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**Office of the Chief Engineer,**
**Tamil Nadu Urban Habitat**
**Development Board,**
**# 5, KamarajarSalai, Chennai -5.**

**Memo.No. TNUHDB/SQC/6281/2023** **Dated:31.08.2023.**

**MEMO**

Sub: TNUHDB – Madurai Division – Construction of 396 tenements (S+9) storeyed at Subramaniyapuram – Structural design – Approval – Reg.

Ref: 1) Lr.No.773/AE(P)/2013, Dt:14.06.2022.
2) Soil Investigation report done by University College of Engineering, Dindigul.

---

The structural drawings for the Construction of 396 tenements (S+9) storeyed at Subramaniyapuram has been prepared and the approved drawings are communicated herewith for adoption at site.

In this connection, the precautions laid by the Soil and Structural Consultant in the above references should be followed without fail. Also,

1. Ductile detailing as per IS 13920: 2016 should be followed.
2. The quality of water to be used for construction has to be tested as per IS codes and if necessary precautionary measures have to be taken based on the test results.
3. Any change in soil strata observed during execution has to be reported to the higher authorities/ Soil Consultant immediately for review.
4. The testing of materials used for construction, frequency of testing, maintenance of documents at site, engagement of technical personnel etc should be as per the circulars issued from this office.

5. In case of, any clarifications in the issued drawings, it is requested to contact the undersigned and get it clarified before execution.
6. The Cover to the reinforcements, grade of concrete, grade of steel, mix design of concrete, water used for constructions and all other parameters, construction sequence for the monolithic construction etc, should satisfy the Circular Instructions, Codal requirements etc, in the interest of the Board.
7. AAC Blocks are considered for main and partition walls for superstructure and fly ash bricks are considered for substructure in the structural analysis and design.
8. All the drawings should be read along with the Master layout drawing No:TNUHDB/SUBRAMANIYAPURAM/GEN/04.

**Encl:** DWG.NO: 1) TNUHDB/ SUBRAMANIYAPURAM/PART 1/01-21
2) TNUHDB/ SUBRAMANIYAPURAM/PART 2/01-14
3) TNUHDB/ SUBRAMANIYAPURAM/GEN/01-04

31.8.23

**for Chief Engineer**

**To**

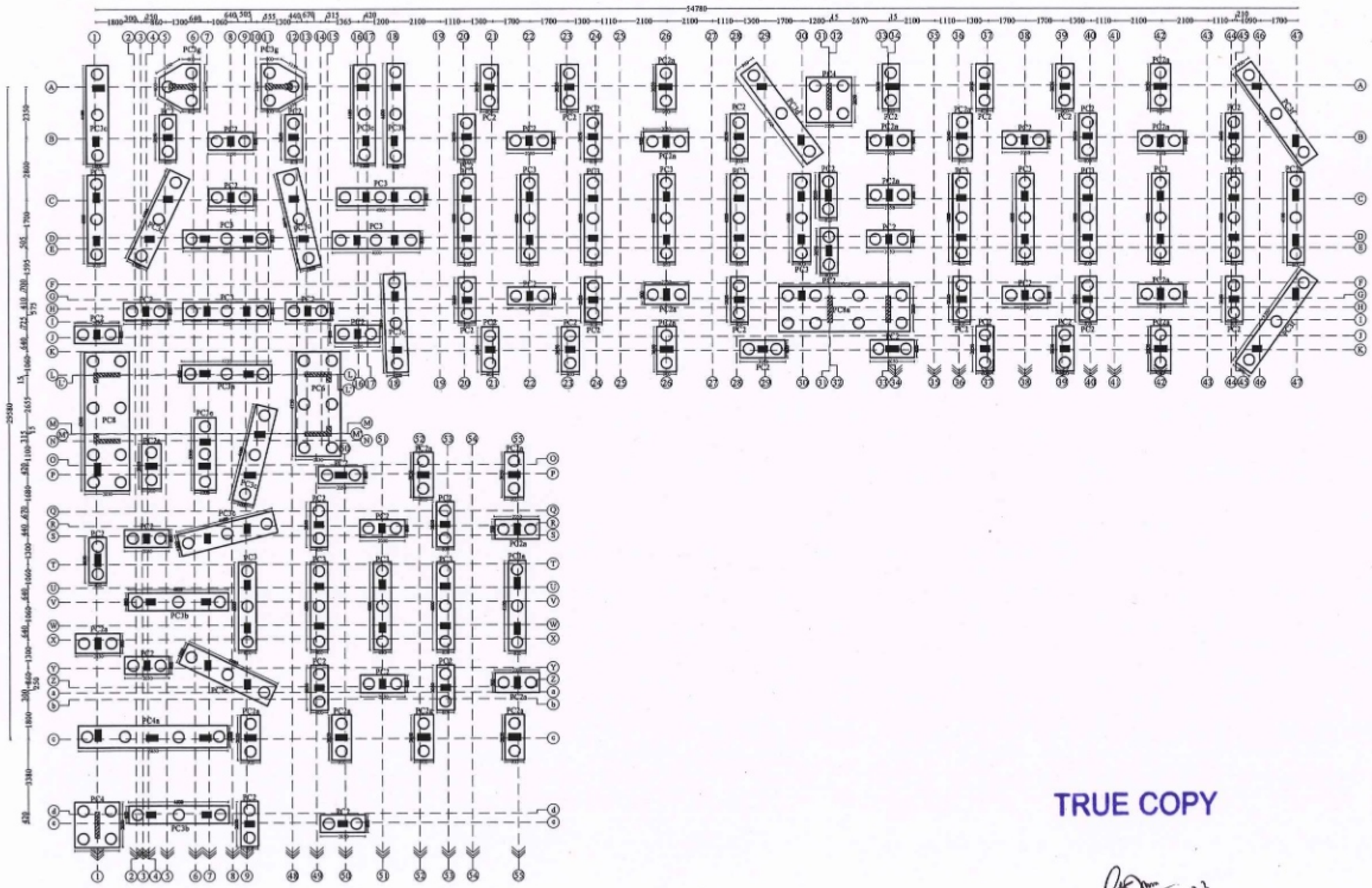
1) The Executive Engineer,
Madurai Division/TNUHDB (w.e).

31/08/23

**Copy To:**

1) The Superintending Engineer,
South Circle/TNUHDB.

# PILE AND PILE CAP LAYOUT



**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PILE AND PILE CAP LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 01.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

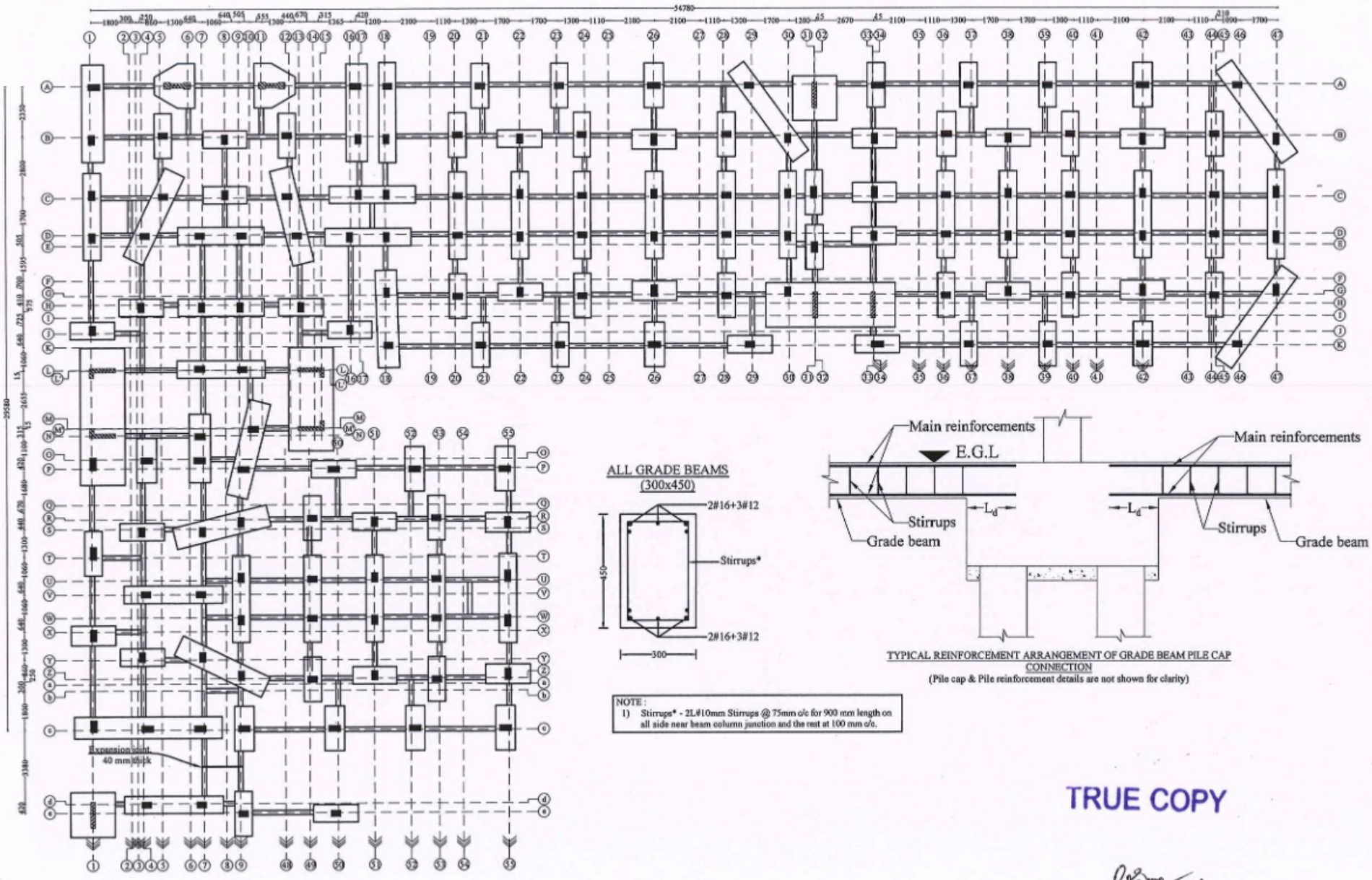
TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

# GRADE BEAM WITH PILE CAP LAYOUT & DETAILS




ALL GRADE BEAMS
(300x450)




NOTE :
1) Stirrups* - 2L#10mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 100 mm c/c.




TYPICAL REINFORCEMENT ARRANGEMENT OF GRADE BEAM PILE CAP CONNECTION
(Pile cap & Pile reinforcement details are not shown for clarity)

TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

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10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
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    (d) Slab - 25 mm
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## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
GRADE BEAM WITH PILE CAP LAYOUT & DETAILS.

TYPE DESIGN NO.: 22/2021

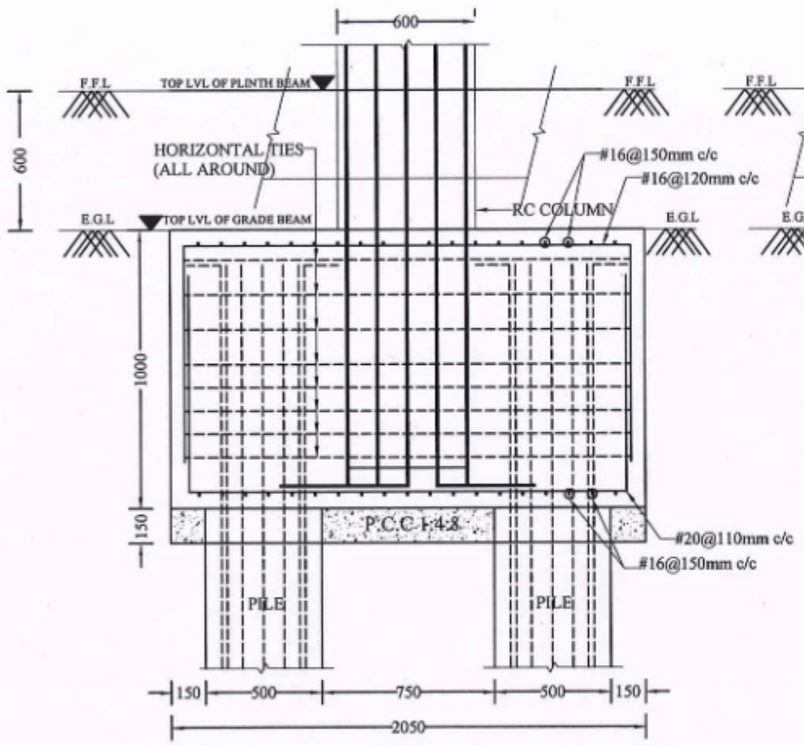
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 02.

REVISION NO.:

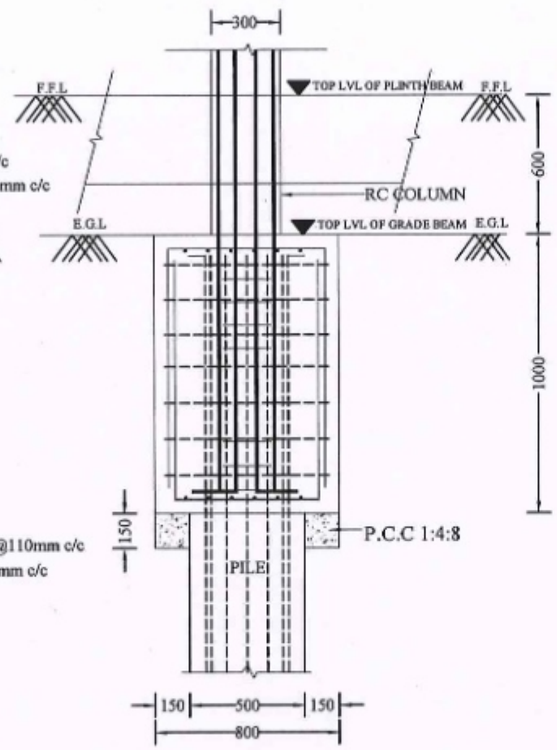
| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

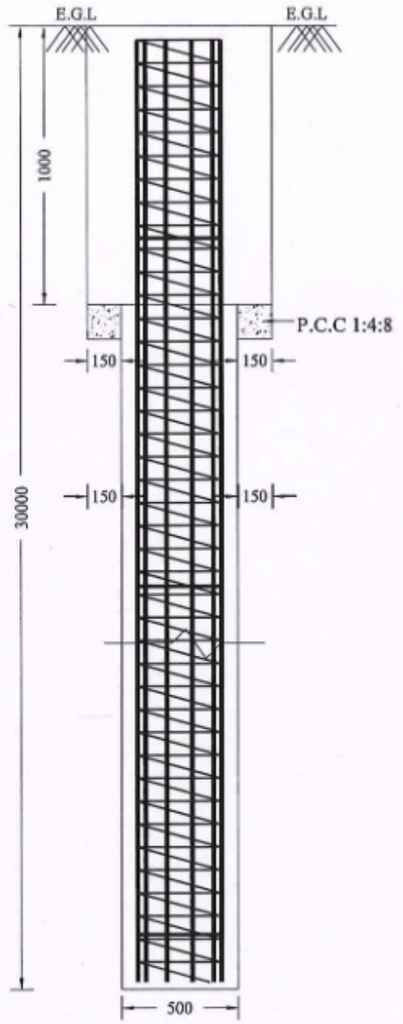
# PILE CAP CROSS SECTIONAL DETAILS (TYPICAL) & DETAILS OF PILE.



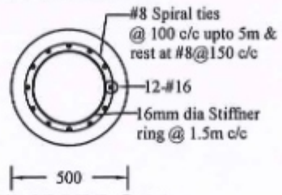

TYPICAL LONGITUDINAL SECTION




TYPICAL CROSS SECTIONAL




DETAILS OF PILE




C/S OF PILE @ AA
DETAILS OF TYPICAL PILE

TRUE COPY

31-8-22
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.
31/08/23

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## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PILE CAP CROSS SECTIONAL DETAILS(TYPICAL) & DETAILS OF PILE.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 03.

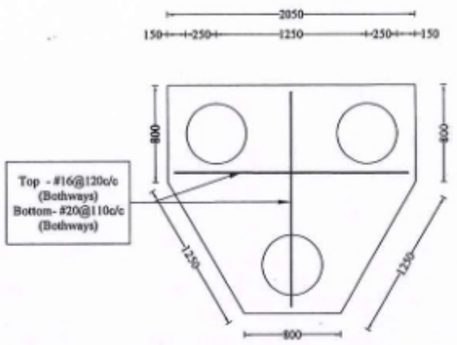
REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

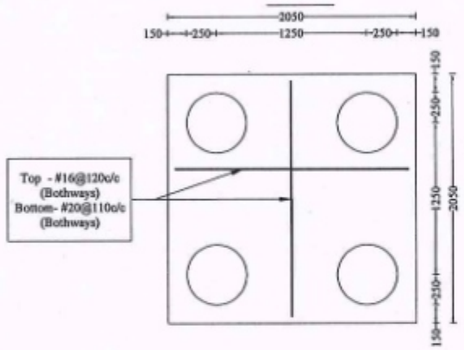
**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# PILE CAP DETAILS

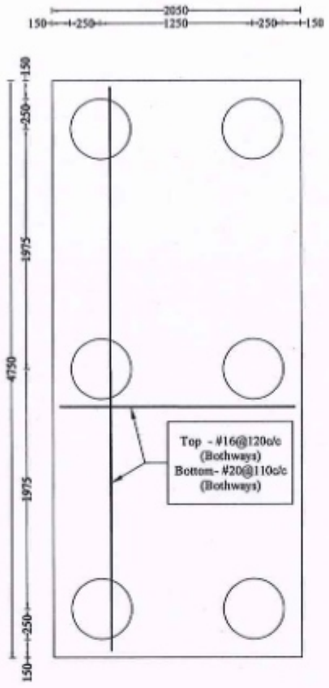
## PC3g



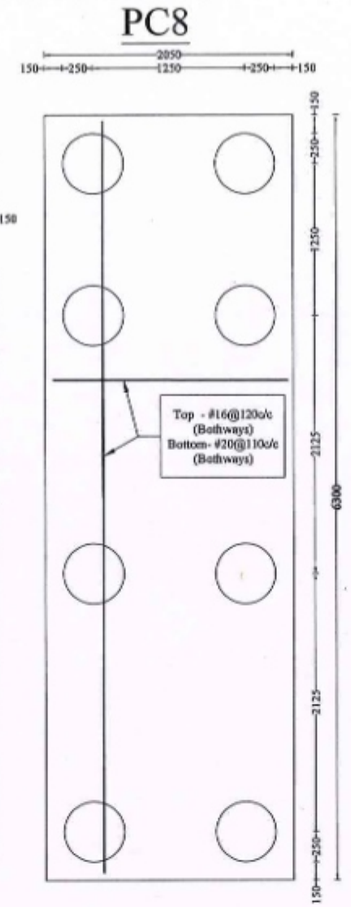

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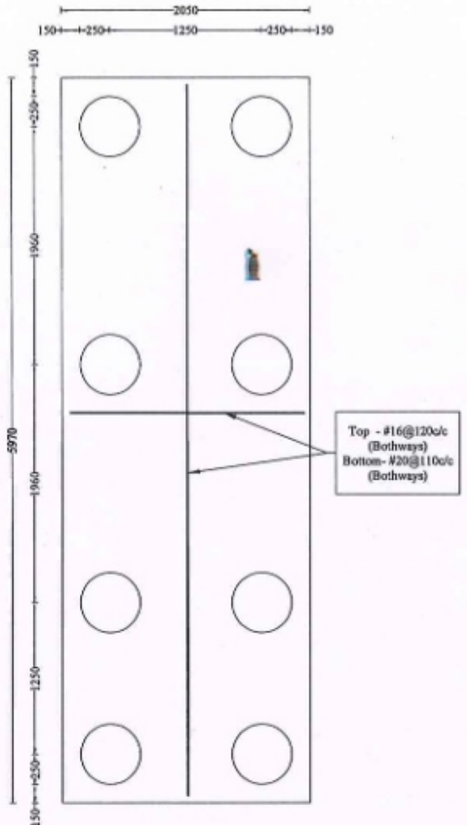

## PC6



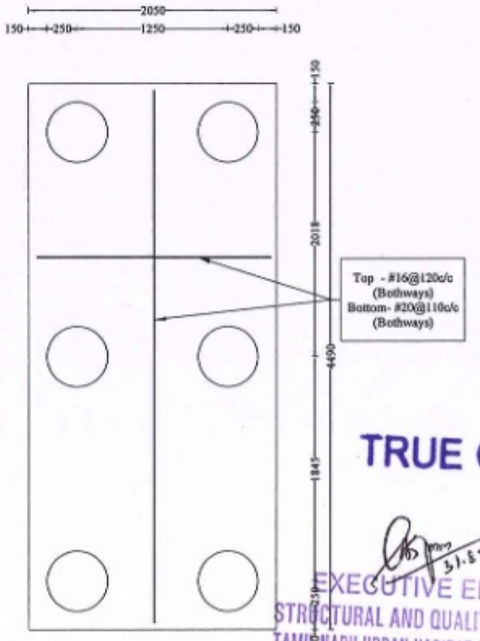

## PC8




## PC8a




## PC6a




**PILE CAP SCHEDULE**

| PILE CAP ID | SIZE (mm) | DEPTH (mm) | REINFORCEMENT DETAILS @ TOP LONGITUDINAL | REINFORCEMENT DETAILS @ BOTTOM LONGITUDINAL | REINFORCEMENT DETAILS @ TRANSVERSE | BURSTING REINFORCEMENT |
|---|---|---|---|---|---|---|
| PC2 | 2050x800 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC2a | 2050x900 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3 | 4000x800 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3a | 4100x800 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3b | 4600x800 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3c | 4480x1000 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3d | 5060x900 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3e | 3300x1000 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3f | 5200x900 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC3g | Refer Drawing | 1000 | Refer Drawing | Refer Drawing | Refer Drawing | #12 @150c/c |
| PC4 | 2050x2050 | 1000 | Refer Drawing | Refer Drawing | Refer Drawing | #12 @150c/c |
| PC4a | 6850x1000 | 1000 | #16 @120c/c | #20 @110c/c | #16 @150c/c | #12 @150c/c |
| PC6 | 4750x2050 | 1000 | Refer Drawing | Refer Drawing | Refer Drawing | #12 @150c/c |
| PC6a | 4490x2050 | 1000 | Refer Drawing | Refer Drawing | Refer Drawing | #12 @150c/c |
| PC8 | 6300x2050 | 1000 | Refer Drawing | Refer Drawing | Refer Drawing | #12 @150c/c |
| PC8a | 5970x2050 | 1000 | Refer Drawing | Refer Drawing | Refer Drawing | #12 @150c/c |

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**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PILE CAP DETAILS.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 04.

