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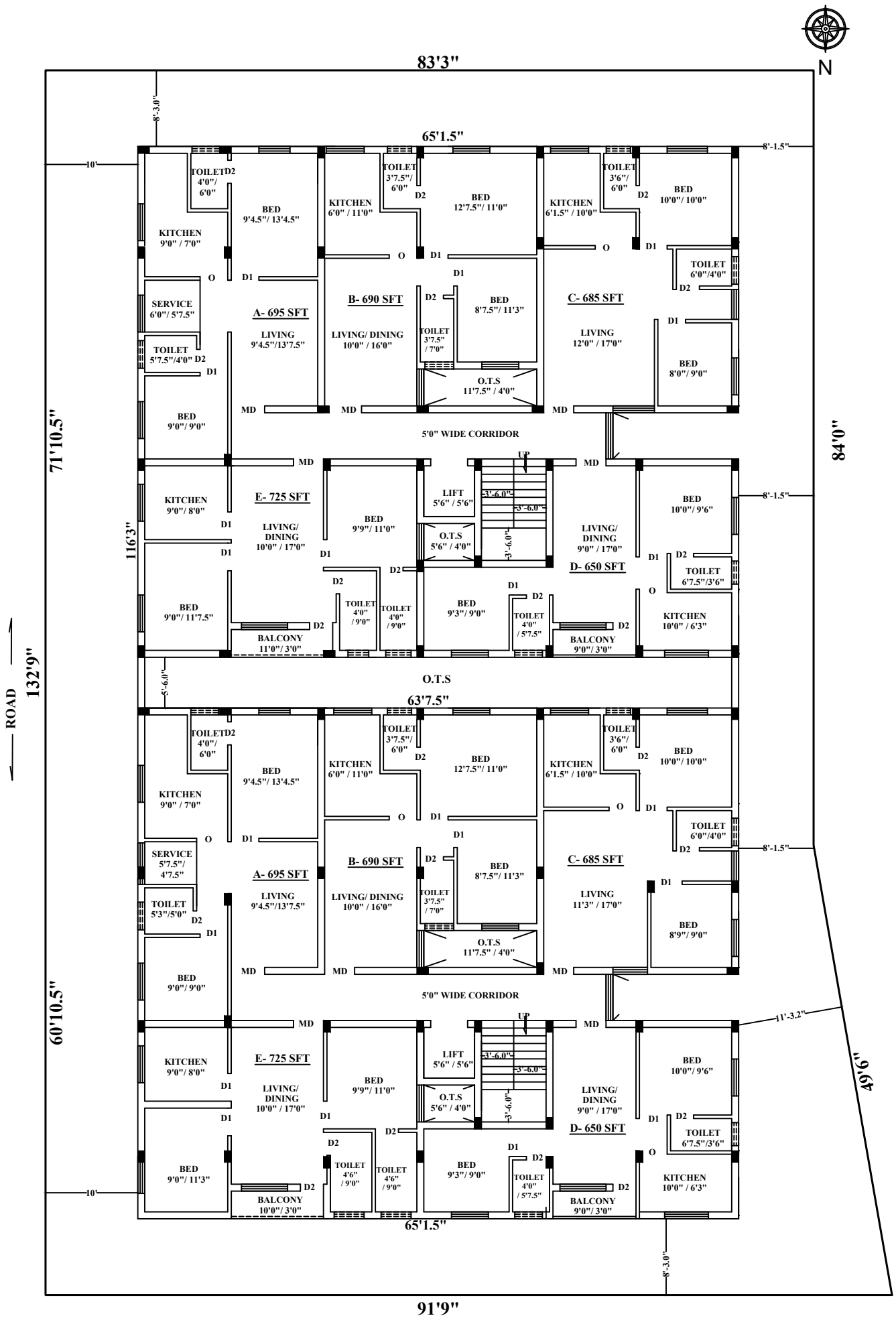
3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai, India

