

## STRUCTURAL STABILITY CERTIFICATE

SITE ADDRESS:- PROPOSED CONSTRUCTION OF STILT FLOOR + 4 FLOORS + 5th FLOOR (Part) RESIDENTIAL BUILDING WITH 34 DWELLING UNITS (WITH HEIGHT 18.30M) AVAILING PREMIUM FSI AT MADHA NAGAR 2nd MAIN ROAD, MADHANANDAPURAM, PORUR, CHENNAI-600125 AND COMPRISED IN OLD S.NO. 99/1 (Part), AS PER PATTA NEW S.NO. 99/1B, 1C & 1D OF MADHANANDAPURAM VILLAGE, ALANDUR TALUK AND WITHIN THE LIMITS OF GREATER CHENNAI CORPORATION.

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.BHARANITHARAN, M.E., C.Eng(I).**  
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

PROPOSED CONSTRUCTION OF STILT FLOOR + 4 FLOORS + 5th FLOOR  
(Part) RESIDENTIAL BUILDING WITH 34 DWELLING UNITS (WITH  
HEIGHT 18.30M) AVAILING PREMIUM FSI AT MADHA NAGAR 2nd MAIN  
ROAD, MADHANANDAPURAM, PORUR, CHENNAI-600125 AND  
COMPRISED IN OLD S.NO. 99/1 (Part), AS PER PATTANAM S.NO.  
99/1B, 1C & 1D OF MADHANANDAPURAM VILLAGE, ALANDUR TALUK  
AND WITHIN THE LIMITS OF GREATER CHENNAI CORPORATION

## 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 earthquake resistant design of structures.

#### A. Load considered in the design

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

#### B. Design details

|                                  |                                                            |
|----------------------------------|------------------------------------------------------------|
| Design method                    | LIMIT STATE DESIGN                                         |
| Codes & special publication used | IS 456: 2000, IS 1893:2002(PART I), SP 16, IS 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                        | 26 m 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    |