REVISION NO.:

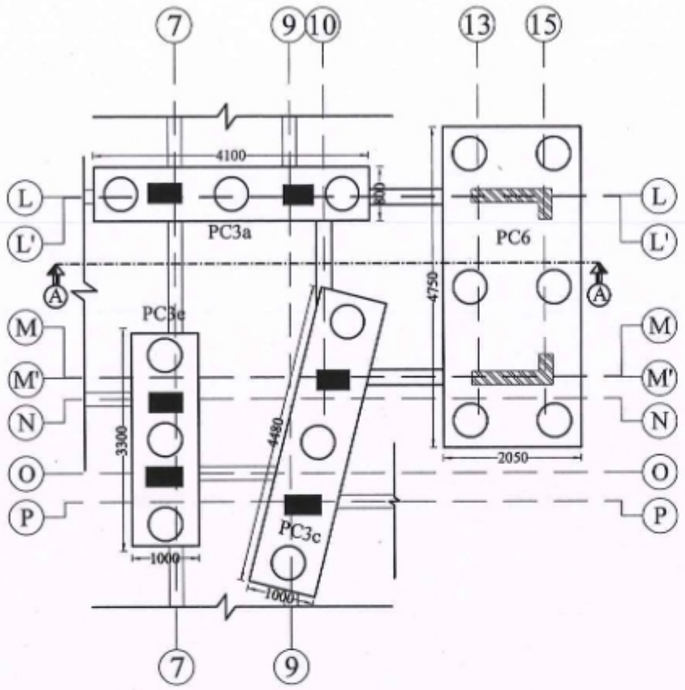
| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx. SE - South** | **Sd.xxxx 31.08.2023. CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

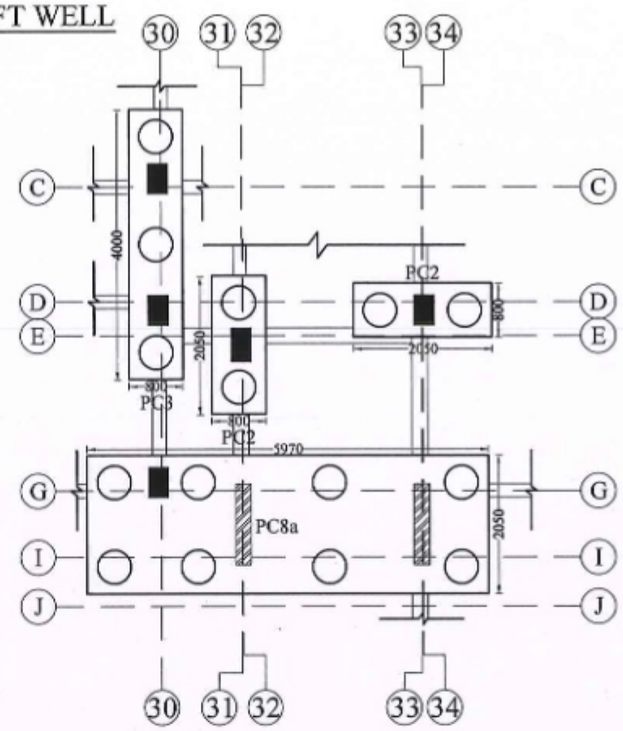
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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMILNADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

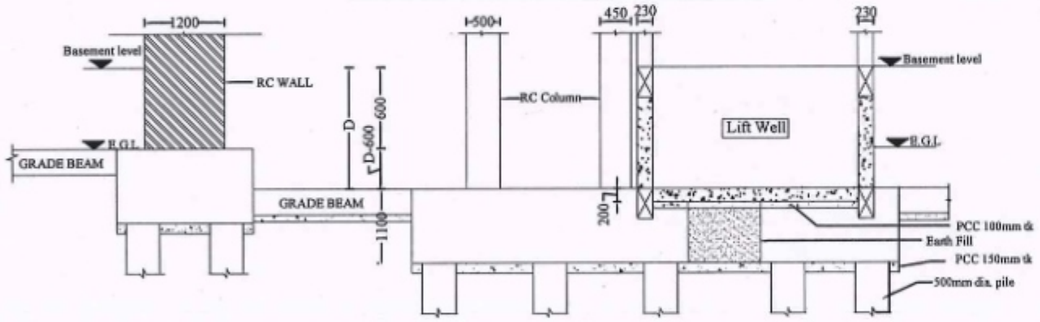
# LAYOUT AND RC DETAILS OF LIFT WELL




GENERAL PILECAP & GRADE BEAM LAYOUT
BELOW THE LIFT PIT AREA - LIFT 1

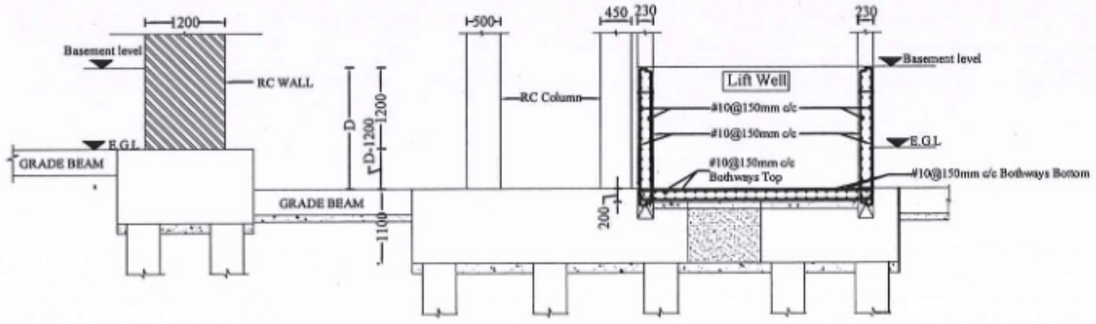



GENERAL PILECAP & GRADE BEAM LAYOUT
BELOW THE LIFT PIT AREA - LIFT 2

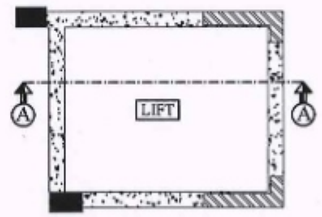



SECTION ON A-A (GENERAL ARRANGEMENT)

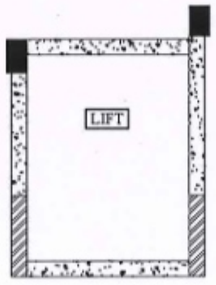
NOTE:
* D - Depth of lift pit below basement level should be confirmed with manufacturer. Any deviation from drawing should be confirmed with structural consultant.




SECTION ON A-A (REINFORCEMENT DETAILS)




PLAN OF LIFT 1 WELL -TYPICAL




PLAN OF LIFT 2 WELL -TYPICAL

TRUE COPY

31-8-23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
LAYOUT AND RC DETAILS OF LIFT WELL.

TYPE DESIGN NO.: 22/2021

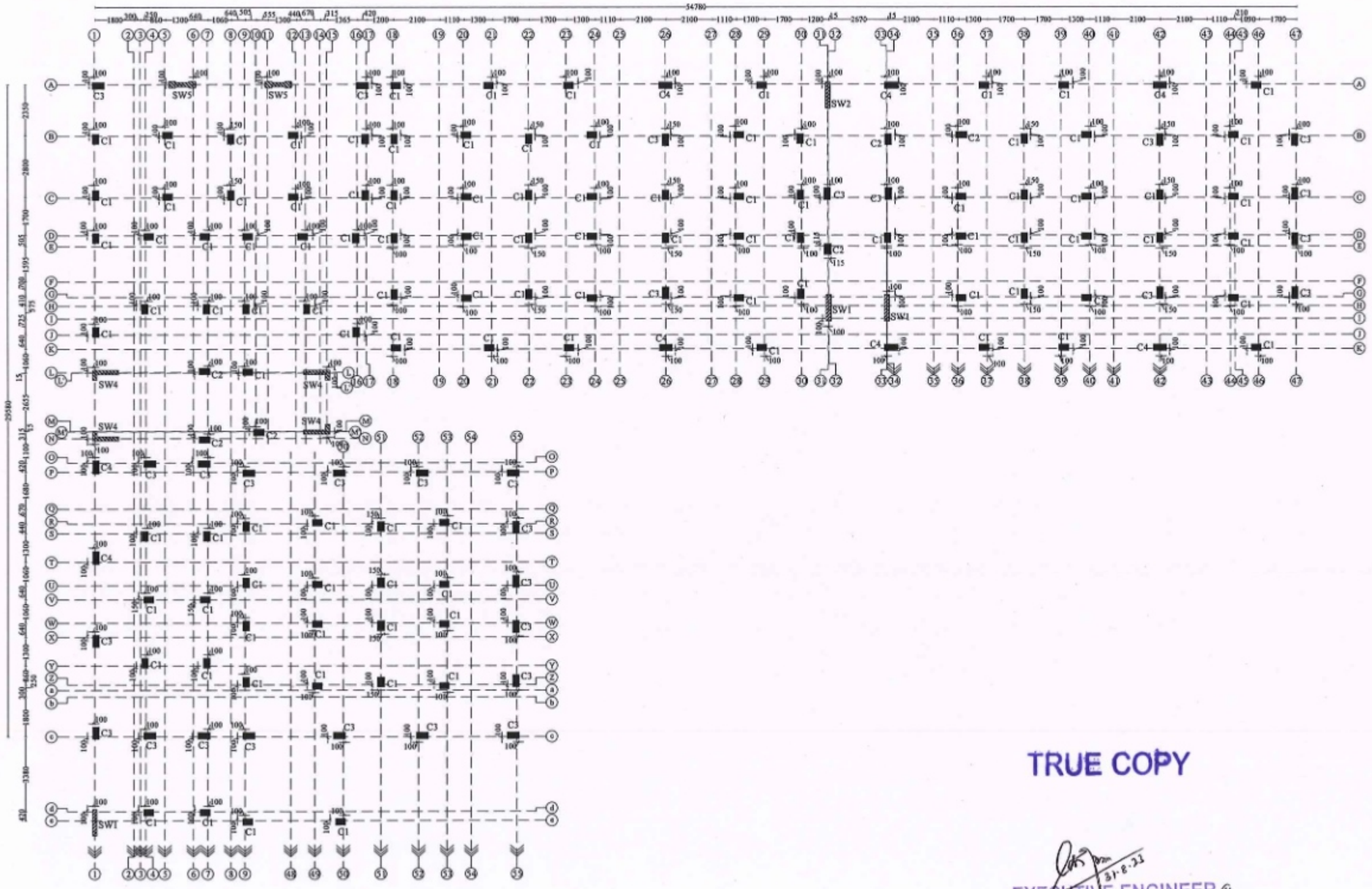
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 05.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# COLUMN LAYOUT



**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
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3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
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## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
COLUMN LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 06.

REVISION NO.:

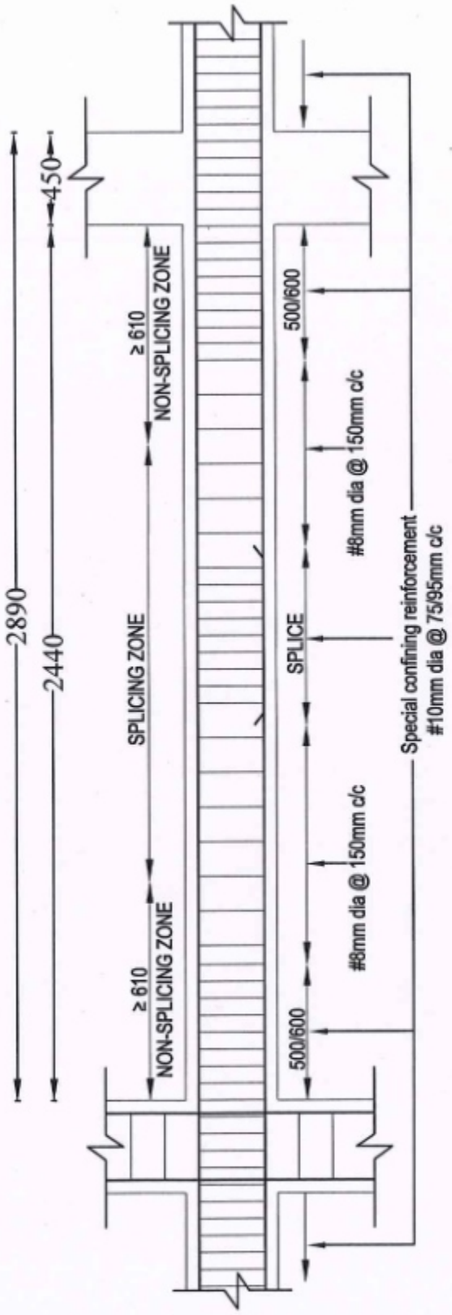
| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

TRUE COPY

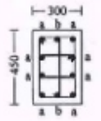
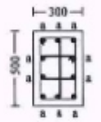
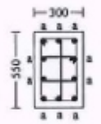
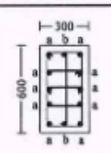
31.8.23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23




**TYPICAL COLUMN SPLICING AND CONFINING REINFORCEMENT DETAILS**

## SCHEDULE OF COLUMNS

| Sl. No. | Column Marking | No. of Columns | | Size (mm x mm) | Column Verticals | Lateral Ties | Cross Section | Ties Profile | |
|---|---|---|---|---|---|---|---|---|---|
| | | Part - A | Part - B | | | | | | |
| 1. | C1 | 103 | 113 | 300 x 450 | #16 - 8 Nos + #12 - 2 Nos | 1) Upto Plinth Beam: # 10 @ 75 mm c/c 2) Above Plinth Beam: # 10 @ 75 mm c/c for 500 mm at top and bottom near beam - column junction and the rest #8 @ 150mm c/c |  |  |  |
| 2. | C2 | 06 | 06 | 300 x 500 | #16 - 10 Nos | 1) Upto Plinth Beam: # 10 @ 95 mm c/c 2) Above Plinth Beam: # 10 @ 95 mm c/c for 500 mm at top and bottom near beam - column junction and the rest #8 @ 150mm c/c |  |  |  |
| 3. | C3 | 30 | 24 | 300 x 550 | #16 - 10 Nos | 1) Upto Plinth Beam: # 10 @ 95 mm c/c 2) Above Plinth Beam: # 10 @ 95 mm c/c for 600 mm at top and bottom near beam - column junction and the rest #8 @ 150mm c/c |  |  |  |
| 4. | C4 | 08 | 06 | 300 x 600 | #16 - 10 Nos + #12 - 2 Nos | 1) Upto Plinth Beam: # 10 @ 75 mm c/c 2) Above Plinth Beam: # 10 @ 75 mm c/c for 600 mm at top and bottom near beam - column junction and the rest #8 @ 150mm c/c |  |  |  |

Notes: In Cross Section a - # 16 mm b - # 12 mm

TRUE COPY

31-8-23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

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## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
SCHEDULE OF COLUMNS.

TYPE DESIGN NO.: 22/2021

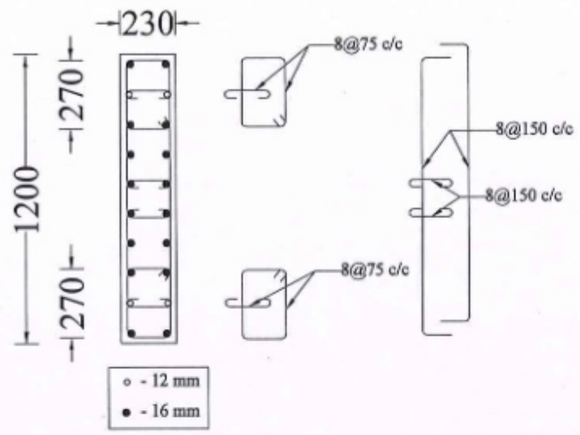
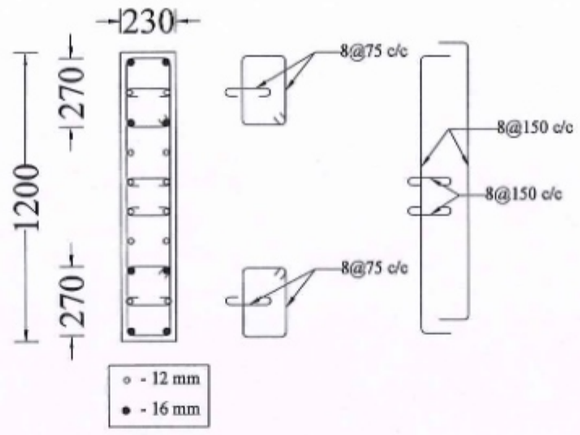
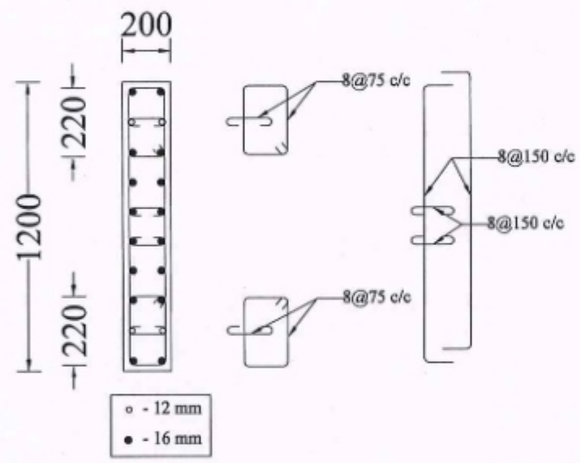
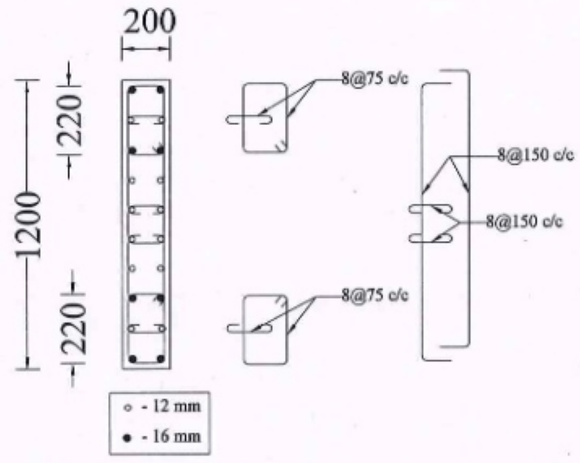
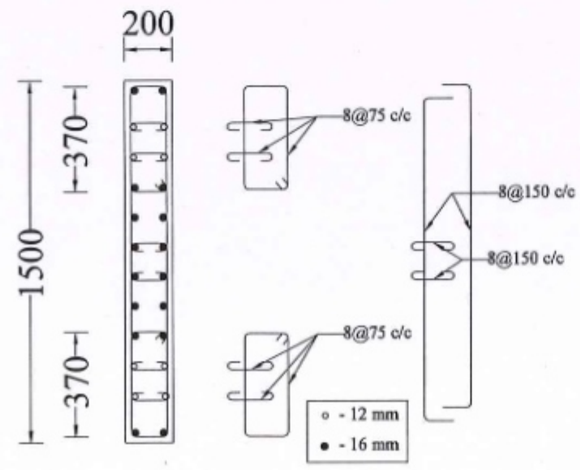
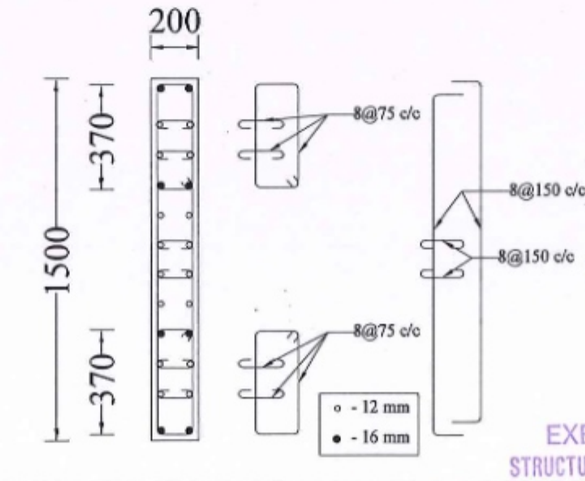
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / 07.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx. SE - South** | **Sd.xxxx 31.08.2023. CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# SHEAR WALL 1, 2 & 3 REINFORCEMENT DETAILS

| Wall No. | Grade level to 5th floor level | 5th floor level to terrace level |
|---|---|---|
| SW1 |  |  |
| SW2 |  |  |
| SW3 |  |  |

Notes: Shear Wall reinforcement lapping should be done at the mid of the floor height.

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
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**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
SHEAR WALL 1, 2 & 3 REINFORCEMENT DETAILS

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / 08.

REVISION NO.:

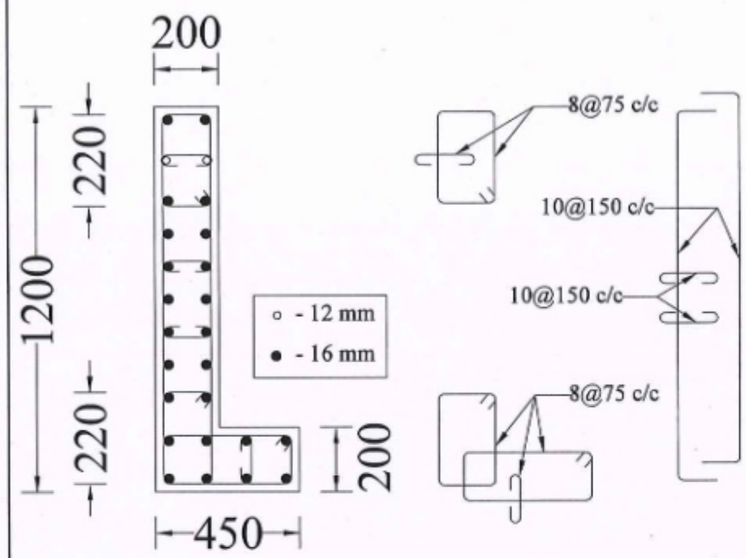
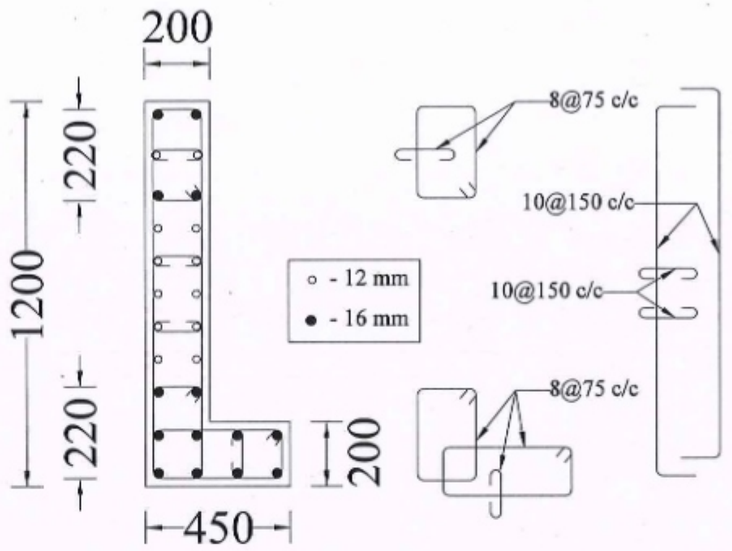
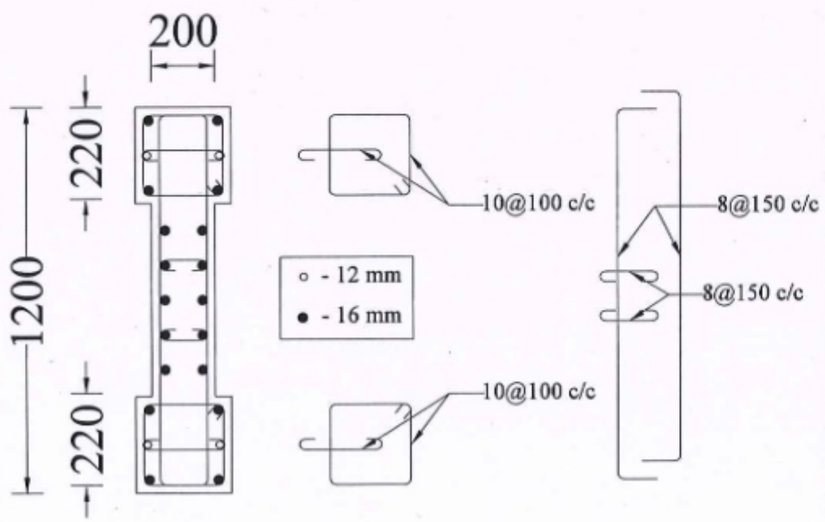
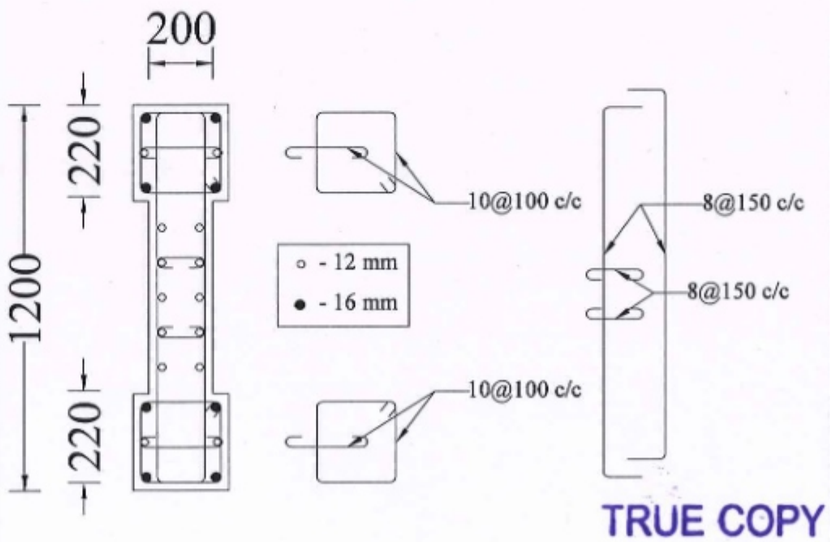
| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

# SHEAR WALL 4 & 5 REINFORCEMENT DETAILS

| Wall No. | Grade level to 5th floor level | 5th floor level to terrace level |
|---|---|---|
| SW4 |  |  |
| SW5 |  |  |

Notes: Shear Wall reinforcement lapping should be done at the mid of the floor height.