hello@verified.realestate
+91 9996 12 9996

Official Property Record

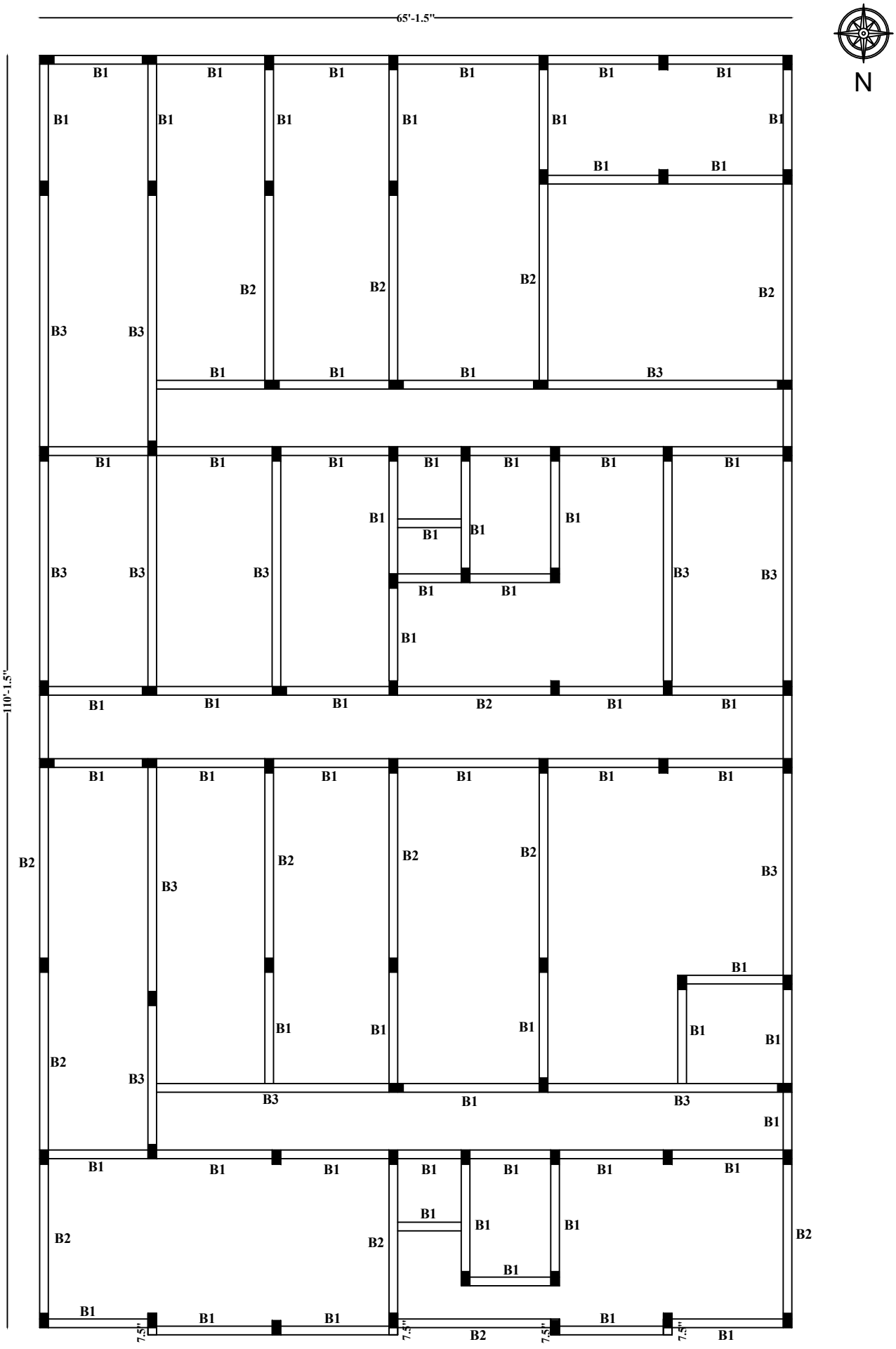
Digitally Verified Record - Powered by Verified RealEstate™

