Verified RealEstate™

Your trusted partner for buying, selling, and managing property, ensuring hassle-free service with 100% transparency.

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™



T. Bharanidharan M.E, AMIE.
+91 9791 7766 85
Registered Civil & Structural Engineer
Chartered Engineer

KURAL ASSOCIATES
Perception to Execution

STRUCTURAL STABILITY CERTIFICATE

SITE ADDRESS:- PLAN SHOWING THE PROPOSED CONSTRUCTION OF RESIDENTIAL GROUP DEVELOPMENT BUILDING CONSISTS OF BLOCK A:- STILT FLOOR + 5 FLOORS RESIDENTIAL BUILDING WITH 39 DWELLING UNITS & ASSOCIATION ROOM / GAMES ROOM AT 5TH FLOOR LVL (WITH HEIGHT 18.30M) AND BLOCK B:- STILT FLOOR + 5 FLOORS RESIDENTIAL BUILDING WITH 50 DWELLING UNITS (WITH HEIGHT 18.30)-TOTALLY 89 DWELLING UNITS AVAILING PREMIUM FSI AT T.PONNAMBALAM SALAI, KOLAPAKKAM, KANCHIPURAM DISTRICT AND COMPRISED IN S.NO. 132/9 OF KOLAPAKKAM VILLAGE, KUNDRATHUR TALUK AND WITHIN THE LIMITS OF KUNDRATHUR PANCHAYAT UNION.

The Residential Building referred to above is a framed structure with **S+5 upper floor**. The structural design and drawing for the building are being prepared by us conforming to the relevant bureau of Indian Standards viz. IS 456:2000 for plain and reinforced concrete, IS 875(part-II)- 1987 for imposed loads and IS 1893:2002(part-1) for seismic force.

We certify that the building when constructed according to our structural designs and drawings will be **structurally safe and sound** taking earthquake effects in account and fit for occupation. No more future vertical expansion will be allowed except staircase & lift headroom.

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

3/1517, Mugalivakkam Main Road, Madhanandhapuram, Porur, Chennai - 600 125.
kuralassociates.engineers@gmail.com
044 79670563 | /kuralassociates

PLAN SHOWING THE PROPOSED CONSTRUCTION OF RESIDENTIAL GROUP DEVELOPMENT BUILDING CONSISTS OF BLOCK A:- STILT FLOOR+ 5 FLOORS RESIDENTIAL BUILDING WITH 39 DWELLING UNITS & ASSOCIATION ROOM / GAMES ROOM AT 5TH FLOOR LVL (WITH HEIGHT 18.30M) AND BLOCK B:- STILT FLOOR + 5 FLOORS RESIDENTIAL BUILDING WITH 50 DWELLING UNITS (WITH HEIGHT 18.30)-TOTALLY 89 DWELLING UNITS AVAILING PREMIUM FSI AT T.PONNAMBALAM SALAI, KOLAPAKKAM, KANCHIPURAM DISTRICT AND COMPRISED IN S.NO. 132/9 OF KOLAPAKKAM VILLAGE, KUNDRATHUR TALUK AND WITHIN THE LIMITS OF KUNDRATHUR PANCHAYAT UNION.

Structural design brief

Introduction

The proposed residential building is a framed structure with stilt and five upper floors. The building is analyzed and designed conforming to loading standards IS: 875 (part II) and to seismic force as per IS 1893: 2002, the revised India code for earth quake resistant design of structures.

A. Load considered in the design

Live load on roof	1.5 KN/M^2
Live load on floor	2 KN/M^2
Weathering course on roof	2KN/M^2
Floor finish	1 KN/M^2
Light partition	1 KN/M^2
Unit weight of brickwork	20 KN/M^3
Unit weight of concrete	25 KN/M^3

B. Design details

Design method	LIMIT STATE DESIGN
Codes & special	IS 456: 2000, IS 1893:2002(PART I), SP 16, IS

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

publication used	875(PART II)
Concrete grade	M25
Steel grade	FE 415

C. Foundation Details

Type of foundation	Pile foundation
Allowable capacity as per soil test report	227tons for 750mm dia piles
Depth of foundation	27m below NGL
Diameter of main bars in footings	20mm, 20mm, 16mm, 12mm

D. Slab Details

Type of slab	Two way slab
Thickness of the slab provided	125mm
Steel cover to slab	25mm
Diameter of main bars used	10mm, 8mm

E. Beam Details

Size of the beam provided	230 x 450mm, 230 x 600mm, 230 x 380mm
Bottom steel cover to beam	25mm
Diameter of main bars used	25mm, 20mm, 16mm, 12mm
Stirrups used	2 legged stirrups 8mm dia

F. Column Details

Size of the columns provided	300mmx600mm
Steel cover to column	40mm
Diameter of main bars used	25mm, 20mm, 16mm
Binder diameter	8mm

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

1. LOADINGS

A. Dead and live loads

Gravity load on roof :6.125 KN/m^2 (weathering course + slab)

Gravity load on floors :5.125 KN/m^2 (floor finish + light partition + slab)

Live load on roof :1.5 KN/m^2

Live load on floor :2 KN/m^2

B. Wind loads

Wind loads for design of structures shall be based on the design wind speeds arrived on the basis of IS: 875 (PART III)

The parameters for calculation of design wind speed as per IS: 875 (PART III) are as follows:

Basic wind speed (v_b) : 50m/sec

Height :15m

From table 1, IS 875 (part 3), for mean probable design life of structure as 50 yrs and wind speed of 50m/sec, risk coefficient, K_1 :10

From table 2, terrain category 2 and class A for a height of 15m and plan dimensions 13.34 x 33.34, terrain, height, structure size factor, K_2 : 1.02

Topography factor, K_3 :1.0

Design wind speed (V_z) :Vb x K1 X K2 X K3

Design wind pressure (P_z): 0.6 Vz^2

:0.6 x 51^2 :1560.6N/m^2

: 1.5606 KN/m^2

C. Determination of earthquake parameters and loadings

Zone factor, Z for Chennai seismic ZONE III: 0.16, (table 2, clause 6.4.2)

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

I, Importance factor : 1, (form table 6)

R, Response reduction factor : 3 for OMRF (ordinary moment resisting frame, table 7)

Fundamental natural period along X direction,

T_x : 0.09 x h / $\sqrt{d_x}$: 0.09 x 12 / $\sqrt{6.79}$

: 0.041 (clause 7.62)

The soil at the site is soft S_a/g : 2.5 as $0.1 \leq T \leq 0.67$

Fundamental natural period along Z direction,

T_z : 0.09 x h / $\sqrt{}$ dz : 0.09 x 12 / $\sqrt{21.07}$

: 0.235 (clause 7.6.2)

The soil at the site is soft S_a/g : 2.5 as $0.1 \leq T \leq 0.67$

Design horizontal seismic coefficient

A_h : Z I S_a/ 2Rg (clause 6.4.2)

: 0.16 x 1 x 2.5/ 2 x 3:0.0667

Seismic weight of the building : Total gravity load + 0.25 superimposed load

W: 8194 + (0.25 x 1178)

W: 8489.0 kN

Design seismic base shear

V_B : A_hW (caluse 7.5.3)

0.0667 x 8489 : 566.2KN

Shear per column : 566.2 / 13 : 42.78KN

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

2. LOAD CALACULATION FOR MAXIMUM LOADED COLUMN

Loading area for the column	:3 x 4.6 :13.8m²
Gravity load reaction from the roof	:6.125 x 13.8 : 84.52Kn
Self weight of the beam	:0.30 x 0.9 x 7.6 x 25
	:51.3KN
Weight of the parapet wall	:1 x 0.23 x 20 x 7.6
	:34.96KN
Total gravity load	:170.72KN
Gravity load reaction from the floor	:5.125 x 13.8 : 70.725KN
Self weight of the beam	:0.30 x 0.9 x 25 x 7.6
	:51.3KN
Weight of 230mm wall	:0.23 x 2.1 x 20 x 7.6
	:73.4KN
Weight of toilet filling	:0.25 x 20 x 3.2 :16KN
Weight of 115mm wall	:0.115 x 20 x 2.4 x 3.9
	:21.53KN
Total gravity load	:232.83 KN
Self weight of the column	:0.3 x 0.6 x 25 x 20.74
	:93.38KN
Total gravity load at the foundation	:170.72 + (232.8 x 5)+ 93.38
Level, KN	:1428.1 KN
Total superimposed load at the foundation	:(30.6 + (40.79x 4)) x 0.7)
Level, KN	:164.18 KN
Total load	:1428.1 + 164.18

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

:1592.28 KN

The loads for the other column are calculated in a similar way.

3.COLUMN DESIGN

Column size

B	300mm	fck	25
D	600mm	fy	415

Cover 40mm Effect. Length ratio 0.65 IS 456:200

Ground floor height,L 3000mm L_{effl} 0.65 X L 950 pg 9

First floor height,L 3000mm L_{eff2} 0.65 X L 1950

Check for slenderness

L_{effl}/D	3.25	L_{effl}/b	6.50
L_{eff2}/D	3.25	L_{eff2}/b	6.50

All columns are short about both axis

Size of column and check e_{min}

e_{min} :$L_{eff}/500 + D/30$ 18.90

Hence adopt 20mm eccentricity. 0.02 x 1592.43 : 31.84KN

Design axial load, P_u : 1592.28 KN

Design moment, M_x : M_{min}: 31.84 KNm

Designing the column as axially loaded column with uniaxial moment

Calculation of area of steel

Cover	40mm		
Design axial load, pu:	1592.28 KN		
Design moment, Mx:	Pu x emin	31.84 KN	
D	600mm	fck	25
b	300mm	fy	415
cover	40mm		

diameter of rod assumed 25mm

d' : 40 + 25/2 :52.5mm

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

d'/D : 52.5/600 :0.0875mm

$Mz/fckbD^2$: 31.84 x 1.5 x 10^6/25 x 300x x 600 x 600

:0.0176

p_u/fck bD :1592.28 x 1.5 x 10^3/25 x 300 x 600

:0.53

From SP 16 chart 45

p/fck : 0.03

Ast : 0.03 x 25 x 300 x 600/100 : 1350 mm^2

However 10 Nos of Y16 (2010.62mm^2) rods are provided.

Also binders Y8 @ 150mm are provided.

4. DESIGN OF FOUNDATION

BORED PILE 500 mm DIA

LOAD 160 t (Stilt + 5 = 5 floors)

Earthquake load =10%
wind load =10% =30%
self weight =10%

160 + 48 = 208 t

Load on each pile = 208/3 = 69.3 t

Depth = 16.5 m (Rock formation) pile – 50 cm dia

L/D=1650/50 = 33>12 (long column)

Reduction Co- efficient Cr= 1.75 – (1650/48 x 50)

=1.75 –(165 / 240)

=1.75 – 0.68

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

=0.67

Concrete safe stress = 0.67 x 400 =268 N / cm^2

Steel safe stress = 0.67 x 23000 = 15410 N / cm^2

268 x [1963 – At] + [14375 x At] = 700000

490750 – 250 At + 14375 At = 700000

14125 At =14.81 cm^2

12 x π/4 d^2 = 1481

d^2 = (1481 x 4)/(3.14 x 12)

d = 12.5 mm say 12 mm

provide 3 NOS 16mm & 3 NOS 12mm

CHECK FOR EARTH QUAKE FORCES:

Check the critical column and its foundation to earth quack forces as per IS 1893

Use seismic co-efficient method as per clause 3.4.2-3(a)

α_h = β I (α_b)

(α_h) = Horizontal seismic co-efficient

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:04[illegible]5670563

α_b = basic horizontal seismic co-efficient as per seismic zone (Chennai) – zone III = 0.04

β = A co-efficient depent up on soil foundation as per table – 3 =1.

I = A co-efficient depent up on soil as per table – 4. = 1.20

(α_h) = 0.048

Total load on column = 160 ton.

Size of pile = 500 mm dia.

Safe bearing capacity of soil = 84T/m^2

HΣ = horizontal force component of earth quake.

$= (\alpha_h) \times w$

$= 0.048 \times 100$

= 4.8 Ton.

Column size = 300 mm x 450 mm

Effective depth = 40 cm

Shear stress = HΣ / bjd

= 4800 / (30 x 0.87 x 50)

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram, Porur,Chennai-600125.
Mob:9791776885 / Tel. No:044-23670563

$= 3.678 \text{ kg / cm}^2 < 8\text{kg / cm}^2$

Hence the column is safe against earth quake.

H_V = vertical component of earth quake force as per clause 3.4.5 of IS 1893

$H_V = (\alpha_h) / 2 = 0.024$

Vertical component force due to seismic (P1) = HV x P

$= 0.024 \text{ X } 160 = 3.84 \text{ Ton}$

Total load on footing = P + P1 = 160 + 3.84 = 163.84 Ton.