**NOTE :**

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8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
SHEAR WALL 4 & 5 REINFORCEMENT DETAILS

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / 09.

REVISION NO.:

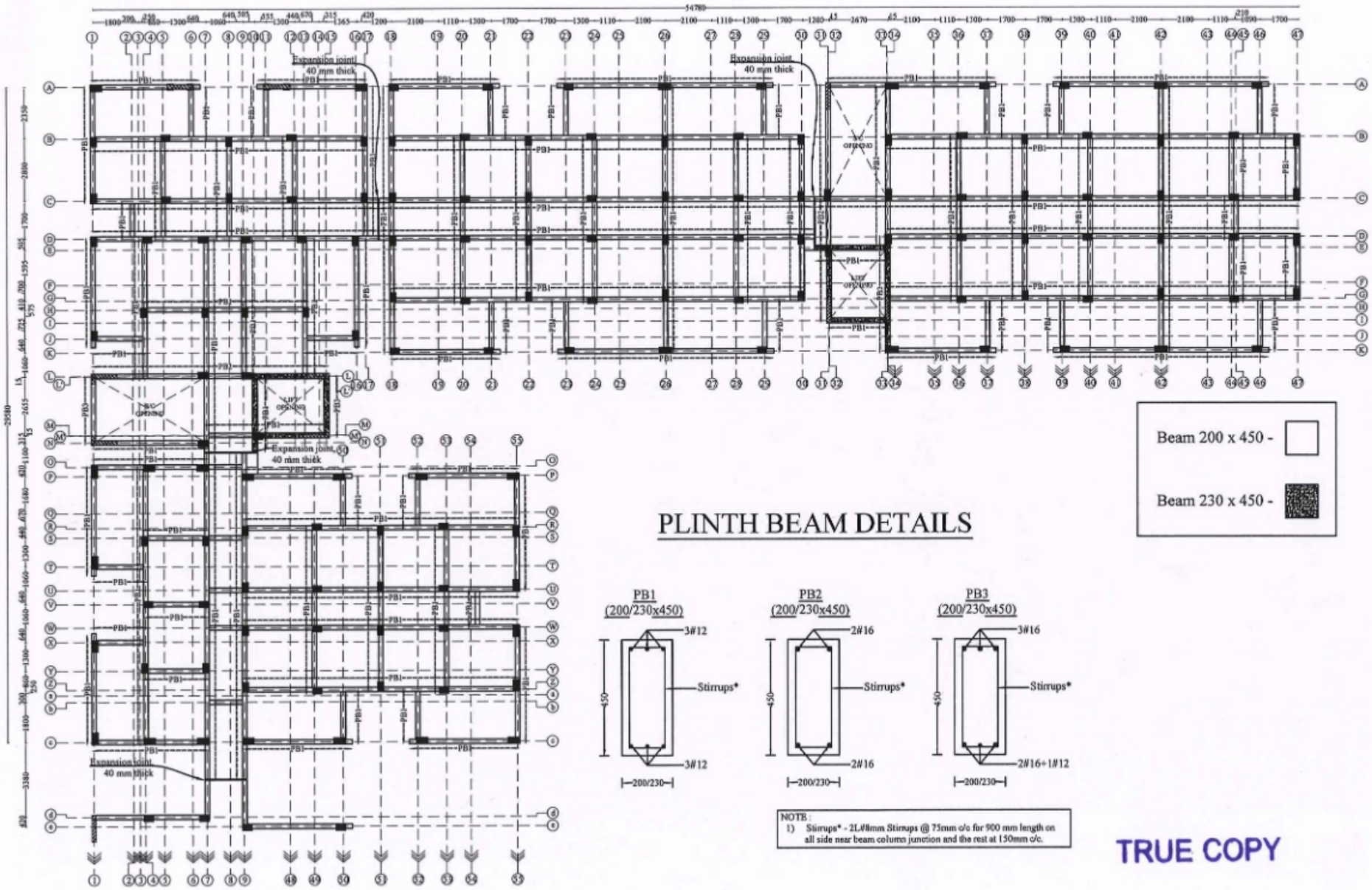
| | |
|---|---|
| Assistant Engineer | Asst. Exe. Engineer |
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

# PLINTH BEAM LAYOUT & DETAILS




Beam 200 x 450 -

Beam 230 x 450 -

## PLINTH BEAM DETAILS




NOTE :
1) Stirrups* - 2L@8mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 150mm c/c.

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PLINTH BEAM LAYOUT & DETAILS.

TYPE DESIGN NO.: 22/2021

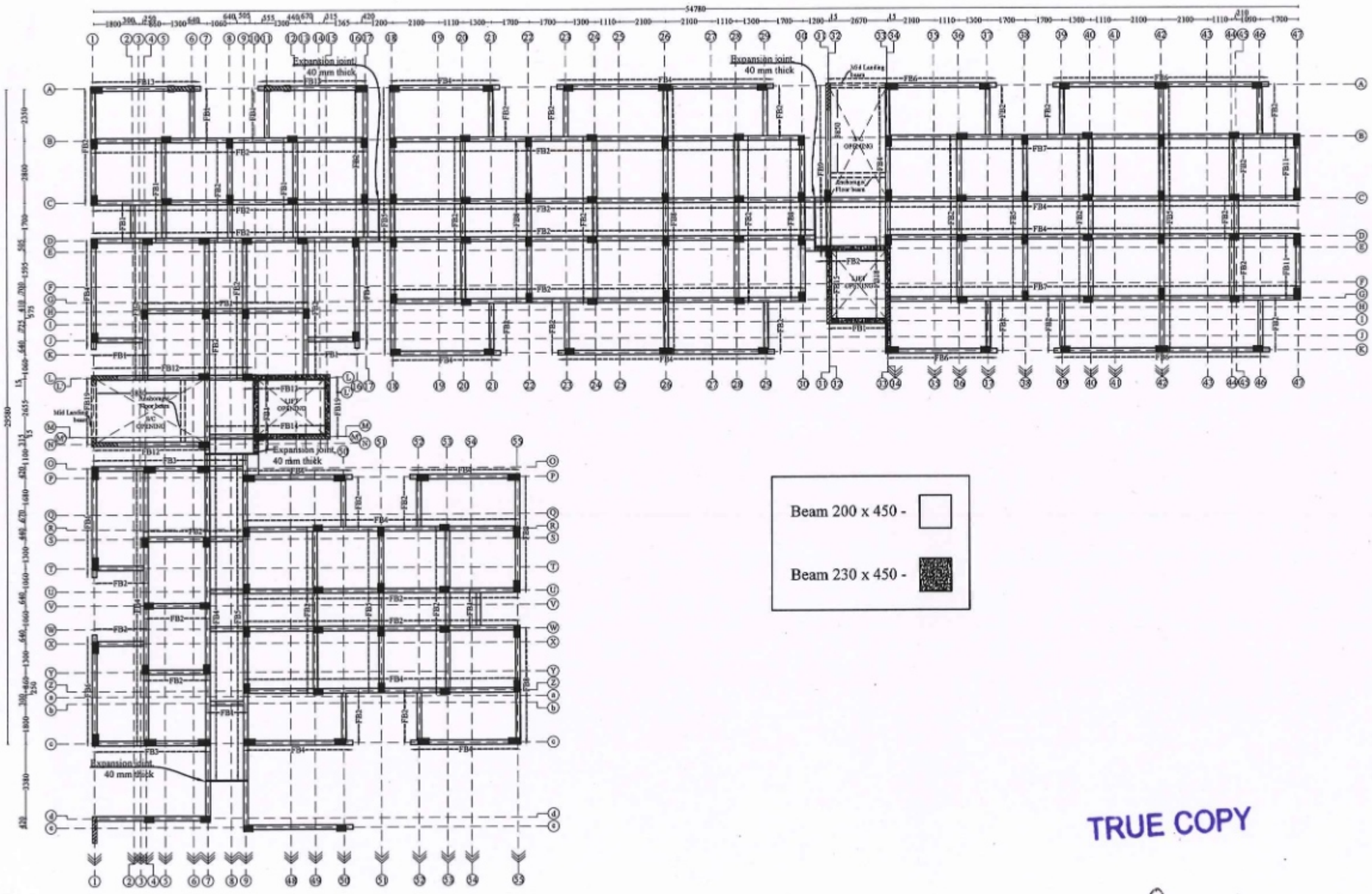
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 10.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# STILT, FIRST & SECOND FLOOR BEAM LAYOUT




Beam 200 x 450 -

Beam 230 x 450 -

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
STILT, FIRST & SECOND FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

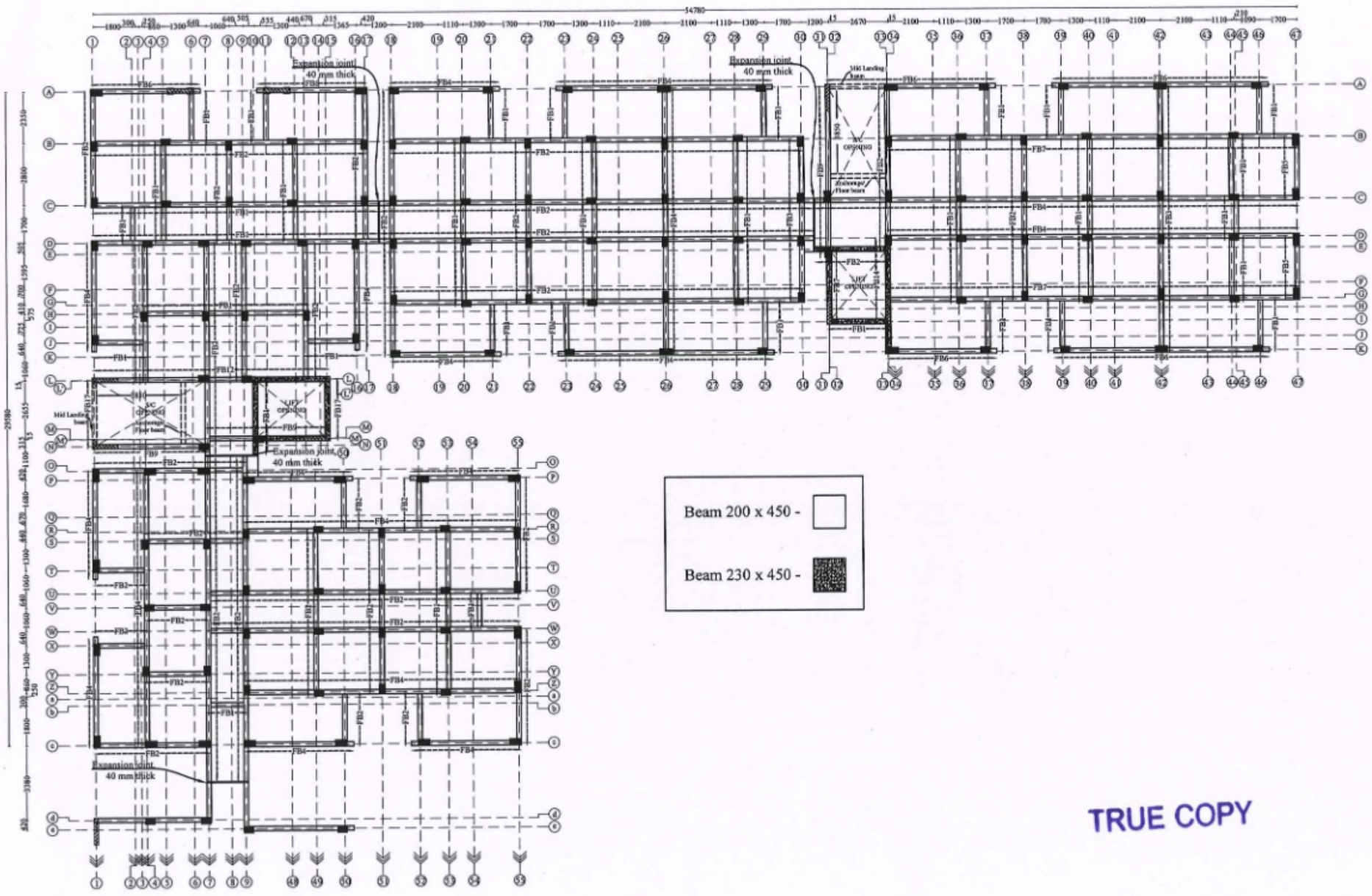
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 11.

REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL.
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

# THIRD & FOURTH FLOOR BEAM LAYOUT




**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
THIRD & FOURTH FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 12.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

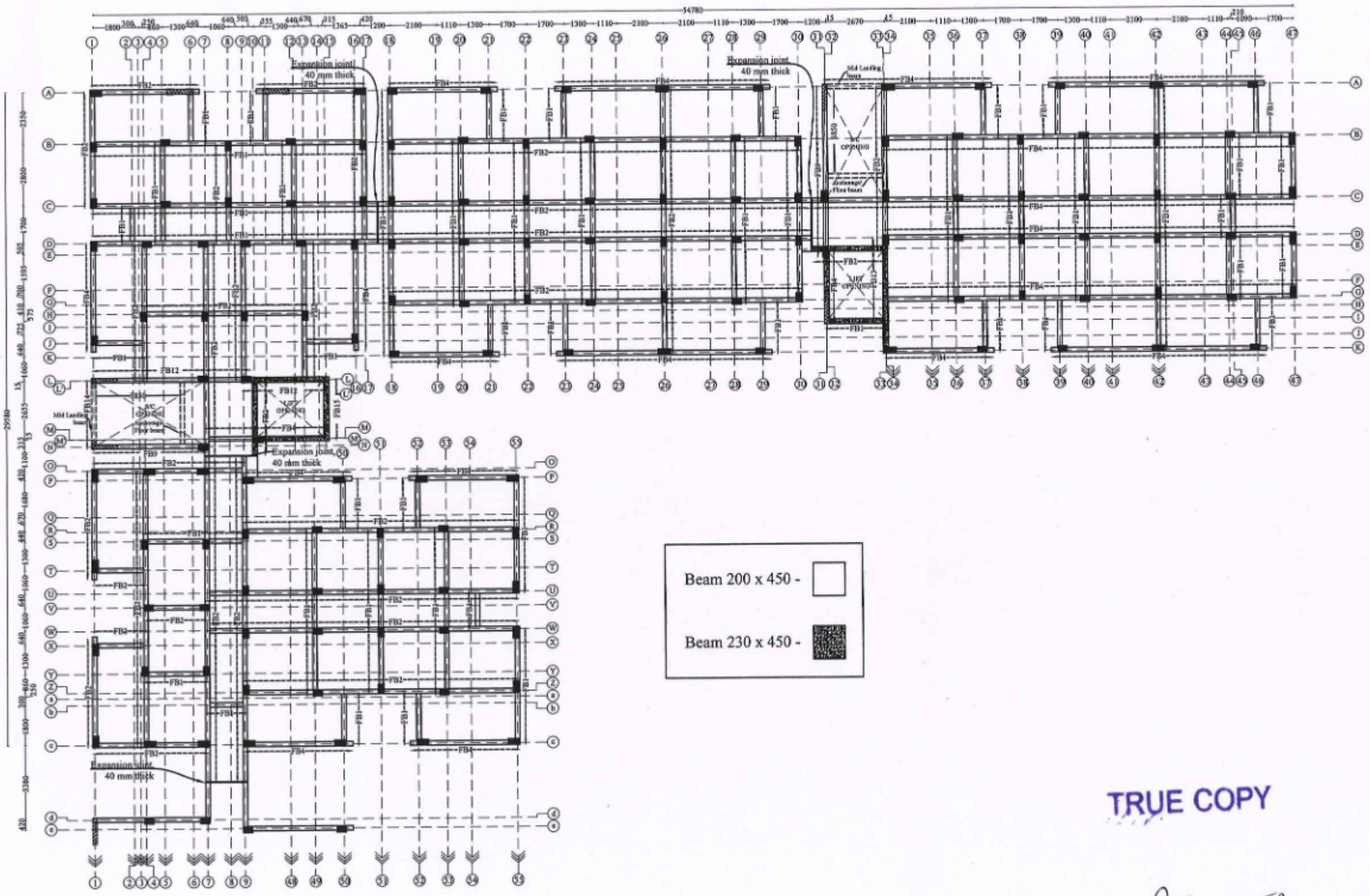
**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

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31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

# FIFTH & SIXTH FLOOR BEAM LAYOUT




**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

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EXECUTIVE ENGINEER 31.8.23
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
FIFTH & SIXTH FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

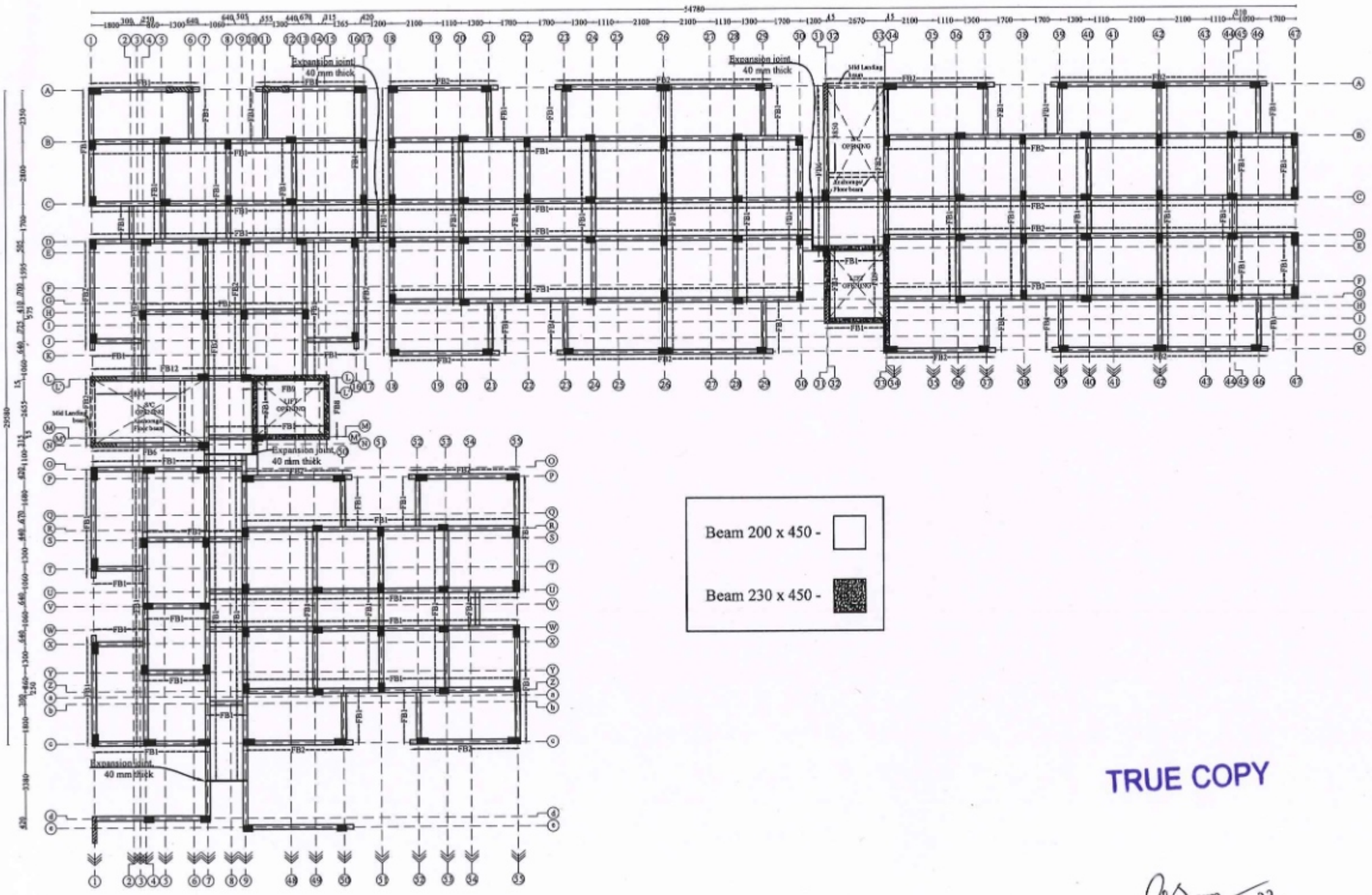
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 13.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# SEVENTH & EIGHTH FLOOR BEAM LAYOUT




Beam 200 x 450 -

Beam 230 x 450 -

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc, unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

TRUE COPY

31-8-23

EXECUTIVE ENGINEER a/c
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
SEVENTH & EIGHTH FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

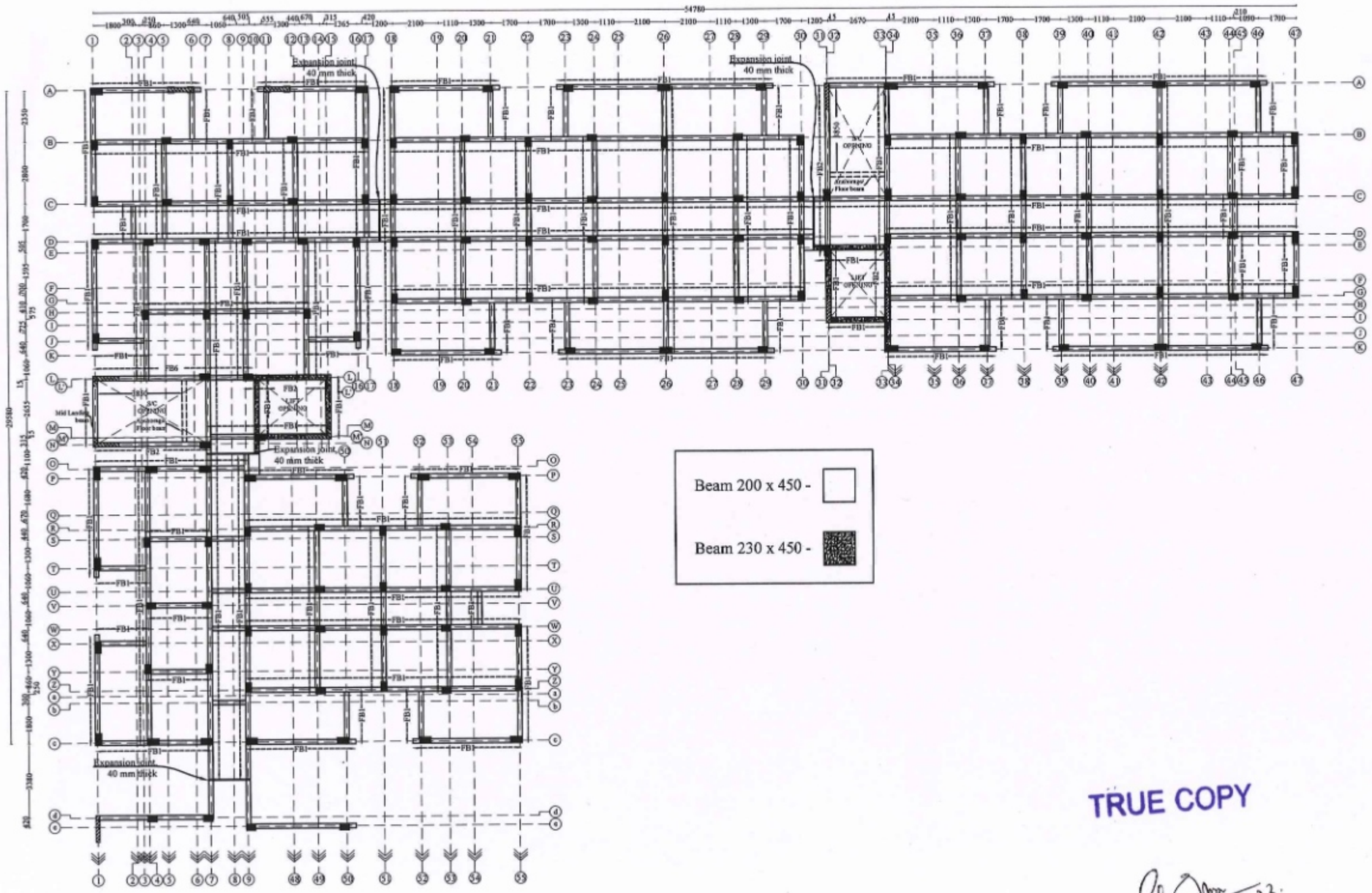
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 14.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# TERRACE BEAM LAYOUT




Beam 200 x 450 -

Beam 230 x 450 -

TRUE COPY

31-8-23.

