Verified RealEstate™

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

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

hello@verified.realestate
+91 9996 12 9996

Official Property Record

Digitally Verified Record - Powered by Verified RealEstate™



11 Dec 2024

STRUCTURAL STABILITY CERTIFICATE FOR DESIGN

TO WHOMSOEVER IT MAY CONCERN

1. This is to certify that the proposed reconstruction of **Dr Thomas Road** with **470 No. Dwelling Units** comprising **03 Blocks of Stilt + 10 floors** at Dr Thomas Road, T. Nagar in old T.S. No. 6578 part, New T.S. No. 6578/2 part, Block No. 141 of T Nagar within the limit of Greater Chennai Corporation, has been structurally designed.

2. The detailed design report, which includes the method of analysis, design calculations, and structural drawings, is enclosed with this certificate. A broad description of the structure is as follows: -

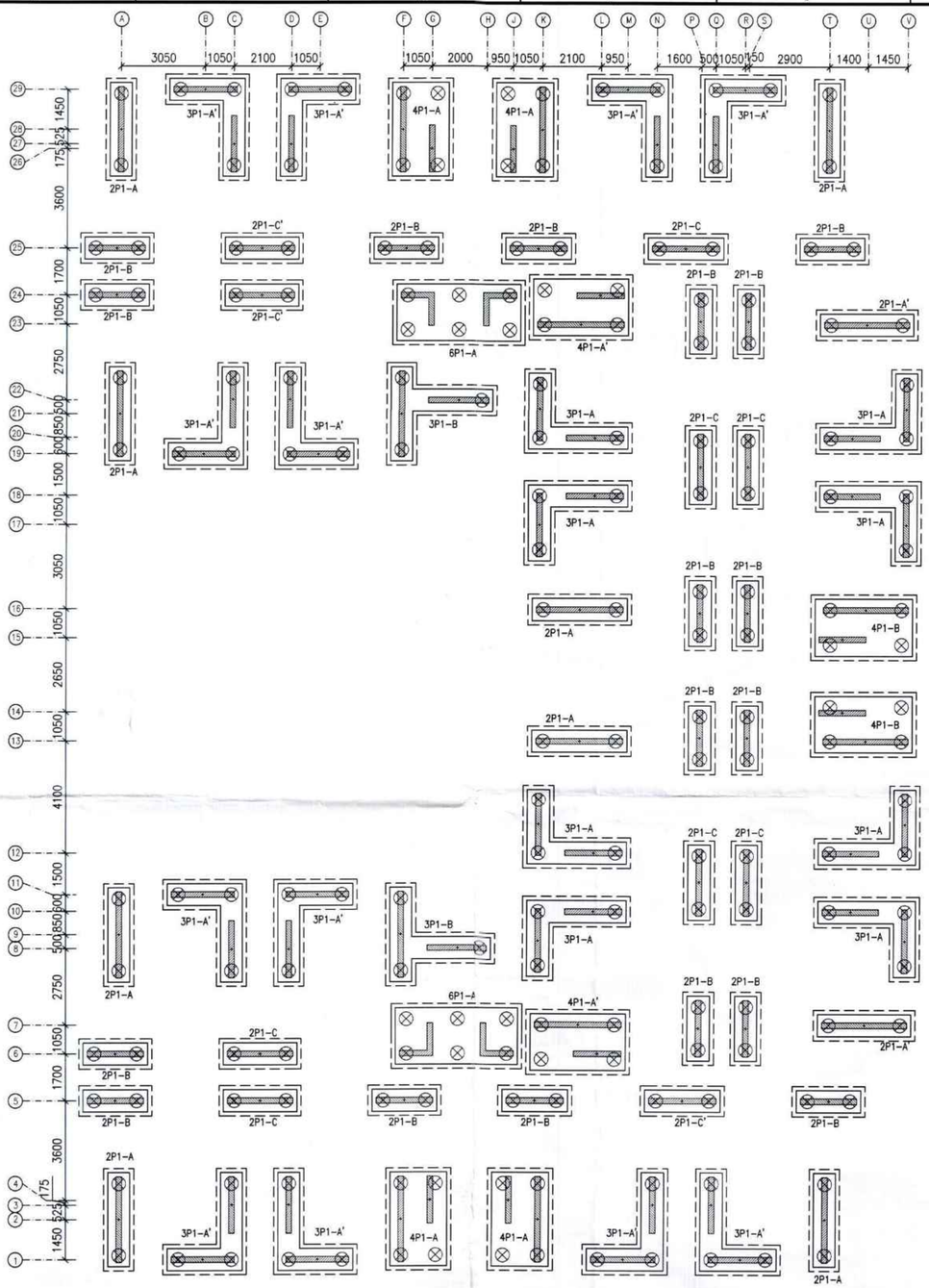
(a) Materials. M30 (Design Mix) grade concrete and Fe 500 D grade steel have been considered for structural design.

