANT
Archetype™ Er.S. JAGADESH KANNAN,M.E(Struct),P.E,M.I.E.F.I.V.,
Archetype Design Services Private Limited
No. 31, "JK Towers" Old Damu Nagar, Puliyakulam,
Coimbatore - 641045,Tamilnadu, India
email: jk@archetypeepl.com
Web: www.archetypeepl.com
Landline: 0422-2324467

TITLE
TYPICAL FLOOR BEAM LAYOUT & DETAILS

DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A2	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-04-SH-01	

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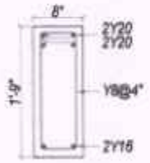
FOR GOOD LIFE OF BUILDING, MAINTAIN PROPER COVER FOR ALL STRUCTURAL ELEMENTS AS PER STANDARDS GIVEN IN GENERAL NOTES.

SCHEDULE OF FLOOR BEAM

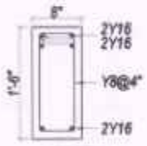
FLOOR BEAM	C/S @ LHS	C/S @ MID SPAN	C/S @ RHS
B201	8" 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y16 / 1'-3" Y8@6" / 2Y16
B202	8" 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y16 / 1'-3" Y8@8" / 2Y16	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16
B203	8" 2Y16 2Y16 / 1'-6" Y8@6" / 2Y16	8" 2Y16 / 1'-6" Y8@8" / 2Y16 2Y16	8" 2Y16 2Y16 / 1'-6" Y8@6" / 2Y16
B204	8" 2Y16 2Y16 / 1'-9" Y8@6" / 3Y16	8" 2Y16 / 1'-9" Y8@8" / 2Y16 3Y16	8" 2Y16 2Y16 / 1'-9" Y8@6" / 3Y16
B205	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y16 / 1'-3" Y8@6" / 3Y16	8" 2Y16 / 1'-3" Y8@6" / 2Y16
B206	8" 2Y20 2Y20 / 1'-9" Y8@6" / 2Y20	8" 2Y20 / 1'-9" Y8@6" / 2Y20 2Y20	8" 2Y20 2Y20 / 1'-9" Y8@6" / 2Y20
B207	8" 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y20 (LAP) / 1'-3" Y8@8" / 2Y16	8" 2Y20 2Y20 / 1'-3" Y8@6" / 2Y16
B208	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y16 / 1'-3" Y8@8" / 3Y16	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16
B209	8" 2Y16 2Y16 / 1'-9" Y8@6" / 3Y20	8" 2Y16 / 1'-9" Y8@6" / 2Y20 3Y20	8" 2Y16 2Y16 / 1'-9" Y8@6" / 3Y20
B210	8" 2Y20 2Y20 / 2' Y8@6" / 2Y16	8" 2Y20 / 2' Y8@8" / 3Y16	8" 2Y20 2Y20 / 2' Y8@6" / 2Y16

FLOOR BEAM	C/S @ LHS	C/S @ MID SPAN	C/S @ RHS
B211	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16	8" 2Y16 / 1'-3" Y8@8" / 2Y16	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16
B212	8" 2Y16 / 1'-6" Y8@6" / 2Y16	8" 2Y16 / 1'-6" Y8@8" / 2Y16 2Y16	8" 2Y16 2Y16 / 1'-6" Y8@6" / 2Y16
B213	8" 2Y20 2Y20 / 1'-9" Y8@6" / 2Y16	8" 2Y20 / 1'-9" Y8@8" / 3Y16	8" 2Y20 2Y20 / 1'-9" Y8@6" / 2Y16
B214	8" 2Y20 2Y20 / 1'-9" Y8@6" / 2Y16	8" 2Y20 / 1'-9" Y8@8" / 3Y16	8" 2Y20 / 1'-9" Y8@6" / 2Y16
B215	8" 2Y16 2Y16 / 1'-9" Y8@6" / 2Y16	8" 2Y16 / 1'-9" Y8@8" / 2Y16 2Y16	8" 2Y16 2Y16 / 1'-9" Y8@6" / 2Y16
B216	8" 2Y20 2Y20 / 1'-3" Y8@6" / 2Y16	8" 2Y16 (LAP) / 1'-3" Y8@6" / 3Y16	8" 2Y16 2Y16 / 1'-3" Y8@6" / 2Y16
B217	8" 2Y20 2Y20 / 1'-9" Y8@6" / 2Y16	8" 2Y16 (LAP) / 1'-9" Y8@6" / 3Y16	8" 2Y16 2Y16 / 1'-9" Y8@6" / 2Y16
B218	8" 2Y16 2Y16 / 1'-6" Y8@6" / 2Y16	8" 2Y16 / 1'-6" Y8@6" / 3Y16	8" 2Y16 / 1'-6" Y8@6" / 2Y16
B219	8" 2Y12 / 1' Y8@6" / 2Y12	8" 2Y12 / 1' Y8@8" / 3Y12	8" 2Y12 / 1' Y8@6" / 2Y12
B220	8" 2Y12 / 1'-3" Y8@6" / 2Y12	8" 2Y12 / 1'-3" Y8@6" / 3Y12	8" 2Y12 / 1'-3" Y8@6" / 2Y12

