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# STRUCTURAL DESIGN AND BASIS REOPRT

## NAME OF THE WORK:

Proposed constriction of stilt + 3 floors of residential building with 11 dwelling units located at Plot No.10A, Classic Farms Avenue Road, Classic Retreat, Sholinganallur, Chennai – 600 119. Comprised in Old Survey No.602/2K & 602/2L, New Survey No.602/2B19A, 602/2B19B & 602/2B19C of Sholinganallur Village& Taluk, Chennai District and within the limit of Greater Chennai Corporation.

## PREAMBLE:

The Building is a RCC structure, The deflection as per the built drawing is very much less than the approval drawing. Hence structurally Safe & Sound and fit for the occupation.

We certify that:

- The building consists of one block of stilt+3 floors.
- The usage of the building stilt floor + 3 upper floors
- The super structure is built on 9"thick outer wall and 4 ½" inner brick walls
- The safe load bearing capacity 60 tonnes, death of Pile – 5.0 M

## DESIGN LOADS:

**Super Imposed Dead Loads:** The Salf-weight of the various elements are computed based on the built weight of materials as given below.

| MATERIALS | UNIT WEIGHT IN KN/ $M^3$ |
|---|---|
| Brick Wall | 20.00 |
| Steel | 78.50 |
| Plain | 24.00 |
| Reinforced Concrete | 25.00 |
| Soil | 18.00 |
| Water | 10.00 |

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The Super Imposed Loads that are envisaged to act permanently (wherever applicable) are as following.

| Item | Intensity in KN/$m^2$ of plan area |
|---|---|
| Floor finish | 1.00 |
| Weathering Proof course on Terrace - 150 thick brickbat coba with IPS finish | 3.00 |
| Sunk — Brick bat coba | 2.5 |

**2.2 Live Loads**

The superimposed load or otherwise live load is assessed on the basis of occupancy classifications as per IS: 875 (Part —2) — 1987 and are listed as below.

**Type of Structure — Residential Building**

| Occupancy Classification | UDL (KN/$m^2$) |
|---|---|
| Living Rooms, Bed rooms and Dormitories | 3.0 |
| Store rooms | 5.0 |
| Baths and toilets | 2.0 |
| Corridors, passages, staircases including fire escapes, lobbies — as per the floor serviced excluding stores and the like but not less than | 5.0 |
| Balconies | 4.0 |
| Open terrace | 1.5 |
| Parking - For vehicles not exceeding 2.5 tones gross Weight. (Including access ways & ramps). | 3.125 |

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## 2.3 Wind Loads

The wind pressure is calculated on the basis of data furnished below and other provisions laid in 1$875 (Part-3) — 1987.

| | | | |
|---|---|---|---|
| Basic Wind Speed | $V_b$ | = | 50 m/sec |
| Risk Coefficient | $K_1$ | = | 1 |
| | K2 | = | As per height. |
| Terrain Category | | = | II |
| Structure Class | | = | B and C class as per Building dimensions |
| Design Wind Speed ($V_2$) | $V_2$ | = | Vb x $K_1$x $K_2$ x $K_3$ |

Where,

$K_1$ = Risk Co-efficient for different classes of structures in different wind speed zones.

K2 = To obtain design wind speed variation with height in different terrains for different classes of buildings.

K3 = Topography factor.

Design Wind Pressure

Pz = $0.6VZ^2$

## 2.4 Earthquake Load

The loading due to earthquake is assessed as per the provisions of IS: 1893 (Part-1):2002

| | | |
|---|---|---|
| Seismic Zone | = | III |
| Soil type | = | I |
| Table-2 Zone factor (Z) | = | 0.16 |
| Table-6 Importance Factor (1) | = | 1.00 |
| Table-7 Response Reduction factor (R) | = | 3.0 |

Fundamental natural time period (Ts) with INFILL WALLS for Tauras, Claudius A, Magnus, Cladius B, Atrium.

Ts = 0.09H/d°* from CL.7.6.2 — 181893 (part — I):2002

Fundamental natural time period (Ts) without INFILL WALLS for Block EWS (Augustus)

Ts = 0.075H°"* from CL.7.6.1 — 1S1893 (part — 1):2002

Sa/g from FIG-2 IS 1893 (part I):2002.

Horizontal Seismic Co-Efficient

Ah = Zx I Sa 2xRg / 2x R g

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### 3 CHECK FOR LATERAL SWAY AS PER IS - 456-2000

The allowable lateral sway at top due to wind force should not exceed H/500, where H is total height of Building.

### 4 CHECK FOR LATERAL SWAY (STOREY DRIFT) AS PER IS- 1893-2002

The allowable lateral sway (storey drift) due to earthquake force should not exceed L/250, where L is the storey height

### 5 BASIC LOADS AND LOAD COMBINATIONS

The various loads are combined in accordance with the stipulations in IS: 875 (Part 5) - 1987. Wherever imposed load is combined with earthquake load the appropriate part of the imposed load as specified in IS: 1893-2002 is adopted both for evaluating earthquake effect and for combined load effects, used in such combination.

### 6 BASIC LOADS AND LOAD COMBINATIONS

The various loads are combined in accordance with the stipulations in IS:875 (Part 5)-1987. Wherever imposed load is combined with earthquake load the appropriate part of the imposed load as specified in IS:1893-2002 is adopted both for evaluating earthquake effect and for combined load effects, used in such combination.

| Type | Load Combinations |
|---|---|
| Primary | DEAD LOAD (DL) |
| Primary | WALL LOAD (WL) |
| Primary | SUPERIMPOSED DEAD LOAD (SDL) |
| Primary | LIVE LOAD (LL) |
| Primary | WIND LOAD X (+) WLX |
| Primary | WIND LOAD Z (+) WLZ |
| Primary | SIESMIC LOAD ALONG-X SLX |
| Primary | SIESMIC LOAD ALONG-Z SLZ |
| Primary | TEMPRATURE LOAD (TEMP) |

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| | |
|---|---|
| Combination | DL + WAL + SDL |
| Combination | DL + WAL +SDL+LL |
| Combination | DL+ WAL + SDL +LL + WLX |
| Combination | DL + WAL + SDL+LL + WLZ |
| Combination | DL + WAL+SDL+LL-WLX |
| Combination | DL + WAL +SDL+LL - WLZ |
| Combination | DL + WAL +SDL+LL+ SLX |
| Combination | DL + WAL +SDL+LL +SLZ |
| Combination | DL+ WAL +SDL+LL - SLX |
| Combination | DL + WAL + SDL +LL - SLZ |
| Combination | DL + WAL + SDL + WLX |
| Combination | DL + WAL +SDL+ WLZ |
| Combination | DL + WAL + SDL - WLX |
| Combination | DL + WAL + SDL - WLZ |
| Combination | DL + WAT + SDL + SLX |
| Combination | DL + WAL + SDL + SLZ |
| Combination | DL + WAL + SDL - SLX |
| Combination | DL + WAL + SDL + TEMP |
| Combination | DL + WAL + SDL + LL + TEMP |
| Combination | DL + WAL + SDL+LL +WLX+TEMP |
| Combination | DL + WAL +SDL+LL+WLZ +TEMP |
| Combination | DL+ WAL + SDL + LL - WLX + TEMP |