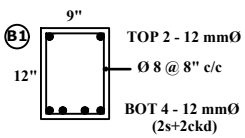


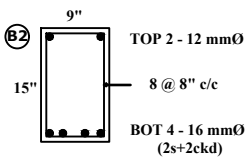


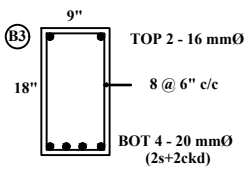
TYPICAL FLOOR PLAN

S.A:10%



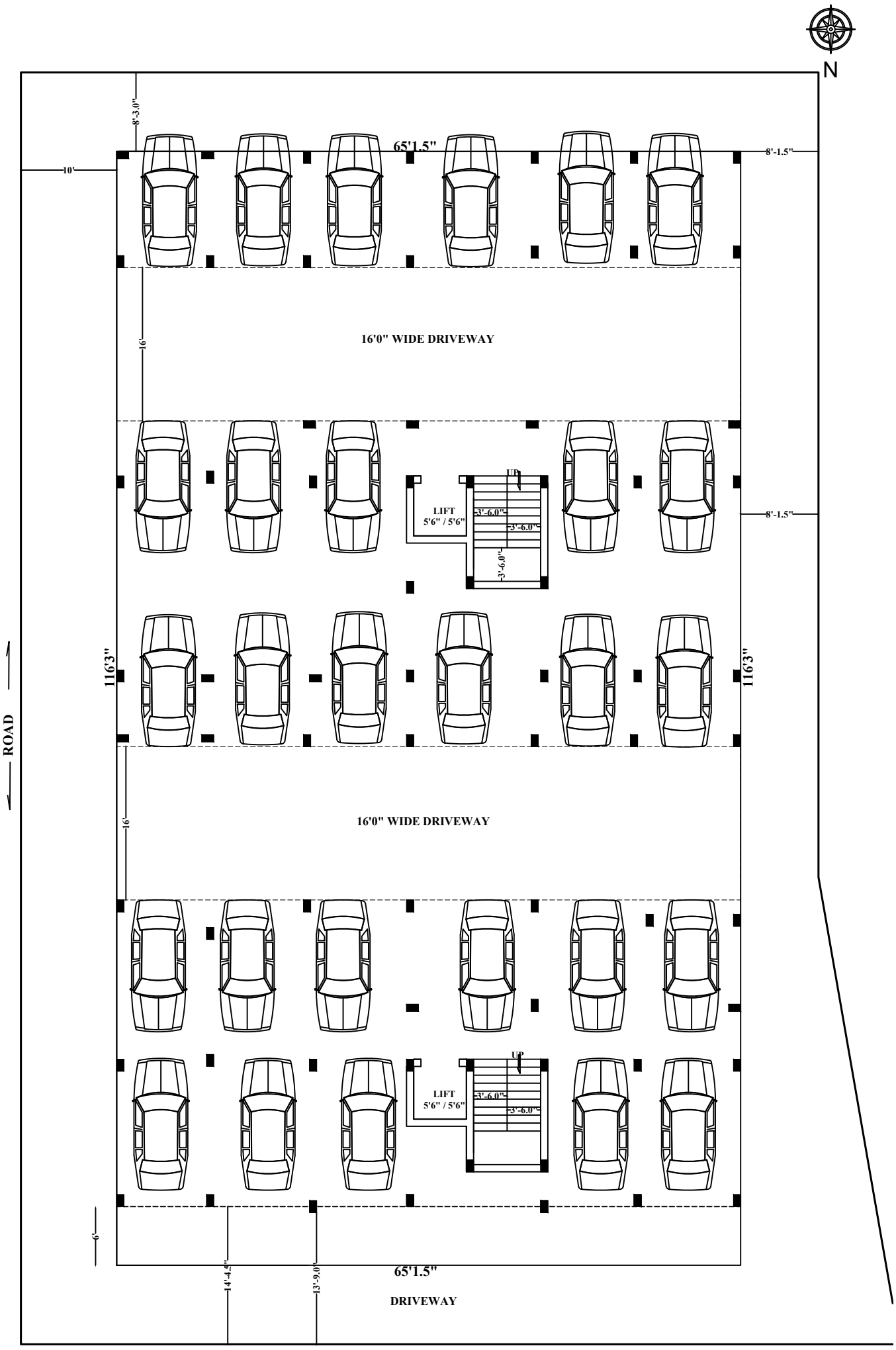






PLINTH FLOOR PLAN

S.A:10%



STILT FLOOR PLAN

S.A:10%

Er. K. Marimuthu, B.E.,M.I.S.trut.E.,M.I.C.I.,
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Trichy - 620 018.
✆ 0431 - 2741573
Cell : 94430 59910

Date : .....

Structural Design for Foundation and Column for the Proposed Residential Apartment Building (Affordable Housing) in T.S.No:27/28 , Block-6, Ward-I, at Subramaniya nagar, Pandamangalam Village, Zone - 5, Trichirappalli City Corporation.

The foundation and column shall be designed for the maximum span of 6.6m.

Number of floor	:	Stilt +4 Floor
Height of each floor	:	3.00 m
Using concrete mix	:	M20
RTS Bars	:	Fe 500

LOAD:

Live Load	:	300 kg/m^2
Dead Load	:	250 kg/m^2
Total load transfer to beam @	:	550 kg/m^2
Clear Spacing of Beams	:	3.5 m
Load transferred to beam /m	:	3.5 x 1 x 550 = 1925 kg/m
Load transferred to Column / floor	:	1925 x 7.8 = 15,015 floor(or)15000kg