(b) Foundation Type. Pile foundation [S+10 floors only and no additional floor is permitted].

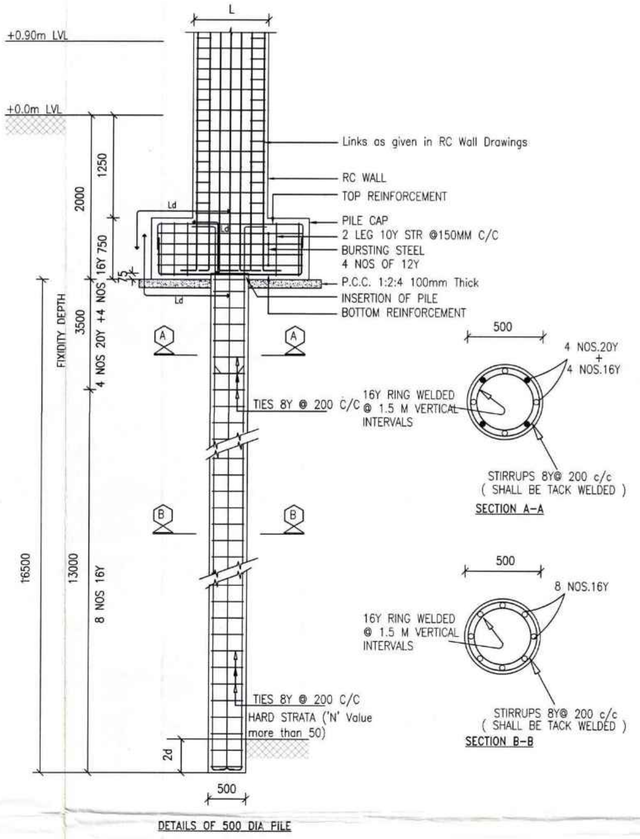
3. The structural design has been carried out in accordance with relevant IS codes and accepted standards to withstand gravity, wind, and earthquake loads as applicable to this site condition.

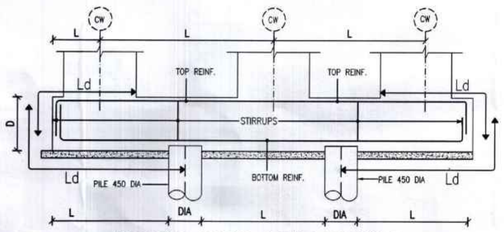
4. The analysis, design calculations, and structural drawings have been thoroughly checked, certified, and proof checked by IIT Madras and found to be safe, good, and sound.