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| | |
|---|---|
| Combination | DL + WAL + SDL +LL-WLZ + TEMP |
| Combination | DL + WAL + SDL+LL + SLX + TEMP |
| Combination | DL + WAL + SDL + LL + SLZ + TEMP |
| Combination | DL + WAL + SDL + LL -SLX + TEMP |
| Combination | DL + WAL + SDL + LL - SLZ + TEMP |
| Combination | DL + WAL + SDL + WLX + TEMP |
| Combination | DL + WAL + SDL + WLZ + TEMP |
| Combination | DL + WAL + SDL - WLX + TEMP |
| Combination | DL + WAL + SDL - WLZ + TEMP |
| Combination | DL + WAL + SDL + SLX + TEMP |
| Combination | DL + WAL + SDL + SLZ + TEMP |
| Combination | DL + WAL + SDL - SLX + TEMP |
| Combination | DL + WAL + SDL - SLZ + TEMP |
| Combination | DL + WAL + SDL - TEMP |
| Combination | DL + WAL + SDL + LL - TEMP |
| Combination | DL + WAL + SDL +LL + WLX - TEMP |
| Combination | DL + WAL + SDL+LL + WLZ - TEMP |
| Combination | DL + WAL + SDL + LL-WLX - TEMP |
| Combination | DL + WAL + SDL + LL - WLZ - TEMP |
| Combination | DL + WAL + SDL + LL + SLX - TEMP |
| Combination | DL + WAL + SDL+LL + SLZ - TEMP |

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| | |
|---|---|
| Combination | DL + WAL + SDL + LL - SLX - TEMP |
| Combination | DL + WAL + SDL + LL -SLZ - TEMP |
| Combination | DL + WAL +SDL + WLX - TEMP |
| Combination | DL + WAL + SDL+ WLZ - TEMP |
| Combination | DL + WAL + SDL - WLX - TEMP |
| Combination | DL + WAL + SDL - WLZ - TEMP |
| Combination | DL + WAL +SDL + SLX - TEMP |
| Combination | DL + WAL + SDL + SLZ - TEMP |
| Combination | DL + WAL + SDL -SLX - TEMP |
| Combination | DL + WAL + SDL -SLX - TEMP |

**7 LOAD FACTORS FOR DESIGN**

| Description of Load Combination | Load Factor for Primary Load Cases | | | | |
|---|---|---|---|---|---|
| | Dead Load | Live Load | Wind Load | Seismic Load | Temp Load |
| Dead load | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Dead load + Live load | 1.5 | 1.5 | 0.0 | 0.0 | 0.0 |
| Dead load + Wind load | 1.5 | 0.0 | ±1.5 | 0.0 | 0.0 |
| Dead load + Seismic load | 1.5 | 0.0 | 00 | ±1.5 | 0.0 |
| Dead load + Live load + Wind load | 1.2 | 1.2 | ±1.2 | 0.0 | 0.0 |
| Dead load + Live load + Seismic | 1.2 | 1.2 | 0.0 | ±1.2 | 0.0 |
| Dead Load + Wind Load | 0.9 | 0.0 | ±1.5 | 0.0 | 0.0 |

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| | | | | | |
|---|---|---|---|---|---|
| Dead Load + Seismic Load | 0.9 | 0.0 | 0.0 | ±1.5 | 0.0 |
| Dead load + Temp | 1.4 | 0.0 | 0.0 | 0.0 | ±1.4 |
| Dead load + Live load + Temp | 1.05 | 1.28 | 0.0 | 0.0 | ±1.05 |
| Dead load + Wind load + Temp | 1.05 | 0.0 | ±1.28 | 0.0 | ±1.05 |
| Dead load + Seismic load + Temp | 1.05 | 0.0 | 0.0 | ±1.28 | ±1.05 |
| Dead load + Live load + Wind | 1.05 | 1.28 | ±1.28 | 0.0 | ±1.05 |
| Dead load + Live load + Seismic | 1.05 | 1.28 | 0 | ±1.28 | ±1.05 |
| Dead Load + Wind Load + Temp | 0.9 | 0.0 | ±1.28 | 00 | ±1.05 |
| Dead Load + Seismic Load + Temp | 0.9 | 0.0 | 0.0 | ±1.28 | ±1.05 |

**8. ANALYSIS METHOD**

The modeling has been generated in STAAD Pro for analysis. The structure will be analyzed for Static and Lateral loads due to Earthquake/Wind loads and its combinations Staad pro Software used - In house interlinked package with STAAD Pro.

**9. DESIGN METHODOLOGY**

All structural members will be designed according to the Limit State Method as specified in IS: 456-2000. Appropriate loads and its combinations, as per relevant clauses in Code IS 456:2000 Code IS 875 (Part-5) 1987, for the most unfavorable effects are chosen for design.

**10. MATERIAL**

Reinforced cement concrete

Grade of concrete = M25 (Design mix)

Grade of steel = Fe 500

**11. EXPOSURE CONDITION**

Structural elements below ground level and Exterior External faces of walls are designed for Moderate exposure condition and internal faces of walls, floor beams and slabs are designed for Mild exposure conditions per Table 16 of IS 456-2000.

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## 12. COVER TO REINFORCEMENT

As per Table 16A-IS: 456-2000.

| Member | Clear Cover (mm) |
|---|---|
| Pile Foundations | 75 mm |
| Footing or Raft Foundations | 50 mm |
| Raft slab | 30 mm |
| Column | 40 mm |
| Shear Walls thickness | 25 mm |
| Retaining Wall on earth facing side | 40 mm |
| Retaining Wall on non - earth facing side | 25 mm |
| Beams | 30 mm |
| Slabs | 20 mm |
| Water Tanks | 25 mm |

## 13. FOUNDATION SYSTEM

Isolated/Combined /Raft foundations with the raft slabs are proposed based on the safe bearing capacities as per soil investigation report.