Total load transferred to column	:	15000 x 5 =75,000 kg
Self weight of column as 10% of load		
Total load/ column	:	82,500 kg (or) 83T
Assuming Column Area	:	A cm^2
% of Longitudinal reinforcement	:	4 %

Using **Fe 500** steel and **M20** Concrete

Pu	= 0.4 x 200 x Ac + 0.67 x fy x Ast
82500	= 0.4 x 200 x (Ac-0.04 Ac) + 0.67 x 5000 x 0.04 Ac
Ac	= 391 cm^2
Required column Area	= 391 cm^2

Hence provide column to the size of 23 cm x 38 cm

Area of column 23 x 38 = 874 cm^2 > 391 cm^2

Hence Safe.

Ast required = 0.04 x 874 = 34.96 cm^2

Using 20mm ϕ bars

Number of vertical required = 34.96/3.14 = **12 Nos**

Hence provide 12 Numbers of 20 mm ϕ bars.

Ast provided = 12 x 3.14 = 37.68 cm^2 > 34.96 cm^2

Hence Safe.

Design of Lateral Reinforcement:

Provide 8 mm ϕ RTS bar as lateral reinforcement

Spacing of reinforcement is not least of the following.

1. Least lateral dimension of column i.e . 23 cm.
2. 16 times the diameter of longitudinal Reinforcement 16x 2cm i.e. 32 cm.
3. 30 cm i.e. 30 cm.

Hence provide lateral reinforcement @ 20 cm c/c.