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc, unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TERRACE BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 15.

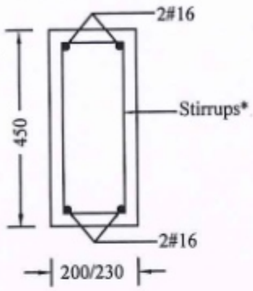
REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

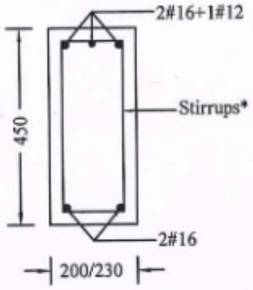
**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# FLOOR BEAM DETAILS

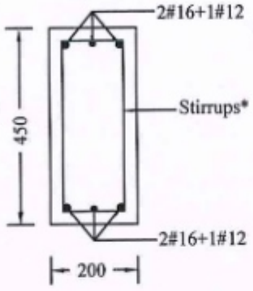
FB1 (200/230x450)



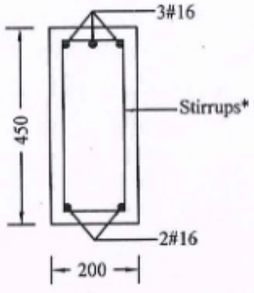

FB2 (200/230x450)



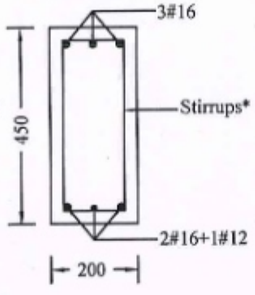

FB3 (200x450)



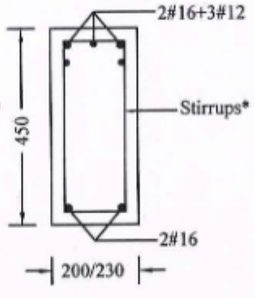

FB4 (200x450)



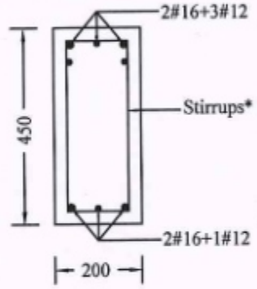

FB5 (200x450)



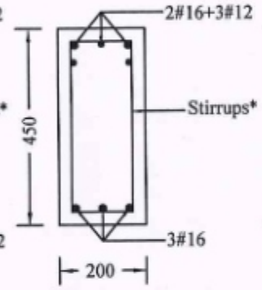

FB6 (200/230x450)



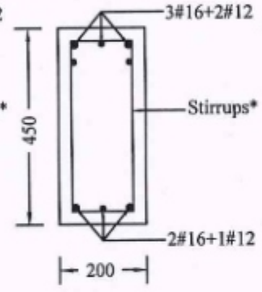

FB7 (200x450)



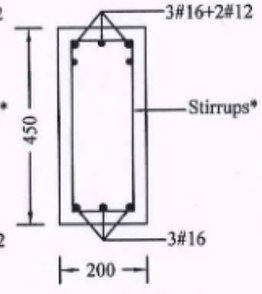

FB8 (200x450)



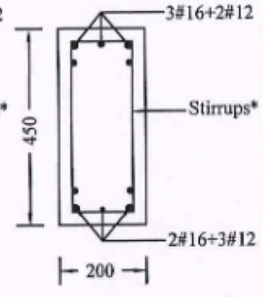

FB9 (200x450)



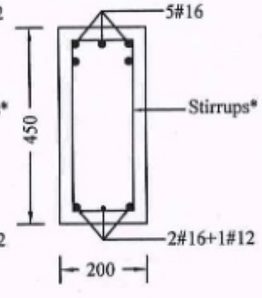

FB10 (200x450)



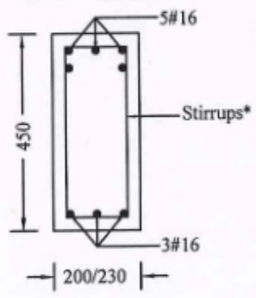

FB11 (200x450)



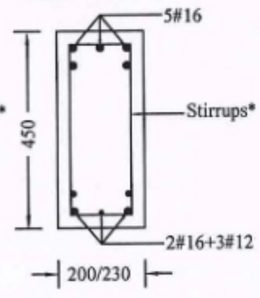

FB12 (200x450)



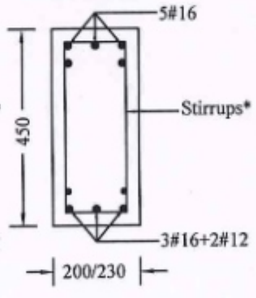

FB13 (200/230x450)



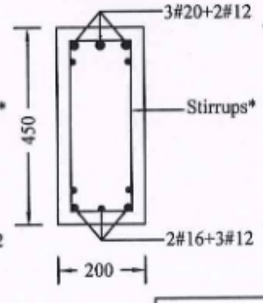

FB14 (200/230x450)



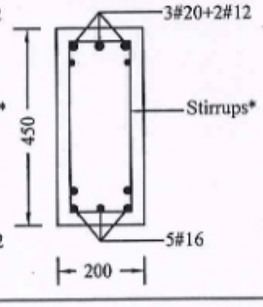

FB15 (200/230x450)



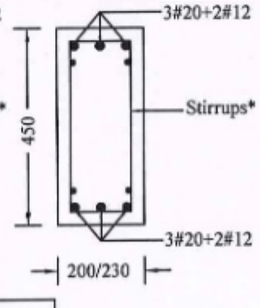

FB16 (200x450)



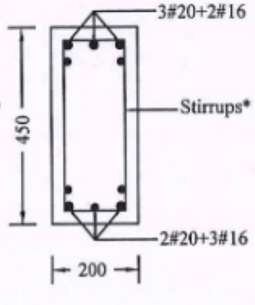

FB17 (200x450)




FB18 (200/230x450)




FB19 (200x450)




NOTE :

1) Stirrups* - 2L#8mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 150mm c/c.
2) Beam hatch to be reffered for 230 mm beam width in the beam layout.

Beam 200 x 450 -

Beam 230 x 450 -

TRUE COPY

31-8-23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/8/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
FLOOR BEAM DETAILS.

TYPE DESIGN NO.: 22/2021

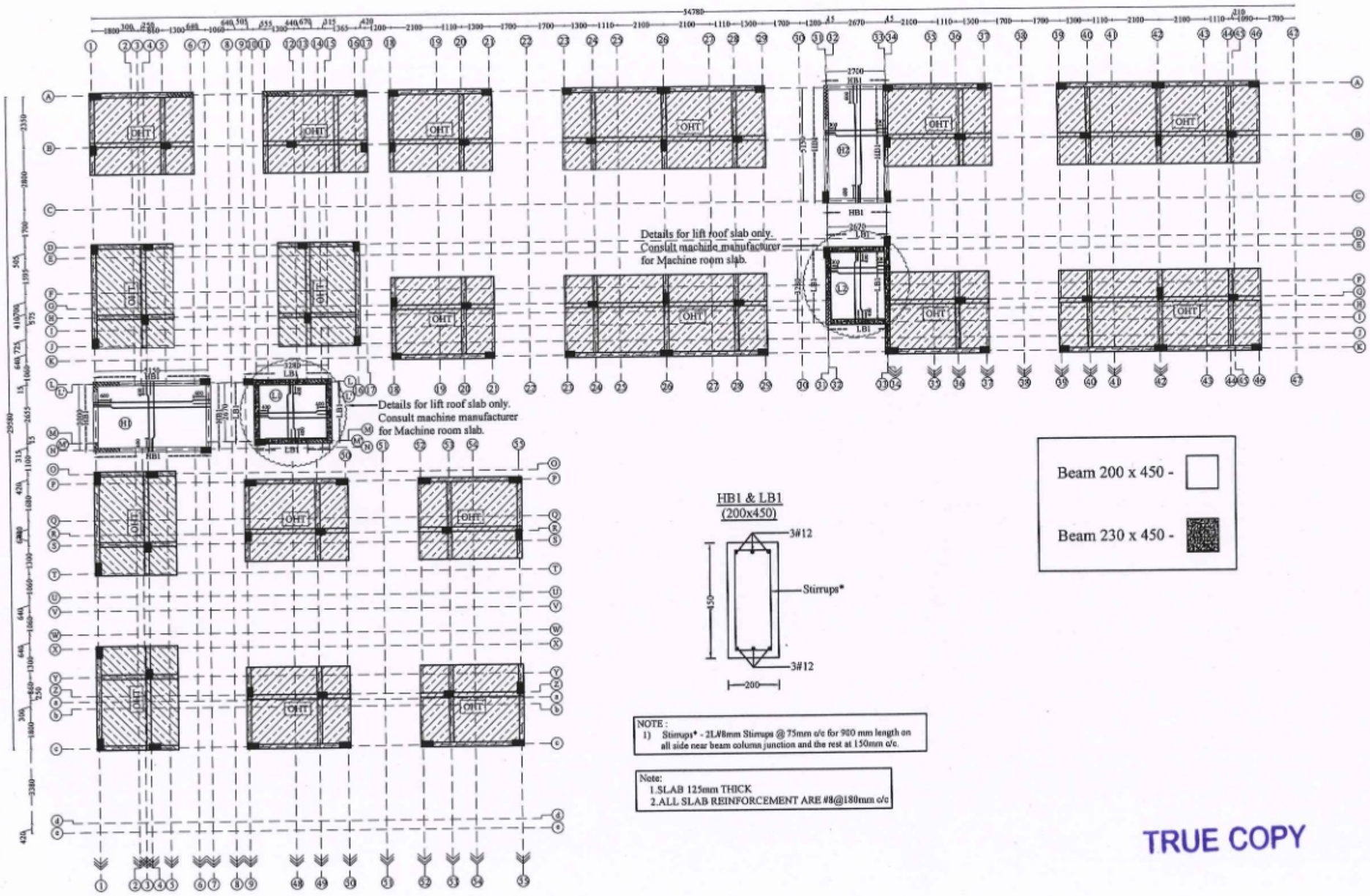
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 16.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# HEAD ROOM & LIFT ROOM BEAM LAYOUT, DETAILS & SLAB DETAILS AND LOCATION OF OHT




HB1 & LB1
(200x450)




NOTE :
1) Stirrups* - 2LV8mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 150mm c/c.

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Beam 200 x 450 -

Beam 230 x 450 -

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
HEAD ROOM & LIFT ROOM BEAM LAYOUT, DETAILS & SLAB DETAILS AND LOCATION OF OHT.

TYPE DESIGN NO.: 22/2021

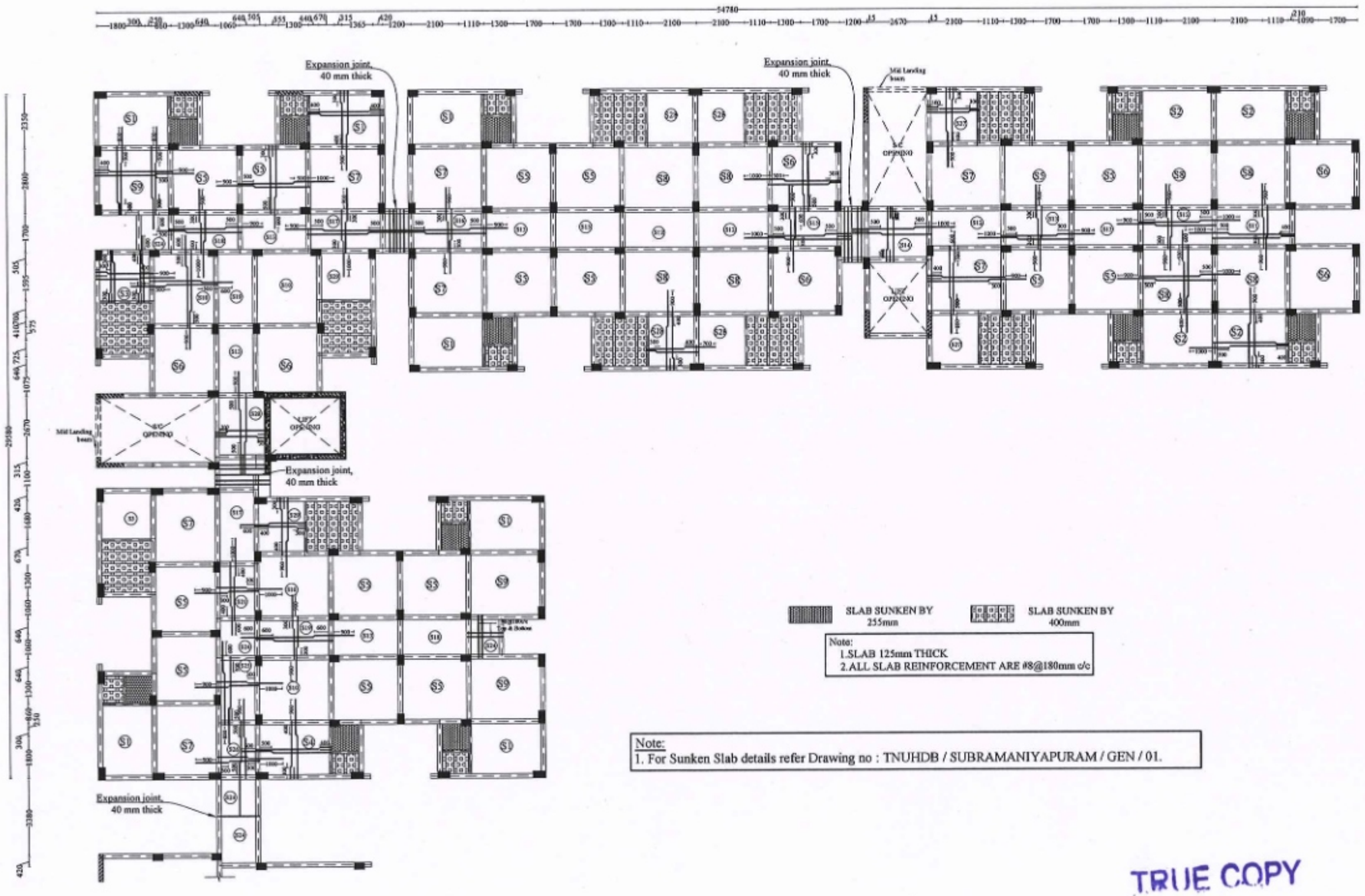
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 17.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# STILT FLOOR SLAB DETAILS




SLAB SUNKEN BY 255mm

SLAB SUNKEN BY 400mm

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Note:
1. For Sunken Slab details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

TRUE COPY

31-8-23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
STILT FLOOR SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

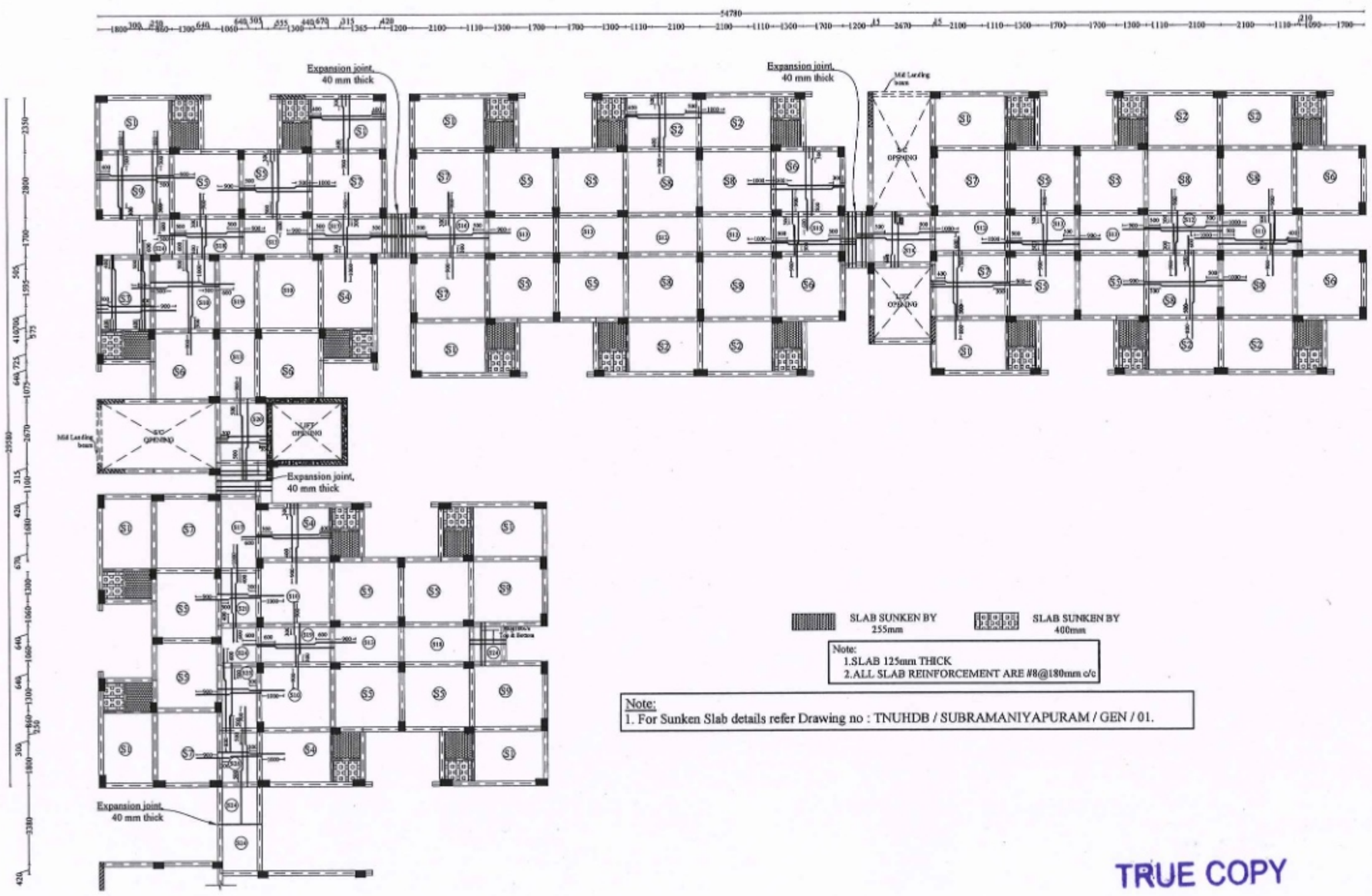
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 18.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# FIRST & SIXTH FLOOR SLAB DETAILS




SLAB SUNKEN BY 255mm

SLAB SUNKEN BY 400mm

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Note:
1. For Sunken Slab details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
FIRST & SIXTH FLOOR SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

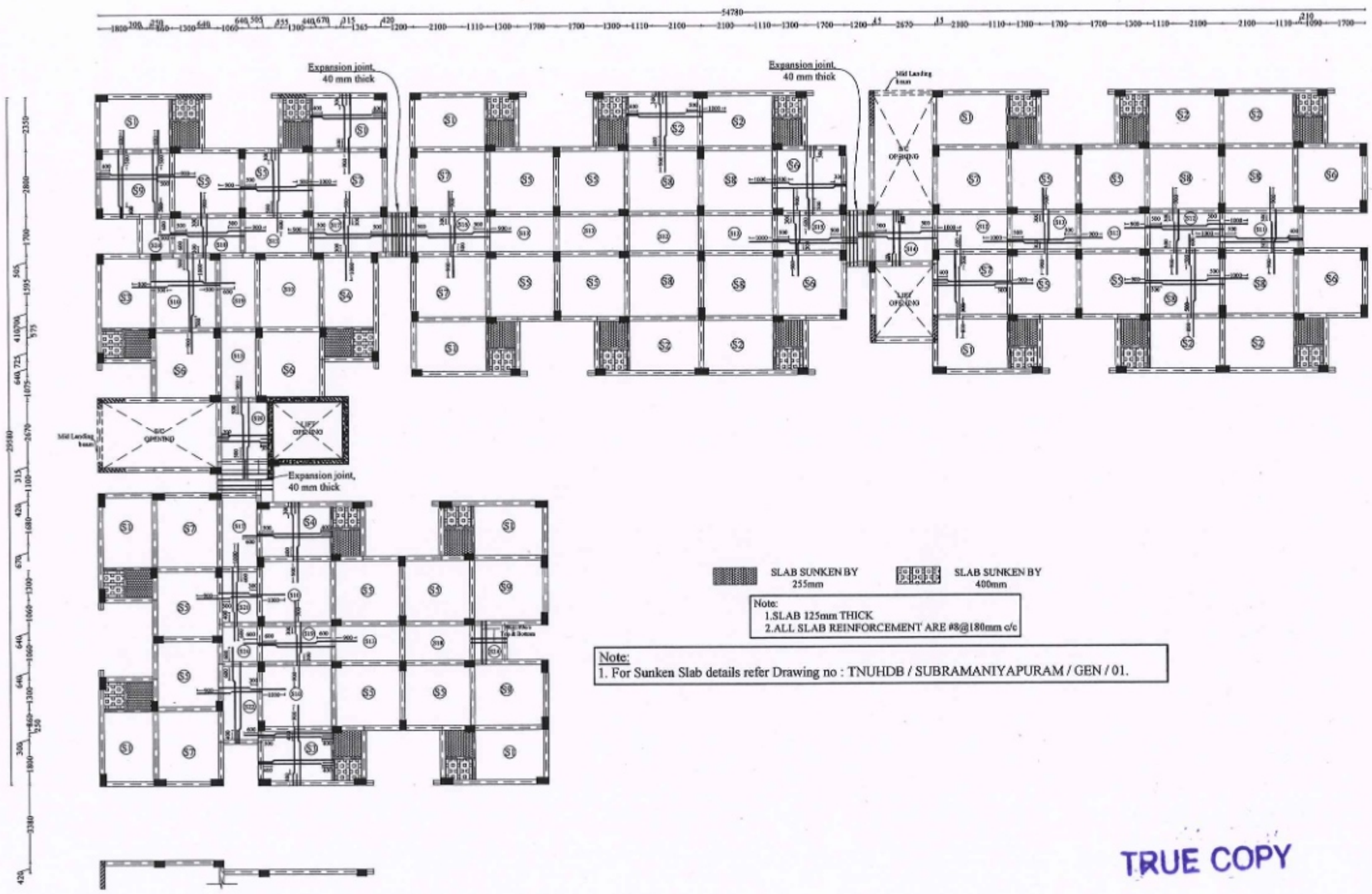
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 19.

REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

# TYPICAL FLOOR SLAB DETAILS




SLAB SUNKEN BY 255mm

SLAB SUNKEN BY 400mm

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Note:
1. For Sunken Slab details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

TRUE COPY

31-8-23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TYPICAL FLOOR SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

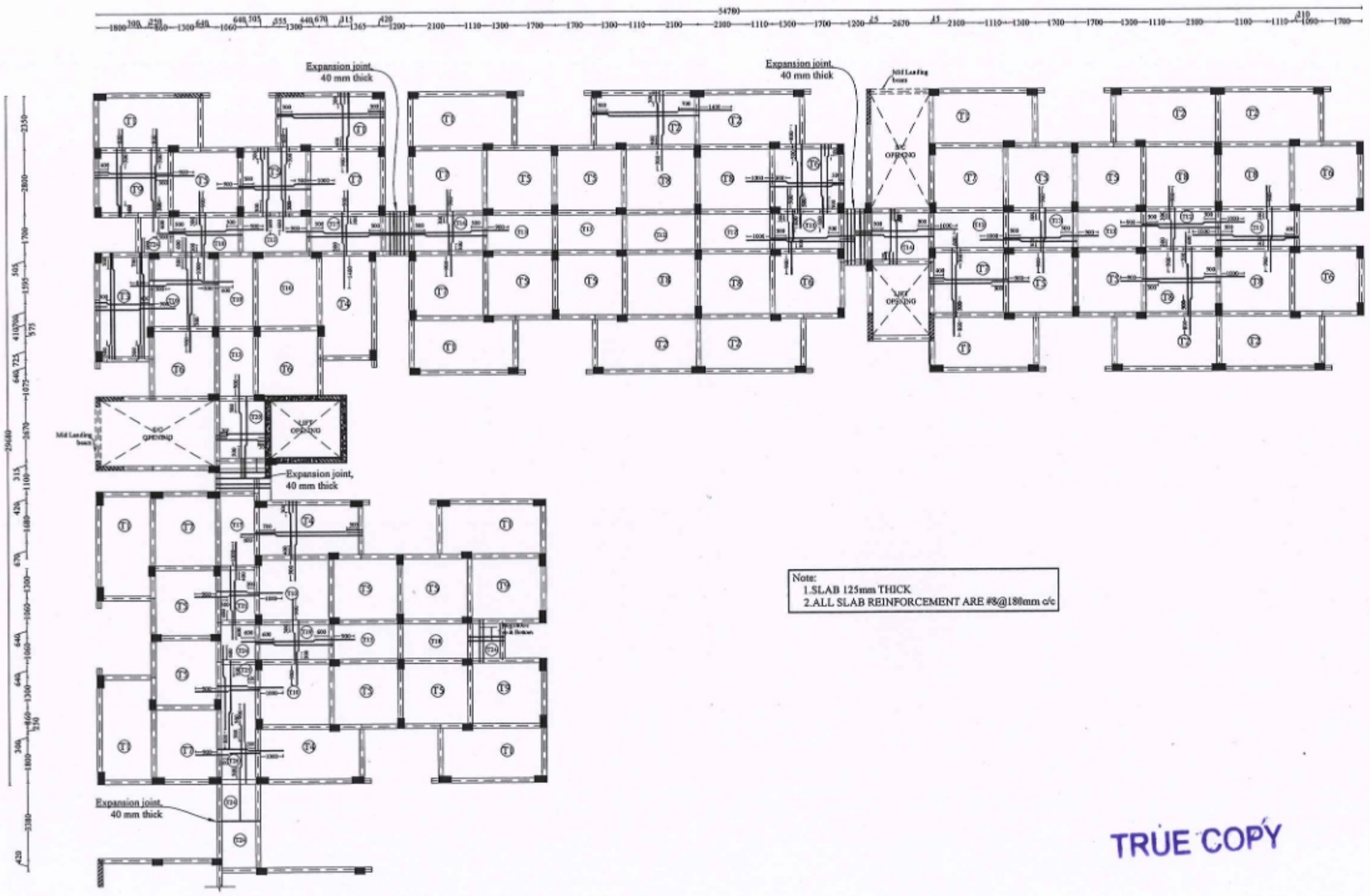
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 20.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# TERRACE SLAB DETAILS




Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31.8.23

31/08/23

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TERRACE SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

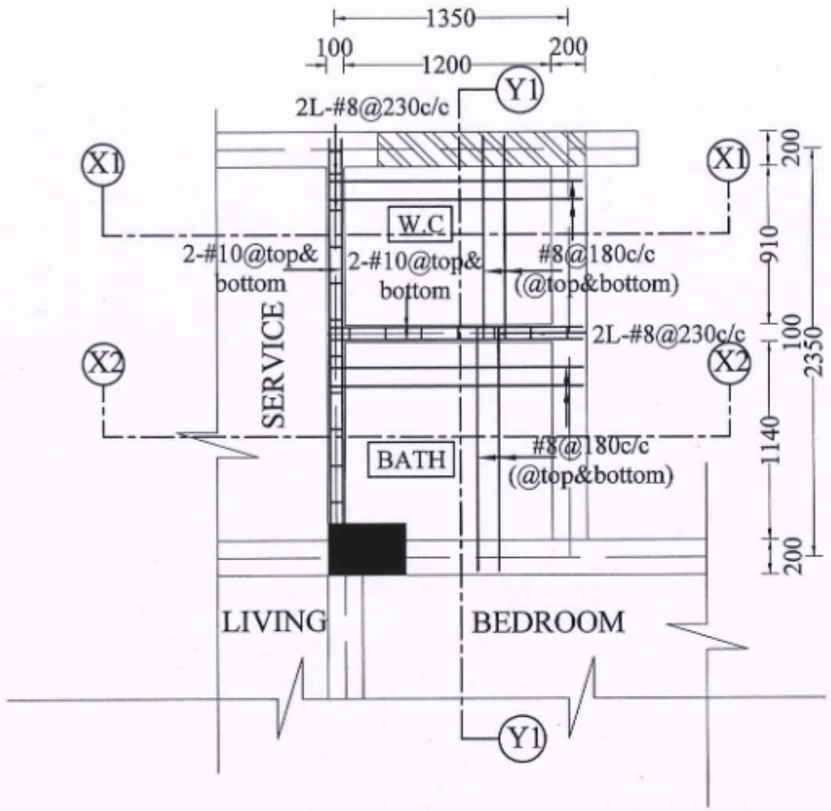
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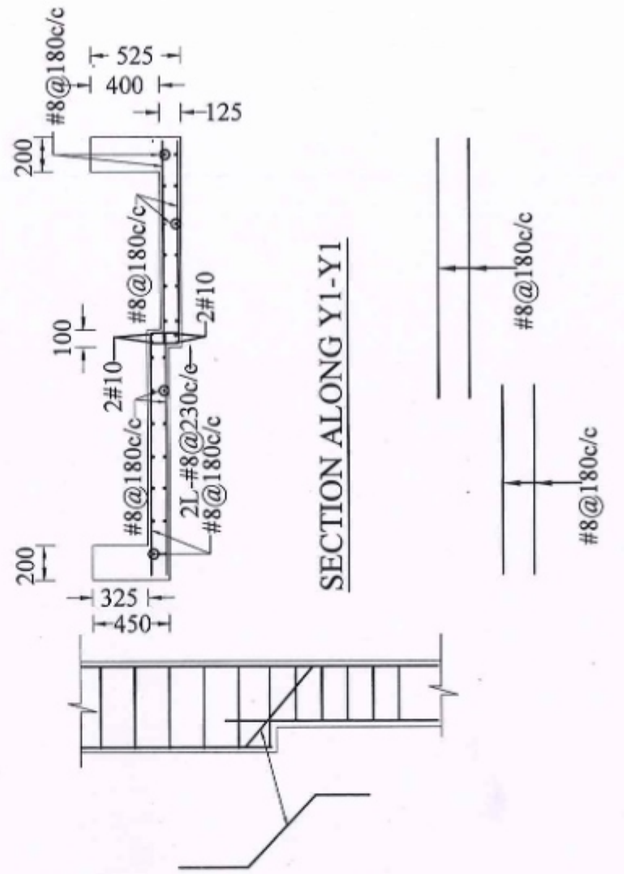
REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

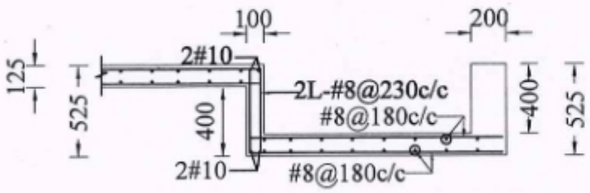
**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# SUNKEN SLAB DETAILS-**TYPICAL**

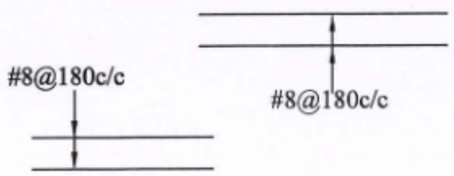


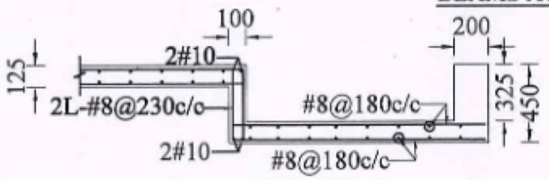




BEAMS AT DIFFERENT DEPTH

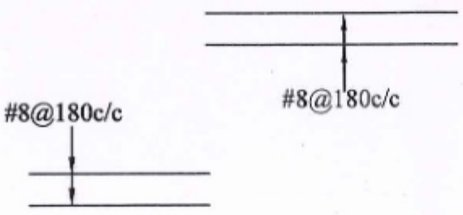



SECTION ALONG X1-X1




SECTION ALONG X2-X2




NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
SUKEN SLAB DETAILS -TYPICAL

TYPE DESIGN NO.: 22/2021

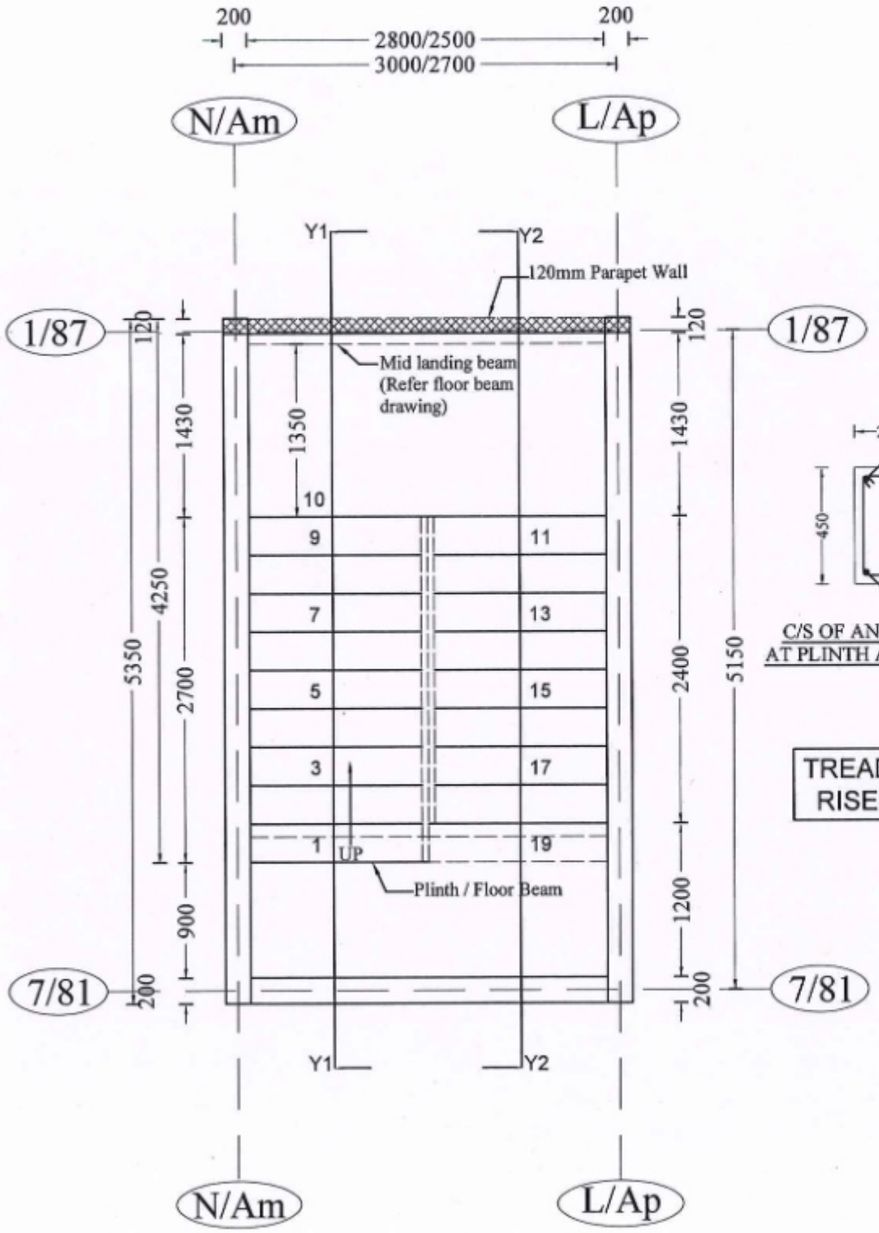
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

REVISION NO.:

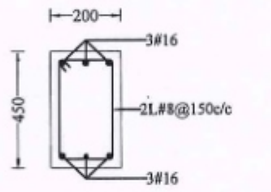
| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

# TYPICAL STAIRCASE DETAILS

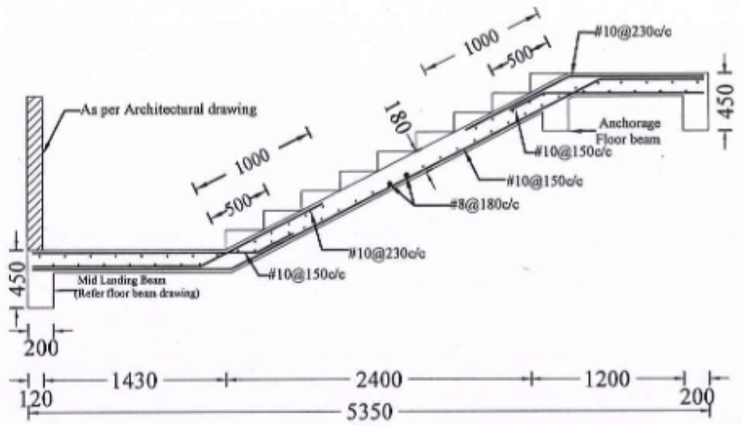



TYPICAL STAIRCASE PLAN

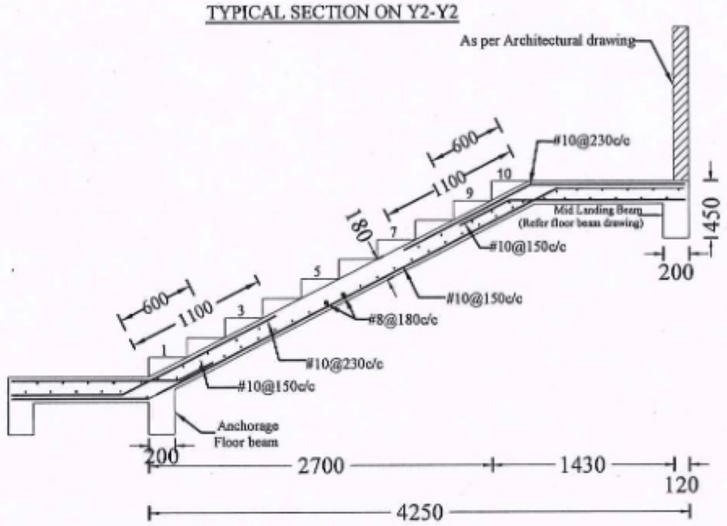



C/S OF ANCHORAGE BEAMS
AT PLINTH AND FLOOR LEVELS

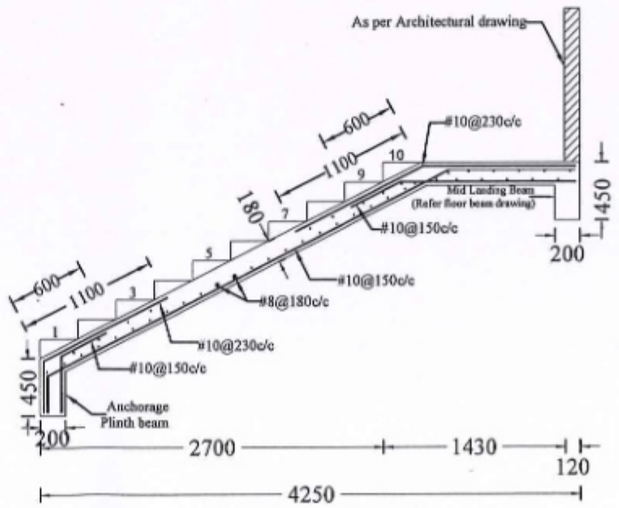
TREAD=300mm
RISE=152mm




TYPICAL SECTION ON Y2-Y2




TYPICAL SECTION ON Y1-Y1
(OTHER THAN STILT FLOOR)




TYPICAL SECTION ON Y1-Y1
(STILT FLOOR ONLY)

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Waist Slab Thickness is 180mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

TRUE COPY

31.8.23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TYPICAL STAIRCASE DETAILS.

TYPE DESIGN NO.: 22/2021

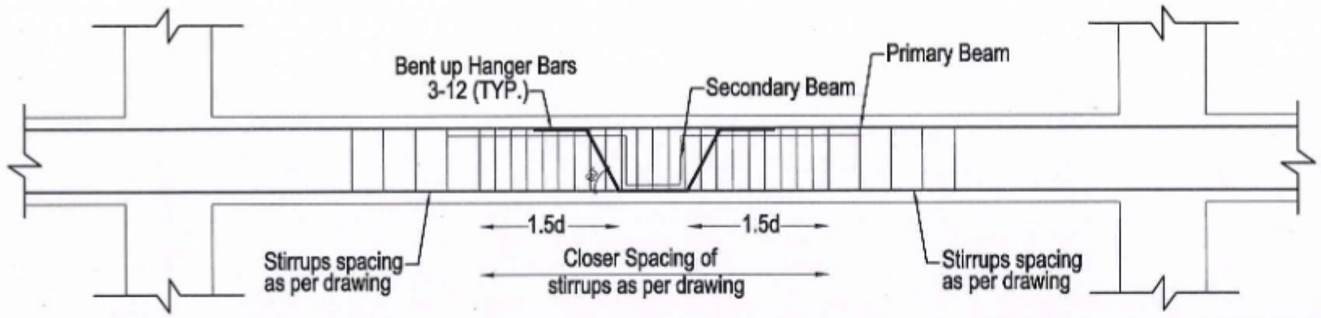
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / GEN / 02.

REVISION NO.:

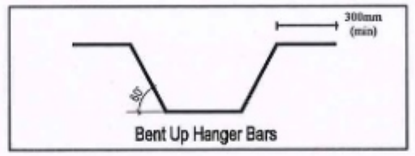
| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| Sd.xxxxx.<br>**SE - South** | Sd.xxxx 31.08.2023.<br>**CE - South** |

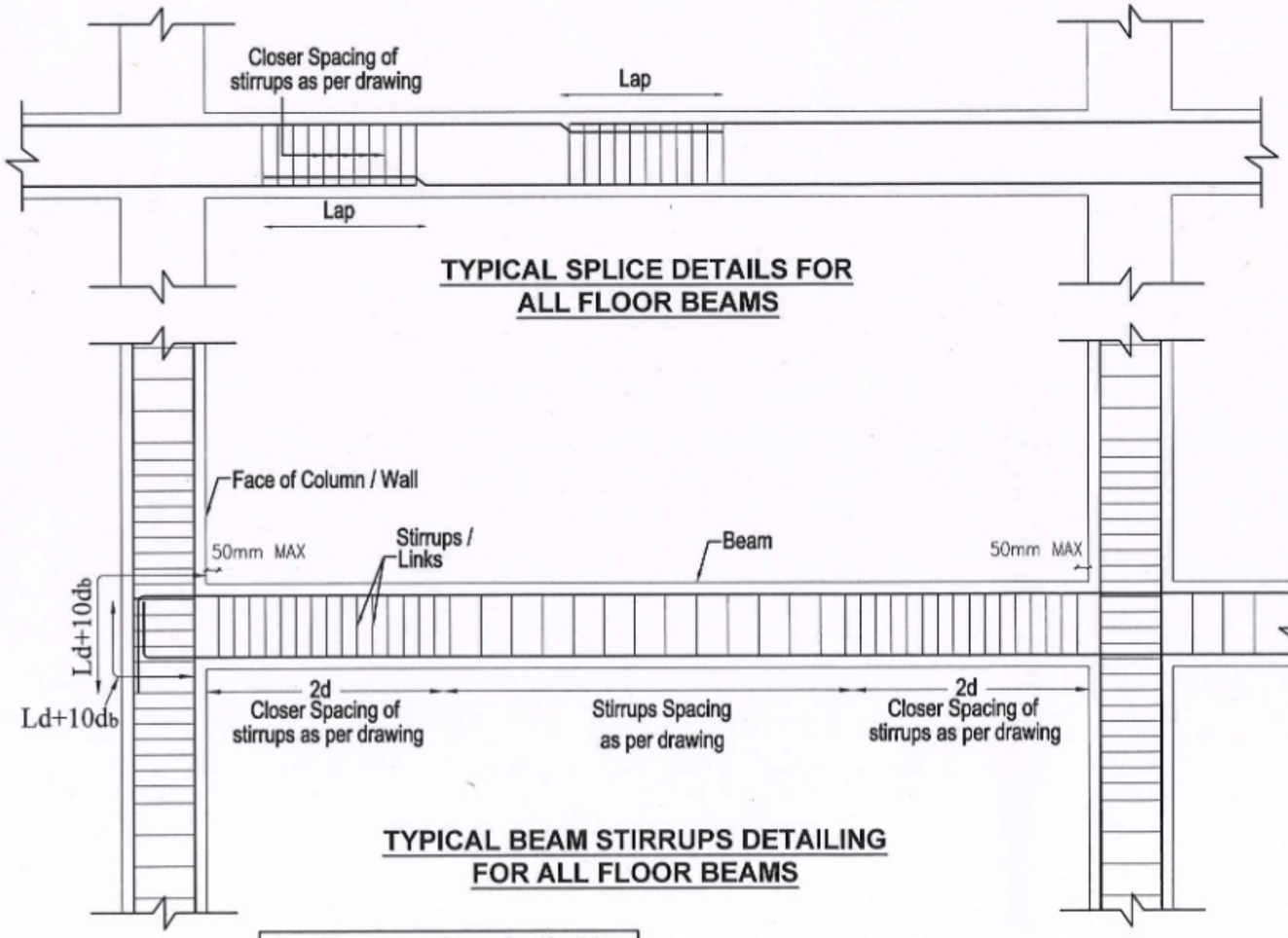
**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# TYPICAL DETAILS FOR ALL THE FLOOR BEAMS




**TYPICAL BENT UP HANGER BAR DETAILS AT MAIN AND SECONDARY BEAM JUNCTIONS**

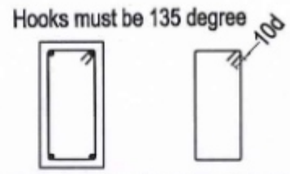



**TYPICAL SPLICE DETAILS FOR ALL FLOOR BEAMS**

**TYPICAL BEAM STIRRUPS DETAILING FOR ALL FLOOR BEAMS**

$d_b$ - diameter of longitudinal bar
d - depth of beam




**TYPICAL DETAILS OF TRANSVERSE REINFORCEMENT HOOKS IN BEAM.**

**TYPICAL SPECIAL CONFINING REINFORCEMENT DETAILS IN FOOTING**

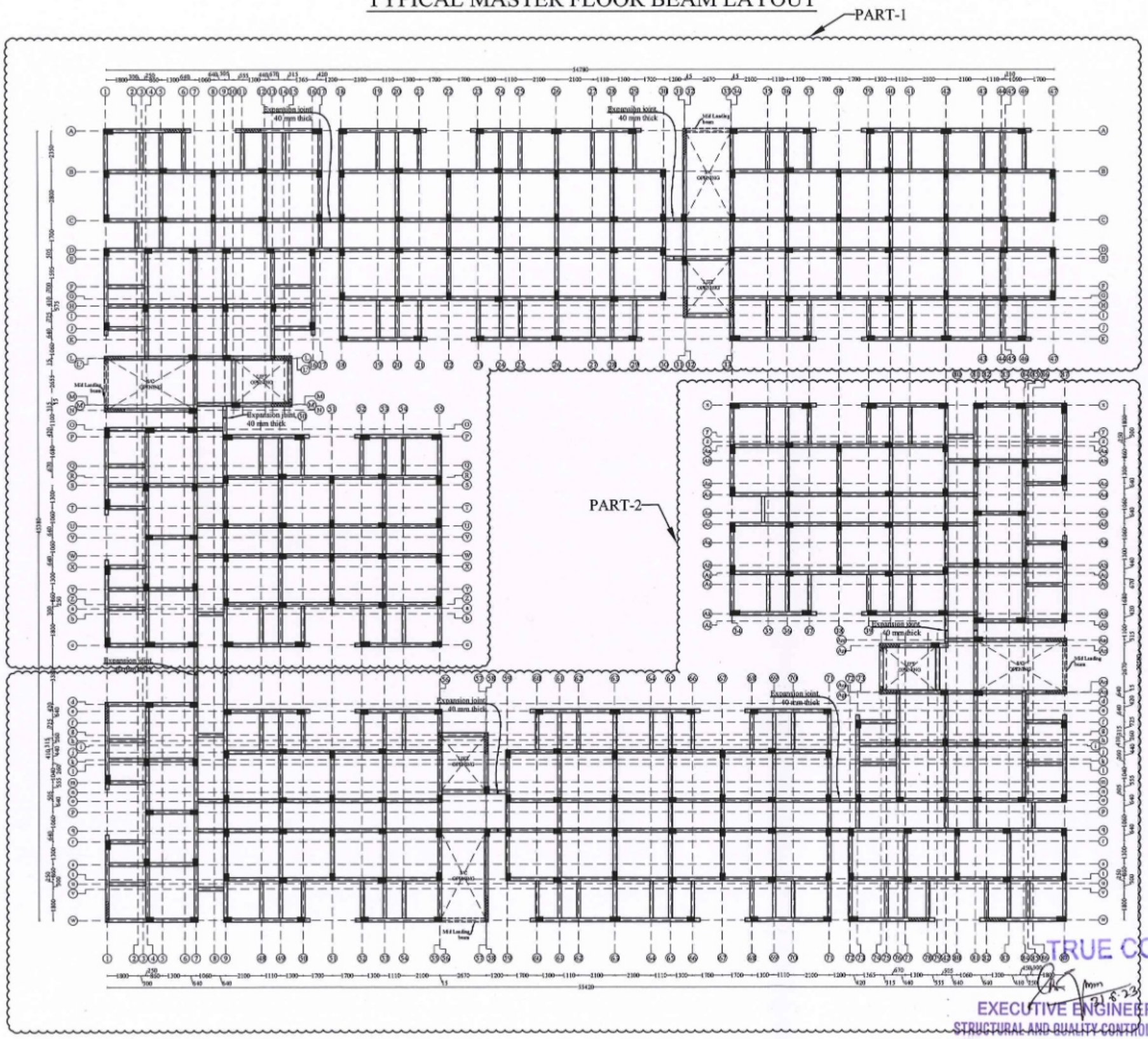
| Development length for Fe500bars in 'mm' | | | | |
|---|---|---|---|---|
| Dia of bar | Tension bar | | Compression bar | |
| | M25 | M30 | M25 | M30 |
| 12 | 583 | 544 | 466 | 435 |
| 16 | 777 | 725 | 621 | 580 |
| 20 | 971 | 906 | 777 | 725 |

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

| STRUCTURAL DETAILS | |
|---|---|
| PROJECT:<br>CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP) | |
| TITLE:<br>TYPICAL DETAILS FOR ALL THE FLOOR BEAMS. | |
| TYPE DESIGN NO.: 22/2021 | |
| DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / GEN / 03. | |
| Assistant Engineer | Asst. Exe. Engineer |
| Executive Engineer | SE - PMU |
| Sd.xxxxx.<br>SE - South | Sd.xxxx 31.08.2023.<br>CE - South |
| STRUCTURAL & QUALITY CONTROL CELL<br>TAMIL NADU URBAN HABIAT DEVELOPMENT BOARD<br>NO.5, KAMARAJAR SALAI<br>CHENNAI - 600 005. | |

# TYPICAL MASTER FLOOR BEAM LAYOUT




**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TYPICAL MASTER FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / GEN / 04.