## 14. CODES AND STANDARDS

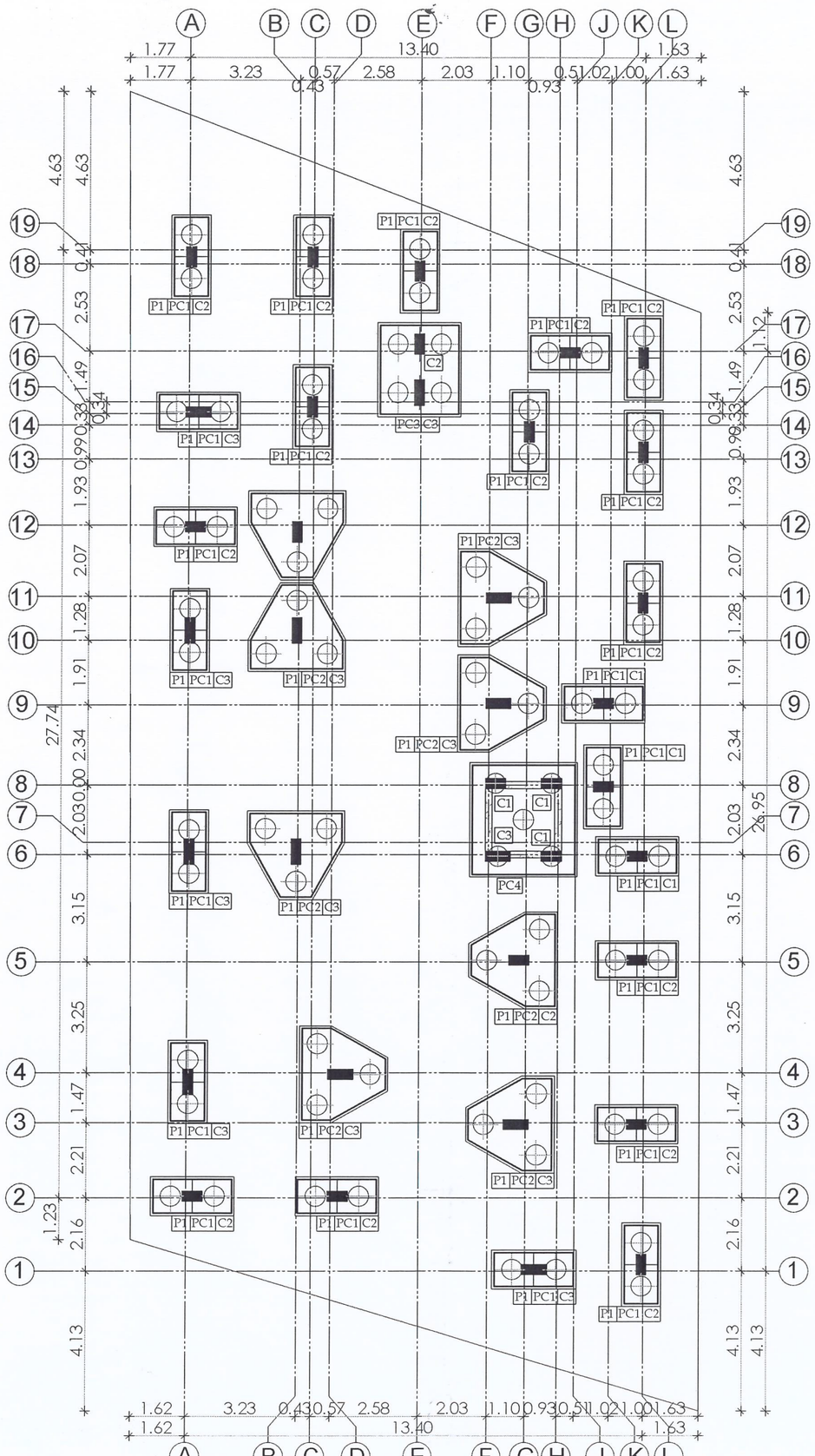
All the designs are conforming to the relevant Indian Standards, Some of the relevant Indian Standard Codes, which have been followed for the structural designs, are given below.

| Code | Description |
|---|---|
| IS:875 (Part-1)-1987 | Code of Practice for Design Loads (Other than Earthquake) for Building and Structures - Unit Weights of Buildings Materials and Stored Material. |
| IS:875 (Part-2)-1987 | Code of Practice for Design Loads (Other than Earthquake) for Building and Structures-Imposed Loads |

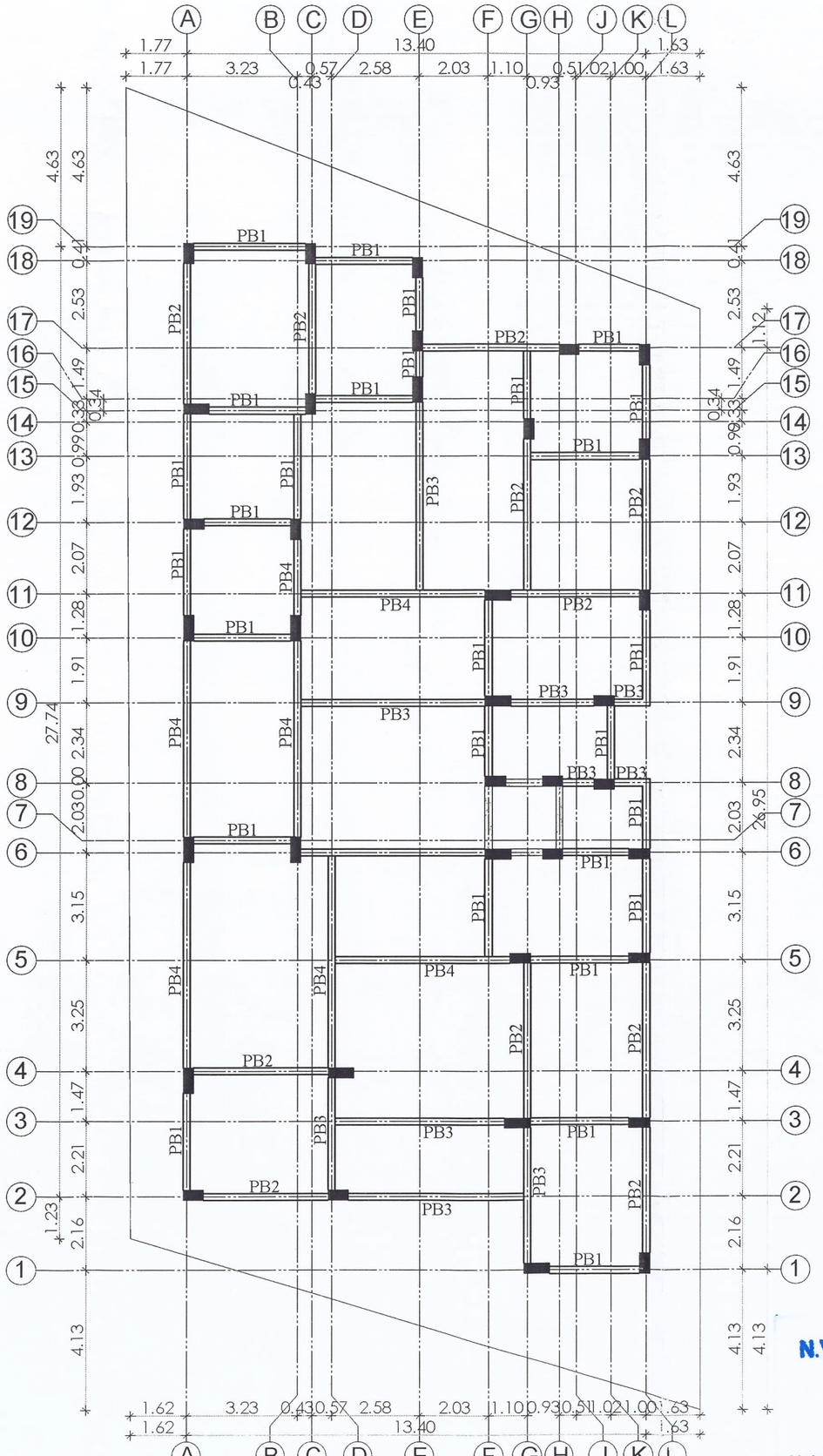
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| | |
|---|---|
| IS:875 (Part-3)-1987 | Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures - Wind Load. |
| IS:875 (Part-5)-1987 | Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures - Special Loads and Load Combinations |
| IS:456-2000 | Code of Practice for Plain and Reinforced Concrete |
| IS:1893 (Part-1)-2002 | Indian Standard Criteria for Earthquake Resistant Design of Structures |
| IS:1893 (Part-2)-2002 | Specification of Mild Steel and Medium Tensile Steel bars and Hard drawn Steel Wire for concrete reinforcement-Mild Steel and Medium Tensile Steel Bars |
| IS:1786-1985 | Specification for High Strength Deformed Steel Bars and Wires for Concrete Reinforcement |
| IS:13920-1993 | Ductile Detailing of reinforced concrete structures subjected to seismic forces - code of practice |
| IS:1904 | Indian Standard Code of practice for Design & Construction foundations in Soil: General Requirements |
| IS:1642-1989 | Indian Standard Code of practice for Fire Safety Of Buildings (General) : Details Of Construction. |
| IS:3370-2009 | Indian Standard Code of practice for Concrete Structures for Storage of Liquids |
| IS:1343-1980 | Indian Standard Code of practice for Pre-stressed Concrete. |