R. Balamourougane
M.Tech., F.IAStructE., FIV., MISE., MSSE., MIBC., MINSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328



PILE LAYOUT





TYPICAL STRIP BEAM DETAILS

NOTES:

1. ALL DIMENSIONS ARE IN 'MILLI METRES' UNLESS OTHERWISE SPECIFIED. DRAWING SHALL NOT BE SCALED OUT. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
2. BORED CAST-IN-SITU PILE CONSTRUCTION WORK IN GENERAL SHALL BE CARRIED OUT AS PER I.S. 2911 (PART I/ SEC - 2) 2010.
3. THE MIX FOR THE R.C.C WORKS SHALL BE DESIGN MIX M30 WITH CEMENT CONTENT NOT LESS THAN 400 kg /cu.m OF CONCRETE.
4. THERMO MECHANICALLY TREATED BARS OF GRADE Fe 500D (ELONGATION NOT LESS THAN 16 %) CONFORMING TO I.S. SPECIFICATION 1786 SHALL BE USED FOR BARS MARKED AS Y.
5. REINFORCEMENT BARS SHALL BE TACK WELDED TO THE LATERAL TIES THROUGHOUT THE LENGTH OF THE PILES TO PROVIDE MORE RIGIDITY TO THE CAGE. ROLLER COVER BLOCKS SHALL BE PROVIDED TO THE CAGE AT APPROXIMATELY TWO METRES INTERVALS AND SUITABLY STAGGERED. ONLY ELECTRICAL WELDING IS PERMITTED.
6. CLEAR COVER TO THE MAIN REINFORCEMENT SHALL BE 60 MM FOR PILES .
7. WATER USED FOR ALL CONCRETE WORK SHALL CONFORM TO CLAUSE 5.4 OF IS 456-2000.
8. THE BORED CAST-IN-SITU PILE SHALL REST ON THE HARD STRATA / WEATHERED ROCK LAYER. THE PILE HAS TO BE TAKEN UPTO THE REFUSAL STRATA.
9. THE VERTICAL LOAD TEST MAY BE CONDUCTED TO ASCERTAIN THE ACTUAL SAFE LOAD CARRYING CAPACITY OF THE PILE IRRESPECTIVE OF THE SAFE LOAD MENTIONED AS PER AGREEMENT ITEM OR IN SOIL INVESTIGATION REPORT .AS PER CLAUSE 4.2.3.9 OF IS 2911 - PT - IV. THE TEST SHALL BE CONDUCTED TILL THE SETTLEMENT ATTAINS 12 MM. AS PER CLAUSE 4.2.3.9 OF IS 2911 - PT - IV.
10. THE TENTATIVE SAFE LOAD ON BORED CAST-IN -SITU PILE IS
    (A) 500MM DIA - 91 TONNES

PILE CAP SCHEDULES

Sl.NO.	PILE CAP NAME	TOTAL NOS	
		PILE	PILE CAP
1	2P1-A	16	08
2	2P1-A'	04	02
3	2P1-B	36	18
4	2P1-C	14	07
5	2P1-C'	06	03
6	3P1-A	24	08
7	3P1-A'	36	12
8	3P1-B	06	02
9	4P1-A	16	04
10	4P1-A'	08	02
11	4P1-B	08	02
12	6P1-A	12	02
	TOTAL	186	70

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.E.,FIV.,M.ISE.,M.ISC.,M.NAE.,M.NASEAG,MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai - 600 113.
Registered Structural Engineer (GR - 1)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/004	SHEET NO:004	REV NO: R0

DRAWING TITLE : PILE LAYOUT

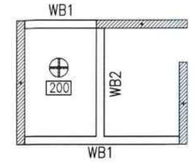
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

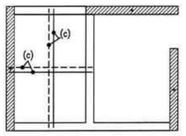
☐PRELIMINARY ☐APPROVAL ☑CONSTRUCTION	☐TENDER	☐INFORMATION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

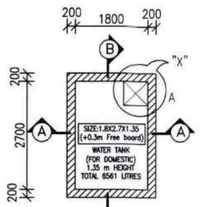
NOTE: ALL DIMENSION ARE IN mm



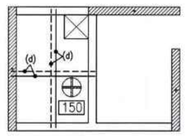
WATER TANK-1,2,3,4,5,6,7,8,9,10,11
12,13,14,15,16,17,18,19,20
BOTTOM BEAM LAYOUT