Size of pile = 500 mm dia

Stress on soil = P/A

=163.84 / (500 mm dia)

$= 9.8 \text{ ton / m}^2 < 10.0 \text{ ton / m}^2$

Which is safe

However it is proposed to provide bored piles 500 mm dia @ 16.5 m depth (as per enclosed drawing)

5. DESIGN OF PILTH BEAM

Assuming a plinth beam of size 230mm x 380mm

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No.044-79670563

Self weight of the plinth beam:0.23 x 0.380 x 25 : 2.185 KN/m

Weight of the 230mm wall :0.23 x 2.4 x 20 :11.04KN/M

Total load on plinth beam :2.185 + 11.04 :13.225KN/M

Maximum moment for a span of 5m :13.225 x 1.5 x 5^2/16: 30.99KN/m

Mu/bd^2 : 30.99 x 10^6 / 230 x 330^2 :1.24

From table 3 of SP 1 6 P_t= 0.3658, Ast : 0.3658 x 230 x 350/100

: 294.469mm^2

Top and bottom steel of 3 NOS, of Y12 is provided. Area of steel provide

:339mm^2

6. DESIGN OF FLOOR BEAM

Self weight of the beam :0.23 x 0.45 x 25 : 2.6N/m

Weight of the 230mm wall :0.23 x 2.1 x 20 : 9.66KN/m

Span

Reaction from slab : 2.6 x 2 : 5.2 KN/m

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

Total factored load : 1.5(5.2 + 9.66 + 6.3): 31.75 KN/m

Maximum moment at support : 432.02 KN/m

Mu/bd^2 : 432.02 x 10^6/230 x 450^2 : 1.72, from table 3 of SP 16 Pt : 0.566

Ast : 0.566 x 230 x 450/100 : 1551.97mm^2

Ast provided : 4 Y16 (804.2MM^2)

Maximum moment at mid-span : 432.02KN/m

Mu/bd^2 : 432.02 x 10^6 / 230 x 450^2 : 1.72, from table 3 of SP Pt: 0.566

Ast : 0.566 x 230 x 450/100 : 585.81mm^2,

Ast provided: 4-Y16(804.2MM^2)

Maximum shear force : 239KN.for Pt : 1.4

Shear capacity of the section :τc bd : 0.72 x 230 x 450 : 74.52KN

Shear to be carried by the stirrups, Vus: 320.88 – 12.2 : 196.68KN

Vus/d : 196.68/57.5 : 3.42. provide stirrups of Y8ST2@100MM for 1m near

The supports, Y8ST2@125MM for the next 1m, Y8ST2@125mm for the next

1m and Y8ST2@230mm for the remaining span.

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

All the other beam are designed in a similar way.

7. DESIGN OF FLOOR SLAB:

Self weight of the slab 125mm thick	:3.125KN/m^2
Floor finish	:1 KN/m^2
Live load	:2 KN/m^2
Total load	:6.125 KN/m^2

The slab has one long edge continuous

ly/lx : 4.53/3.69:1.23<2. The slab is designed as a two-way slab.

From table 26 of IS 456:2000 for ly/lx : 1.15; αx: 0.0725, αy : 0.043

Negative moment at continuous edge for shorter side Mx : αx w l^2X

:0.0725 X 6.125 X 3.69^2 X 1.5:9.07KN/m

Effective depth required :$\sqrt{9.07 \times 10^6/0.138 \times 25 \times 1000}$

:51.27mm.

A slab depth of 125mm is provided.

Mu/bd^2 : 9.07 x 10^6/1000 x 100^2 : 0.907. from table 3 of SP 16 Pt: 0.2631

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chenn 0125.
Mob:9791776685 / Tel No:044-

Ast required : 0.2631 x 1000 x 125/100: 263.1mm^2.

However Y8@ 150mm c/c (335mm^2) is provided along the shorter span.

Positive moment at mid span for the longer side My : αy w l^2x

: 0.043 x 6.125 x 3.69^2 x 1.5 : 5.37KNm

Mu/bd^2: 5.37 x 10^6 / 1000 x 100^2 : 0.537. from table 3 of SP 16 Pt :0.15236

Ast required : 0.15236 x 1000 x 100/100 :152.36mm^2.

However Y8@ 150mm c/c (335mm^2) is provided along the longer span.

All other slab are designed in a similar way.

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai 600125.
Mob:9791776685 / Tel No:044-79670563

7.இவ்வலுவலகத்திலிருந்து முடிவு அறிக்கை பெறாமல் மனுதாரர் கட்டிடத்தில் குடிபுகக்கூடாது.

8.புதிய கட்டிடத்தையும் அதன் சுற்றுப்புறங்களையும் மற்றவர்களுக்குத் தொந்தரவு ஏற்படாவண்ணம் சுத்தமாக வைத்திருக்க வேண்டும்.

9.கழிவுநீர் அனைத்தும் வீட்டின் சுற்றுச்சுவருக்குள்ளேயே பூமியில் உறிஞ்சப்படும் வகையில் கட்டப்பட வேண்டும்.

10.எந்த உபயோகத்திற்கு கட்டிட அனுமதி பெறப்பட்டதோ அந்த உபயோகத்திற்கு மட்டும் கட்டிடம் பயன்படுத்தப்பட வேண்டும்.

11.கட்டிடம் முடிவுற்றதின் முடிவுற்ற விவரம் ஊராட்சிக்கு தெரிவிக்க வேண்டும்.

12.நில உரிமை தொடர்பாகவோ (அ) வேறு விதத்திலோ ஏதேனும் பிரச்சினை இருப்பின் அது குறித்து ஆக்கிரமிப்பை அகற்றுதல் மற்றும் நீதிமன்றம் தொடர்பான நடவடிக்கைகள் இவ்வாணையை எந்த விதத்திலும் கட்டுப்படுத்தாது.

13.விண்ணப்பதாரர் தவறான ஆவணங்கள் மற்றும் தகவல்கள் கொடுத்து ஒப்புதல் பெற்றால் இவ்வாணை மாற்றப்படவோ (அ) ரத்து செய்யப்படலாம்.

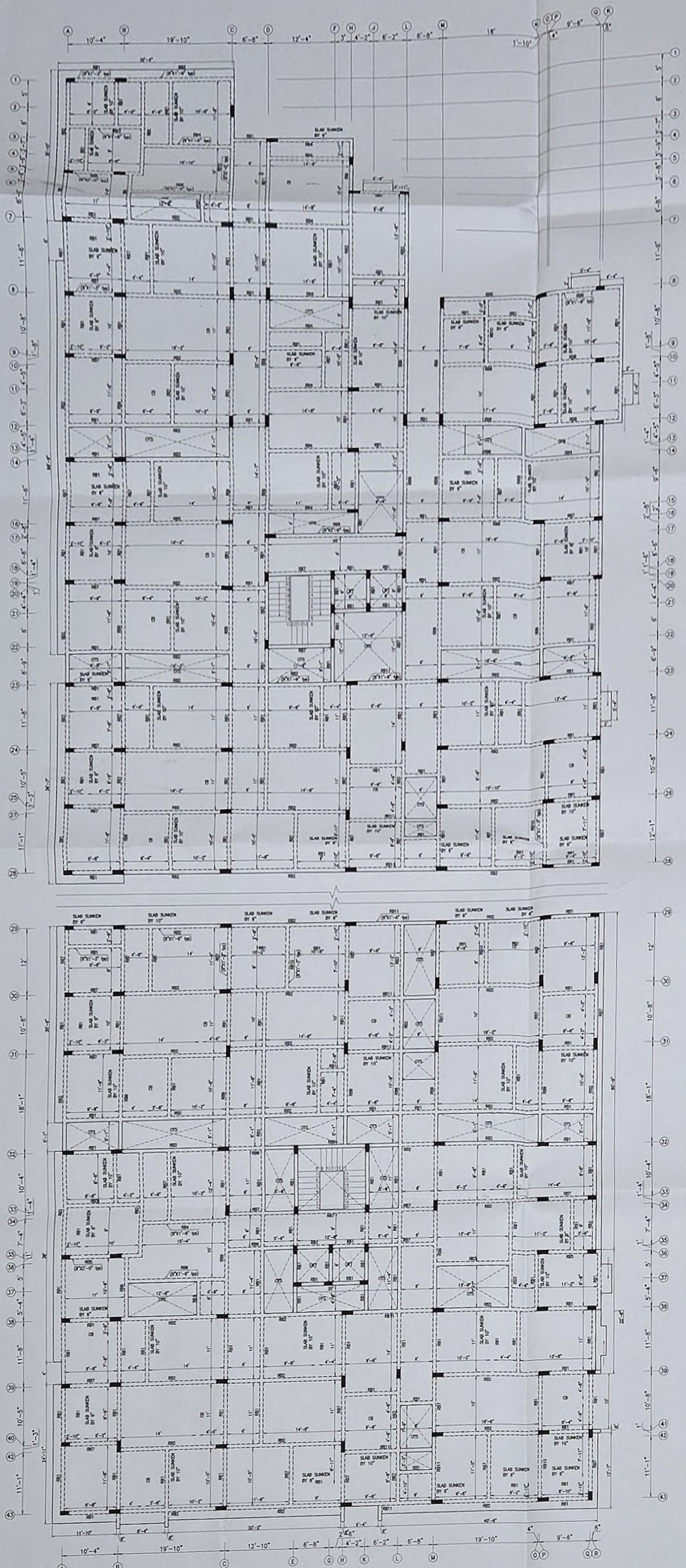
14.இவ்வாணை அளிக்கப்படும் நாளிலிருந்து ஐந்தாண்டு காலத்திற்கு செல்லத்தக்கது.

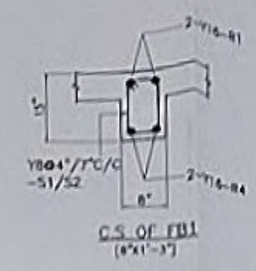
15.வீட்டுமனையின் எல்லைக்குள் மழைநீர் சேகரிப்பு கலன் அமைத்திட வேண்டும்.

தலைவர்/நிர்வாக அலுவலர்,
ஊராட்சி மன்ற தலைவர்
கொளப்பாக்கம் ஊராட்சி,
குன்றத்தூர் ஊராட்சி ஒன்றியம்.

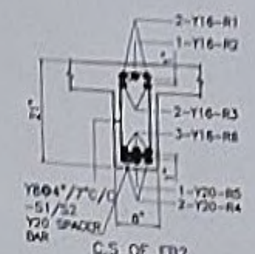
பெறுநர்:-

M/S. Anand Developer rep by M.V. Sathiss Ananth & M.V. Jawagar Ananth
Doo No.10, Plot No:10,
Readdy Street,
Virugambakkam,
Chennai.

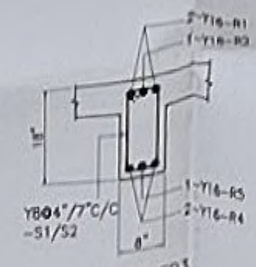




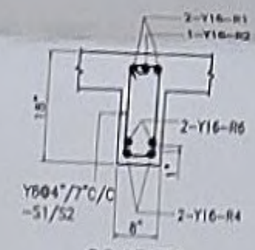
C.S OF FB1
(8"X1'-3")



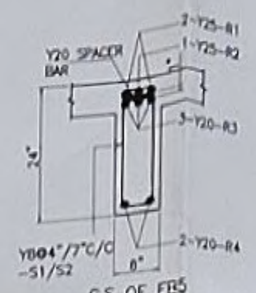
C.S OF FB2
(8"X1'-9")



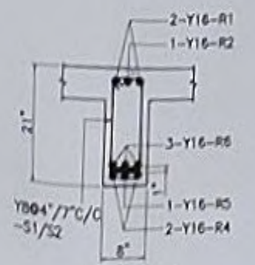
C.S OF FB3
(8"X1'-6")



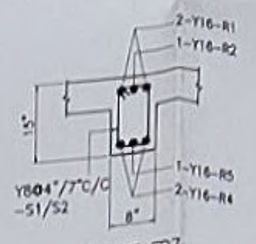
C.S OF FB4
(8"X1'-6")



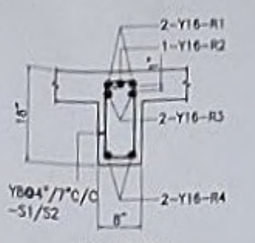
C.S OF FB5
(8"X2'-0")



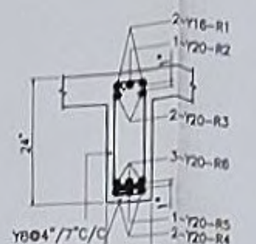
C.S OF FB6
(8"X1'-9")



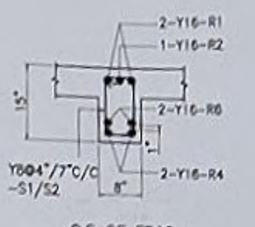
C.S OF FB7
(8"X1'-3")



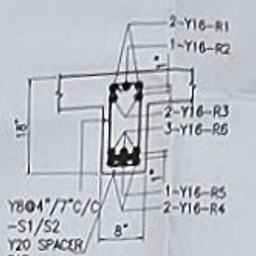
C.S OF FB8
(8"X1'-6")



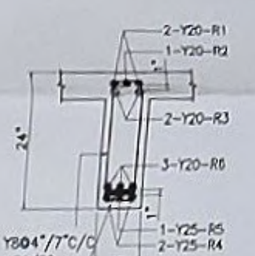
C.S OF FB9
(8"X2'-0")



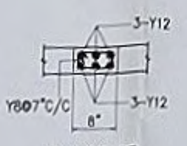
C.S OF FB10
(8"X1'-3")



C.S OF FB11
(8"X1'-6")

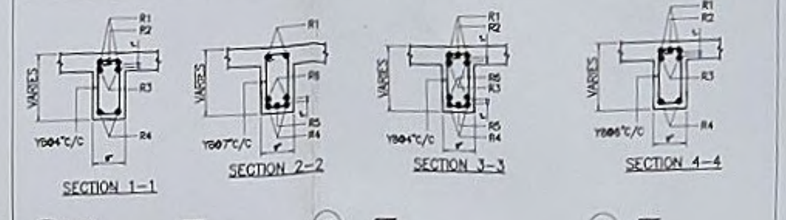


C.S OF FB12
(8"X2'-0")