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COLUMN, PILE AND PILE CAP LAYOUT




GRADE BEAM LAYOUT

## Notes:

1. This drawing should be read along with architectural drawings.
2. Grade of R.C.C. Items shall be **M25 (1:1:2)** by design mix confirming to I.S.456-2000 unless otherwise specified.
3. Y Denotes TOR40 Steel confirming to I.S. 1786 – 1985.
   **Grade - Fe 550**
4. Clear cover to the main steel
   2" for Footings , Raft Beam , Raft Slab.
   1.5" for Columns.
   1" for Plinth beam, Lintel & Beams.
   0.5" for Sunshade & Slab.
5. Lap length shall be 50 d (Max.dia) for all bars.
6. ——— Bottom Reinforcement
7. ——— Top Reinforcement
8. Provide Continuous Chairs to keep the top Reinforcement in position
9. Provide Y8 at 12" as Distribution steel for all top Reinforcement.
10. Spacer Bar to be Provided in Between Two Layers Of Reinforcement of Same Dia at Every 3'-0" C/ C.
11. Not more than 40% of Reinforcement shall be Lapped at any particular junction.
12. Foundation is designed **As per Architectural Drawing.**
13. Safe load carrying capacity **60.0 Tone**
    **Depth of Pile - 5.0m**
14. Cantilever props should not be released Until the roof is concreted
15. Removal of formworks :
    i) for slabs :
    a. Slabs spanning upto 4.5 m ( 15'-0" ) – 7 days
    b. Slabs spanning over 4.5 m ( 15'-0" ) – 14 days
    ii) for beams and arches :
    c. Beams and arches spanning upto 6 m (20'-0") – 14 days
    d. Beams and arches spanning over 6 m (20'-0") – 21 days
16. For all Window openings 2" Th Sill Plate Should be Provided at Sill Lvl with 12" Bearing on either side of opening.
17. All Reinforcement steel Should be coated with Anti-corrosive Paint before Use
18. Portable drinking water should be used for Complete Structure

**Project :**

PLAN SHOWING THE PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING AT P.NO.10A, CLASIC FARMS 1st STREET, "CLASIC RETREAT" COMPRISED IN S.NO.602/2B15 [AS PER PATTA] OF SHOLINGANALLUR VILLAGE&TALUK, GREATER CHENNAI CORPORATION, ZONE:XV, DIVISION:197

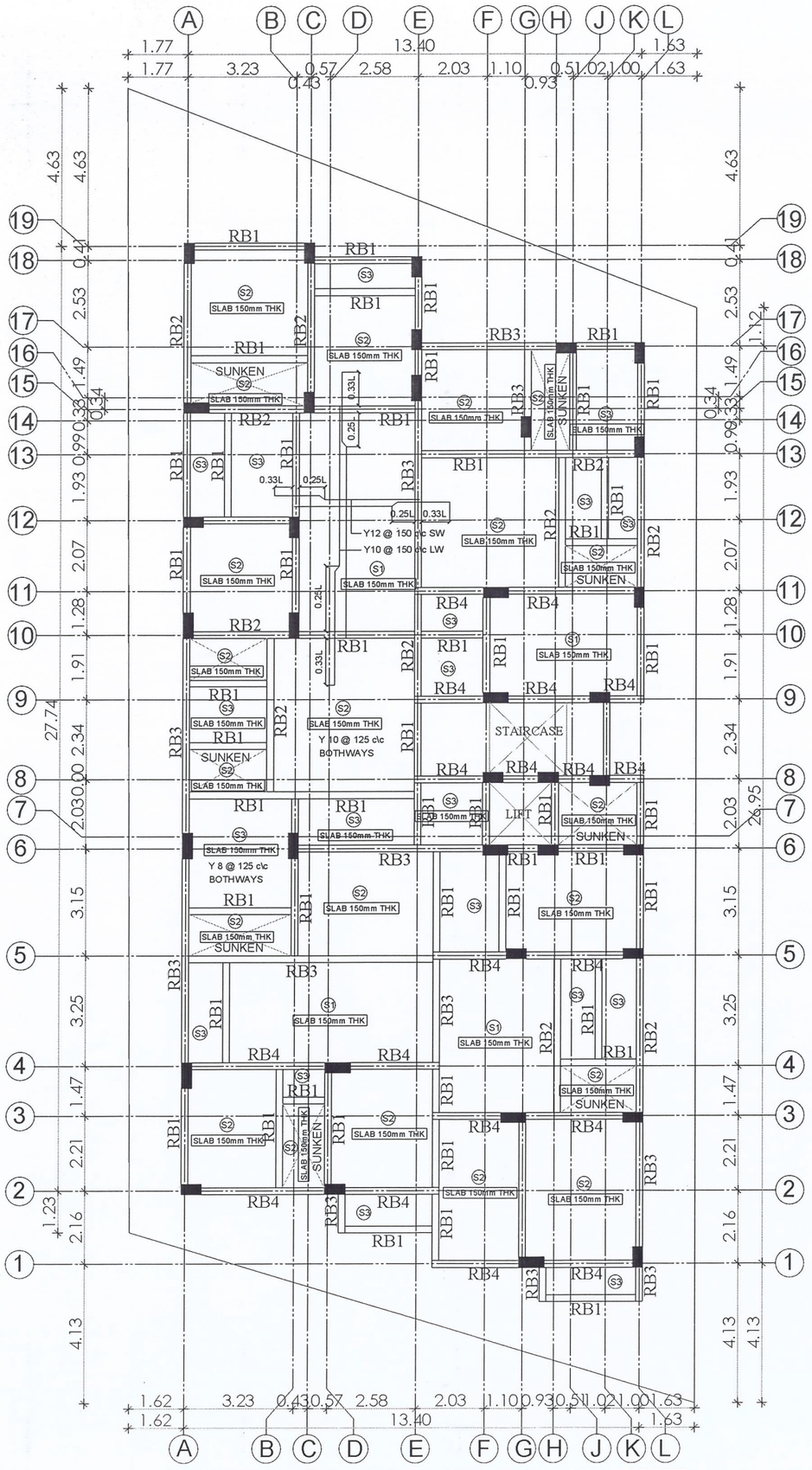
Title:
COLUMN, PILE AND PILE CAP LAYOUT
GRADE BEAM LAYOUT