FLOOR BEAM	C/S @ LHS	C/S @ MID SPAN	C/S @ RHS
B221	8" 2Y16 / 1'-6" Y8@6" / 2Y16	8" 2Y20 (LAP) / 1'-6" Y8@8" / 2Y16	8" 2Y20 2Y20 / 1'-6" Y8@6" / 2Y16
B222	8" 2Y16 / 1'-6" Y8@6" / 2Y16	8" 2Y16 / 1'-6" Y8@8" / 2Y16	8" 2Y16 / 1'-6" Y8@6" / 2Y16
B223	8" 2Y16 2Y16 / 1'-9" Y8@6" / 2Y16	8" 2Y16 / 1'-9" Y8@8" / 3Y16	8" 2Y16 / 1'-9" Y8@6" / 2Y16
B224	8" 2Y16 2Y16 / 2' Y8@6" / 2Y20	8" 2Y16 / 2' Y8@8" / 2Y20 2Y20	8" 2Y16 2Y16 / 2' Y8@6" / 2Y20
B225	8" 2Y16 2Y16 / 2' Y8@6" / 2Y16	8" 2Y16 / 2' Y8@8" / 2Y16 2Y16	8" 2Y16 2Y16 / 2' Y8@6" / 2Y16



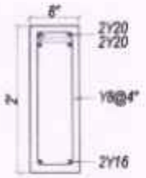
CB1 DETAIL



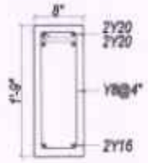
CB2 DETAIL



CB3 DETAIL



CB4 DETAIL



CB5 DETAIL

IMPORTANT NOTES:

GRADE OF CONCRETE UPTO FIRST FLOOR IS M25.
GRADE OF CONCRETE ABOVE FIRST FLOOR IS M20.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FEET & INCHES, UNLESS OTHERWISE SPECIFIED.
2. DRAWING SHOULD NOT BE SCALED, FOLLOW FIGURED DIMENSIONS.
3. ANY DISCREPANCY IN DRAWING SHALL BE BRING TO NOTICE OF STRUCTURAL CONSULTANT BEFORE EXECUTION OF WORK.
4. SCOPE OF STRUCTURAL CONSULTANT ENDS, WITH THE ISSUE OF STRUCTURAL DRAWINGS, EXECUTION OF WORK AS PER DRAWING SHOULD BE ENSURED BY PMC / CLIENT.
5. THIS DRAWING SHOULD BE READ ALONG WITH THE RELEVANT ARCHITECTURAL DRAWING.
6. IF THERE IS ANY REVISION IN DRAWING, FURTHER C ONSTRUCTION SHALL BE EXECUTED AS PER THE LATEST REVISED DRAWING, ON THE ISSUE OF LATEST REVISION.
7. GRADE OF CONCRETE SHALL BE M25
   GRADE OF STEEL SHALL BE Fe500
8. CLEAR COVER FOR
   FOOTING: SIDE : 75mm
   FOOTING: TOP & BOTTOM : 50mm
   PEDESTAL,COLUMN : 40mm
   BEAM : 25mm
   SLAB : 20mm
9. LAP LENGTH OF BARS : 50Ø, AT COLUMN LAPPING PROVIDE 100mm SPACING OF TIES, NO LAPPING ALLOWED AT BEAM-COLUMN JOINT.
10. DEVELOPMENT LENGTH (Ld) FOR REINFORCEMENT BARS
    IN COMPRESSION : 40Ø
    IN TENSION : 50Ø
11. IN CASE OF BEAM REINFORCEMENT, NO LAPPING SHALL BE ALLOWED IN FOLLOWING PLACES
    (a) TOP ROD NEAR COLUMN, L/4 ON EITHER SIDES OF COLUMN
    (b) TOP ROD OF CANTILEVER BEAM ALONG THE LENGTH AND ALSO DEVELOPMENT LENGTH, BEYOND COLUMN
    (c) BOTTOM ROD AT MID SPAN OF BEAM
12. REMOVAL OF SHUTTERING / FORM WORK
    (a) COLUMN : 24 HOURS
    (b) BEAM SIDES : 24 HOURS
    (c) BEAM BOTTOM : LESS THAN 6M SPAN : 14 DAYS
    : MORE THAN 6M SPAN : 28 DAYS
    (d) SLAB : LESS THAN 6M SPAN : 14 DAYS
    : MORE THAN 6M SPAN : 28 DAYS
    HOWEVER 7 DAYS STRENGTH OF CONCRETE SHOULD BE 65% OF THE TARGET STRENGTH, TO REMOVE FORM WORK.
13. SUPPORT DESTINATION
    LHS - LEFT HAND SIDE SUPPORT
    RHS - RIGHT HAND SIDE SUPPORT