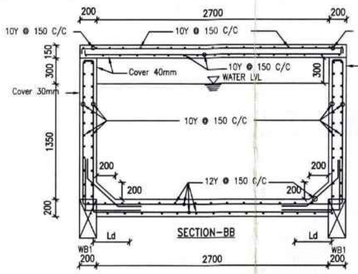
WATER TANK-1,2,3,4,5,6,7,8,9,10,11
12,13,14,15,16,17,18,19,20
BOTTOM SLAB LAYOUT

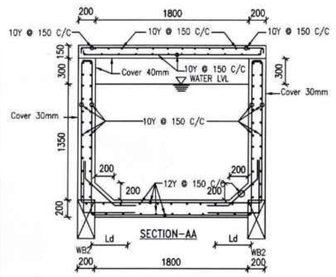


RCC WALL LAYOUT
AND MANHOLE DETAILS



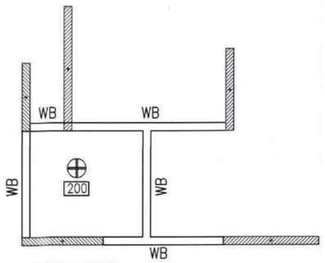
WATER TANK-1,2,3,4,5,6,7,8,9,10,11
12,13,14,15,16,17,18,19,20
TOP SLAB LAYOUT



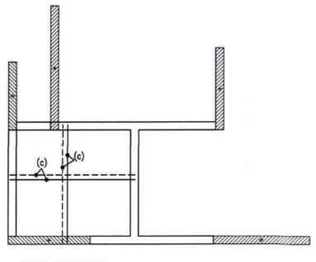


LEGEND:
⊕ – Two way slab
—— – Top Bar
—— – Bottom Bar

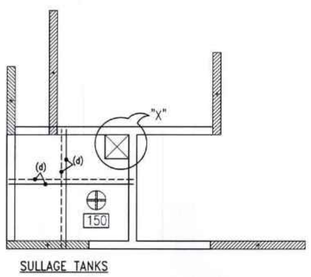
LEGEND:
(c) – 12Y @ 150 c/c
(d) – 10Y @ 150 c/c



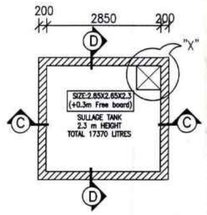
SULLAGE TANKS
BOTTOM BEAM LAYOUT



SULLAGE TANKS
BOTTOM SLAB LAYOUT



SULLAGE TANKS
TOP SLAB LAYOUT



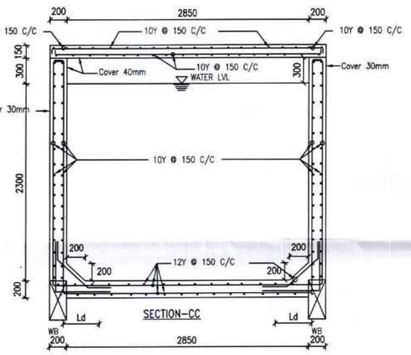
SULLAGE TANKS
: WALL LAYOUT & MANHOLE DETAILS

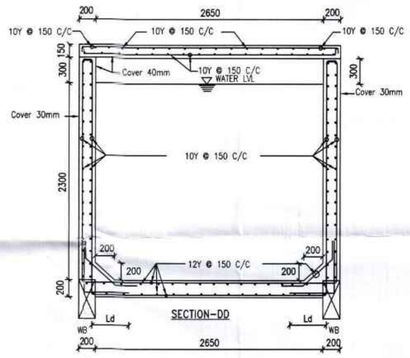
WATER TANK BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
WB1 200x450	200 2x16Y; 450; 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 450; 2L-8Y@150mmc/c; 2x16Y	200 2x16Y; 450; 2L-8Y@100mmc/c; 2x16Y
WB2 200x450	200 2x16Y; 450; 2L-10Y@100mmc/c; 2x16Y	200 2x16Y; 450; 2L-10Y@100mmc/c; 2x16Y	200 2x16Y; 450; 2L-10Y@100mmc/c; 2x16Y