| Date : | Scale: 1:100 (or) 1" = 4'-0" |
|---|---|
| 21-02-2023 | |

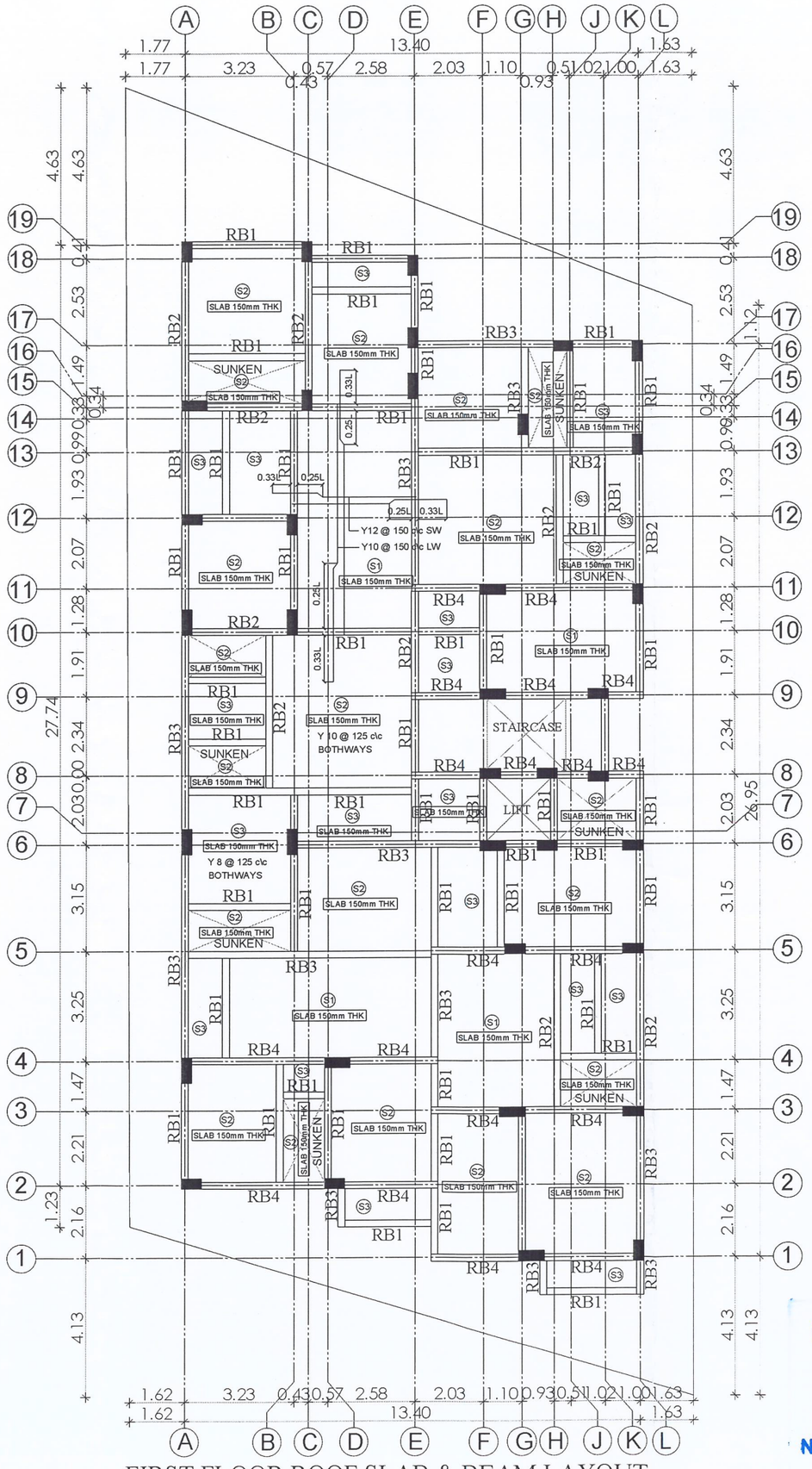
Design : N.Vaideeswaran. M.Tech (Struct.)

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STILT FLOOR ROOF SLAB & BEAM LAYOUT




FIRST FLOOR ROOF SLAB & BEAM LAYOUT

## Notes:

1. This drawing should be read along with architectural drawings.
2. Grade of R.C.C. items shall be **M25 (1:1:2)** by design mix confirming to I.S.456-2000 unless otherwise specified.
3. Y Denotes TOR40 Steel confirming to I.S. 1786 – 1985.
   **Grade - Fe 550**
4. Clear cover to the main steel
   2" for Footings , Raft Beam , Raft Slab.
   1.5" for Columns.
   1" for Plinth beam, Lintel & Beams.
   0.5" for Sunshade & Slab.
5. Lap length shall be 50 d (Max.dia) for all bars.
6. ——— Bottom Reinforcement
7. ——— Top Reinforcement
8. Provide Continuous Chairs to keep the top Reinforcement in position
9. Provide Y8 at 12" as Distribution steel for all top Reinforcement.
10. Spacer Bar to be Provided in Between Two Layers Of Reinforcement of Same Dia at Every 3'-0" C/ C.
11. Not more than 40% of Reinforcement shall be Lapped at any particular Junction.
12. Foundation is designed As per Architectural Drawing.
13. Safe load carrying capacity 60.0 Tone
    Depth of Pile - 5.0m
14. Cantilever props should not be released until the roof is concreted
15. Removal of formworks :
    i) for slabs :
    a. Slabs spanning upto 4.5 m ( 15'-0" ) – 7 days
    b. Slabs spanning over 4.5 m ( 15'-0" ) – 14 days
    ii) for beams and arches :
    c. Beams and arches spanning upto 6 m (20'-0") – 14 days
    d. Beams and arches spanning over 6 m (20'-0") – 21 days
16. For all Window openings 2" Th Sill Plate Should be Provided at Sill Lvl with 12" Bearing on either side of opening.
17. All Reinforcement steel Should be coated with Anti-corrosive Paint before Use
18. Portable drinking water should be used for Complete Structure

**Project :**

PLAN SHOWING THE PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING AT P.NO.10A, CLASIC FARMS 1st STREET, "CLASIC RETREAT" COMPRISED IN S.NO.602/2B15 [AS PER PATTA] OF SHOLINGANALLUR VILLAGE&TALUK, GREATER CHENNAI CORPORATION, ZONE:XV, DIVISION:197