Er. S. JAGADESH KANNAN M.E(Struct), PE, MIE, FIV.,
CHARTERED CIVIL ENGINEER (M-1630045)
REGISTERED STRUCTURAL ENGINEER
REGD. No: TD/RSE/Gr-I/2025/02/002
J1 B, OLD DAMU NAGAR, PULIYAKULAM,
COIMBATORE - 641 045

R. No	DATE	REVISIONS / DETAILS	INITIAL

PROJECT
PROPOSED APARTMENT BUILDING @ KALAPATTI, COIMBATORE

CLIENT
Ms.PREMIER DEVELOPERS

ARCHITECT
arch DESIGN STUDIO

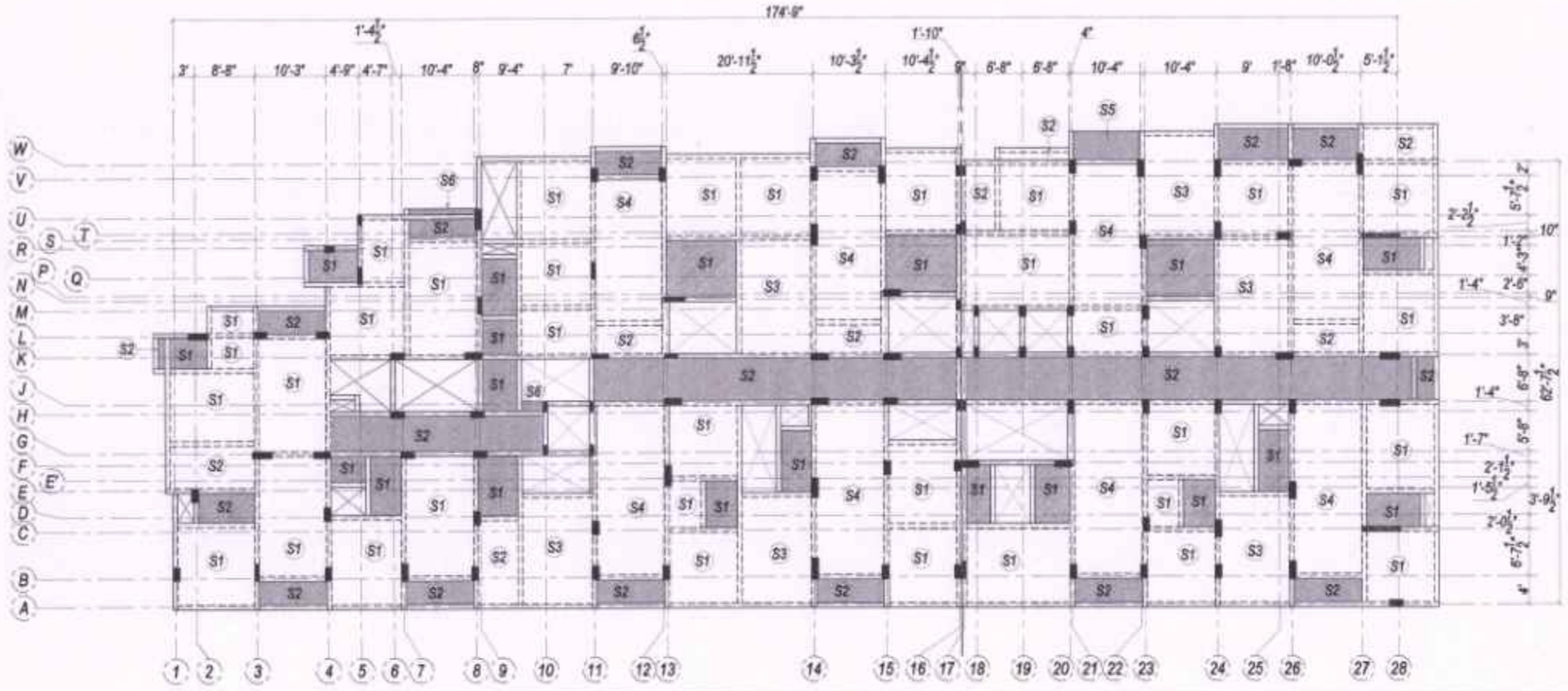
STRUCTURAL CONSULTANT
Archetype
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TITLE
TYPICAL FLOOR BEAM CROSS SECTIONAL DETAILS

DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A2	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-04-SH-02	

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FOR GOOD LIFE OF BUILDING, MAINTAIN PROPER COVER FOR ALL STRUCTURAL ELEMENTS AS PER STANDARDS GIVEN IN GENERAL NOTES.



TYPICAL FLOOR SLAB LAYOUT

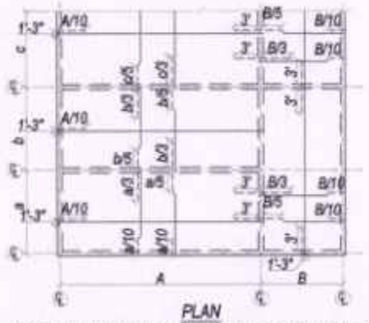
NOTES:

a. ---------- - TOP BAR
b. ———— - BOTTOM BAR
c. PROVIDED Y8@8" FOR DISTRIBUTION BARS, IF NOT SHOWN.
d. ▭ - INDICATES SLAB SUNKEN BY 2"
e. ▭ - INDICATES INVERTED BEAM



PLAN

TYPICAL TWO WAY SLAB REINFORCEMENT DETAIL



PLAN

TYPICAL ONE WAY SLAB REINFORCEMENT DETAIL

SCHEDULE OF SLABS

SLAB NO.	THICKNESS	SHORTER SPAN REINFORCEMENT	LONGER SPAN REINFORCEMENT	REMARKS
S1	5"	Y8@5"o/c	Y8@6"o/c	TWO WAY SLAB
S2	5"	Y8@6"o/c	Y8@8"o/c	ONE WAY SLAB
S3	5"	Y10@6"o/c	Y8@6"o/c	TWO WAY SLAB
S4	5"	Y10@5"o/c	Y10@8"o/c	ONE WAY SLAB
S5	6"	Y12@4"o/c	Y8@8"o/c	CANTILEVER SLAB
S6	5"	Y10@4"o/c	Y8@8"o/c	CANTILEVER SLAB

IMPORTANT NOTES:

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Er. S. JAGADESH KANNAN ME(Struct), PE, MIE, FIV.,
CHARTERED CIVIL ENGINEER (M-1630045)
REGISTERED STRUCTURAL ENGINEER
REGD. No : TD/RSE/Gr-I/2025/02/002
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PROJECT
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Web: www.archetypespl.com
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TITLE
TYPICAL FLOOR SLAB LAYOUT & DETAILS

DRAWN BY : LA	DESIGNED BY : SA	CHECKED BY : GA
DATE : 20.AUG.2025	SCALE : 1:150/ A2	APPROVED BY : JK
PROJECT NO : K-25103	DRAWING NO : ST-04-SH-03	

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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

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+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.