C.S OF CB
(CONCEALED BEAM)

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR/419956/166) M.SE/GR/419/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791770685 / Tel No:044-79670563



MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

NOTE:
1. Beam column junction and main beam – secondary beam junctions must be reinforced as per miscellaneous details presented in sheet–26.
2. Clear cover = 25mm.
3. Top reinforcement shall be lapped at midspan and bottom reinforcement at support.
4. Lap length=50ϕ and all laps must be staggered

LEGEND

℄ : CENTRE LINE
F.B : GROUND FLOOR
S1 : SLAB-1
TYP. : TYPICAL
× : COLUMN TERMINATED
⊠ : SUNKEN SLAB
THK. : THICKNESS OF SLAB

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet: 12 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

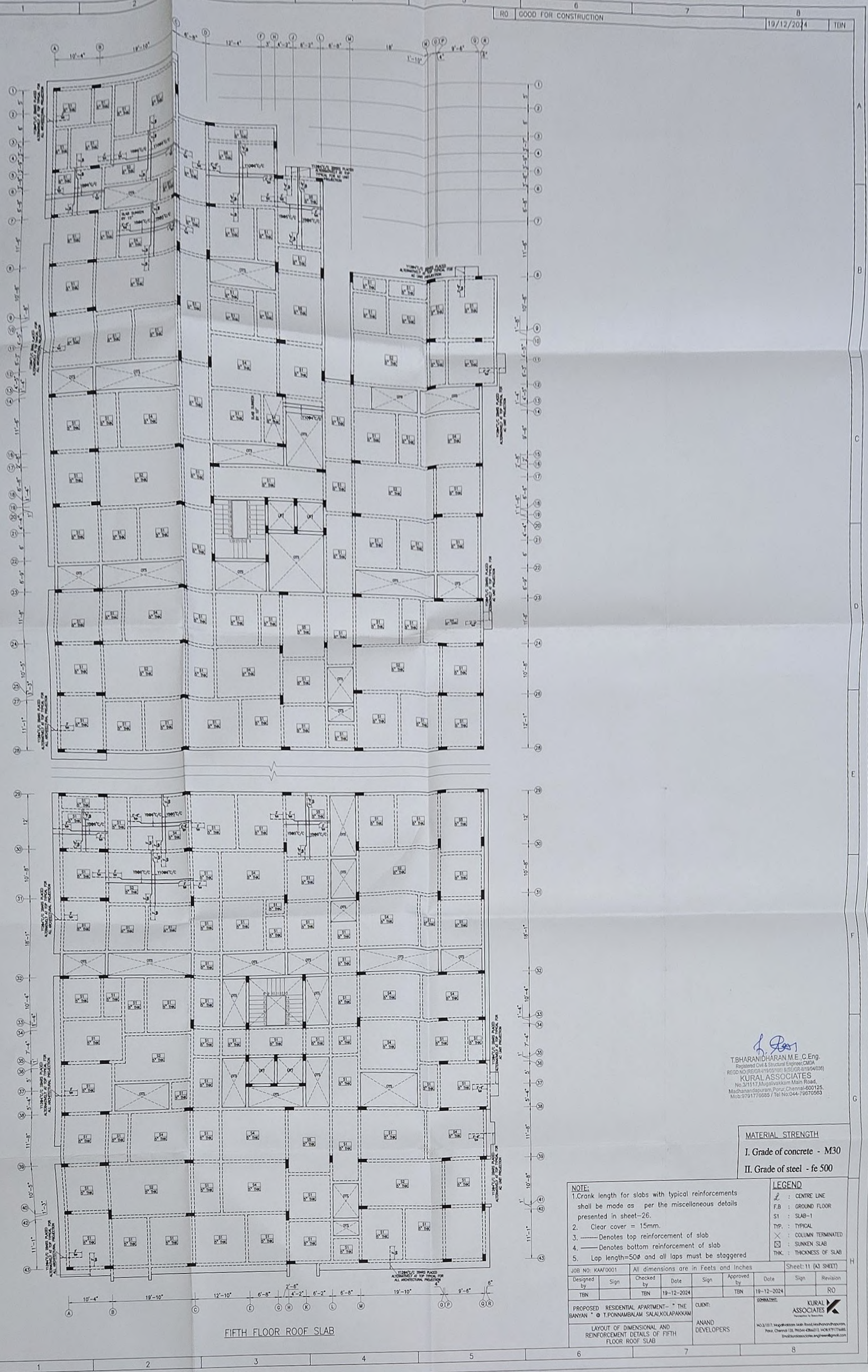
PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF FIFTH FLOOR ROOF BEAM

CLIENT: ANAND DEVELOPERS

CONSULTANT: KURAL ASSOCIATES

R0	GOOD FOR CONSTRUCTION		19/12/2024	TBN



FIFTH FLOOR ROOF SLAB

T.BHARANIDHARAN M.E., C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-II/19/05/168) &(SE/GR-II/19/94/035)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

NOTE:
1. Crank length for slabs with typical reinforcements shall be made as per the miscellaneous details presented in sheet-26.
2. Clear cover = 15mm.
3. ——— Denotes top reinforcement of slab
4. ——— Denotes bottom reinforcement of slab
5. Lap length=50ø and all laps must be staggered

LEGEND

℄	:	CENTRE LINE
F.B	:	GROUND FLOOR
S1	:	SLAB-1
TYP.	:	TYPICAL
×	:	COLUMN TERMINATED
⊠	:	SUNKEN SLAB
THK.	:	THICKNESS OF SLAB

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet: 11 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

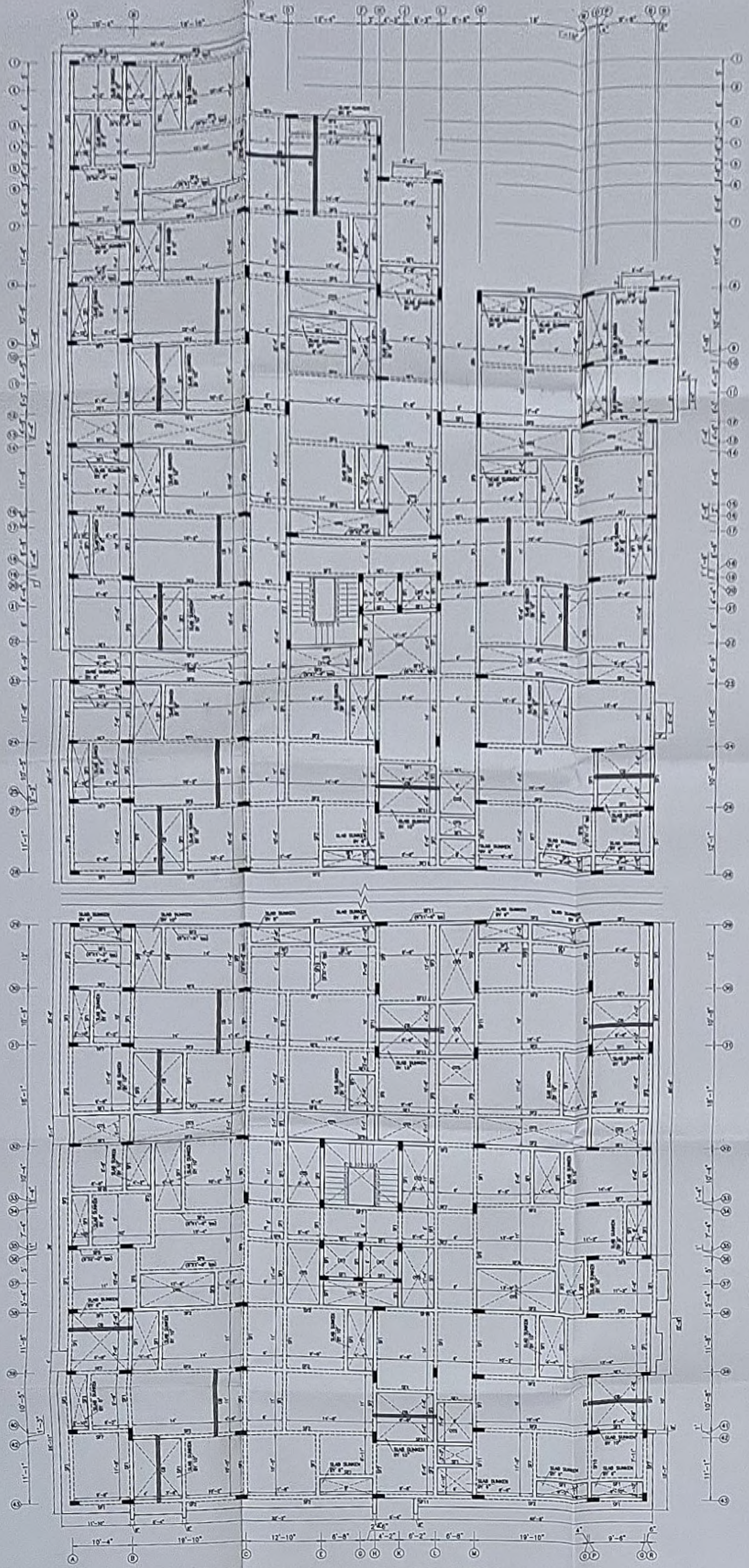
PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

CLIENT: ANAND DEVELOPERS

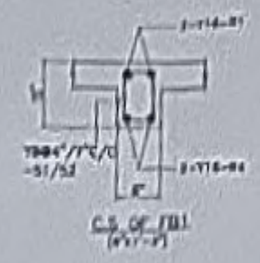
CONSULTANT: KURAL ASSOCIATES

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF FIFTH FLOOR ROOF SLAB

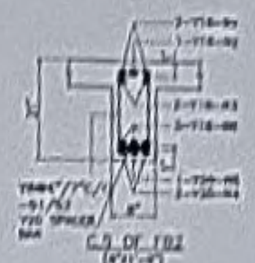
R0	GOOD FOR CONSTRUCTION	19/12/24	A	TBH



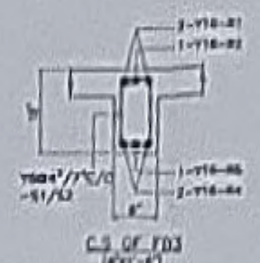
TYPICAL 1st,2nd,3rd,4th FLOOR ROOF SLAB



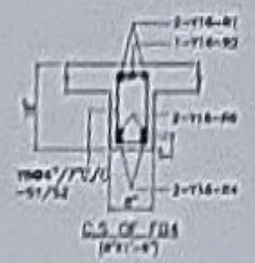
C.S OF FB1 (9"X1'-3")



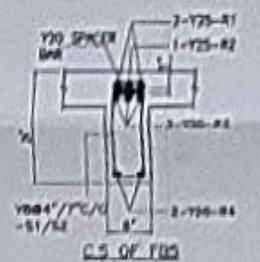
C.S OF FB2 (9"X1'-9")



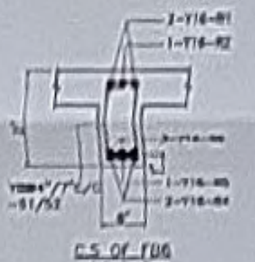
C.S OF FB3 (9"X1'-6")



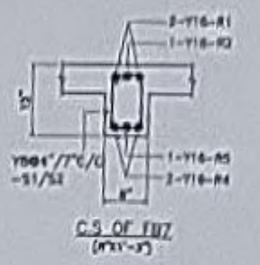
C.S OF FB4 (9"X1'-9")



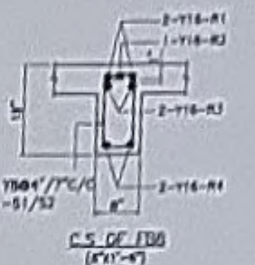
C.S OF FB5 (9"X2'-0")



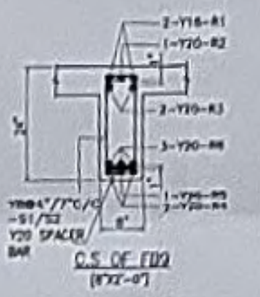
C.S OF FB6 (9"X1'-9")



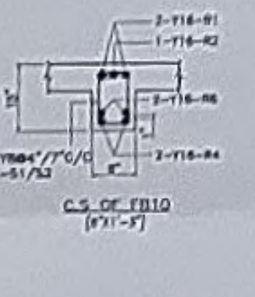
C.S OF FB7 (9"X1'-3")



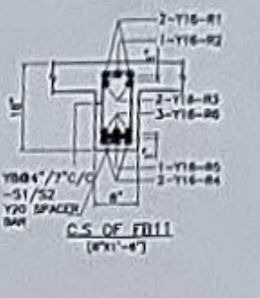
C.S OF FB8 (9"X1'-9")



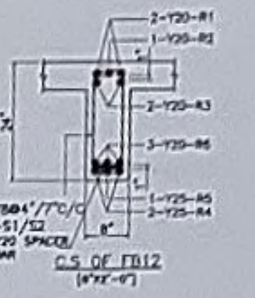
C.S OF FB9 (9"X2'-0")



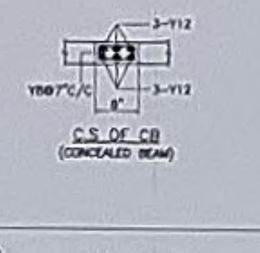
C.S OF FB10 (9"X1'-3")



C.S OF FB11 (9"X1'-6")