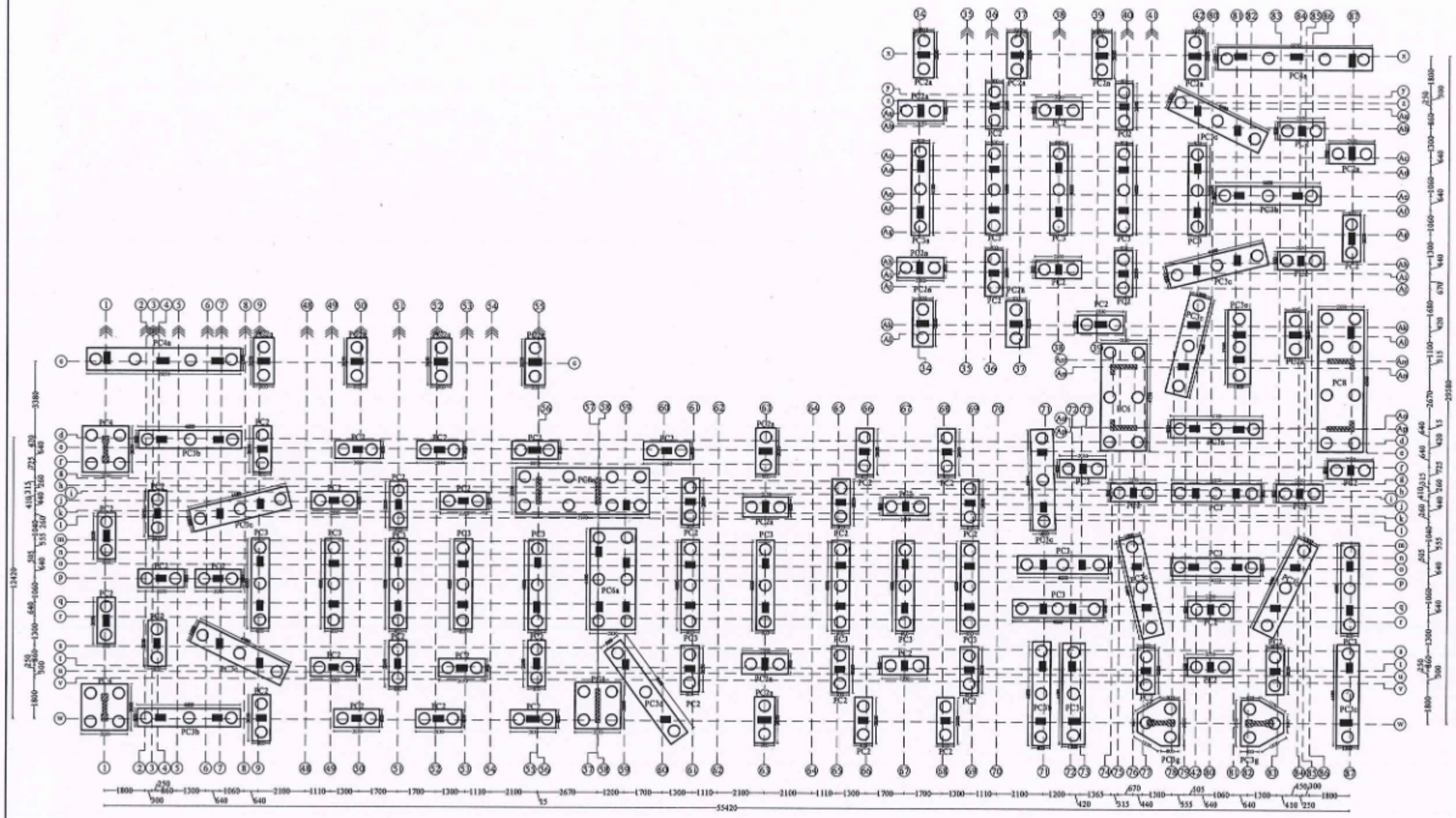
REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

TRUE COPY
31.8.23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005

# PILE AND PILE CAP LAYOUT



**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,, unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PILE AND PILE CAP LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 01.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

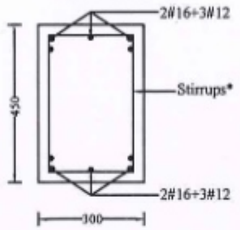
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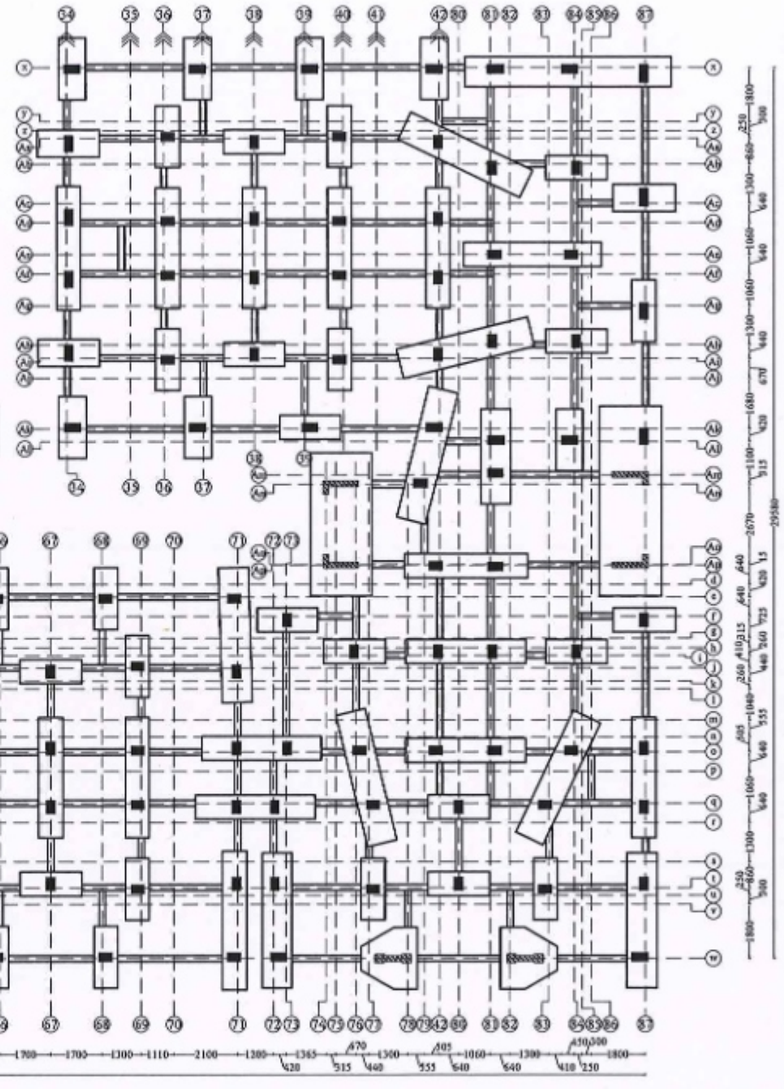
31.8.23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
#.5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

# GRADE BEAM WITH PILE CAP LAYOUT & DETAILS

ALL GRADE BEAMS
(300x450)





NOTE :
1) Stirrups* - 2L#10mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 150 mm c/c.

Note:
1. For Pile & Pile cap details refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 03 / 04.
2. For RC details of Lift Well refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 05.

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,, unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
GRADE BEAM WITH PILE CAP LAYOUT & DETAILS.

TYPE DESIGN NO.: 22/2021

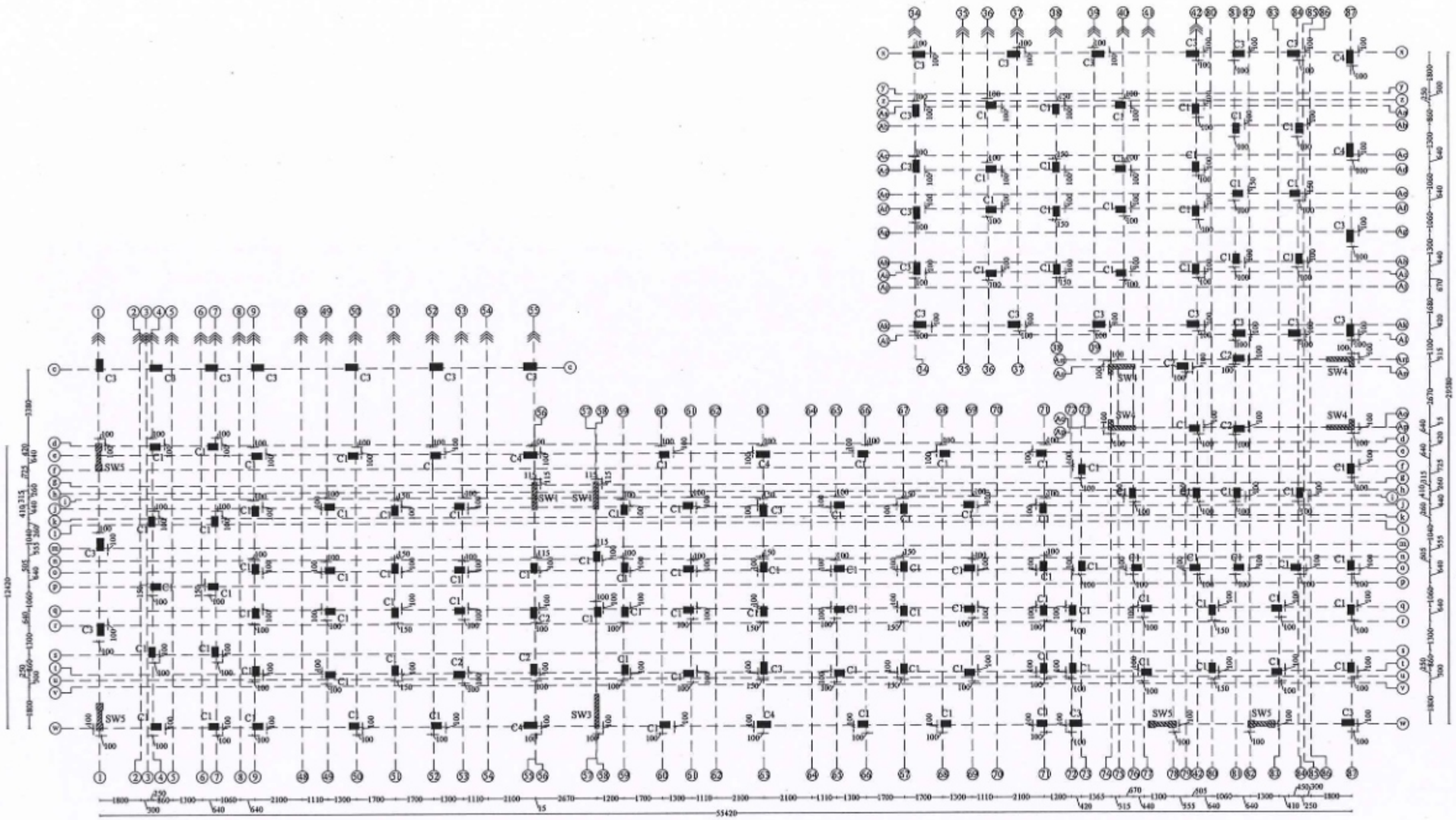
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 02.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# COLUMN LAYOUT




Note:
1. For Schedule of Column details refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 07.
2. For Shear Wall Reinforcement details refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 08 / 09.

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
COLUMN LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 03.

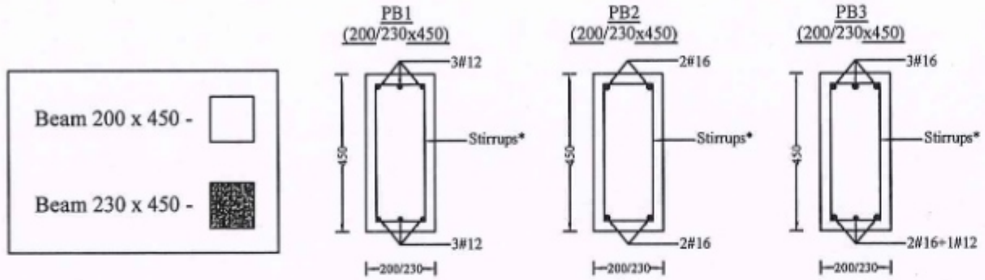
REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# PLINTH BEAM LAYOUT & DETAILS

## PLINTH BEAM DETAILS




NOTE :
1) Stirrups* - 2L@8mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 150mm c/c.




**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PLINTH BEAM LAYOUT & DETAILS.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 04.

REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

TRUE COPY

31.8.23

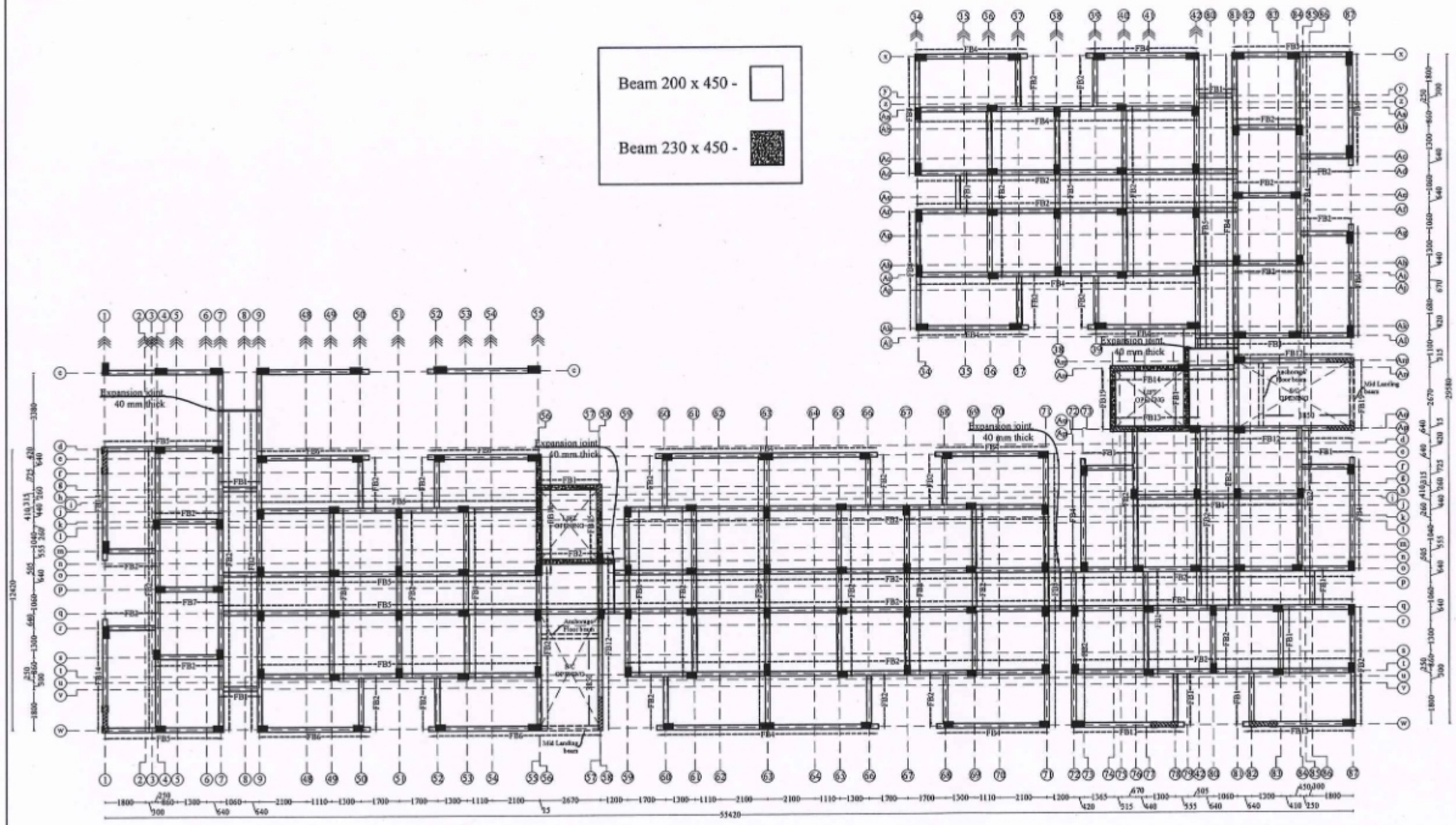
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

# STILT, FIRST & SECOND FLOOR BEAM LAYOUT

Beam 200 x 450 -

Beam 230 x 450 -




Note:
1. For Floor Beam details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / PART-1 / 16.

TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
STILT, FIRST & SECOND FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

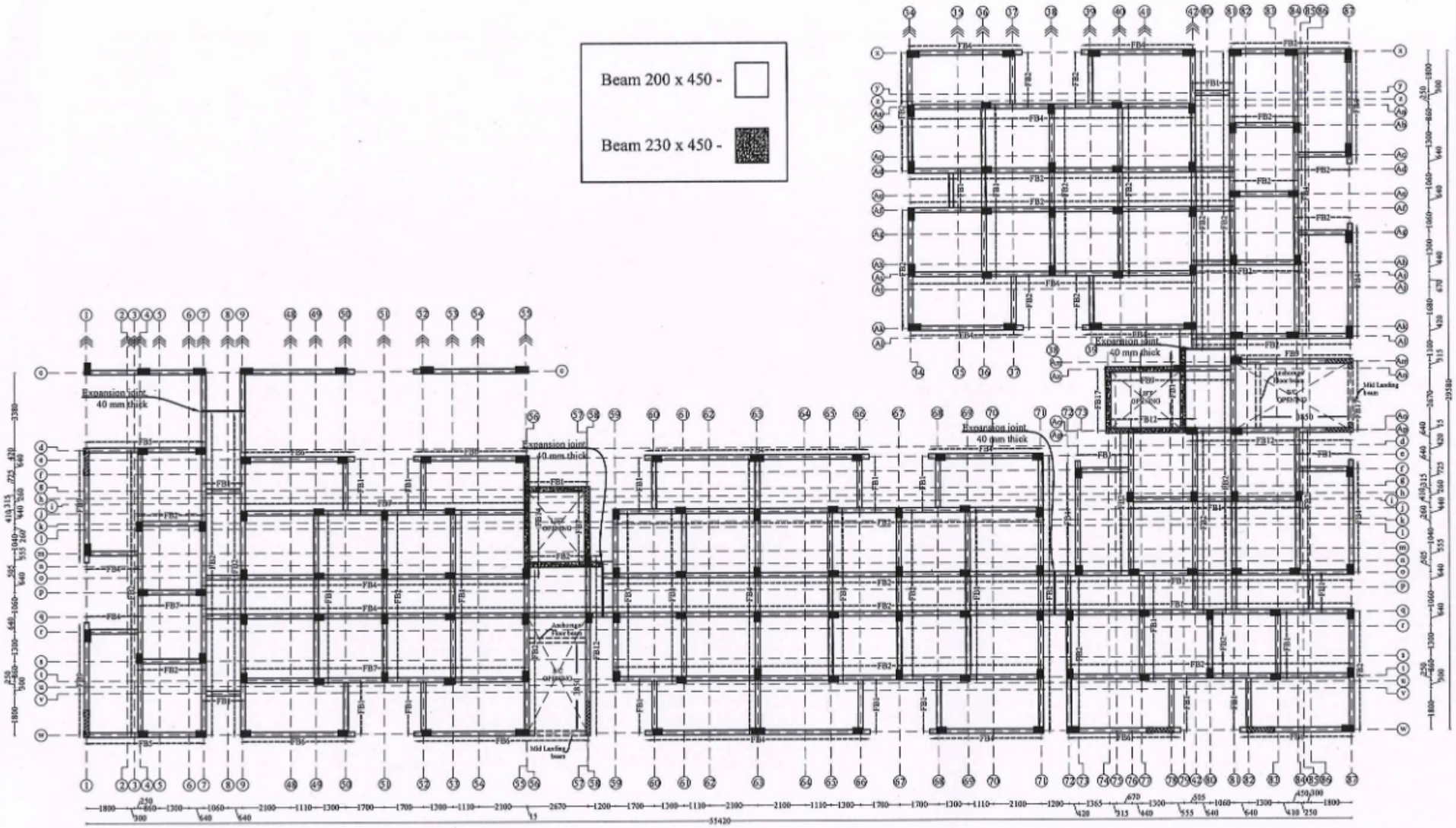
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 05.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# THIRD & FOURTH FLOOR BEAM LAYOUT




Note:
1. For Floor Beam details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / PART-1 / 16.

TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,, unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
THIRD & FOURTH FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 06.