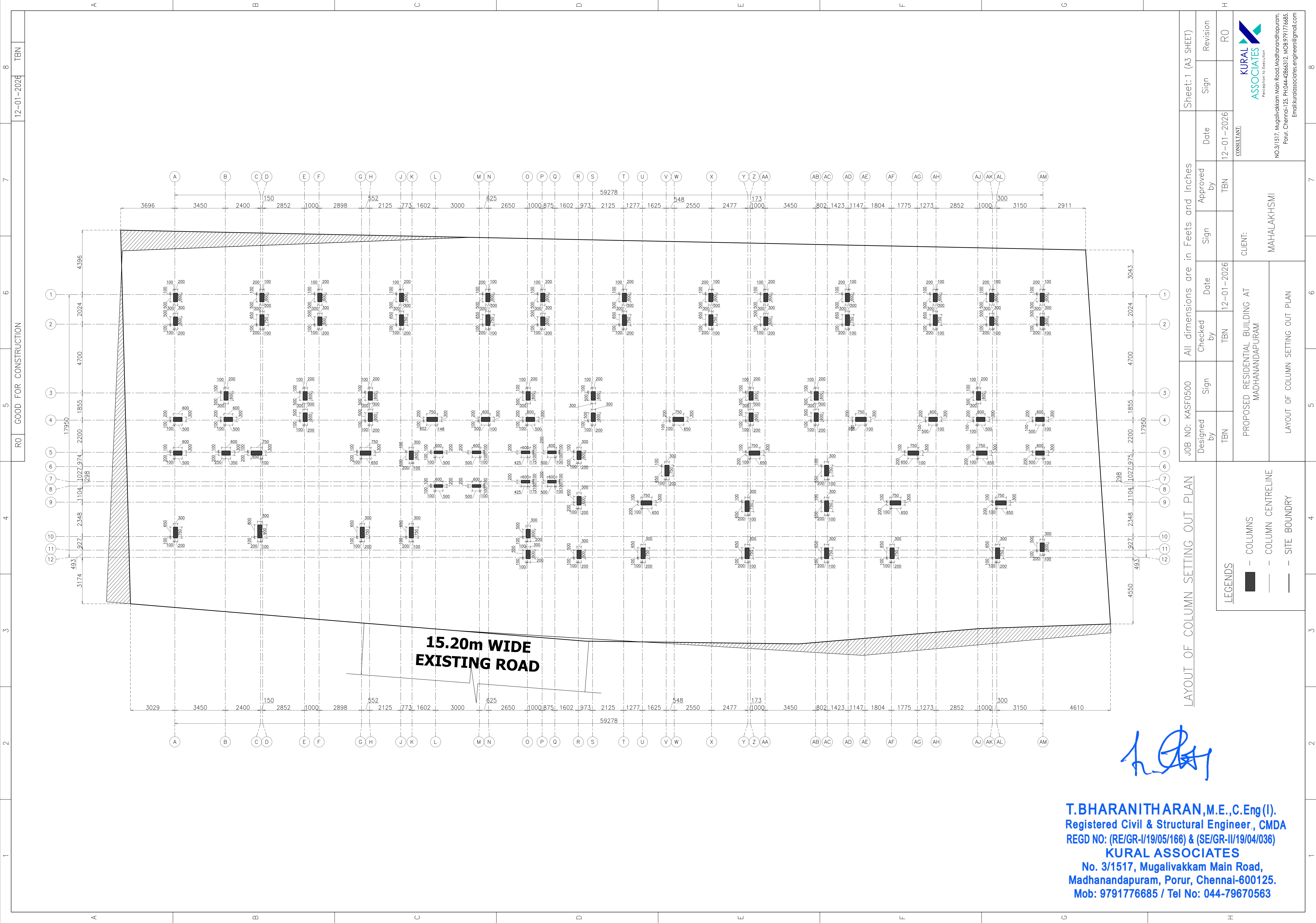
### E. Beam Details

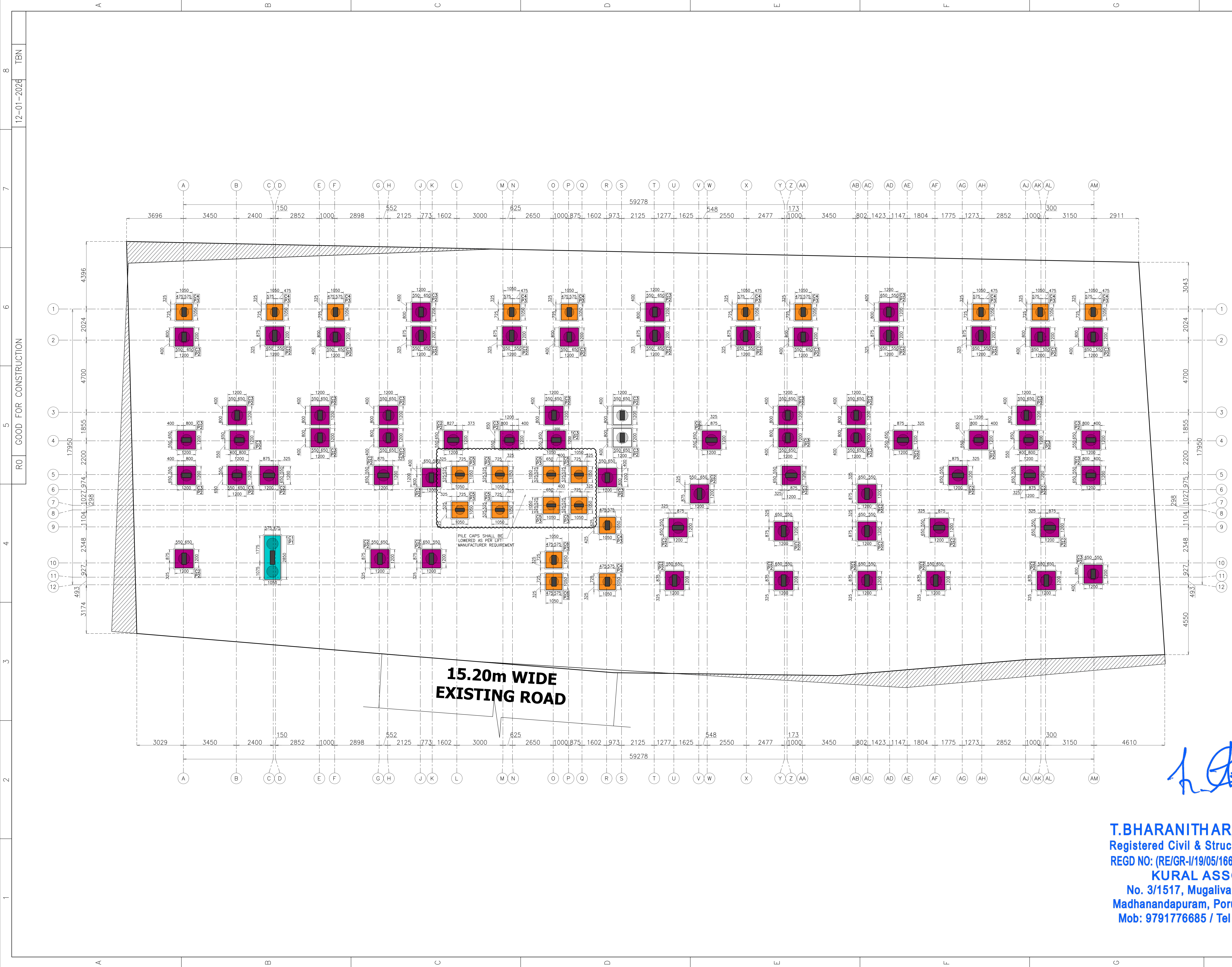
|                            |                                       |
|----------------------------|---------------------------------------|
| Size of the beam provided  | 230 x 450mm, 230 x 600mm, 230 x 380mm |
| Bottom steel cover to beam | 25mm                                  |
| Diameter of main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

### F. Column Details

|                              |                  |
|------------------------------|------------------|
| Size of the columns provided | 300mmx750mm      |
| Steel cover to column        | 40mm             |
| Diameter of main bars used   | 25mm, 20mm, 16mm |
| Binder diameter              | 8mm              |