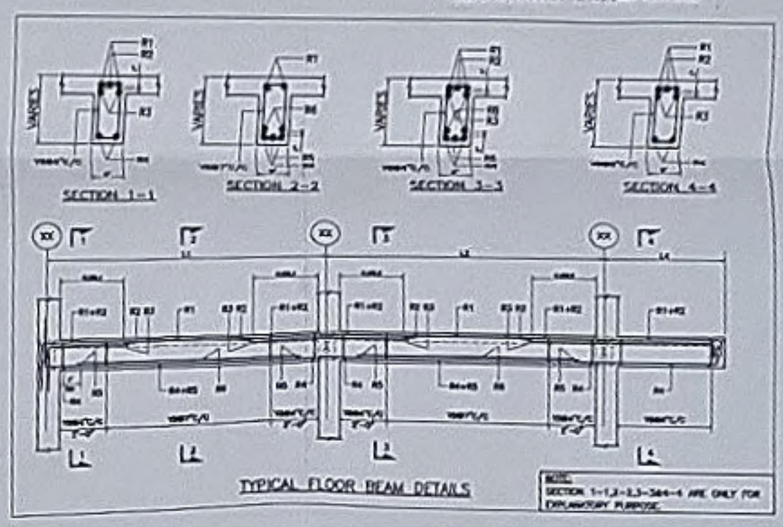


C.S OF FB12 (9"X2'-0")



C.S OF CB (CONCEALED BEAM)

T.BHARANIDHARAN M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD.NO.[REGISTRATION &/OR LICENCE]
KURAL ASSOCIATES
No.3/1517,Mugaiyakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:97917/0055 / Tel No.044-79570053



MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

NOTE:
1. Beam column junction and main beam – secondary beam junctions must be reinforced as per miscellaneous details presented in sheet–26.
2. Clear cover = 25mm.
3. Top reinforcement shall be lapped at midspan and bottom reinforcement at support.
4. Lap length=50ϕ and all laps must be staggered

LEGEND

℄	CENTRE LINE
F.B	GROUND FLOOR
S1	SLAB-1
TYP.	TYPICAL
×	COLUMN TERMINATED
⊠	SUNKEN SLAB
THK	THICKNESS OF SLAB

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet: 10 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

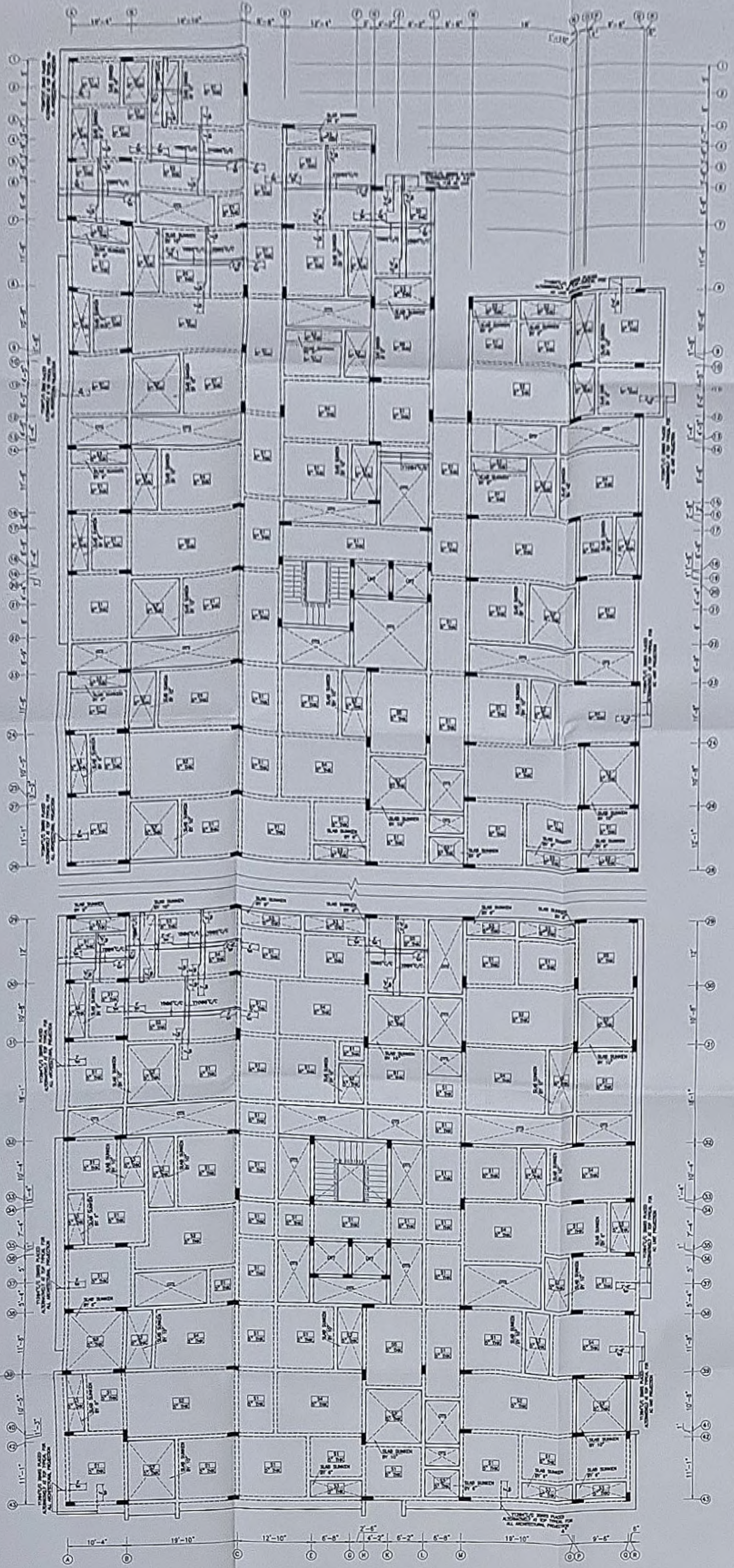
PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF TYPICAL 1st,2nd,3rd,4th FLOOR ROOF BEAM

CLIENT: ANAND DEVELOPERS

CONSULTANT: KURAL ASSOCIATES

NO	ISSUED FOR CONSTRUCTION	10/12/24	A	TBN



TYPICAL 1st,2nd,3rd,4th FLOOR ROOF SLAB

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(R)GR-II/05/1981 &(E)GR-II/1904/2015
KURAL ASSOCIATES
No.3/1517,Mugaiyavakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776585 / Tel No:044-79670563

MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

NOTE:
1. Crank length for slabs with typical reinforcements shall be made as per the miscellaneous details presented in sheet-26.
2. Clear cover = 15mm.
3. —— Denotes top reinforcement of slab
4. —— Denotes bottom reinforcement of slab
5. Lap length=50ϕ and all laps must be staggered

LEGEND

℄	:	CENTRE LINE
F.B	:	GROUND FLOOR
S1	:	SLAB-1
TYP.	:	TYPICAL
×	:	COLUMN TERMINATED
⊠	:	SUNKEN SLAB
THK.	:	THICKNESS OF SLAB

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet: 9 (A1 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

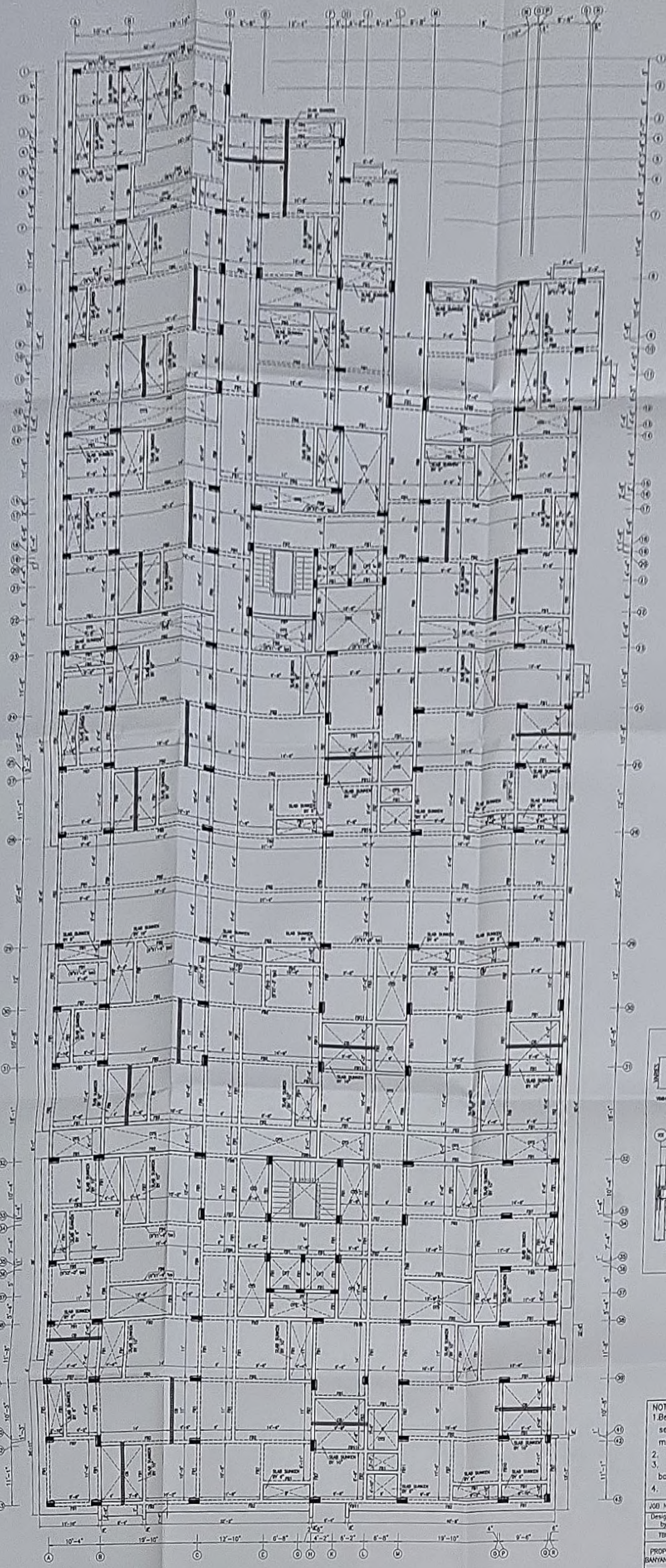
PROPOSED RESIDENTIAL APARTMENT- " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF TYPICAL 1st,2nd,3rd,4th FLOOR ROOF SLAB

CLIENT: ANAND DEVELOPERS

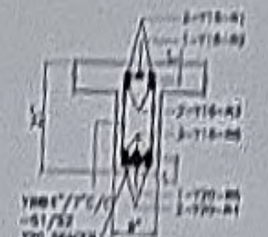
KURAL ASSOCIATES

NO	ISSUED FOR	DATE	INIT
R0	GOOD FOR CONSTRUCTION	19/12/2024	TBN

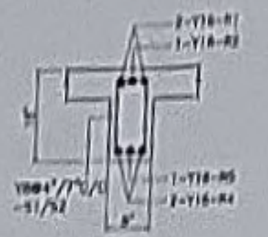




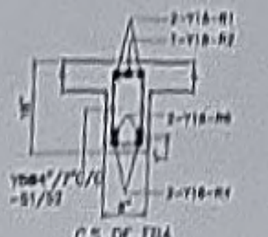
C.S OF FB1
(6"X1'-3")



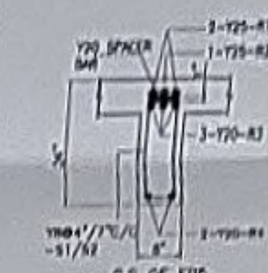
C.S OF FB2
(6"X1'-9")



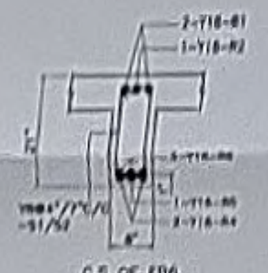
C.S OF FB3
(6"X1'-9")



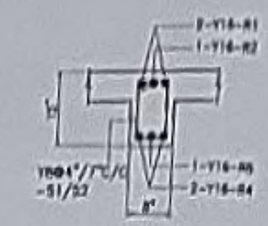
C.S OF FB4
(6"X1'-9")



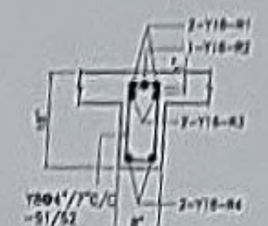
C.S OF FB5
(6"X2'-0")



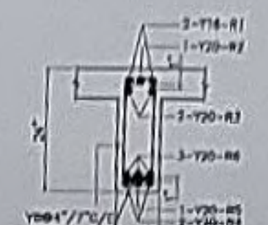
C.S OF FB6
(6"X1'-9")



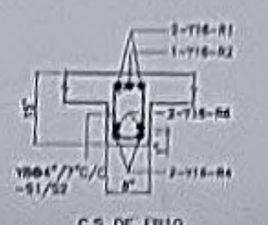
C.S OF FB7
(6"X1'-3")



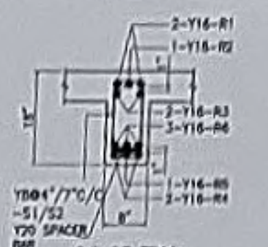
C.S OF FB8
(6"X1'-9")



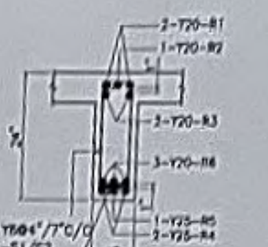
C.S OF FB9
(6"X2'-0")