**Title:**

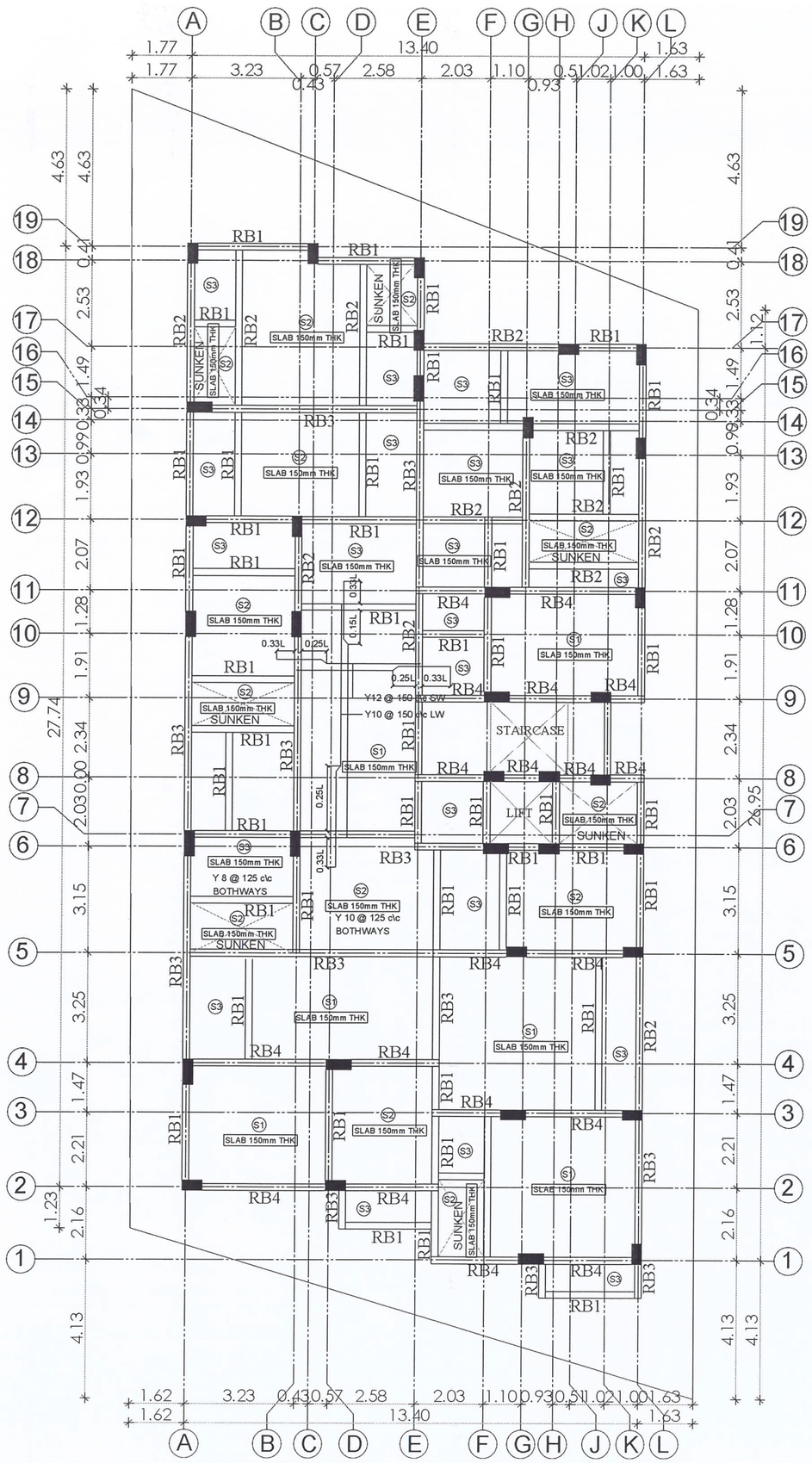
STILT & FIRST FLOOR ROOF SLAB & BEAM LAYOUT

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|---|---|
| 21-02-2023 | |

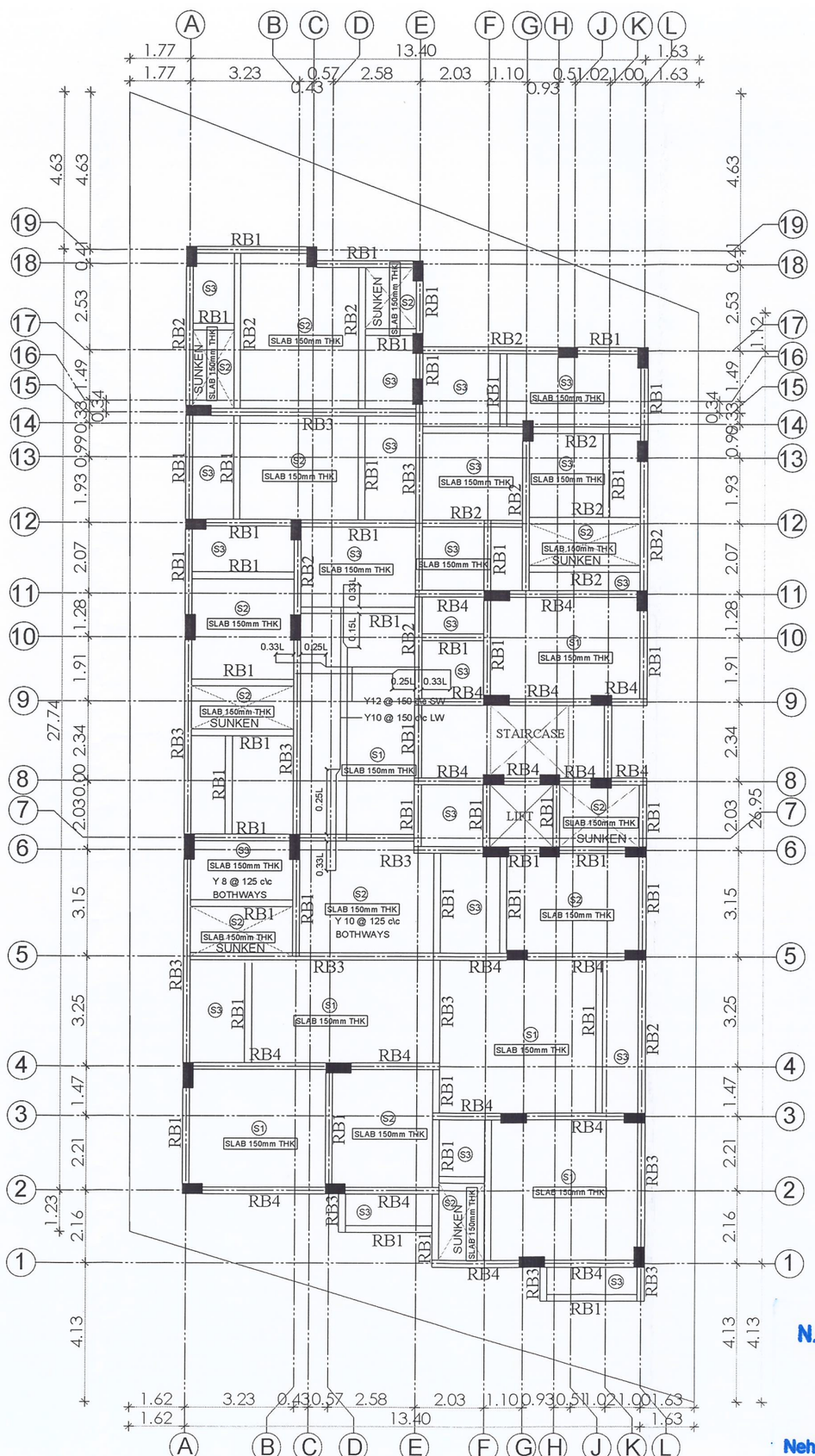
Design : N. Vaideeswaran. M.Tech (Struct.)