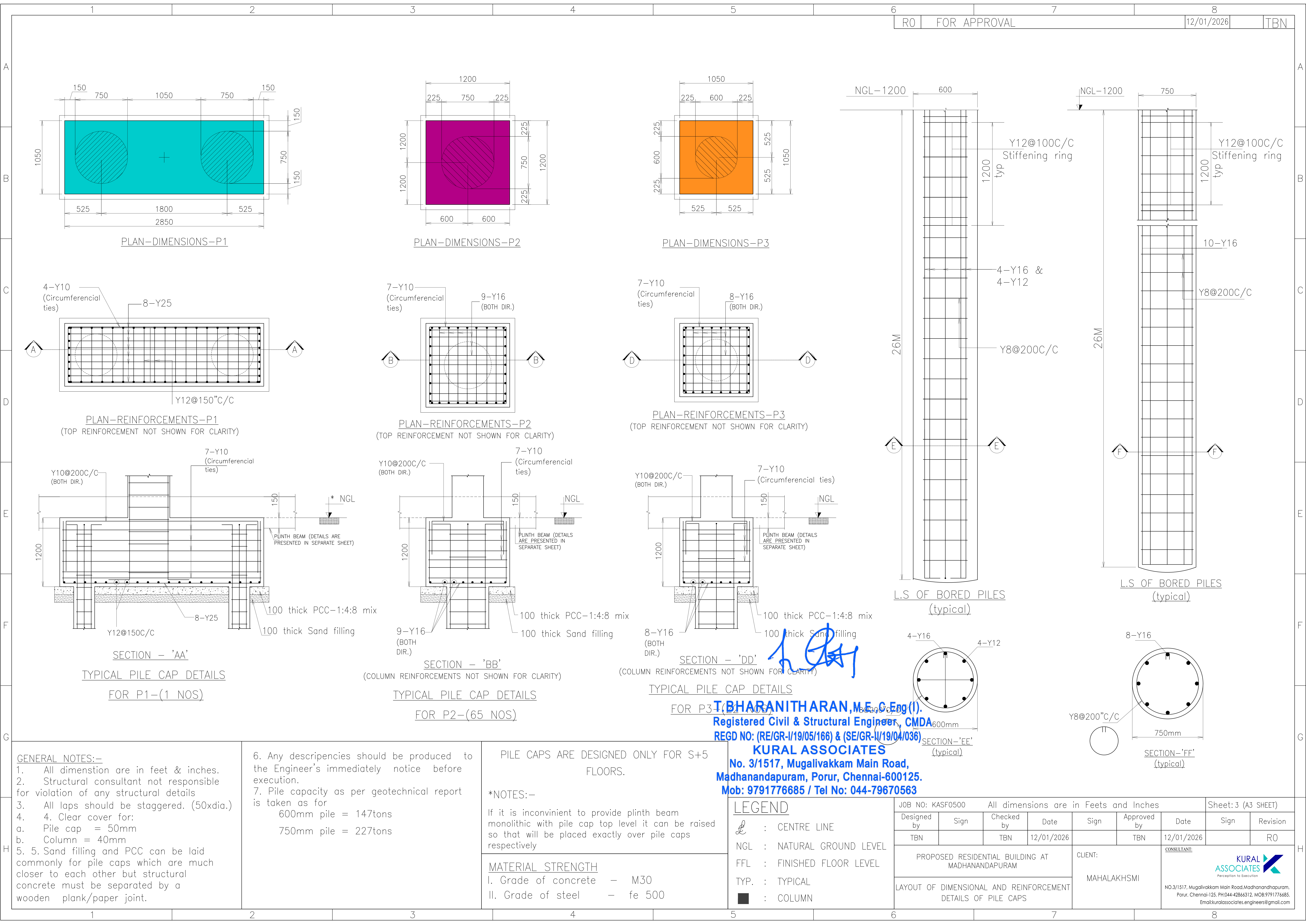
LAYOUT OF PILES AND PILECAPS

|                                                     |      |                                       |                        |      |                                                                                                                                                                                                                                      |            |                     |  |
|-----------------------------------------------------|------|---------------------------------------|------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------|--|
| JOB NO: KASF0500                                    |      | All dimensions are in Feet and Inches |                        |      |                                                                                                                                                                                                                                      |            | Sheet: 1 (A3 SHEET) |  |
| Designed by                                         | Sign | Checked by                            | Date                   | Sign | Approved by                                                                                                                                                                                                                          | Date       | Revision            |  |
| TBN                                                 |      | TBN                                   | 12-01-2026             |      | TBN                                                                                                                                                                                                                                  | 12-01-2026 | R0                  |  |
| PROPOSED RESIDENTIAL BUILDING AT<br>MADHANANDAPURAM |      |                                       | CLIENT:<br>MAHALAKHSMI |      | <u>CONSULTANT:</u><br><br>KURAL ASSOCIATES<br>Perception to Execution<br><br>NO.3/1517, Mugalivakkam Main Road, Madhanandapuram,<br>Porur, Chennai-125. Ph:044-42866312, MOB:979177685,<br>Email:kuralassociates.engineers@gmail.com |            |                     |  |
| LAYOUT OF PILES AND PILECAPS                        |      |                                       |                        |      | 7                                                                                                                                                                                                                                    |            | 8                   |  |