Footing Design:

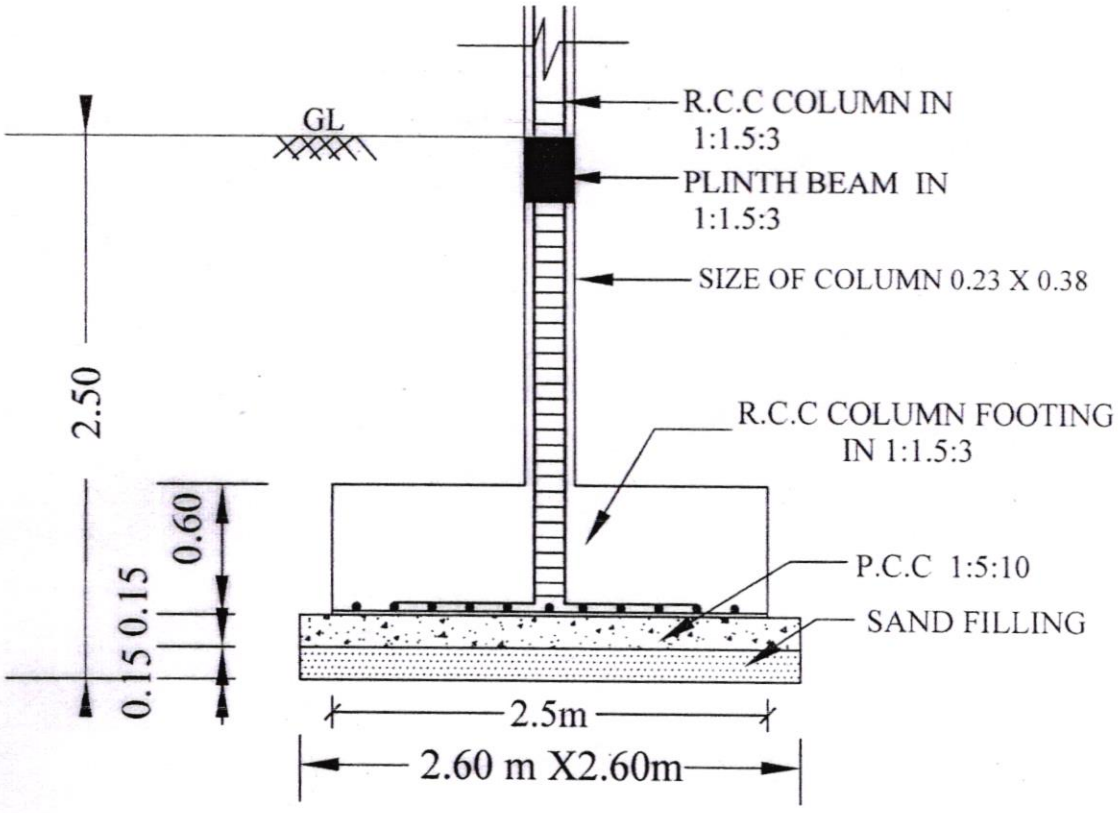
Total load transferred by a column = 82.5 Tones.

Safe Bearing capacity of soil = 15 T/ m^2
(as per soil report)

Area of footing = 82.5 T/15 T = 5.5 m^2

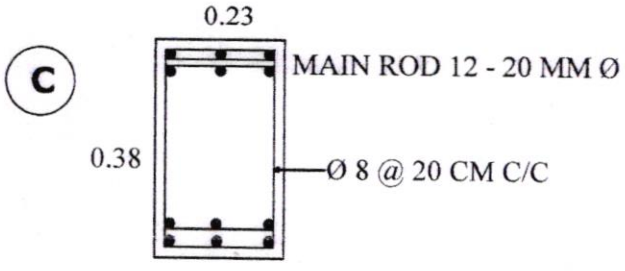
Hence provide footing size of 2.5 m x 2.5 m

COLUMN DESIGN FOR THE PROPOSED RESIDENTIAL APARTMENT BUILDING (AFFORDABLE HOUSING) IN T.S.NO:27/28 , BLOCK-6, WARD-I, AT SUBRAMANIYA NAGAR, PANDAMANGALAM VILLAGE, ZONE - 5, TRICHIRAPPALLI CITY CORPORATION.



CROSS SECTION OF COLUMN FOOTING

NOT TO SCALE



CROSS SECTION OF COLUMN

ENGINEER.

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Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

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We're honored to be part of your real estate journey

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