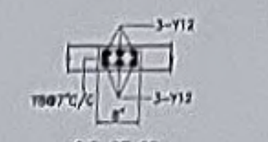
C.S OF FB10
(6"X1'-3")



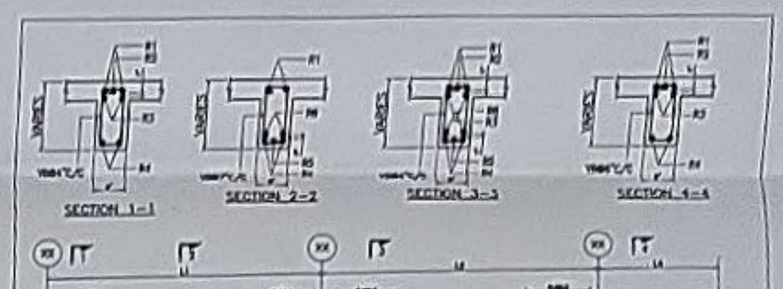
C.S OF FB11
(6"X1'-6")



C.S OF FB12
(6"X2'-0")



C.S OF CB
(CONCEALED BEAM)



NOTE: SECTION 1-1,2-2,3-3&4-4 ARE ONLY FOR EXPLANATORY PURPOSE

T.BHARANIDHARAN M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
- REGD NO:(SE/CR-II/13/5/195) &(SE/CR-II/15/04/205)
KURAL ASSOCIATES

I. Grade of concrete - M30

II. Grade of steel - fe 500

NOTE:
1. Beam column junction and main beam – secondary beam junctions must be reinforced as per miscellaneous details presented in sheet-26.
2. Clear cover = 25mm.
3. Top reinforcement shall be lapped at midspan and bottom reinforcement at support.
4. Lap length=50ϕ and all laps must be staggered

LEGEND
- ℄ : CENTRE LINE
- F.B : GROUND FLOOR
- S1 : SLAB-1
- TYP. : TYPICAL
- × : COLUMN TERMINATED
- ⊡ : SUNKEN SLAB
- THK. : THICKNESS OF SLAB

JOB NO: KAA/0001	All dimensions are in Feets and Inches						Sheet:8 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF GROUND FLOOR ROOF BEAM

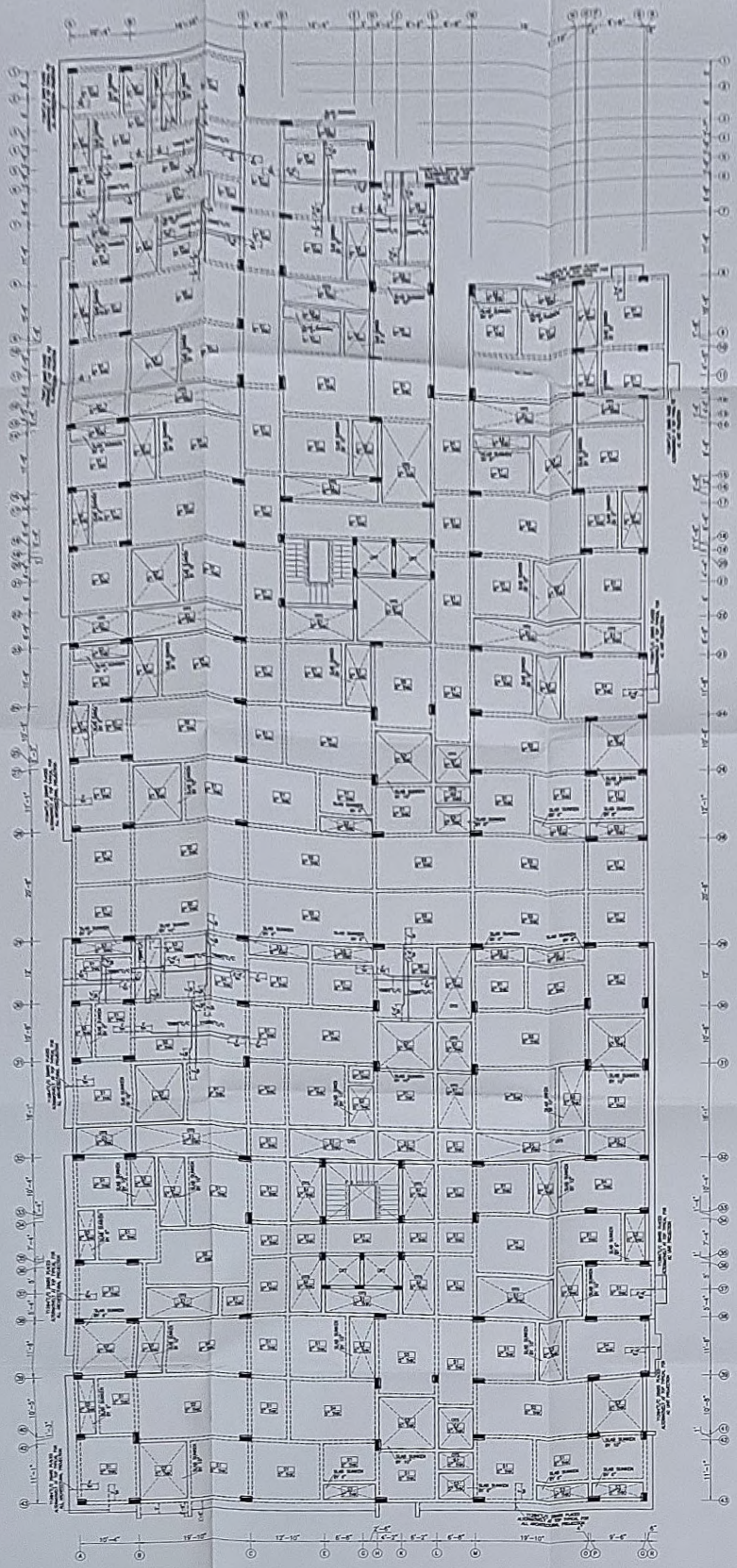
CLIENT: ANAND DEVELOPERS

KURAL ASSOCIATES

NO.3/1217, Mugalivakkam Main Road, Mugalivakkam,Ambattur, Post, Chennai-125. PHONE:4356212, MOB:9751771665,
Email:kuralassociates.engineers@gmail.com

LAYOUT OF GROUND FLOOR ROOF BEAM

NO	ISSUED FOR CONSTRUCTION	19/12/2024	TBN



T.BHARANIDHARAN M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:[illegible]
KURAL ASSOCIATES
No.3/1517,Mugaiveakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79970563

MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

NOTE:

1. Crank length for slabs with typical reinforcements shall be made as per the miscellaneous details presented in sheet-26.
2. Clear cover = 15mm.
3. —— Denotes top reinforcement of slab
4. —— Denotes bottom reinforcement of slab
5. Lap length=50ø and all laps must be staggered

LEGEND

℄	CENTRE LINE
F.B	GROUND FLOOR
S1	SLAB-1
TYP.	TYPICAL
×	COLUMN TERMINATED
⊠	SUNKEN SLAB
THK.	THICKNESS OF SLAB

JOB NO: KAA'0001	All dimensions are in Feets and Inches						Sheet: 8 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

PROPOSED RESIDENTIAL APARTMENT- " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

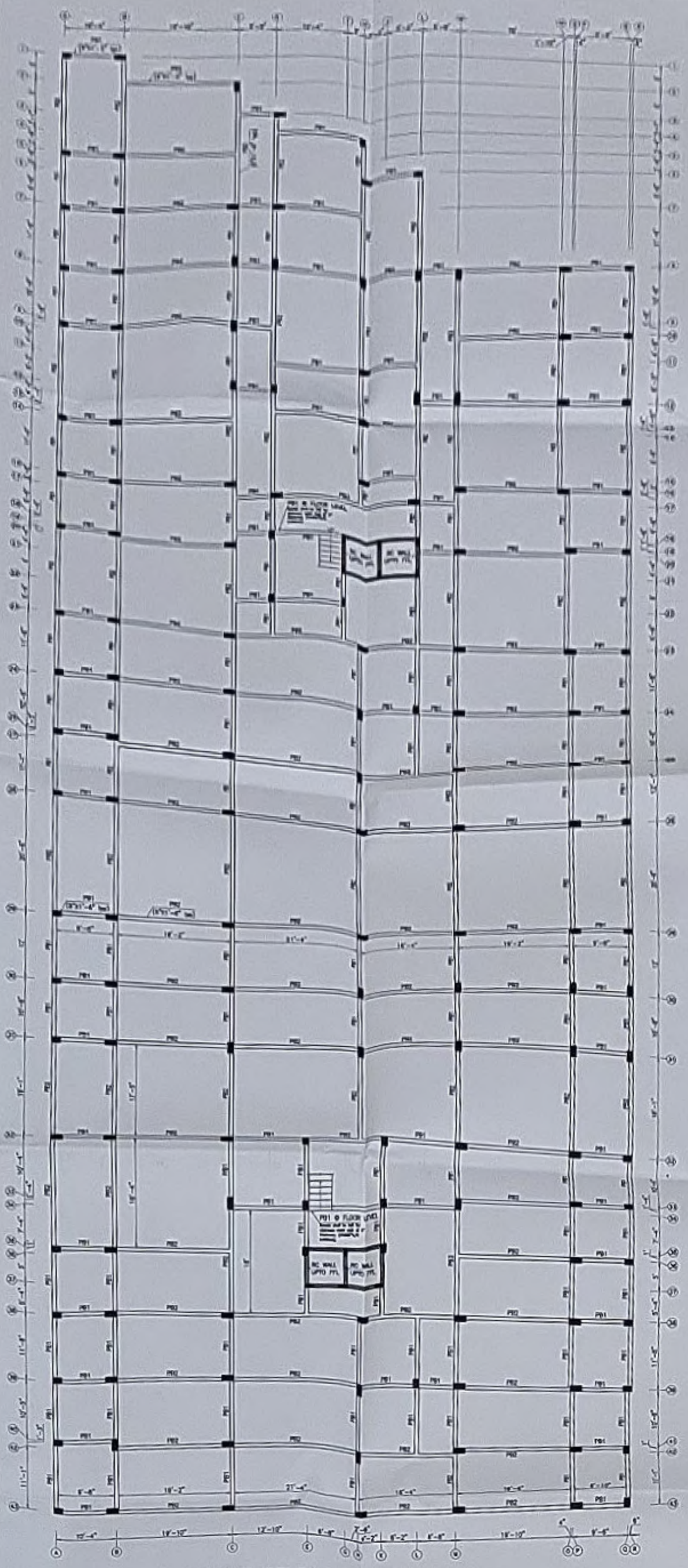
LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF GROUND FLOOR ROOF SLAB

CLIENT:

ANAND DEVELOPERS

KURAL ASSOCIATES

R1	GOOD FOR CONSTRUCTION		19/12/2024	TBN



LAYOUT OF PLINTH BEAMS AT NGL

NOTE:
1. Clear cover = 30mm
2. All laps shall be 50ø
3. Top reinforcement shall be lapped at midspan and bottom reinforcement at support.
4. 3" thick sand and pcc layers shall be laid below all beams.

LEGEND

℄	:	CENTRE LINE
NGL	:	NATURAL GROUND LEVEL
FFL	:	FINISHED FLOOR LEVEL
TYP.	:	TYPICAL
■	:	COLUMN
— —	:	COLUMN CENTERLINE
—	:	SITE BOUNDARY

MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

T.BHARANIDHARAN M.E., C.Eng.
Registered Civil & Structural Engineer, CMDA
KURAL ASSOCIATES
No.3/1517, Mugaiyakkam Main Road, Madhanandapuram, Porur, Chennai-600125.
Mob:9791776585 | Tel No:044-29870563

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet:5 (A1 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R1