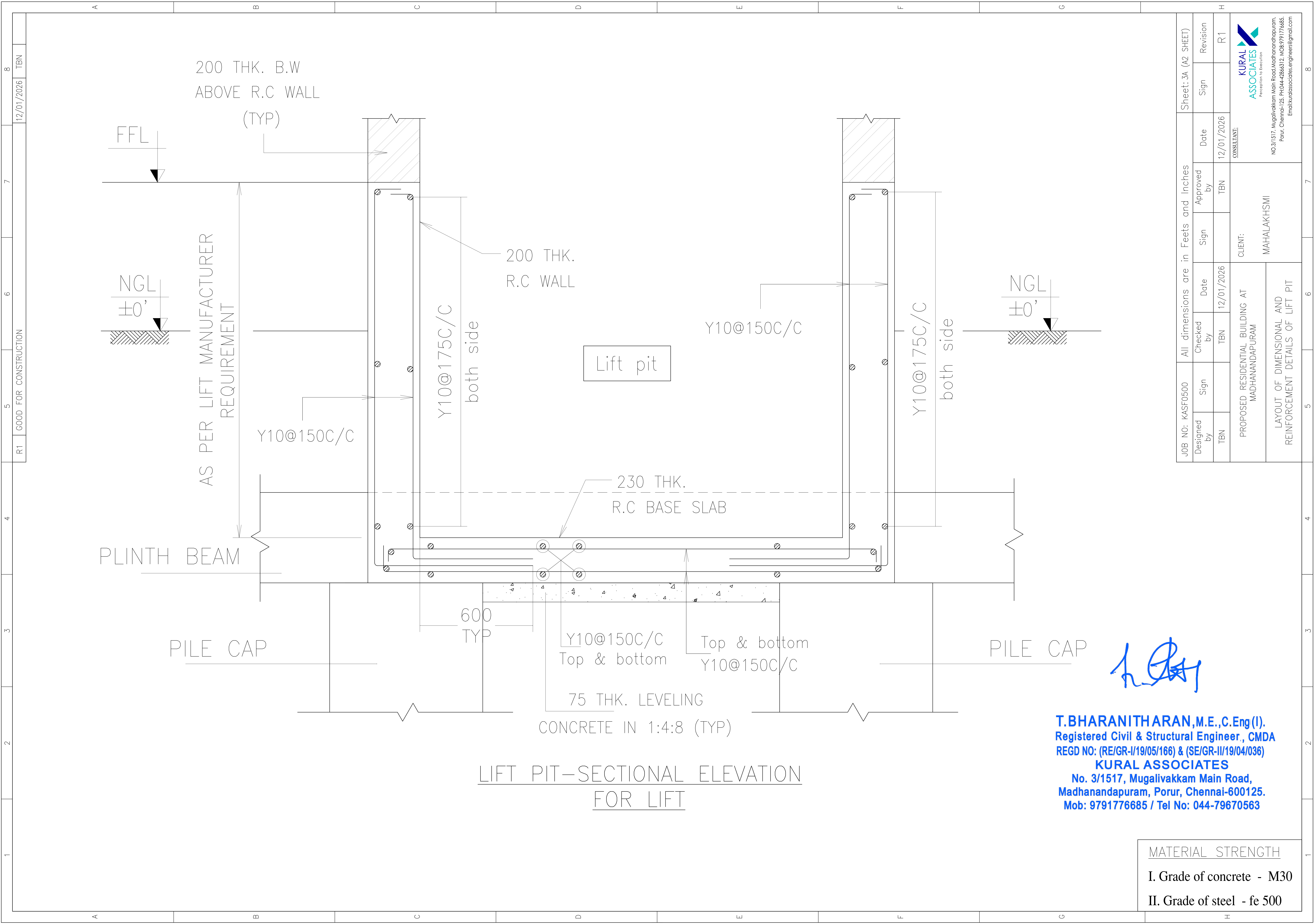
LEGENDS

- COLUMNS
- COLUMN CENTRELINE
- SITE BOUNDARY

**T.BHARANITHARAN, M.E., C.Eng (I).**  
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



**T.BHARANITHARAN,M.E.C Eng (I).**  
**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**



|                                                             |      |                                       |             |      |                                                                                                                                                   |                      |          |
|-------------------------------------------------------------|------|---------------------------------------|-------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------|
| JOB NO: KASF0500                                            |      | All dimensions are in Feet and Inches |             |      |                                                                                                                                                   | Sheet: 3A (A2 SHEET) |          |
| Designed by                                                 | Sign | Checked by                            | Date        | Sign | Approved by                                                                                                                                       | Sign                 | Revision |
| TBN                                                         |      | TBN                                   | 12/01/2026  |      | TBN                                                                                                                                               |                      | R1       |
| PROPOSED RESIDENTIAL BUILDING AT MADHANANDAPURAM            |      |                                       | CLIENT:     |      | CONSULTANT:                                                                                                                                       |                      |          |
| LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF LIFT PIT |      |                                       | MAHALAKSHMI |      | KURAL ASSOCIATES<br>Registration to Execution                                                                                                     |                      |          |
|                                                             |      |                                       |             |      | NO 3/1517, Mugalivakkam Main Road, Madhanandapuram, Porur, Chennai-125, PH:044-2264312, MOB:9791776685, Email:kuralassociates.engineers@gmail.com |                      |          |

*[Handwritten Signature]*

**T.BHARANITHARAN, M.E., C.Eng(I).**  
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

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



MATERIAL STRENGTH

I. Grade of concrete - M30

II. Grade of steel - fe 500

LAYOUT OF PLINTH BEAMS AT NGL

**T.BHARANITHARAN,M.E.,C.Eng(I).**  
**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**

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

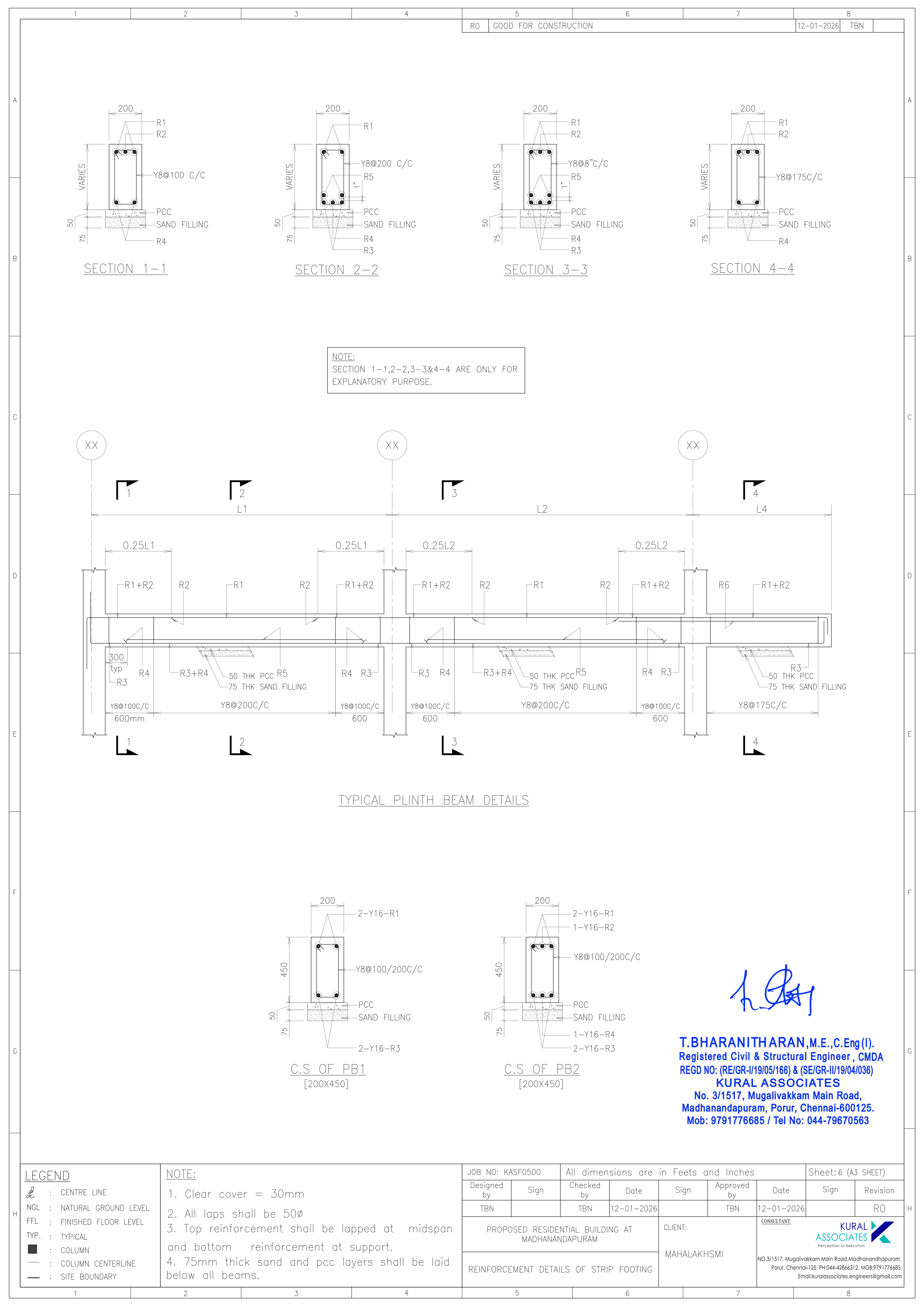
- ℄ : CENTRE LINE  
NGL : NATURAL GROUND LEVEL  
FFL : FINISHED FLOOR LEVEL  
TYP. : TYPICAL  
■ : COLUMN  
— : COLUMN CENTERLINE  
— : SITE BOUNDARY