REVISION NO.:

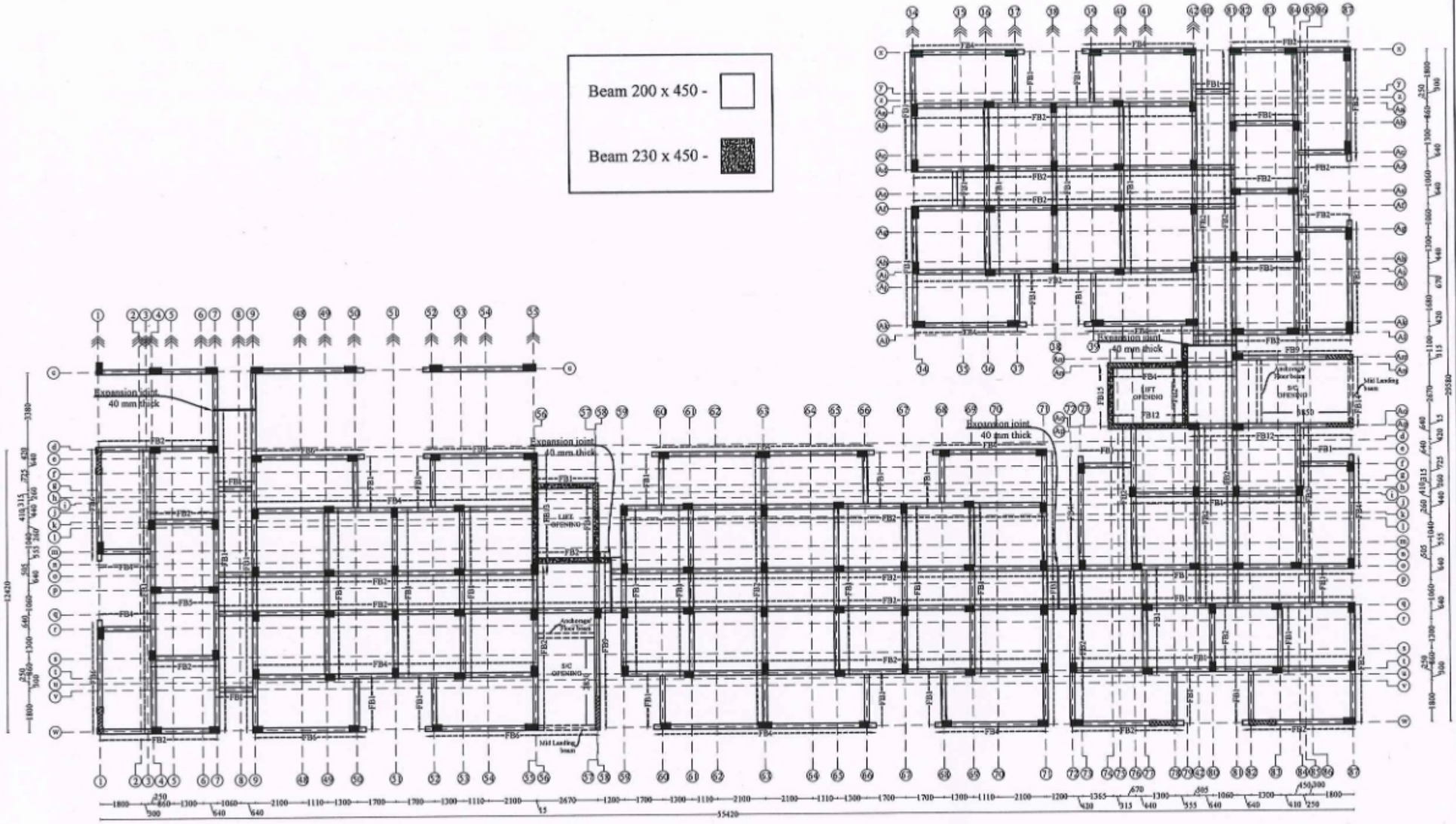
| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# FIFTH & SIXTH FLOOR BEAM LAYOUT

Beam 200 x 450 -

Beam 230 x 450 -




Note:
1. For Floor Beam details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / PART-1 / 16.

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31.8.23

31/8/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
FIFTH & SIXTH FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

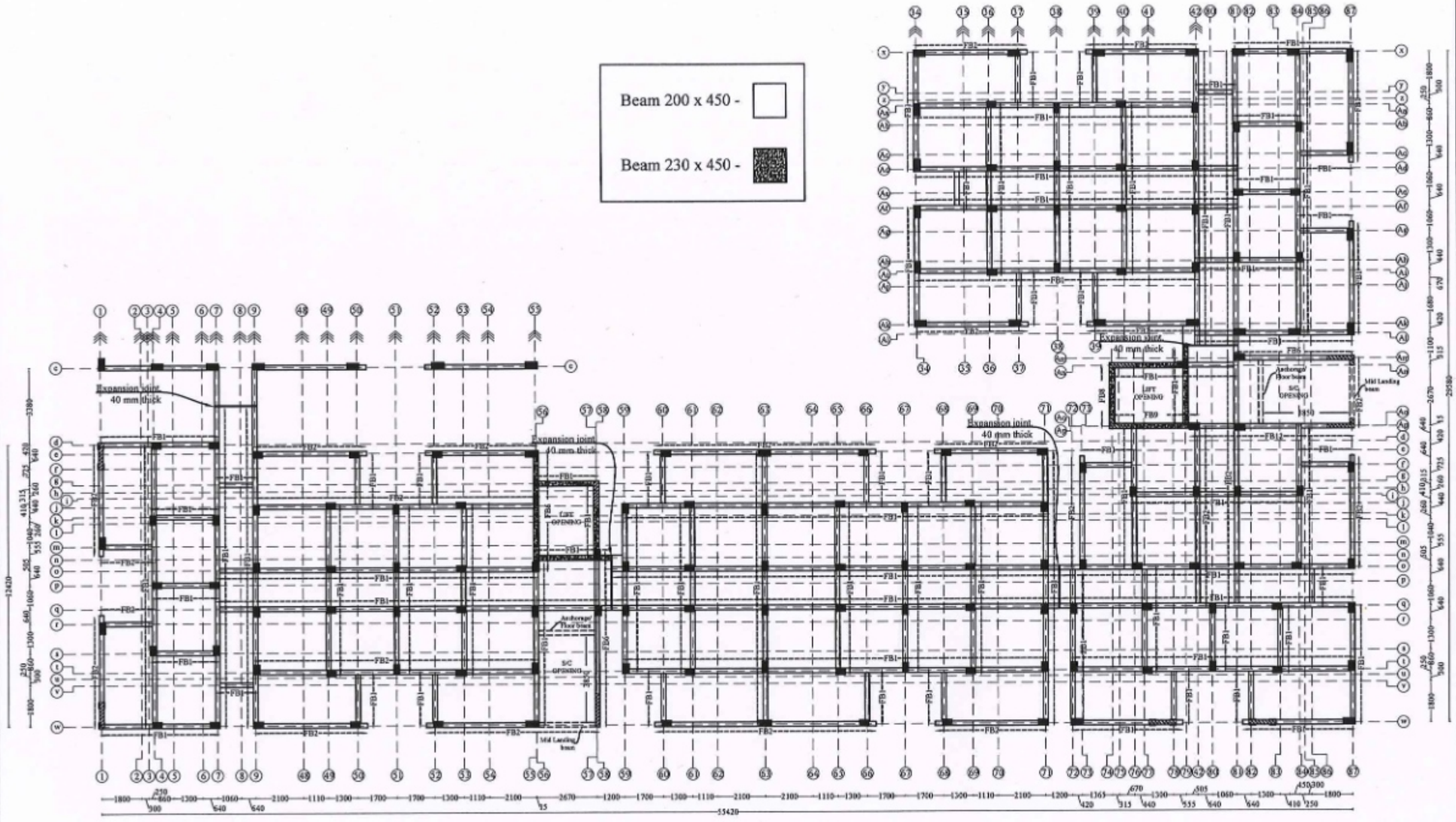
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 07.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# SEVENTH & EIGHTH FLOOR BEAM LAYOUT




Note:
1. For Floor Beam details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / PART-1 / 16.

TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
SEVENTH & EIGHTH FLOOR BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 08.

REVISION NO.:

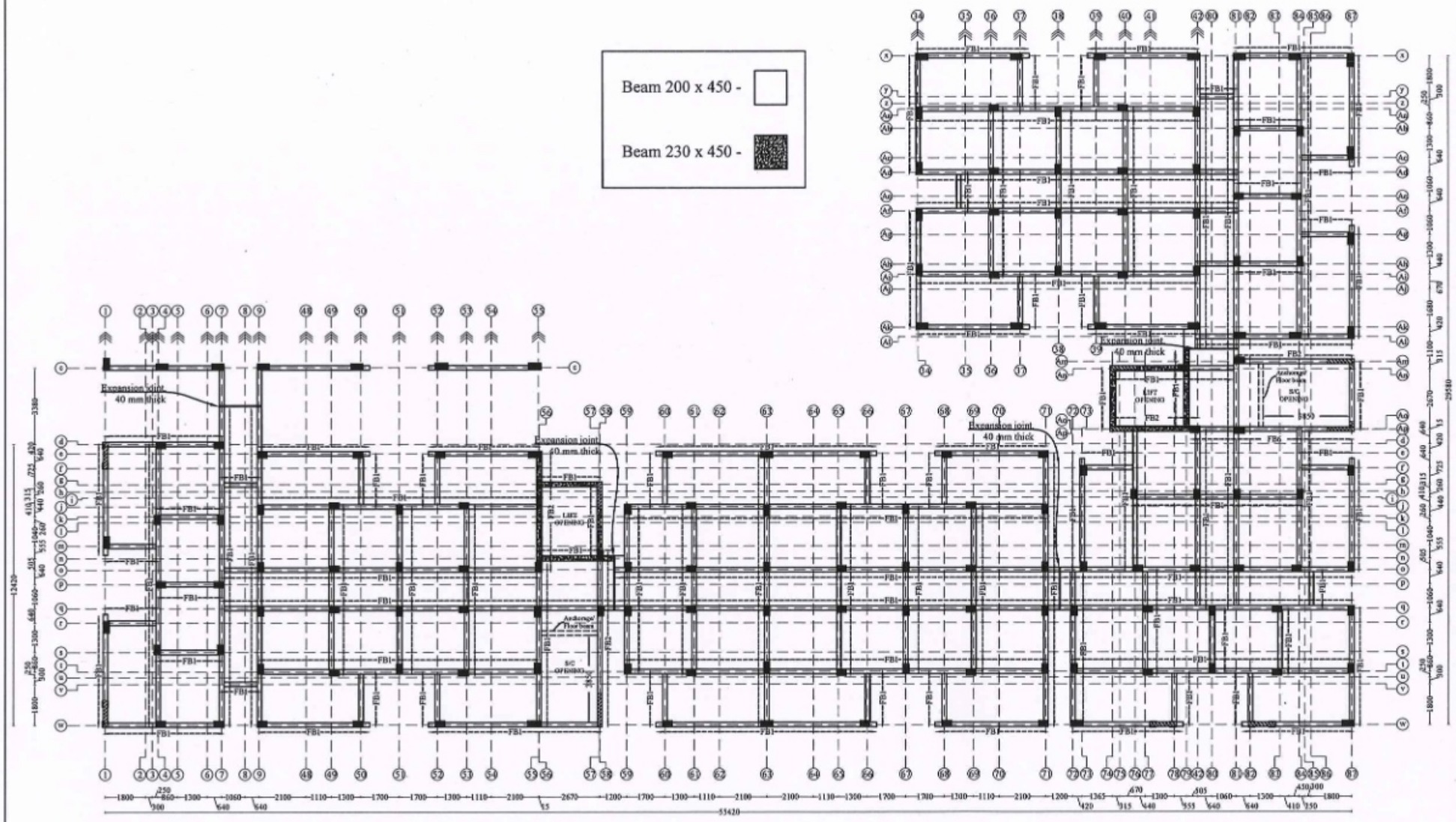
| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx.<br>SE - South | Sd.xxxx 31.08.2023.<br>CE - South |

STRUCTURAL & QUALITY CONTROL CELL.
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

# TERRACE BEAM LAYOUT

Beam 200 x 450 -

Beam 230 x 450 -




Note:
1. For Floor Beam details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / PART-1 / 16.

TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TERRACE BEAM LAYOUT.

TYPE DESIGN NO.: 22/2021

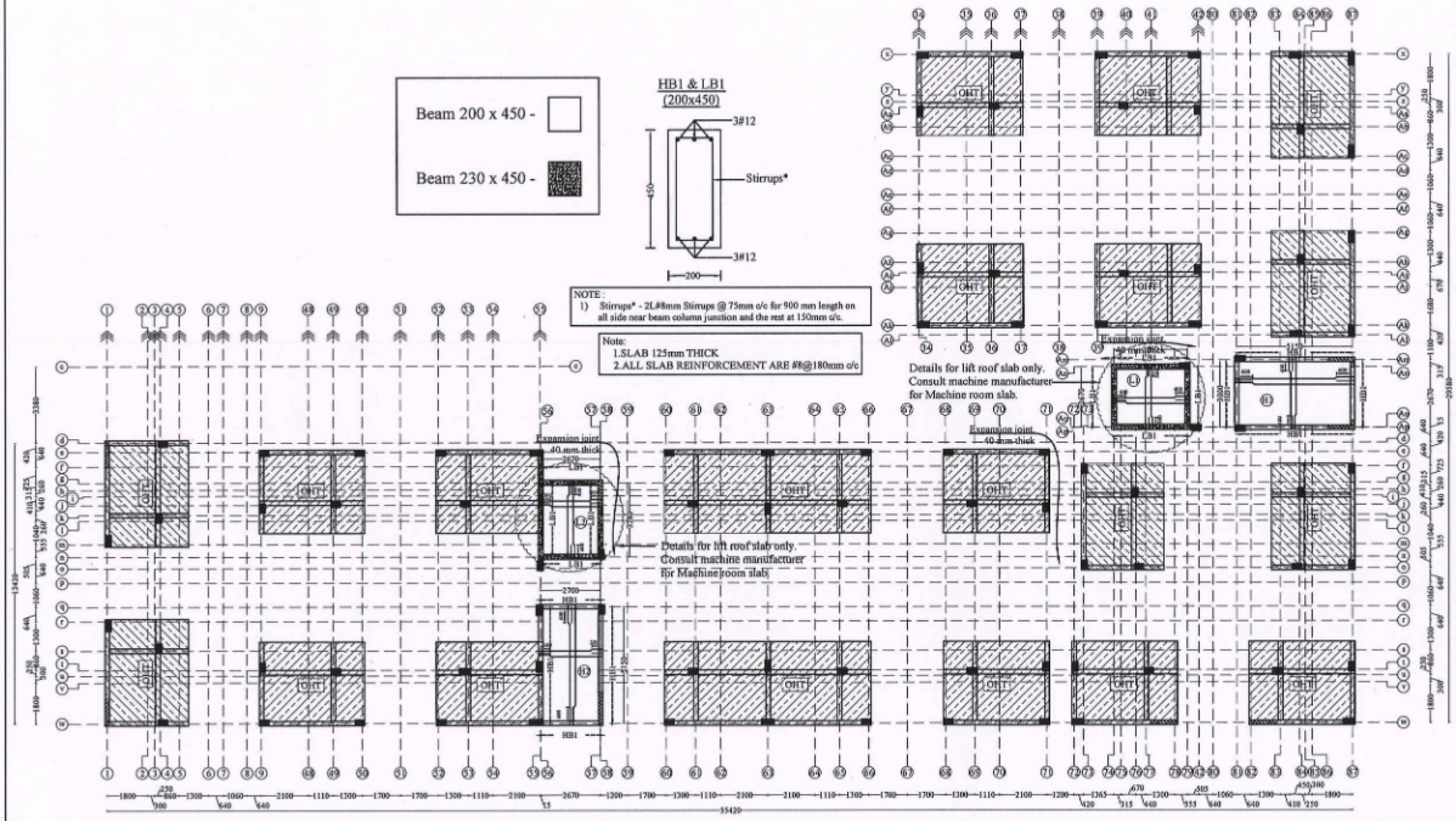
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 09.

REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx.<br>SE - South | Sd.xxxx 31.08.2023.<br>CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

# HEAD ROOM & LIFT ROOM BEAM LAYOUT, DETAILS & SLAB DETAILS AND LOCATION OF OHT




**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
HEAD ROOM & LIFT ROOM BEAM LAYOUT, DETAILS & SLAB DETAILS AND LOCATION OF OHT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 10.

REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx.<br>SE - South | Sd.xxxx 31.08.2023.<br>CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

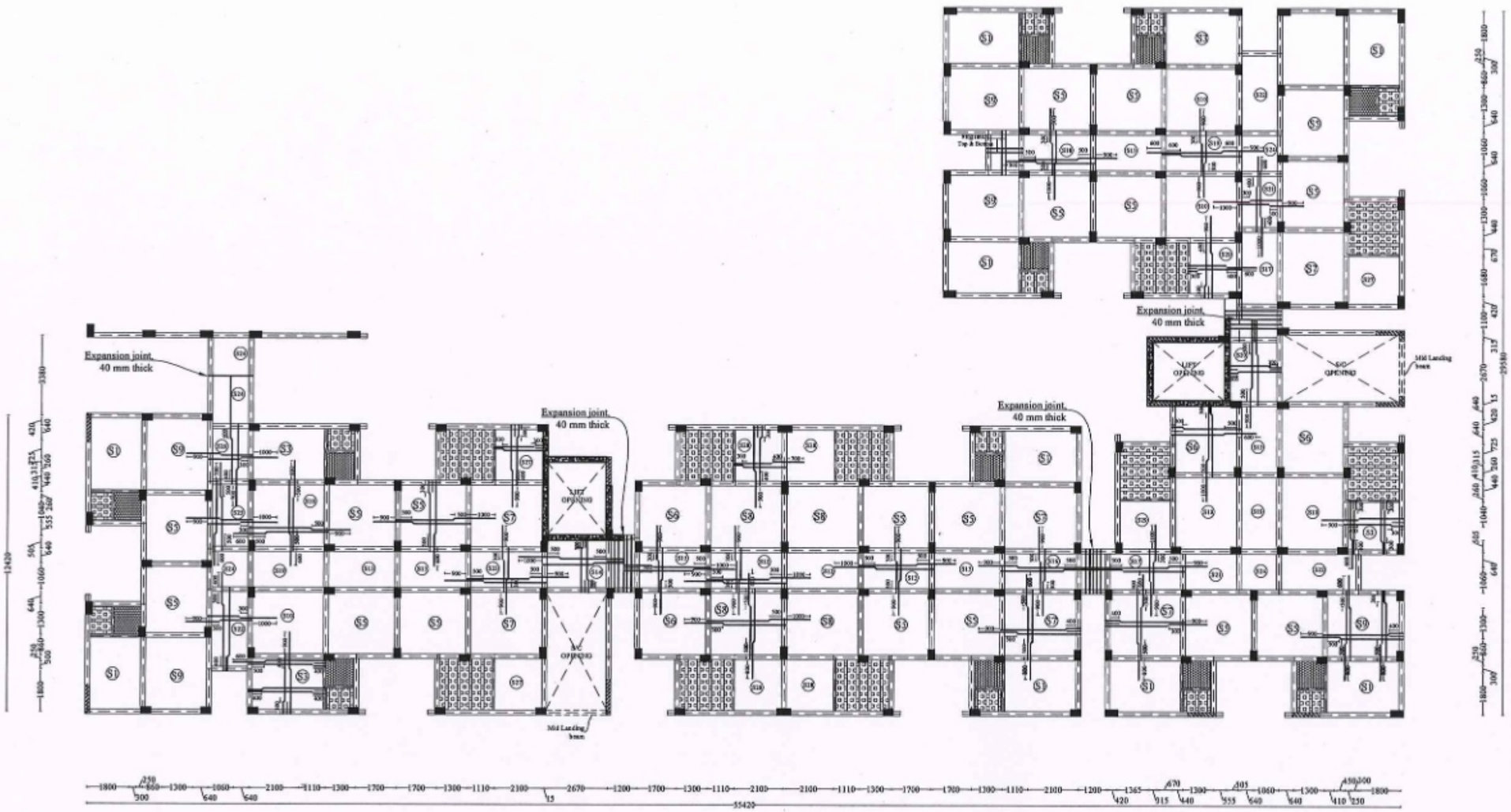
TRUE COPY

31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

# STILT FLOOR SLAB DETAILS




SLAB SUNKEN BY 255mm

SLAB SUNKEN BY 400mm

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Note:
1. For Sunken Slab details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

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31.8.23

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
STILT FLOOR SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

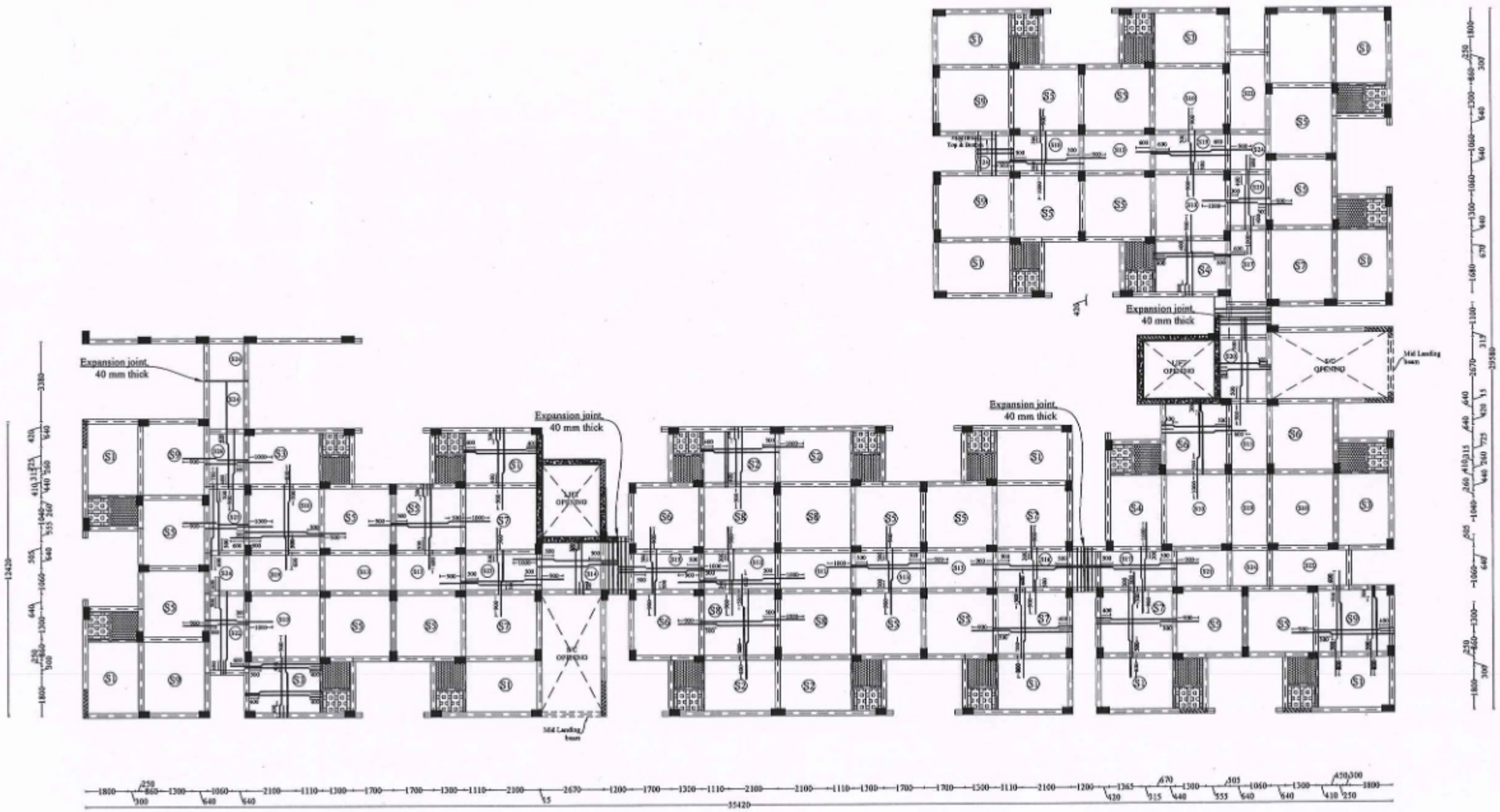
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REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx. SE - South** | **Sd.xxxx 31.08.2023. CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# FIRST & SIXTH FLOOR SLAB DETAILS




SLAB SUNKEN BY 255mm

SLAB SUNKEN BY 400mm

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Note:
1. For Sunken Slab details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31.8.23

31/08/23

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
FIRST & SIXTH FLOOR SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

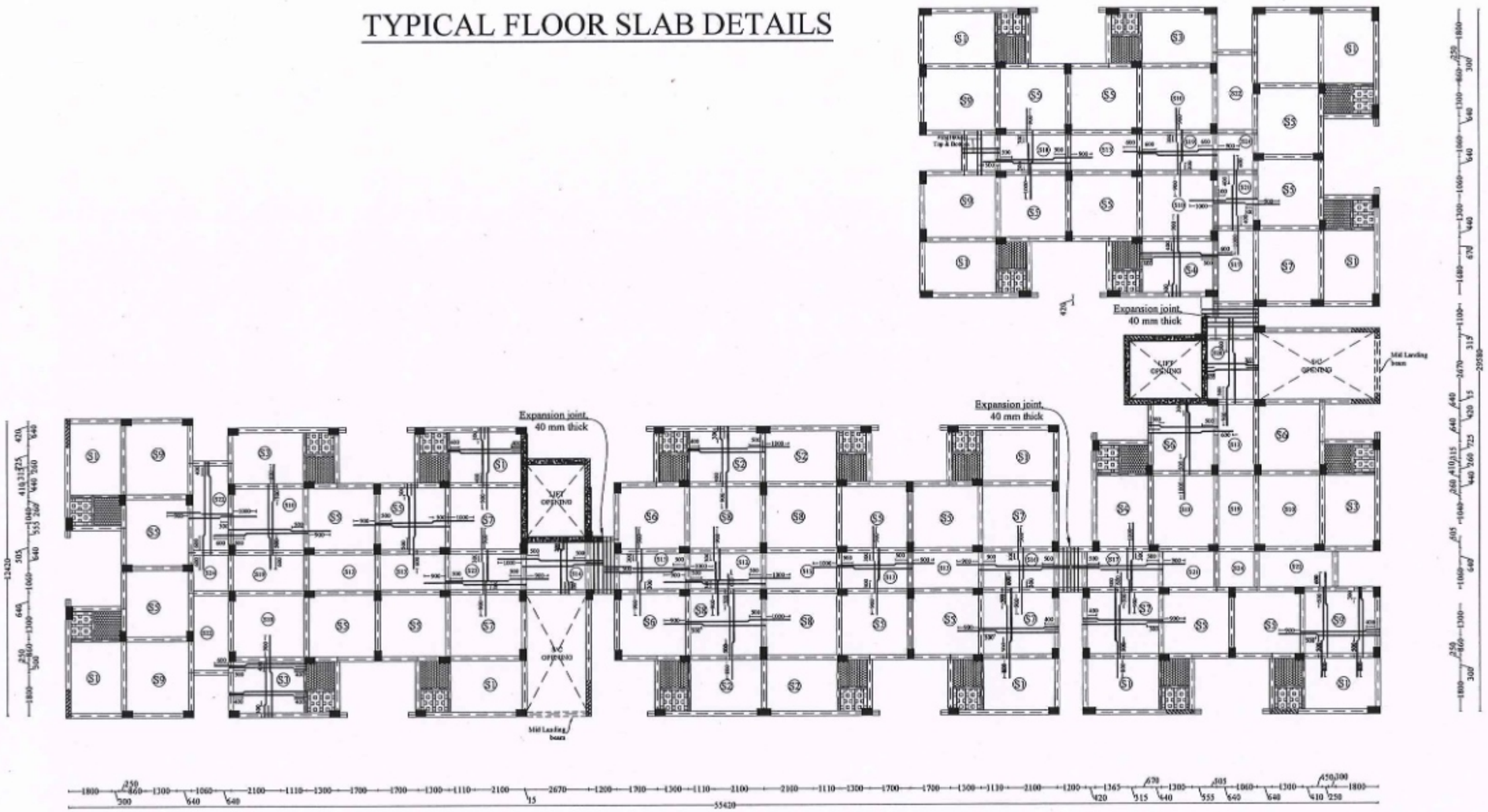
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 12.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# TYPICAL FLOOR SLAB DETAILS




SLAB SUNKEN BY 255mm

SLAB SUNKEN BY 400mm

Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

Note:
1. For Sunken Slab details refer Drawing no : TNUHDB / SUBRAMANIYAPURAM / GEN / 01.