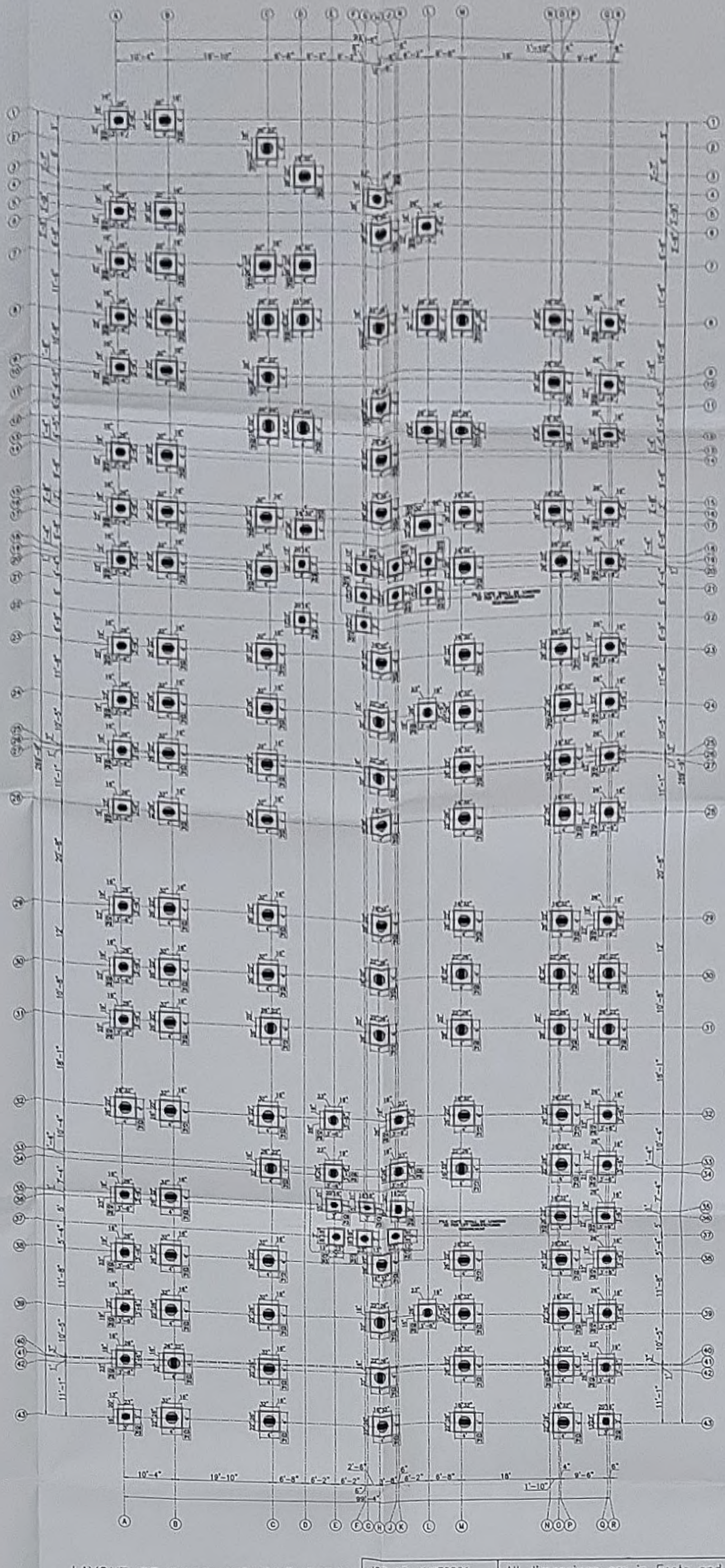
PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF REINFORCEMENT DETAILS OF PLINTH BEAMS

CLIENT: ANAND DEVELOPERS

CONSULTANT: KURAL ASSOCIATES
Perception to Execution
NO.3/1517, Mugaiyakkam Main Road,Madhanandhapuram, Porur, Chennai-125. PH:044-42866312, MOB:9791776585.
Email:kuralassociates.engineers@gmail.com

R0	GOOD FOR CONSTRUCTION	19-12-2024	TBN



S
E W
N

LAYOUT OF PILES AND PILE CAPS

LEGENDS

- COLUMNS
- COLUMN CENTRELINE
- SITE BOUNDRY

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet: 2 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF PILES AND PILE CAPS

CLIENT:

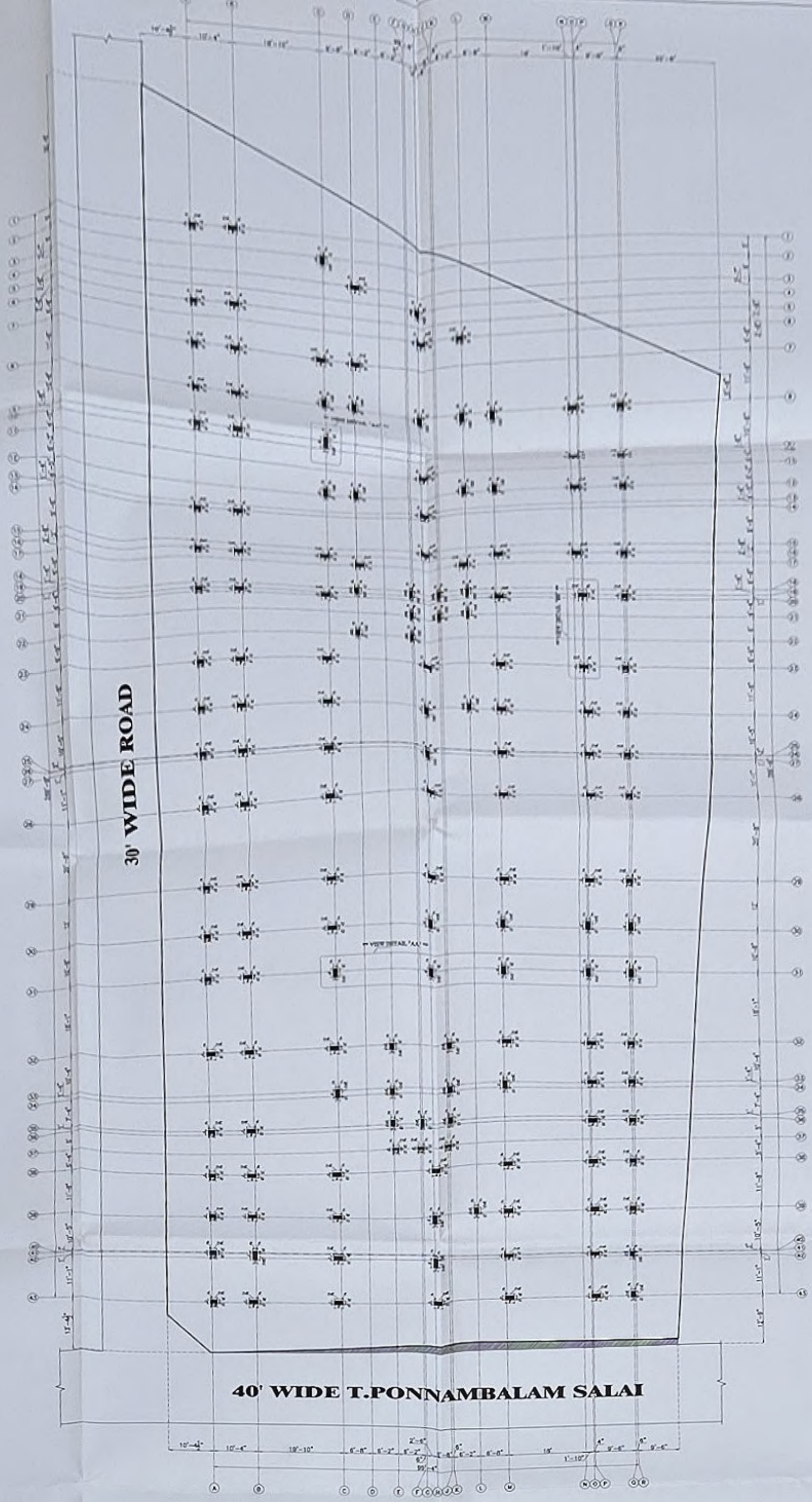
ANAND DEVELOPERS

T.BHARANIDHARAN M.E.,C.Eng.
Registered Civil & Structure Engineer,CMDA
REGD NO.
KURAL ASSOCIATES
No.3/1517,Mugaiyaktram Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791770685 / Tel No:044-71670063

CONSULTANT:

KURAL ASSOCIATES
Perception to Execution

NO.3/1517, Mugaiyaktram Main Road,Madhanandhapuram,
Porur, Chennai-125. PH:044-42866312, MOB:9791776685.
Email:kuralassociates.engineers@gmail.com



LAYOUT OF COLUMN SETTING OUT PLAN



LEGENDS

- COLUMNS
- COLUMN CENTRELINE
- SITE BOUNDRY

JOB NO: KAAF0001		All dimensions are in Feets and Inches					Sheet: 1 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19-12-2024		TBN	19-12-2024		R0

PROPOSED RESIDENTIAL APARTMENT– " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

LAYOUT OF COLUMN SETTING OUT PLAN

CLIENT:

ANAND DEVELOPERS

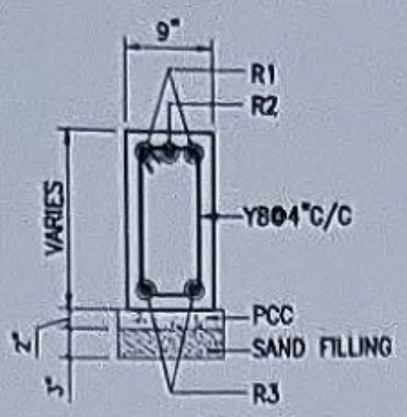
CONSULTANT:

KURAL ASSOCIATES
Perception to Execution

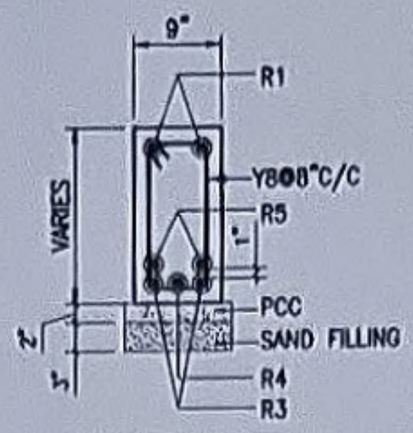
NO.3/1517, Mugalivakkam Main Road,Madhanandhapuram, Porur, Chennai-125. PH:044-42866312, MOB:9791776685. Email:kuralassociates.engineers@gmail.com

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(R)CE/STR/0904/036 & STE/CR/0904/036
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram Porur,Chennai-600125.
Mob:9791776685 / Tel No:044-79670563

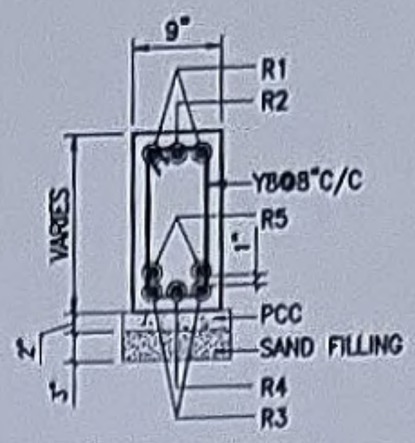
R0	GOOD FOR CONSTRUCTION	19/12/2024	TBN



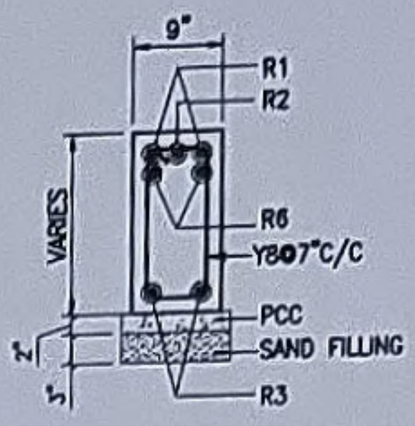
SECTION 1-1



SECTION 2-2

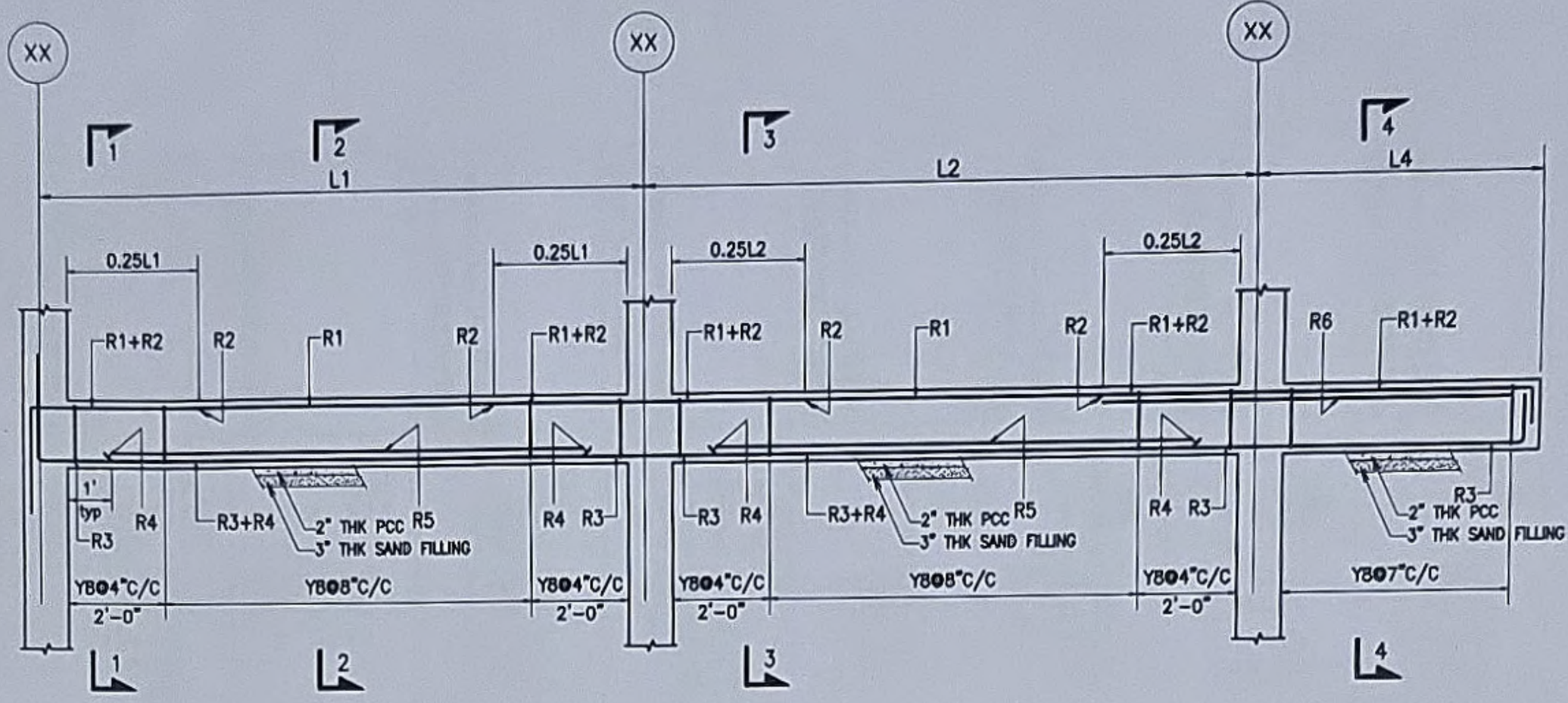


SECTION 3-3

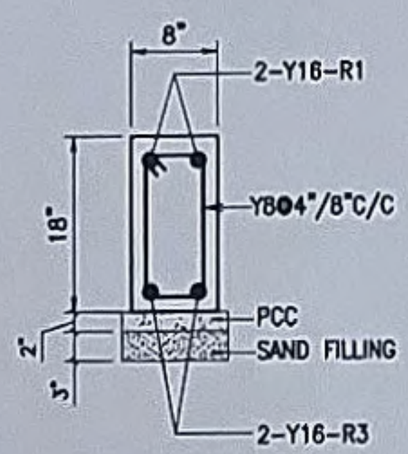


SECTION 4-4

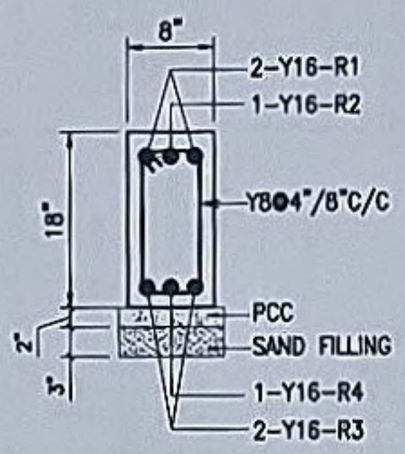
NOTE:
SECTION 1-1,2-2,3-3&4-4 ARE ONLY FOR EXPLANATORY PURPOSE.