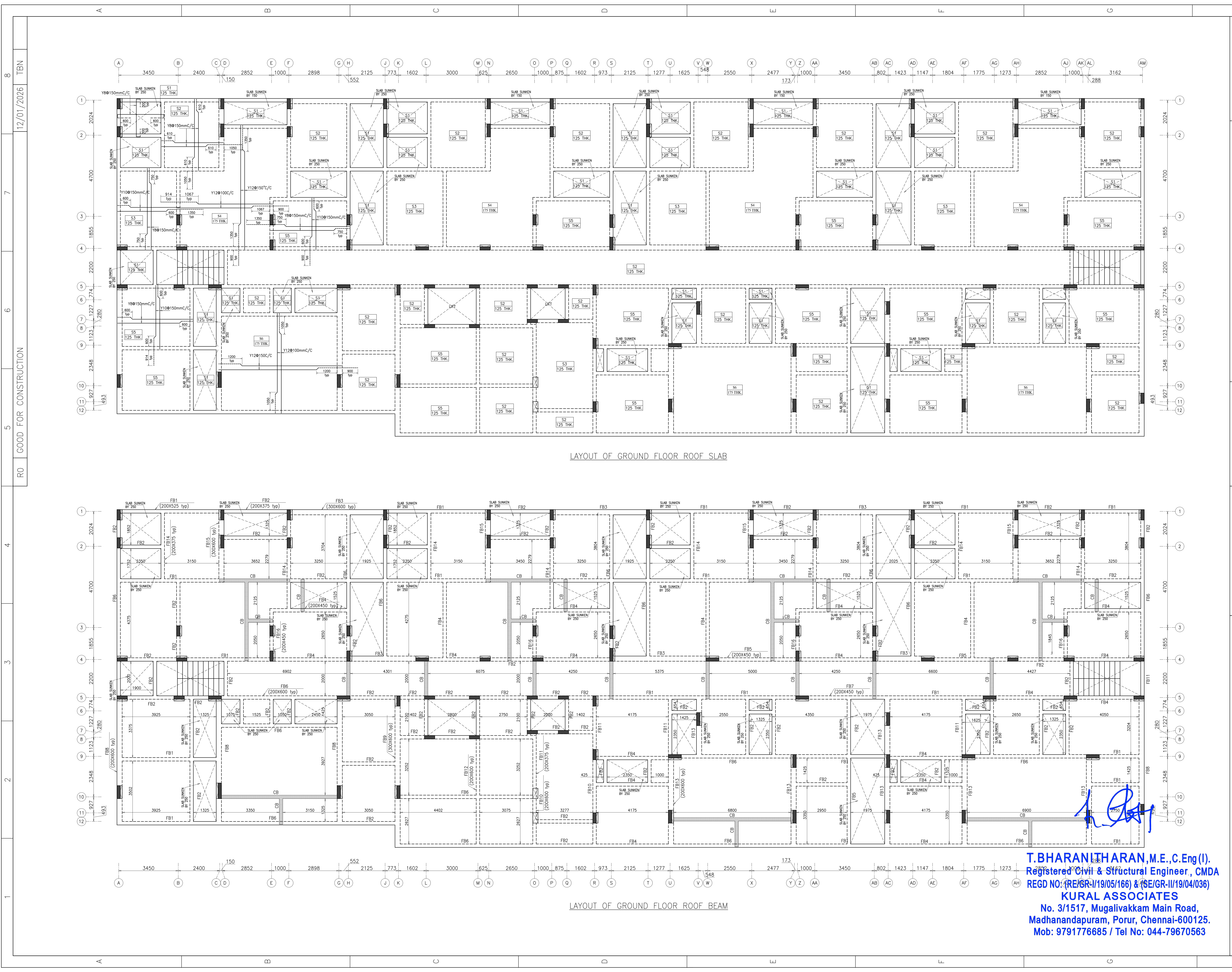
JOB NO: KASF0500

All dimensions are in Feet and Inches

Sheet:5 (A1 SHEET)

|                                                  |      |            |            |                                                                                                                                                                                |            |      |          |
|--------------------------------------------------|------|------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------|----------|
| Designed by                                      | Sign | Checked by | Date       | Approved by                                                                                                                                                                    | Date       | Sign | Revision |
| TBN                                              |      | TBN        | 12-01-2026 | TBN                                                                                                                                                                            | 12-01-2026 |      | R1       |
| PROPOSED RESIDENTIAL BUILDING AT MADHANANDAPURAM |      |            |            | CLIENT: MAHALAKHSMI                                                                                                                                                            |            |      |          |
| LAYOUT OF REINFORCEMENT DETAILS OF PLINTH BEAMS  |      |            |            | CONSULTANT: KURAL ASSOCIATES<br>NO.3/1517, Mugalivakkam Main Road Madhanandapuram, Porur, Chennai-125, PH:044-4284312, MO:9791776685, Email:kuralassociatesengineers@gmail.com |            |      |          |