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EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

31/05/23

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TYPICAL FLOOR SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

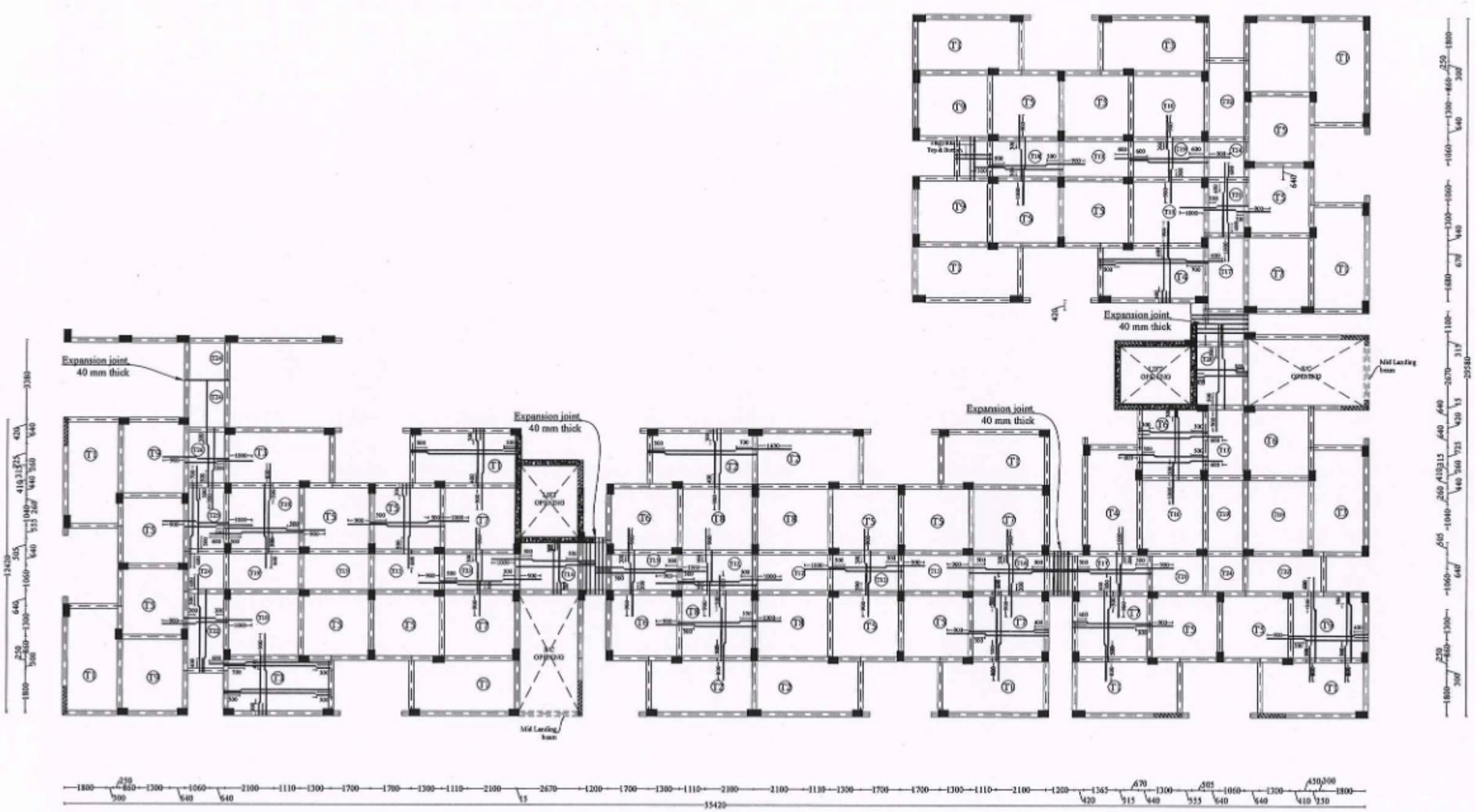
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 13.

REVISION NO.:

| Assistant Engineer | Asst. Exe. Engineer |
|---|---|
| Executive Engineer | SE - PMU |
| Sd.xxxxx. SE - South | Sd.xxxx 31.08.2023. CE - South |

STRUCTURAL & QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
NO.5, KAMARAJAR SALAI
CHENNAI - 600 005.

# TERRACE SLAB DETAILS




Note:
1.SLAB 125mm THICK
2.ALL SLAB REINFORCEMENT ARE #8@180mm c/c

NOTE:

1. All the Dimensions are in mm.
2. M30 Concrete and Fe500D grade steel shall be adopted.
3. Slab Thickness is 125mm.
4. Clear cover to slab is 25mm.
5. Crank point distances are as shown.
6. "-------" denotes extra rods to be provided at top.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
TERRACE SLAB DETAILS.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 14.

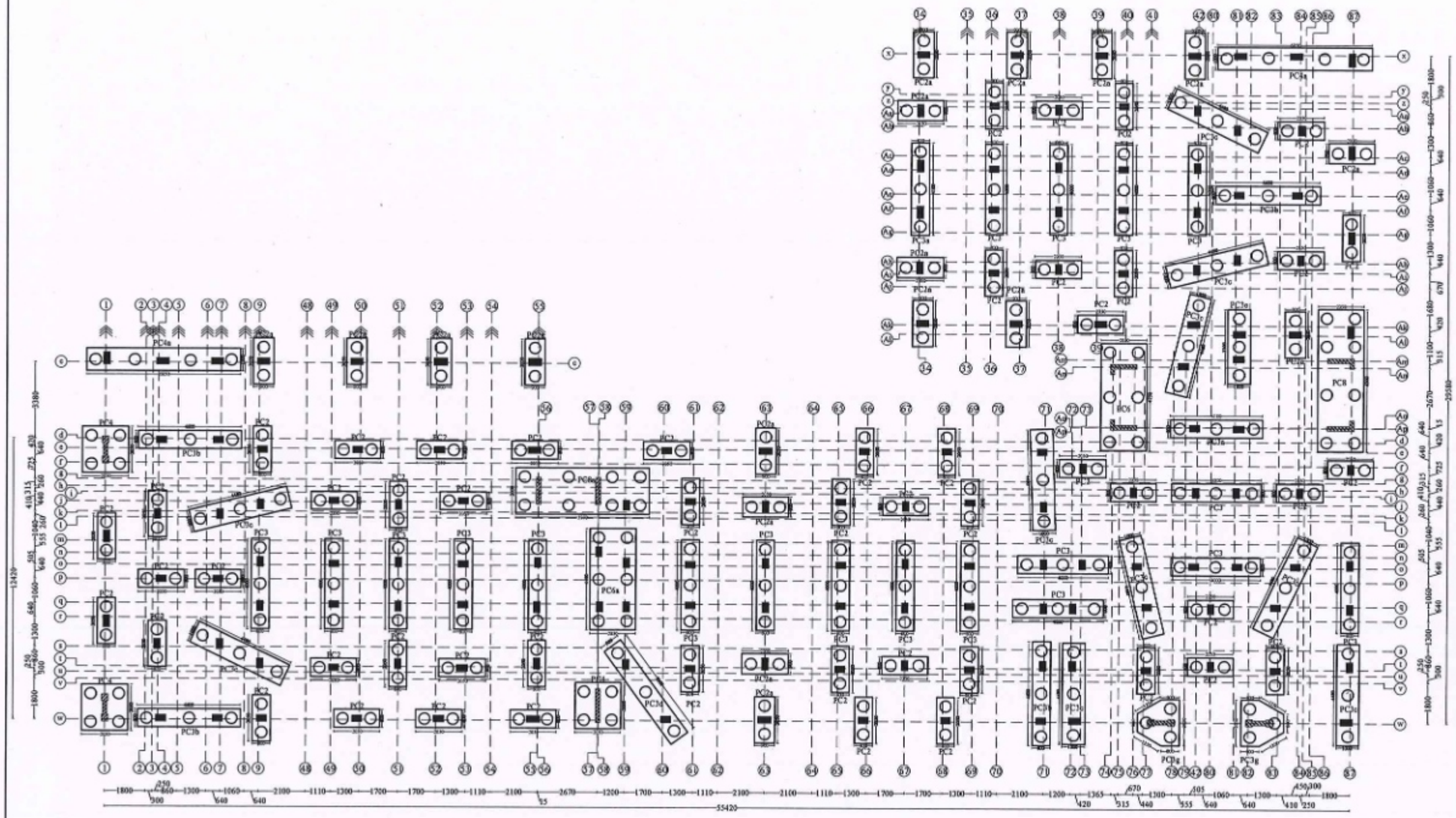
REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.**<br>**SE - South** | **Sd.xxxx 31.08.2023.**<br>**CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

TRUE COPY
31.8.23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.
31/08/23

# PILE AND PILE CAP LAYOUT



**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
19. Anchorage of column bars into the footings shall not be less than 50 Ø.
20. Field Engineers should ensure that the soil at the recommended founding depth is in conformity to the soil characteristic detailed in the soil test report. If any variation in soil strata is encountered at the recommended foundation depth, then the same should be informed to the Chief Engineer atonce for review.
21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,, unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

**STRUCTURAL DETAILS**

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
PILE AND PILE CAP LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 01.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

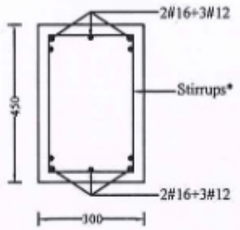
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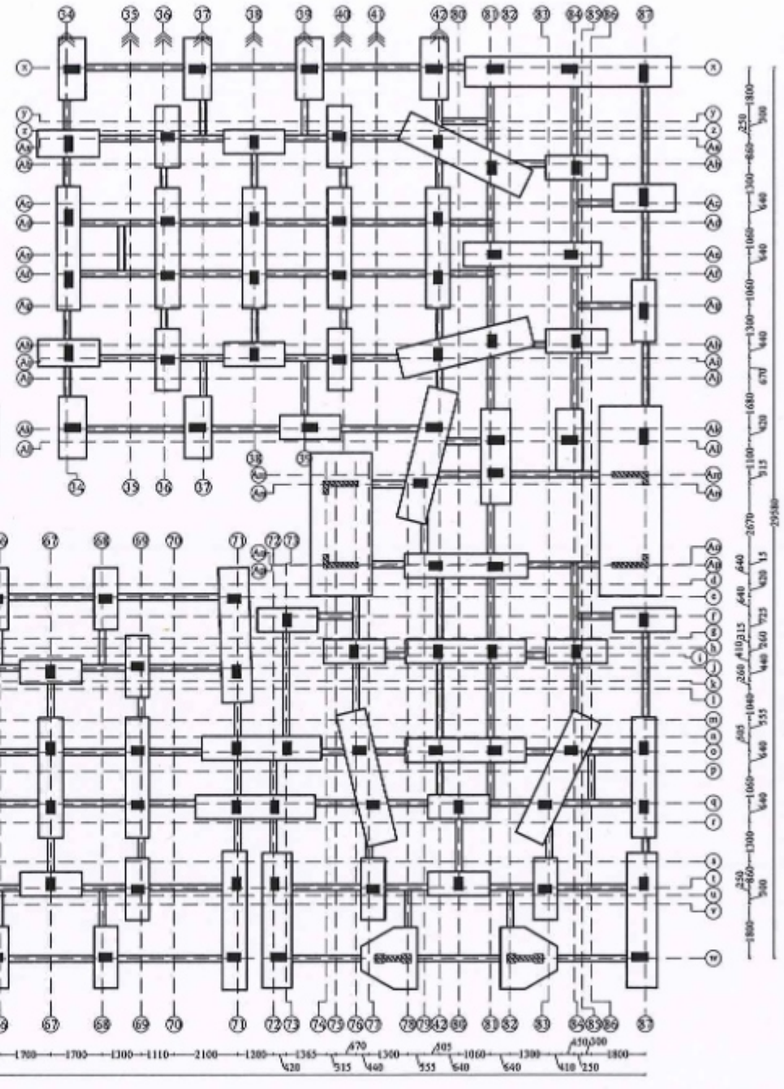
31.8.23
EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
#.5, KAMARAJAR SALAI, CHENNAI-600 005.

31/08/23

# GRADE BEAM WITH PILE CAP LAYOUT & DETAILS

ALL GRADE BEAMS
(300x450)





NOTE :
1) Stirrups* - 2L#10mm Stirrups @ 75mm c/c for 900 mm length on all side near beam column junction and the rest at 150 mm c/c.

Note:
1. For Pile & Pile cap details refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 03 / 04.
2. For RC details of Lift Well refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 05.

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
4. All the reinforcement shall be of **Fe500D** grade conforming to IS 1786 - 2008 unless noted otherwise.
5. The structure is designed for seismic zone II as per IS 1893:2016 and detailed as per IS13920:2016.
6. AAC Blocks has been considered for masonry work in super structure and Fly Ash Bricks has been considered for masonry work in sub structure.
7. Structure is designed for (S+9) floors only.
8. Design of the structure carried out with Limit State Method.
9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
17. Cut lintels to be provided in all floors.
18. Lapping of column bars shall be midway between slabs and staggered with lap length not less than 50 Ø.
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22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
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24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
GRADE BEAM WITH PILE CAP LAYOUT & DETAILS.

TYPE DESIGN NO.: 22/2021

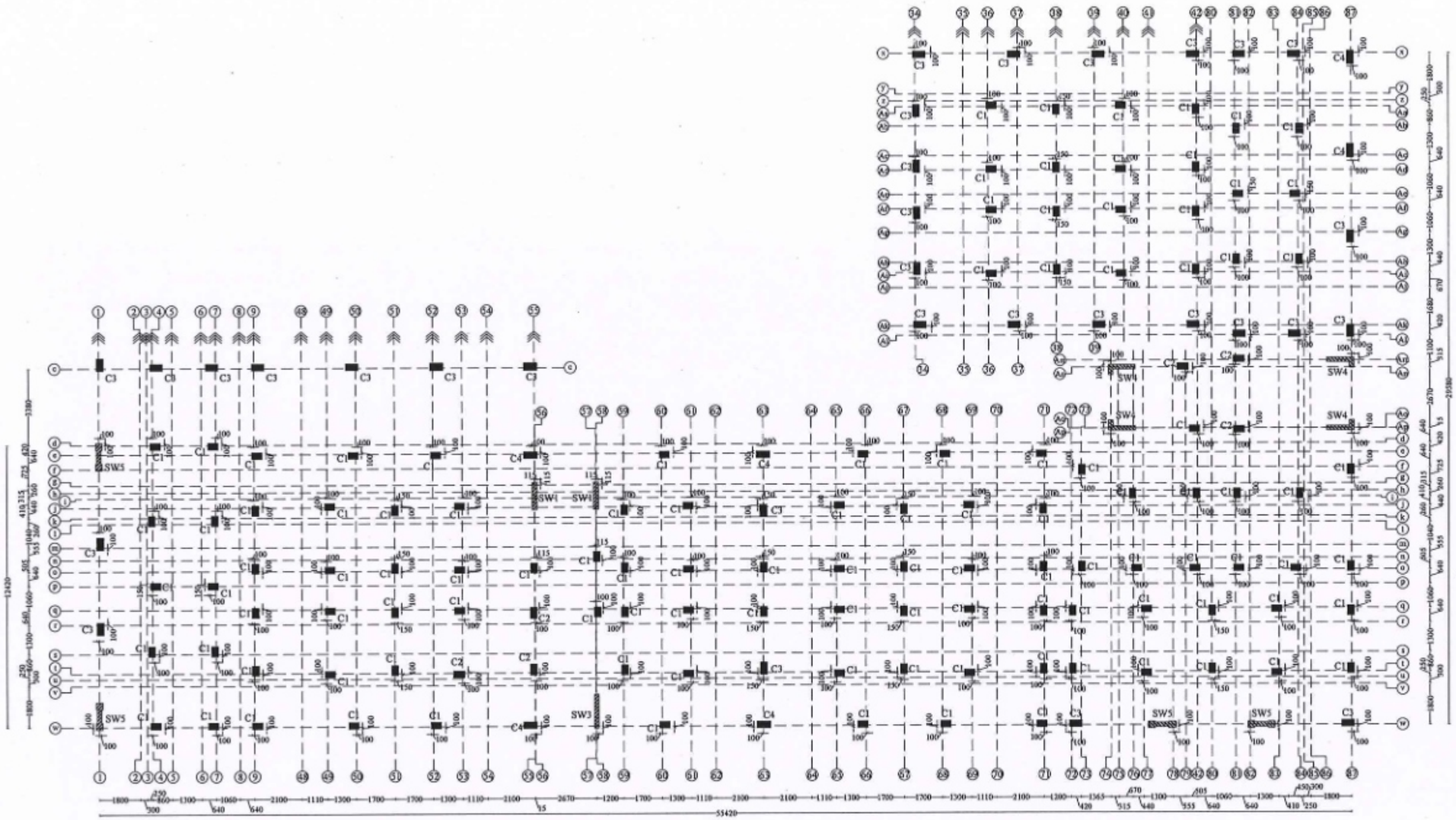
DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 02.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

# COLUMN LAYOUT




Note:
1. For Schedule of Column details refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 07.
2. For Shear Wall Reinforcement details refer Drawing no : NO.: TNUHDB / SUBRAMANIYAPURAM / PART-1 / 08 / 09.

TRUE COPY

EXECUTIVE ENGINEER
STRUCTURAL AND QUALITY CONTROL CELL
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD
# 5, KAMARAJAR SALAI, CHENNAI-600 005.

**NOTE :**

1. All the dimensions are in mm unless noted otherwise.
2. All structural drawings shall be read in conjunction with the relevant Architectural drawings.
3. All the RCC works shall be as per design mix of **M30** grade, conforming to IS: 456 - 2000.
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9. Bored Cast-in-situ piles of 500 mm diameter shall be adopted with the minimum length of pile of 30 m from the Existing Ground Level (EGL) & The axial capacity of pile is 110.5 ton and the lateral capacity is 51.2 ton (Fixed) as recommended in Soil Report.
10. It is recommended carryout routine load test as per IS 2911- Part 4 (1985).
11. It is recommended to carry out pile integrity tests on working piles minimum 25 percent of the total number of piles in each block.
12. Good quality of bentonite with a liquid limit of approx. 350 is recommended to be used as the drilling mud in boring operations. Proper cleaning of borehole bottom after lowering the reinforcement cage shall be strictly employed as quality control measures.
13. Analysis of the structure done with **ETABS**.
14. Clear cover for reinforcement are as follows:
    (a) Pile & Pile Cap - 70 mm
    (b) Column/Wall - 40 mm
    (c) Floor and roof beam - 30 mm
    (d) Slab - 25 mm
    (e) Water Tank Walls & Slab - 30 mm
15. Design mix report should be got approved by the Anna University/IIT Madras/PWD.
16. All PCC works should be carried out with PCC 1:4:8 conforming IS: 456 - 2000.
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19. Anchorage of column bars into the footings shall not be less than 50 Ø.
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21. Ground water quality has to be conformed for suitability to construction work.
22. The ground water / soil to be tested for chlorides & sulphate and remedial measures if any should be taken accordingly.
23. Dimensions and levels are to unfinished surface excluding finishes,coating etc,. unless noted otherwise. The dimension should be checked with type design drawing.
24. The Recommendations in the Soil Report furnished by Department Of Civil Engineering, University College Of Engineering, Dindigul, Dt: 23.05.2022 should be followed scrupulously.

## STRUCTURAL DETAILS

PROJECT:
CONSTRUCTION OF 396 NOS OF (S+9) TENEMENTS AT SUBRAMANIYAPURAM, MADURAI DISTRICT, UNDER HFA (AHP)

TITLE:
COLUMN LAYOUT.

TYPE DESIGN NO.: 22/2021

DWG.NO.: TNUHDB / SUBRAMANIYAPURAM / PART-2 / 03.

REVISION NO.:

| | |
|---|---|
| **Assistant Engineer** | **Asst. Exe. Engineer** |
| **Executive Engineer** | **SE - PMU** |
| **Sd.xxxxx.<br>SE - South** | **Sd.xxxx 31.08.2023.<br>CE - South** |

**STRUCTURAL & QUALITY CONTROL CELL**
**TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD**
**NO.5, KAMARAJAR SALAI**
**CHENNAI - 600 005.**

OFFICE OF THE
EXECUTIVE ENGINEER,
STRUCTURAL QUALITY
CONTROL WING,
TAMILNADU URBAN HABITAT
DEVELOPMENT BOARD,
KAMARAJAR SALAI,
CHENNAI – 05.

## STABILITY CERTIFICATE

This is to Certify that the Construction of 396 (S+9) tenements at Subramaniyapuram colony Scheme in T.S.No 40 & 42 Ward IV, Block 39 of Madurai west Taluk, Madurai District, Tamil Nadu, which is structurally designed for S+9 Floors assuming the live load of 200 Kg/ Sq.m as per IS 875 and also designed as per IS 456. The Grade of concrete is M30 for sub and super structure members. The structure is also designed for the seismic zone as per IS code. The structural design is Safe, Good and sound.

Yours Faithfully,

30/8/2024

G. MAHENDIRAN, M.E.,
ASSISTANT EXECUTIVE ENGINEER
REGISTRATION No: SE/I/2024/4/0071
Registered Structural Engineer Grade-I (SE-I)
Tamil Nadu Urban Habitat Development Board
No. 5, Kamarajar Salai, Chennai-600 005.



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