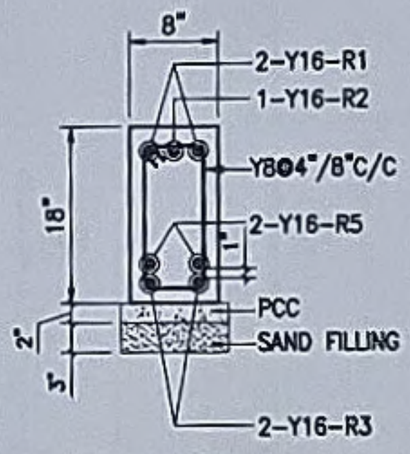
TYPICAL PLINTH BEAM DETAILS



C.S OF PB1
[8"X1'-6"]



C.S OF PB2
[8"X1'-6"]



C.S OF PB3
[8"X1'-6"]

T.BHARANIDHARAN.M.E.,C.Eng.
Registered Civil & Structural Engineer,CMDA
REGD NO:(RE/GR-I/19/05/166) &(SE/GR-II/19/04/036)

LEGEND

℄	CENTRE LINE
NGL	NATURAL GROUND LEVEL
FFL	FINISHED FLOOR LEVEL
TYP.	TYPICAL
□	COLUMN
—	COLUMN CENTERLINE
—	SITE BOUNDARY

NOTE:
1. Clear cover = 30mm
2. All laps shall be 50ø
3. Top reinforcement shall be lapped at midspan and bottom reinforcement at support.
4. 3" thick sand and pcc layers shall be laid below all beams.

JOB NO: KAAF0001		All dimensions are in Feets and Inches				Sheet: 6 (A3 SHEET)	
Designed by	Sign	Checked by	Date	Sign	Approved by	Date	Sign	Revision
TBN		TBN	19/12/2024		TBN	19/12/2024		R0

PROPOSED RESIDENTIAL APARTMENTS TO BE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

CLIENT: ANAND DEVELOPERS

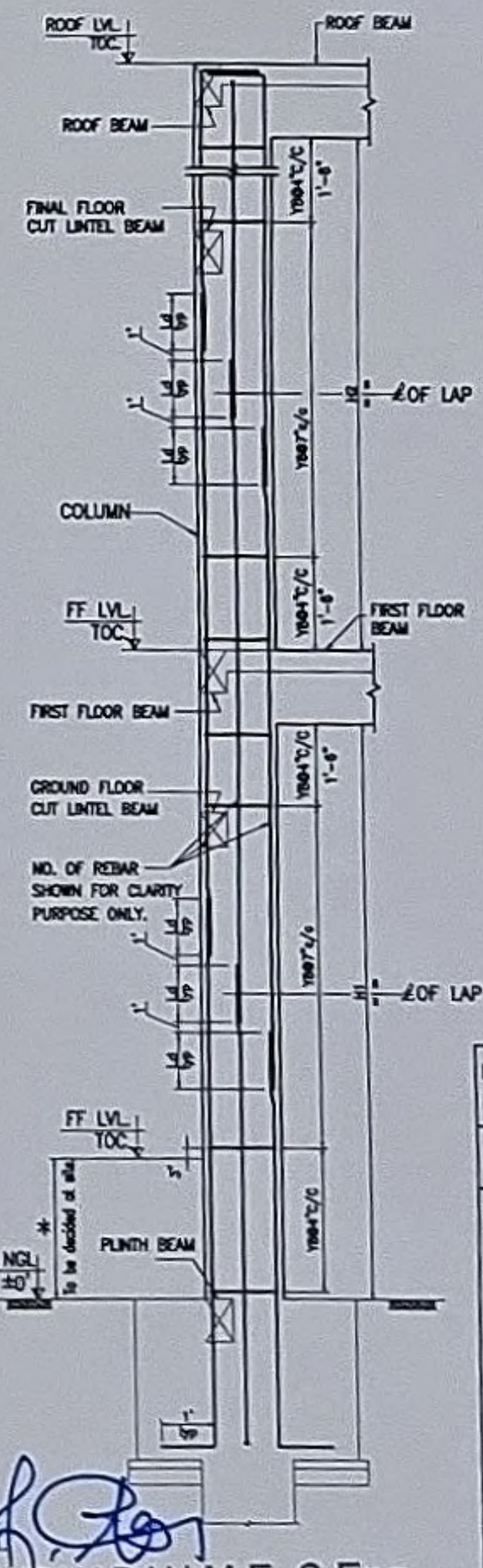
LAYOUT OF REINFORCEMENT DETAILS OF PLINTH BEAMS

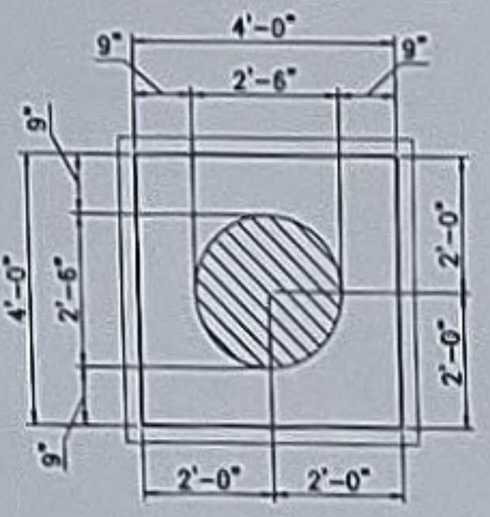
CONSULTANT:
KURAL ASSOCIATES
Perception to Execution
NO.3/1517, Mugalivakkam Main Road,Madhanandhapuram, Porur, Chennai-125. PH:044-42864312, MOB:9791776535. Email:kuralassociates.engineers@gmail.com

KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram,Porur,Chennai-600125.
Mob:9791776685/ Tel No:044-79670563

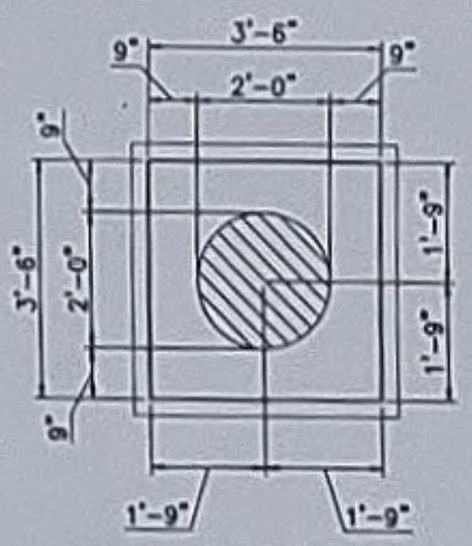
R1	GOOD FOR CONSTRUCTION	19/12/2024		TBN

COLUMN NO.	NOS.	FROM FOUNDING LEVEL TO GROUND FLOOR ROOF LEVEL	FROM GROUND FLOOR ROOF LEVEL TO SECOND FLOOR ROOF LEVEL	FROM SECOND FLOOR ROOF LEVEL TO FOURTH FLOOR ROOF LEVEL	FROM FOURTH FLOOR ROOF LEVEL TO TERRACE FLOOR LEVEL	REMARKS
C0	4	'a'-6-Y20 'b'-4-Y16 'c'-2-Y20 'S1'-Y8@4"/C/C	'a'-6-Y20 'b'-4-Y16 'S1'-Y8@4"/C/C	'a'-6-Y20 'b'-4-Y16 'S1'-Y8@4"/C/C	'a'-6-Y20 'b'-4-Y20 'S1'-Y8@4"/C/C	COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C1	17	'a'-4-Y20 'b'-6-Y16 'c'-2-Y20 'S1'-Y8@4"/C/C	'a'-4-Y20 'b'-6-Y16 'c'-2-Y16 'S1'-Y8@4"/C/C	'a'-4-Y20 'b'-6-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-6-Y16 'S1'-Y8@4"/C/C	COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C2	44	'a'-4-Y20 'b'-6-Y16 'c'-2-Y16 'S1'-Y8@4"/C/C	'a'-4-Y20 'b'-6-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-6-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-6-Y12 'S1'-Y8@4"/C/C	GRID NO: 031–COLUMN SHALL BE TERMINATED AT FOURTH FLOOR ROOF LEVEL ALL OTHER COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C3	39	'a'-4-Y16 'b'-6-Y16 'c'-2-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-6-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-6-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-6-Y12 'S1'-Y8@4"/C/C	GRID NO: 030–COLUMN SHALL BE TERMINATED AT FOURTH FLOOR ROOF LEVEL ALL OTHER COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C4	26	'a'-4-Y20 'b'-4-Y16 'c'-2-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-4-Y16 'c'-2-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-4-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-4-Y12 'S1'-Y8@4"/C/C	GRID NO: E32 & K32–COLUMN SHALL BE TERMINATED AT HEADROOM ROOF LEVEL ALL OTHER COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C5	17	'a'-4-Y16 'b'-4-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-4-Y16 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-4-Y12 'S1'-Y8@4"/C/C	'a'-4-Y12 'b'-4-Y12 'S1'-Y8@4"/C/C	GRID NO: E34 & K34–COLUMN SHALL BE TERMINATED AT HEADROOM ROOF LEVEL ALL OTHER COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C6	6	'a'-4-Y16 'b'-4-Y12 'S1'-Y8@4"/C/C	'a'-4-Y16 'b'-4-Y12 'S1'-Y8@4"/C/C	'a'-4-Y12 'b'-4-Y12 'S1'-Y8@4"/C/C	'a'-4-Y12 'b'-4-Y12 'S1'-Y8@4"/C/C	GRID NO: D18 & D22–COLUMN SHALL BE TERMINATED AT HEADROOM ROOF LEVEL ALL OTHER COLUMNS SHALL BE TERMINATED TERRACE LEVEL
C7	11	'a'-8-Y12 'S1'-Y8@4"/C/C	'a'-8-Y12 'S1'-Y8@4"/C/C	'a'-8-Y12 'S1'-Y8@4"/C/C	'a'-8-Y12 'S1'-Y8@4"/C/C	GRID NO: F22–COLUMN SHALL BE TERMINATED AT HEADROOM ROOF LEVEL ALL OTHER COLUMN SHALL BE TERMINATED MACHINE ROOM ROOF LEVEL