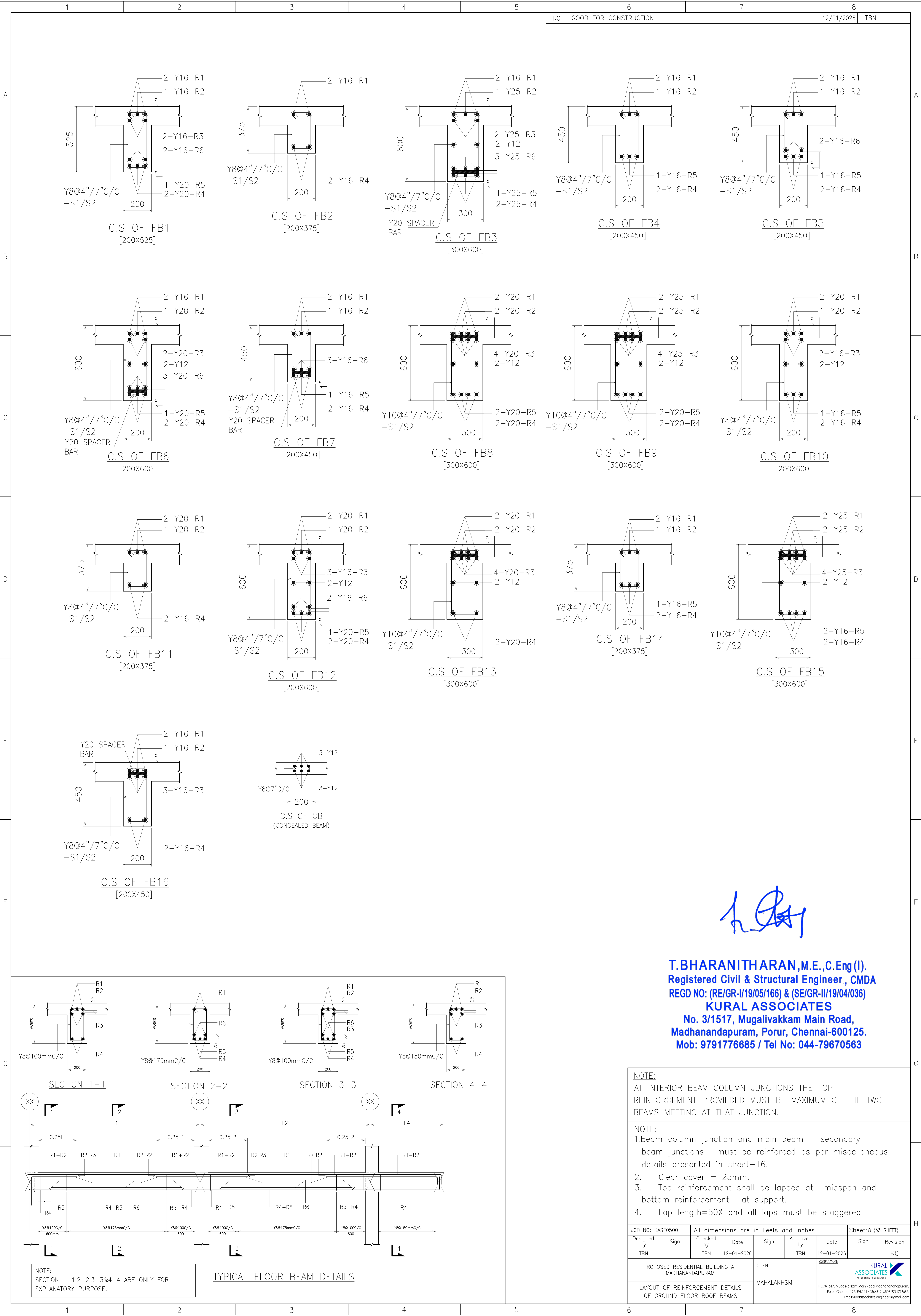
|                                                                                  |      |                                       |            |                  |             |                                                                                                                                                 |          |
|----------------------------------------------------------------------------------|------|---------------------------------------|------------|------------------|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| JOB NO: KASF0500                                                                 |      | All dimensions are in Feet and Inches |            |                  |             | Sheet: 7 (A3 SHEET)                                                                                                                             |          |
| Designed by                                                                      | Sign | Checked by                            | Date       | Sign             | Approved by | Date                                                                                                                                            | Revision |
| TBN                                                                              |      | TBN                                   | 12-01-2026 |                  | TBN         | 12-01-2026                                                                                                                                      | R0       |
| PROPOSED RESIDENTIAL BUILDING AT MADHANANDAPURAM                                 |      | CLIENT:                               |            | CONSULTANT:      |             | R0                                                                                                                                              |          |
| LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF GROUND FLOOR ROOF SLAB & BEAM |      | MAHALAKHSMI                           |            | KURAL ASSOCIATES |             | NO.3/1517, Mugaliyakkam Main Road Madhanandapuram, Porur, Chennai-125, Ph:044-4284312, MOb:9791776685, Email:kuralassociatesengineers@gmail.com |          |