STRUCTURAL CONSULTANTS

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SECOND FLOOR ROOF SLAB & BEAM LAYOUT




THIRD FLOOR ROOF SLAB & BEAM LAYOUT

## Notes:

1. This drawing should be read along with architectural drawings.
2. Grade of R.C.C. Items shall be **M25 (1:1:2)** by design mix confirming to I.S.456-2000 unless otherwise specified.
3. Y Denotes TOR40 Steel confirming to I.S. 1786 – 1985. **Grade - Fe 550**
4. Clear cover to the main steel
   2" for Footings , Raft Beam , Raft Slab.
   1.5" for Columns.
   1" for Plinth beam, Lintel & Beams.
   0.5" for Sunshade & Slab.
5. Lap length shall be 50 d (Max.dia) for all bars.
6. ——— Bottom Reinforcement
7. ——— Top Reinforcement
8. Provide Continuous Chairs to keep the top Reinforcement in position
9. Provide Y8 at 12" as Distribution steel for all top Reinforcement.
10. Spacer Bar to be Provided in Between Two Layers Of Reinforcement of Same Dia at Every 3'-0" C/ C.
11. Not more than 40% of Reinforcement shall be Lapped at any particular junction.
12. Foundation is designed As per Architectural Drawing.
13. Safe load carrying capacity 60.0 Tone
    Depth of Pile - 5.0m
14. Cantilever props should not be released until the roof is concreted
15. Removal of formworks :

i) for slabs :

a. Slabs spanning upto 4.5 m ( 15'-0" ) – 7 days
b. Slabs spanning over 4.5 m ( 15'-0" ) – 14 days

ii) for beams and arches :

c. Beams and arches spanning upto 6 m (20'-0") – 14 days
d. Beams and arches spanning over 6 m (20'-0") – 21 days

16. For all Window openings 2" Th Sill Plate Should be Provided at Sill Lvl with 12" Bearing on either side of opening.
17. All Reinforcement steel Should be coated with Anti-corrosive Paint before Use
18. Portable drinking water should be used for Complete Structure

**Project :**

PLAN SHOWING THE PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING AT P.NO.10A, CLASIC FARMS 1st STREET, "CLASIC RETREAT" COMPRISED IN S.NO.602/2B15 [AS PER PATTA] OF SHOLINGANALLUR VILLAGE&TALUK, GREATER CHENNAI CORPORATION, ZONE:XV, DIVISION:197

**Title:**

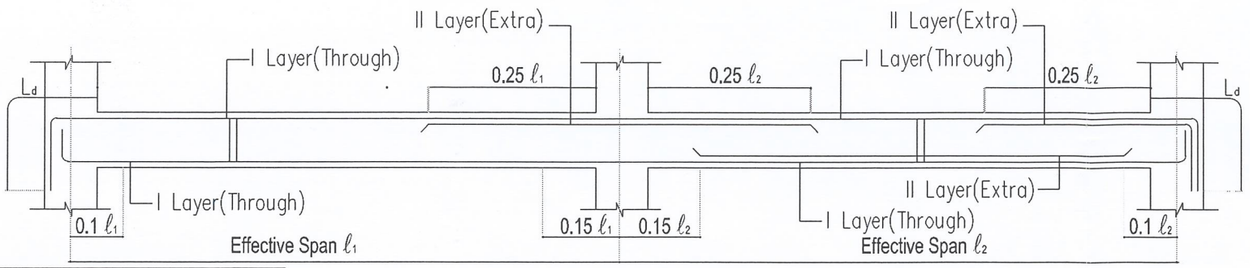
SECOND & THIRD FLOOR ROOF SLAB & BEAM LAYOUT

| Date : | Scale: 1:100 (or) 1" = 4'-0" |
|---|---|
| 21-02-2023 | |

Design : N.Vaideeswaran. M.Tech (Struct.)

STRUCTURAL CONSULTANTS

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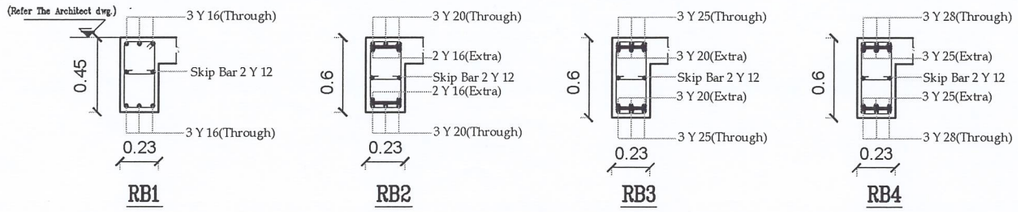



STIRRUPS FOR ALL BEAMS

AT SUPPORT (0.25L) - 8# @ 100 C/C

AT MID SPAN - 8# @ 150 C/C

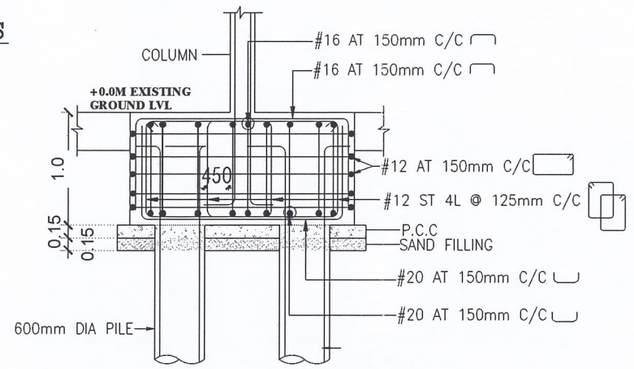
# TYPICAL BEAM DETAILS FOR CONTINUOUS BEAMS



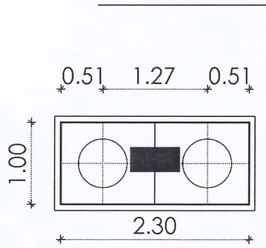

## TYP.C.S OF ROOF BEAMS

## SCHEDULE OF COLUMNS

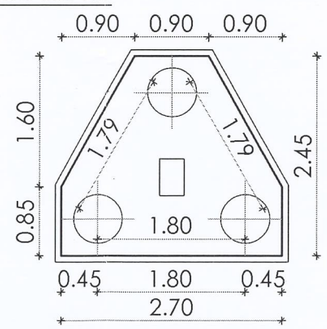
| TYPE | COLUMN MKD. | SHAPE & SIZE | MAIN REINFORCEMENT | TIES & LINKS |
|---|---|---|---|---|
| C1 | REFER LAYOUT | 375 × 230 | 8–#16 | #8 AT 150 C/C |
| C2 | REFER LAYOUT | 600 × 300 | 6–#25<br>4–#20 | #8 AT 125 C/C |
| C3 | REFER LAYOUT | 750 × 300 | 12–#25 | #8 AT 100 C/C |