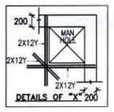
WATER TANK BEAM REINFORCEMENT DETAILS

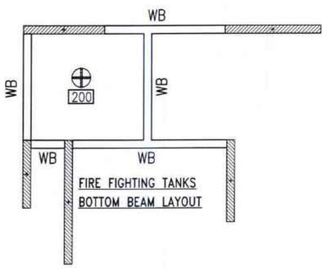
BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
WB 200x450	200 2x16Y; 450; 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 450; 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 450; 2L-8Y@100mmc/c; 2x16Y



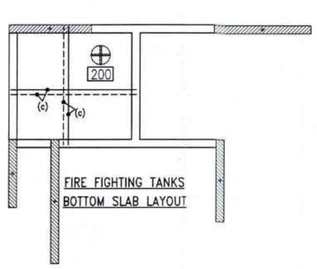


NOTE:
Water tank Inner cover should be 40mm
Water tank Outer cover should be 30mm
The water tank base slab reinforcement and beam top reinforcement shall not be connected to avoid corrosion transfer.

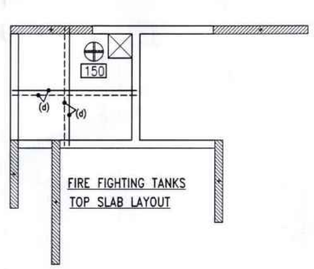




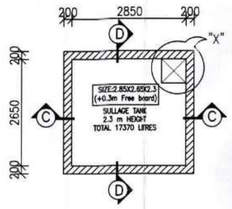
FIRE FIGHTING TANKS
BOTTOM BEAM LAYOUT



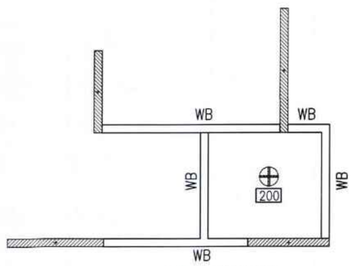
FIRE FIGHTING TANKS
BOTTOM SLAB LAYOUT



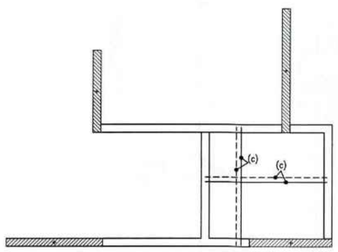
FIRE FIGHTING TANKS
TOP SLAB LAYOUT



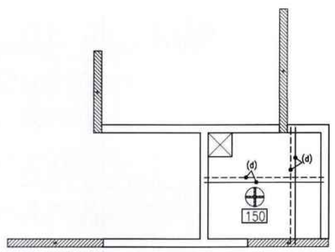
FIRE FIGHTING TANKS
RCC WALL LAYOUT & MANHOLE DETAILS