LEGEND

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

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

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

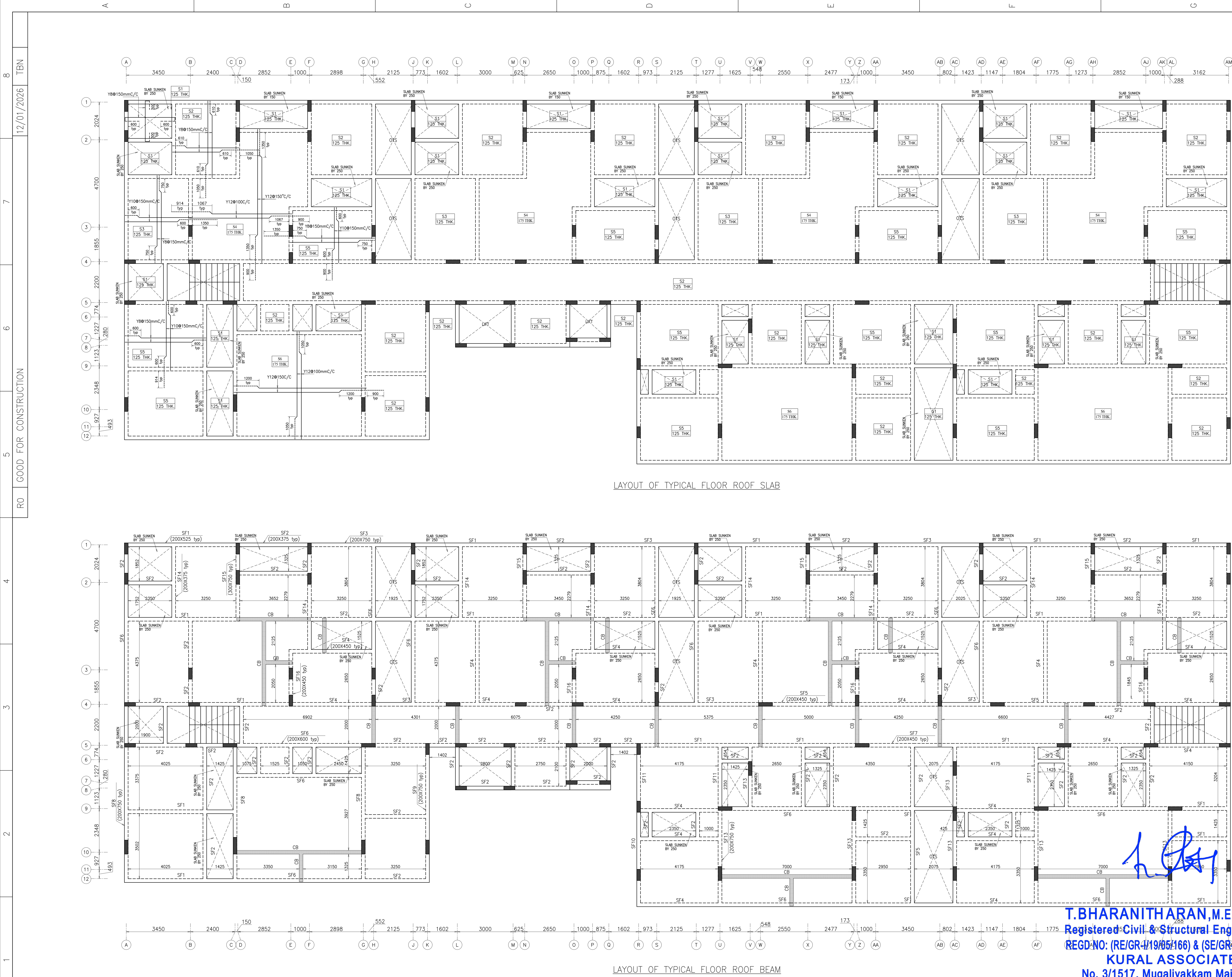


**T.BHARANITHARAN, M.E., C.Eng (I).**  
**Registered Civil & Structural Engineer, CMDA**  
**REGD NO: (RE/GR-I/19/05/166) & (SE/GR-II/19/04/036)**  
**KURAL ASSOCIATES**  
**No. 3/1517, Mugalivakkam Main Road,**  
**Madhanandapuram, Porur, Chennai-600125.**  
**Mob: 9791776685 / Tel No: 044-79670563**

NOTE:  
AT INTERIOR BEAM COLUMN JUNCTIONS THE TOP REINFORCEMENT PROVIDED MUST BE MAXIMUM OF THE TWO BEAMS MEETING AT THAT JUNCTION.

NOTE:  
1.Beam column junction and main beam – secondary beam junctions must be reinforced as per miscellaneous details presented in sheet–16.  
2. Clear cover = 25mm.  
3. Top reinforcement shall be lapped at midspan and bottom reinforcement at support.  
4. Lap length=50Ø and all laps must be staggered

|                                                            |      |                                       |            |                     |             |                                                                                                                                                                                      |      |          |
|------------------------------------------------------------|------|---------------------------------------|------------|---------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| JOB NO: KASF0500                                           |      | All dimensions are in Feet and Inches |            |                     |             | Sheet: 8 (A3 SHEET)                                                                                                                                                                  |      |          |
| Designed by                                                | Sign | Checked by                            | Date       | Sign                | Approved by | Date                                                                                                                                                                                 | Sign | Revision |
| TBN                                                        |      | TBN                                   | 12-01-2026 |                     | TBN         | 12-01-2026                                                                                                                                                                           |      | R0       |
| PROPOSED RESIDENTIAL BUILDING AT MADHANANDAPURAM           |      |                                       |            | CLIENT: MAHALAKHSMI |             | CONSULTANT: KURAL ASSOCIATES<br>No.3/1517, Mugalivakkam Main Road, Madhanandapuram, Porur, Chennai-600125, Ph:044-4366312, MOB:9791776685, Email:kuralassociates.engineers@gmail.com |      |          |
| LAYOUT OF REINFORCEMENT DETAILS OF GROUND FLOOR ROOF BEAMS |      |                                       |            |                     |             |                                                                                                                                                                                      |      |          |



LAYOUT OF TYPICAL FLOOR ROOF SLAB

LAYOUT OF TYPICAL FLOOR ROOF BEAM

- 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=50 $\phi$  and all laps must be staggered

- LEGEND
- $\phi$  : CENTRE LINE
  - F.B : GROUND FLOOR
  - S1 : SLAB-1
  - TYP. : TYPICAL
  - $\times$  : COLUMN TERMINATED
  - $\boxtimes$  : SUNKEN SLAB
  - THK. : THICKNESS OF SLAB

JOB NO: KASF0500

Designed by: TBN

Sign: TBN

Checked by: TBN

Date: 12-01-2026

Approved by: TBN

Date: 12-01-2026

Sign: TBN

Client: MAHALAKSHMI

PROPOSED RESIDENTIAL BUILDING AT MADHANANDAPURAM

LAYOUT OF DIMENSIONAL AND REINFORCEMENT DETAILS OF TYPICAL FLOOR ROOF SLAB & BEAM

Sheet: 9 (A3 SHEET)