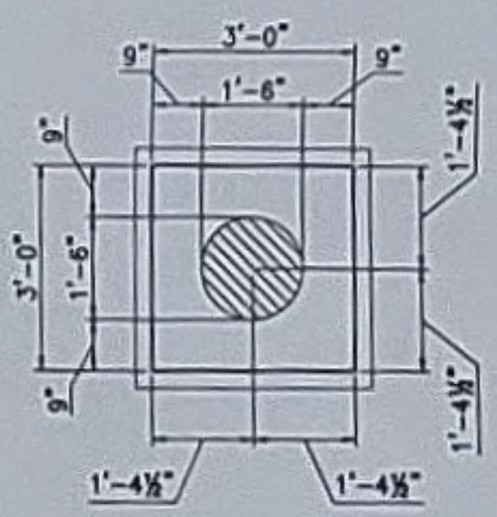

ROOF LVL
TOC
ROOF BEAM
ROOF BEAM
FINAL FLOOR CUT LINTEL BEAM
C/C Y8@4"
1'-8"
1'-8"
1'-8



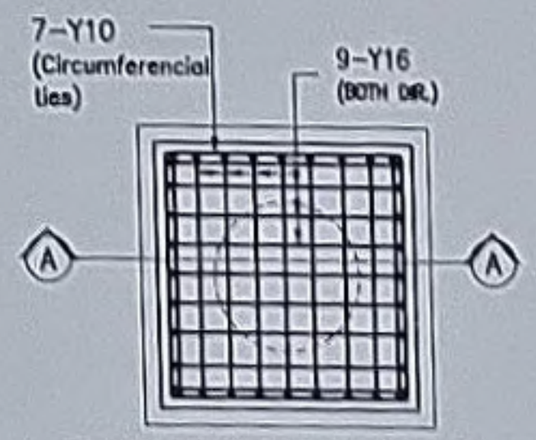
PLAN-DIMENSIONS-P1



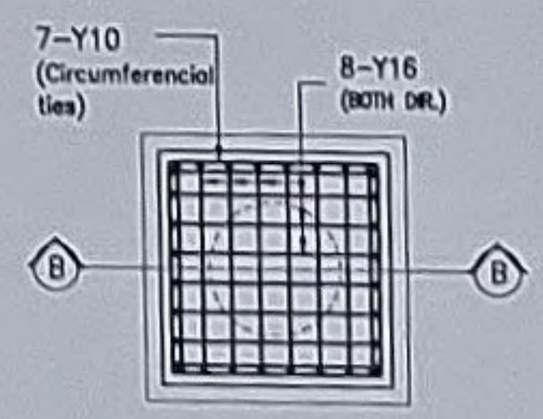
PLAN-DIMENSIONS-P2



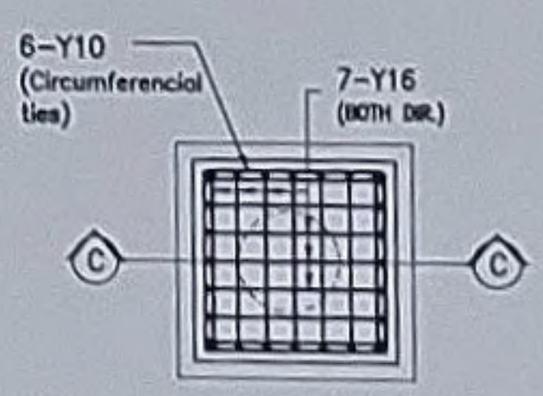
PLAN-DIMENSIONS-P3



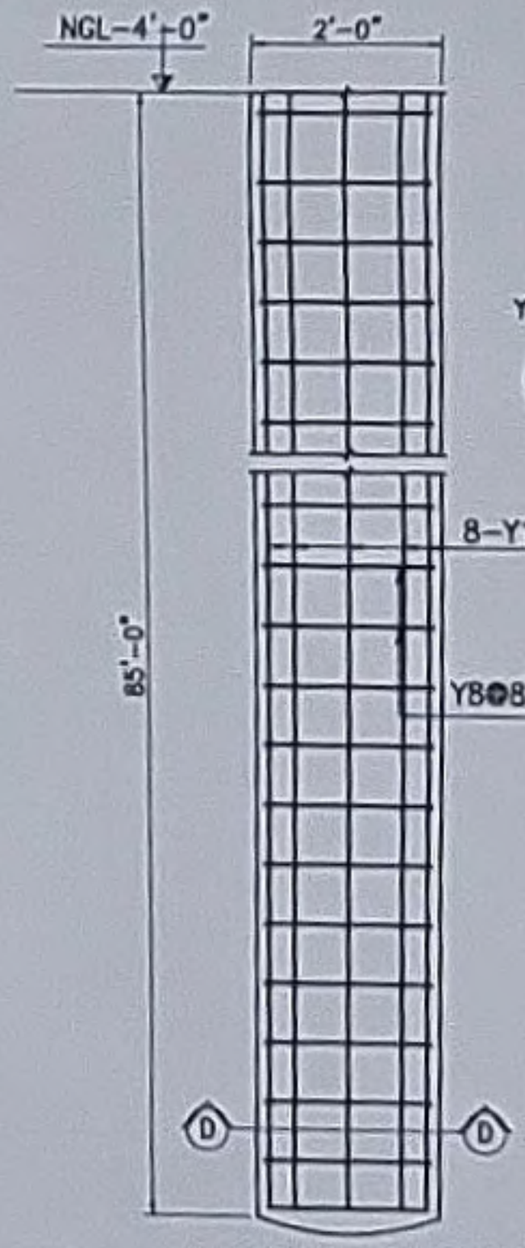
PLAN-REINFORCEMENTS-P1
(TOP REINFORCEMENT NOT SHOWN FOR CLARITY)



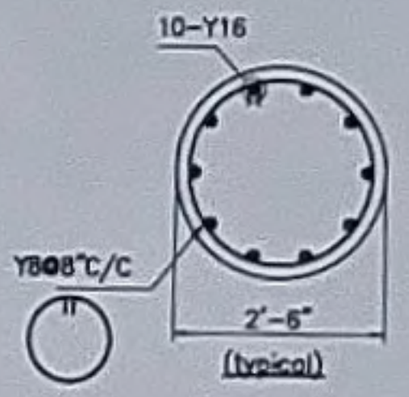
PLAN-REINFORCEMENTS-P2
(TOP REINFORCEMENT NOT SHOWN FOR CLARITY)

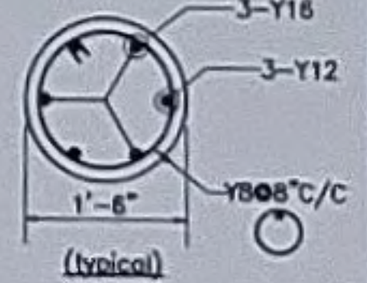


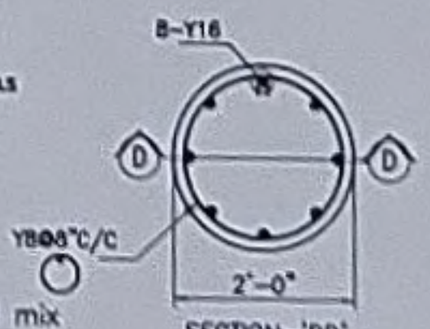
PLAN-REINFORCEMENTS-P3
(TOP REINFORCEMENT NOT SHOWN FOR CLARITY)



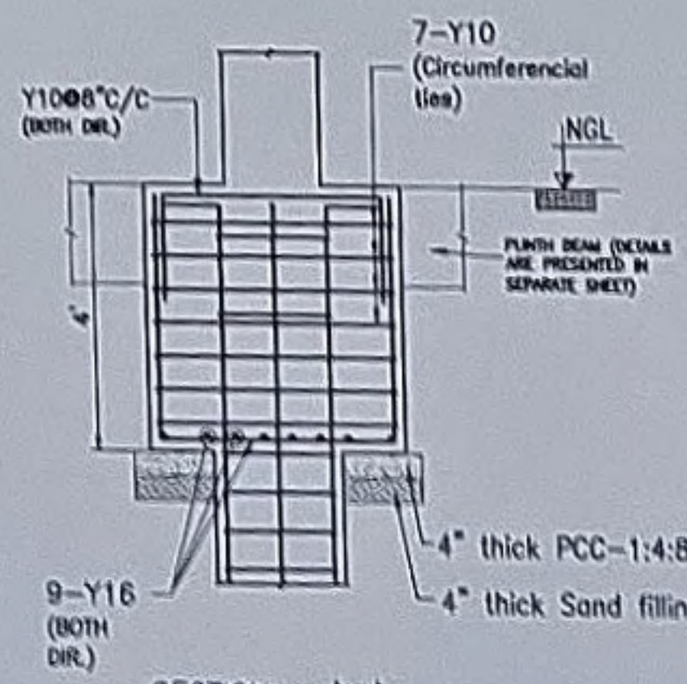
L.S OF BORED PILES
(PC 2'0" dia)
(typical)





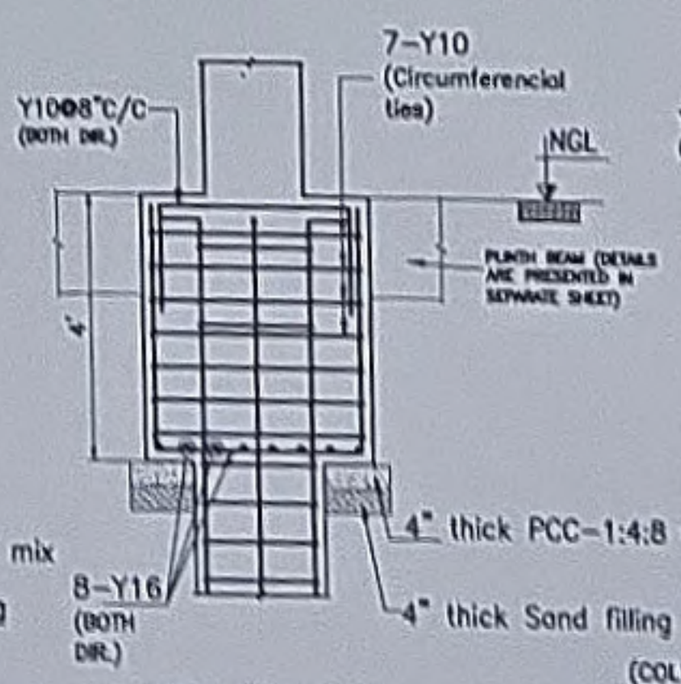


SECTION-'DD'
(typical)



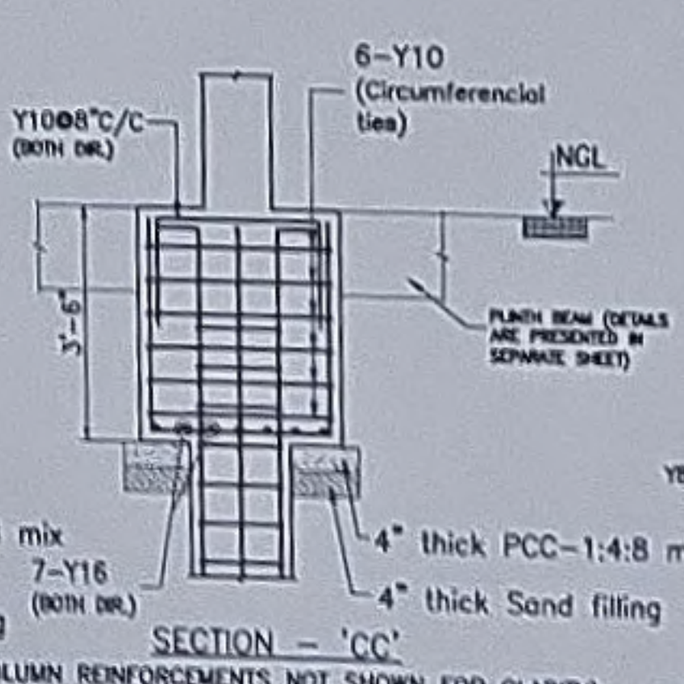
SECTION - 'AA'
(COLUMN REINFORCEMENTS NOT SHOWN FOR CLARITY)

TYPICAL PILE CAP DETAILS
FOR P1-(104 NOS)



SECTION - 'BB'
(COLUMN REINFORCEMENTS NOT SHOWN FOR CLARITY)

TYPICAL PILE CAP DETAILS
FOR P2-(43 NOS)



SECTION - 'CC'
(COLUMN REINFORCEMENTS NOT SHOWN FOR CLARITY)

TYPICAL PILE CAP DETAILS
FOR P3-(17 NOS)

GENERAL NOTES:-

1. All dimenstion are in feet & inches.
2. Structural consultant not responsible for violation of any structural details
3. All laps should be staggered. (50xdia.)
4. Clear cover for:
   a. Pile cap = 50mm
   b. Column = 40mm
5. Sand filling and PCC can be laid commonly for pile caps which are much closer to each other but structural concrete must be separated by a wooden plank/paper joint.
6. Any descripencies should be produced to the Engineer's immediately notice before execution.
7. Pile capacity as per geotechnical report is

For 750mm pile = 227 ton per pile
600mm pile = 147 ton per pile
450mm pile = 83 ton per pile

PILE CAPS ARE DESIGNED ONLY FOR S+5 FLOORS

*NOTES:-
If it is inconvinient to provide plinth beam monolithically with pile cap top level, it can be raised upto 1'-6" above pile cap top level respectively.

MATERIAL STRENGTH
I. Grade of concrete - M30
II. Grade of steel - fe 500

T.BHARANIDHARAN M.E., C.Eng.
Registered Civil & Structural Engineer, CMDA
REGD NO:(RE/GR-I/19015/156) & (RE/GR-II/19/04/036)
KURAL ASSOCIATES
No.3/1517,Mugalivakkam Main Road,
Madhanandapuram, Porur, Chennai-600125.
Mob:9791766566 Tel No:044-79670563

Designed by	Sign	TBN	Checked by	Sign	TBN	Date	19/12/2024	Approved by	Sign	TBN	Date	19/12/2024	Sheet:3 (A2 SHEET)
JOB NO: KAAF0001			All dimensions are in Feets and Inches										Revision R1

PROPOSED RESIDENTIAL APARTMENT- " THE BANYAN " @ T.PONNAMBALAM SALAI,KOLAPAKKAM

CLIENT: ANAND DEVELOPERS

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF PILE CAPS

KURAL ASSOCIATES



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

Certified EC, Patta, legal opinions, property verification, due diligence, litigation solutions, and legal heir certificates.

Property Development & Approvals

Building plan approvals, construction, layout and sub-division approvals, zone conversion, and occupancy certification.

NRI & Investment Services

Escrow Services, Rentals, Litigation Solutions, Property Valuation and Property Management

Compliance & Special Services

Demolition, Vaasthu checks, regularization of unauthorized buildings, and office space solutions.



empowering your real estate decisions with smart tools

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

Verified RealEstate™

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

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

hello@verified.realestate
+91 9996 12 9996
www.verified.realestate