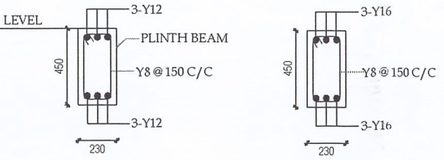

SECTION OF PC1 &PC2




PILE CAP -PC1



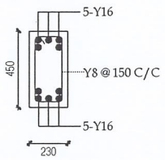

PILE CAP -PC2



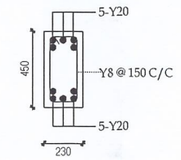

C.S OF PB1



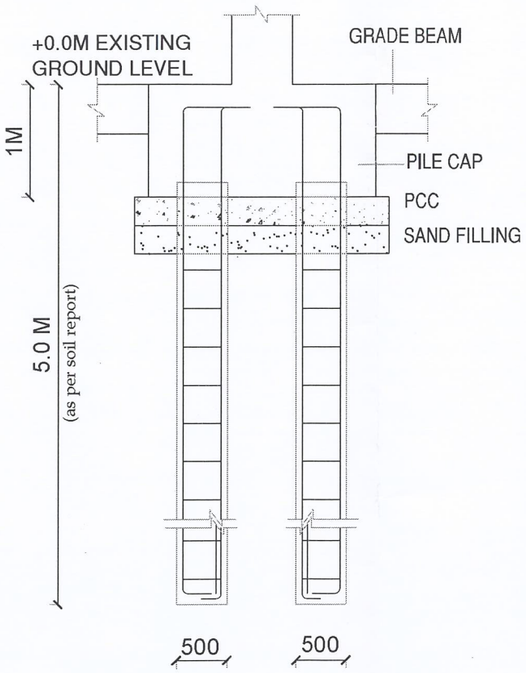

C.S OF PB2



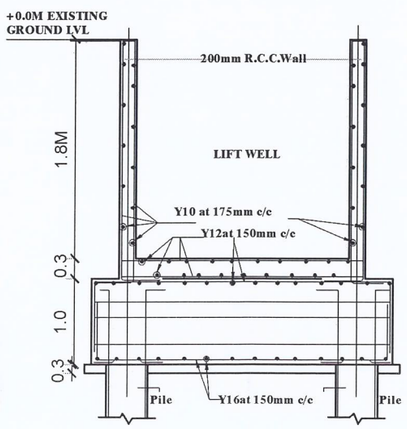

C.S OF PB3



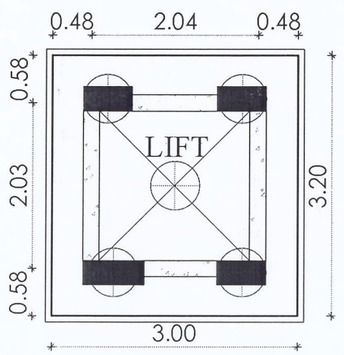

C.S OF PB4



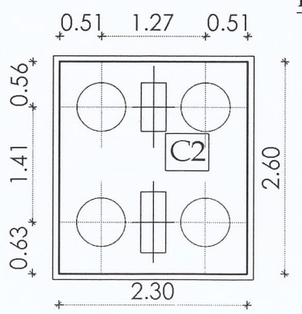

TYPICAL L.S OF PILE DETAIL



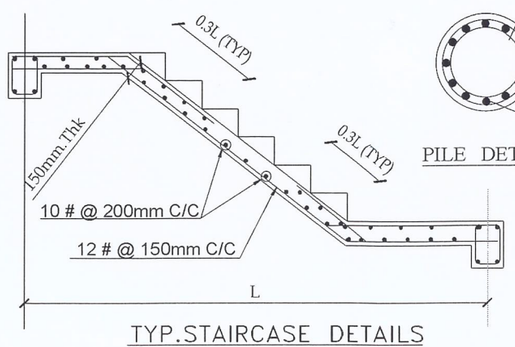

SECTION DETAILS FOR LIFT WELL
PILE CAP -PC3



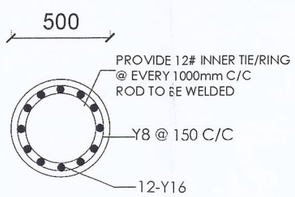

PILE CAP -`PC4'




PILE CAP -`PC3'




TYP.STAIRCASE DETAILS




PILE DETAILS

## Notes:

1. This drawing should be read along with architectural drawings.
2. Grade of R.C.C. Items shall beM25 (1:1:2) by design mix confirming to I.S.456–2000 unless otherwise specified.
3. Y Denotes TOR40 Steel confirming to I.S. 1786 – 1985. Grade - Fe 500
4. Clear cover to the main steel
   2" for Footings , Raft Beam , Raft Slab.
   1.5" for Columns.
   1" for Plinth beam, Lintel & Beams.
   0.5" for Sunshade & Slab.
5. Lap length shall be 50 ϕ (Max.dia) for all bars.
6. ——— Bottom Reinforcement
7. ——— Top Reinforcement
8. Provide Continuous Chairs to keep the top Reinforcement in position.
9. Provide Y8 at 12" as Distribution steel for all top Reinforcement.
10. Spacer Bar to be Provided in Between Two Layers Of Reinforcement of Same Dia at Every 3'-0" C/ C.
11. Not more than 40% of Reinforcement shall be Looped at any particular junction.
12. Foundation is designed As per Architectural Drawing.
13. Safe load carrying capacity 60.0 tone
    Depth of Pile - 5.0m
14. Cantilever props should not be released until the roof is concreted.
15. Removal of formworks :
    i) for slabs :
    a. Slabs spanning upto 4.5 m ( 15'-0" ) – 7 days
    b. Slabs spanning over 4.5 m ( 15'-0" ) – 14 days
    ii) for beams and arches :
    c. Beams and arches spanning upto 6 m (20'-0") – 14 days
    d. Beams and arches spanning over 6 m (20'-0") – 21 days
16. For all Window openings 2" Th Sill Plate Should be Provided at Sill Lv with 12" Bearing on either side of opening
17. All Reinforcement steel Should be coated with Anti-corrosive Paint before Use
18. Portable drinking water should be used for Complete Structure

Project :

PLAN SHOWING THE PROPOSED CONSTRUCTION OF A RESIDENTIAL BUILDING AT P.NO.10A, CLASIC FARMS 1st STREET, "CLASIC RETREAT" COMPRISED IN S.NO.602/2B15 [AS PER PATTA] OF SHOLINGANALLUR VILLAGE&TALUK, GREATER CHENNAI CORPORATION, ZONE:XV, DIVISION:197

Title:
COLUMN, PILE, PILE CAP LAYOUT, PLINTH BEAM AND ROOF BEAM LAYOUT

Date : 21-03-2023

Scale: 1:100 (or) 1" = 4'-0"

Design : N.Vaideeswaran. M.Tech (Struct.)

STRUCTURAL CONSULTANTS


N.VAIDEESWARAN.M.Tech (Struct)
Structural Engineer
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