Sign: TBN

Date: 12-01-2026

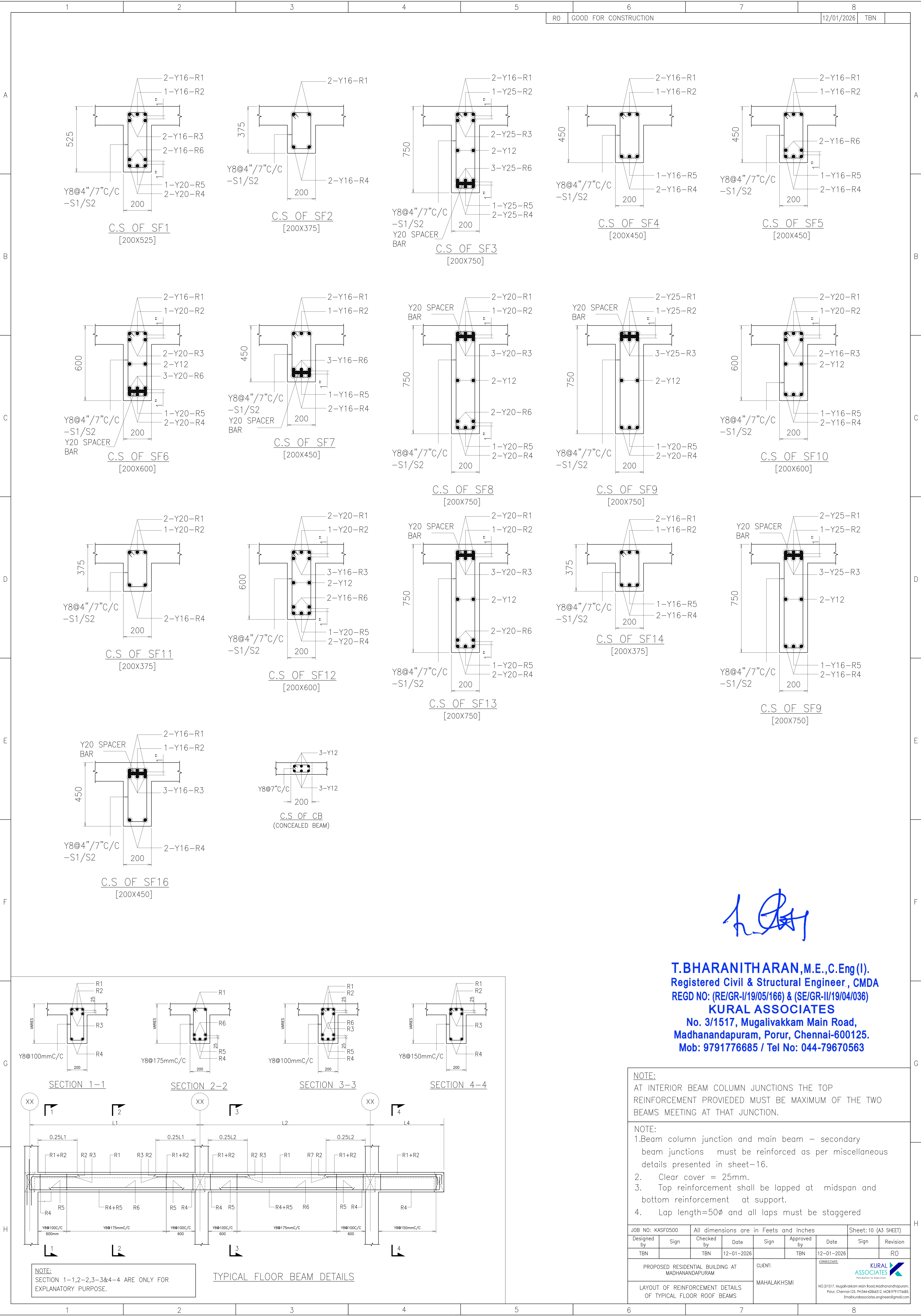
Revision: R0

CONSULTANT: MAHALAKSHMI

KURAL ASSOCIATES

Registration to Execution

NO.3/1517, Mugaliyakkam Main Road Madhanandapuram, Porur, Chennai-125, Ph:044-4284312, MOB:9791776685, Email:kuralassociates.engineers@gmail.com



*[Handwritten Signature]*

**T.BHARANITHARAN,M.E.,C.Eng(I).**  
**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**

NOTE:

AT INTERIOR BEAM COLUMN JUNCTIONS THE TOP REINFORCEMENT PROVIDED MUST BE MAXIMUM OF THE TWO BEAMS MEETING AT THAT JUNCTION.

NOTE:

1.Beam column junction and main beam – secondary beam junctions must be reinforced as per miscellaneous details presented in sheet–16.

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

|                                                             |      |                                       |            |             |             |                                                                                                                                                                                                                                                   |      |          |
|-------------------------------------------------------------|------|---------------------------------------|------------|-------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------|
| JOB NO: KASF0500                                            |      | All dimensions are in Feet and Inches |            |             |             | Sheet: 10 (A3 SHEET)                                                                                                                                                                                                                              |      |          |
| Designed by                                                 | Sign | Checked by                            | Date       | Sign        | Approved by | Date                                                                                                                                                                                                                                              | Sign | Revision |
| TBN                                                         |      | TBN                                   | 12-01-2026 |             | TBN         | 12-01-2026                                                                                                                                                                                                                                        |      | R0       |
| PROPOSED RESIDENTIAL BUILDING AT MADHANANDAPURAM            |      |                                       |            | CLIENT:     |             | CONSULTANT:                                                                                                                                                                                                                                       |      |          |
| LAYOUT OF REINFORCEMENT DETAILS OF TYPICAL FLOOR ROOF BEAMS |      |                                       |            | MAHALAKHSMI |             | <div><div>KURAL ASSOCIATES</div><div>Perception to Execution</div><div><div>NO.3/1517, Mugalivakkam Main Road Madhanandapuram, Porur, Chennai-600125, Ph:044-4286312, MOB:9791776685, Email:kuralassociates.engineers@gmail.com</div></div></div> |      |          |