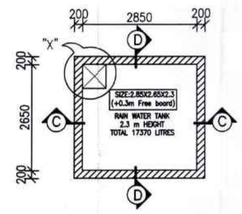
RAIN WATER TANKS
BOTTOM BEAM LAYOUT



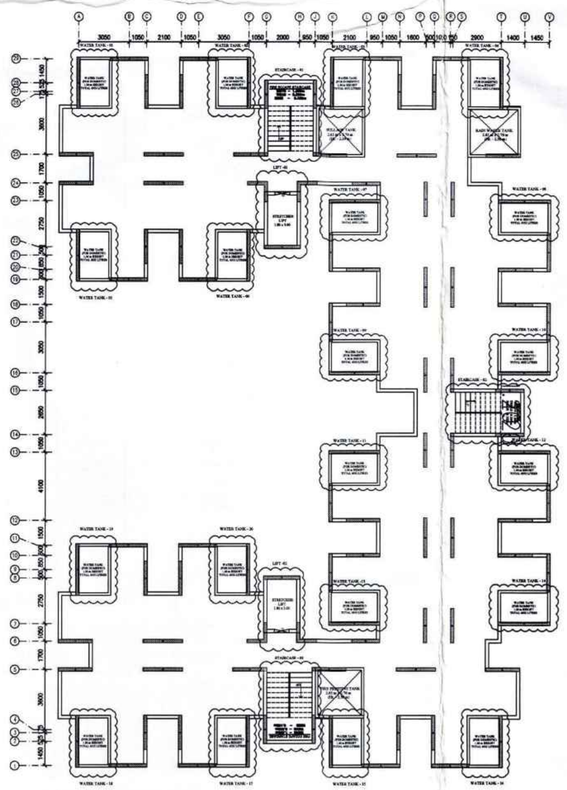
RAIN WATER TANKS
BOTTOM SLAB LAYOUT



RAIN WATER TANKS
TOP SLAB LAYOUT



RAIN WATER TANKS
RCC WALL LAYOUT & MANHOLE DETAILS



HEADROOM, LIFT AND WATER TANK – KEY PLAN

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

SYMBOL	DESCRIPTION
NOTE:	NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.I.E(Struct.E., F.V., MISE, MISC, MIC, MNSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory

Dr.A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

Proof Checked By:

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/016	SHEET NO:016	REV NO: R0

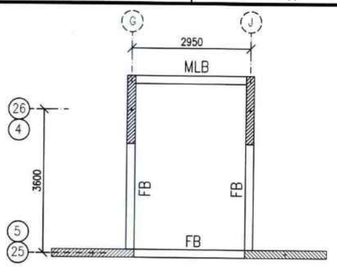
DRAWING TITLE :
WATER TANK DETAILS

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET:A1

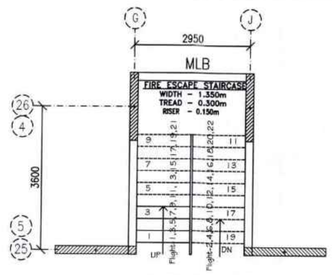
ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022
DESIGNED BY:		DRAWN BY:	
CHECKED BY:		APPROVED BY:	

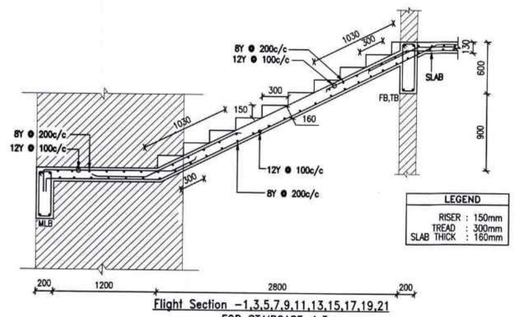
NOTE: ALL DIMENSION ARE IN mm



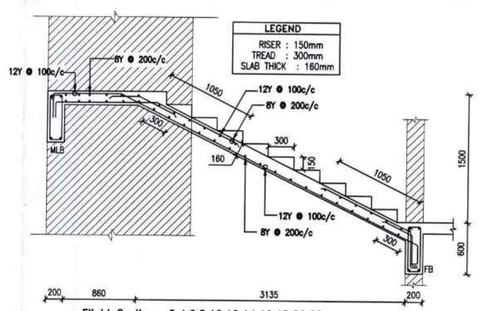
STAIRCASE-BEAM LAYOUT
FOR STAIRCASE-1,3



STAIRCASE-PLAN LAYOUT
FOR STAIRCASE-1,3



Flight Section -1,3,5,7,9,11,13,15,17,19,21
FOR STAIRCASE-1,3

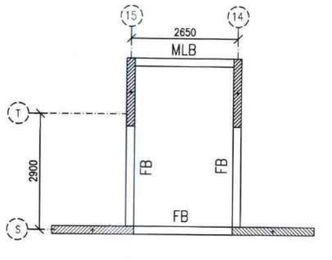


Flight Section -2,4,6,8,10,12,14,16,18,20,22
FOR STAIRCASE-1,3

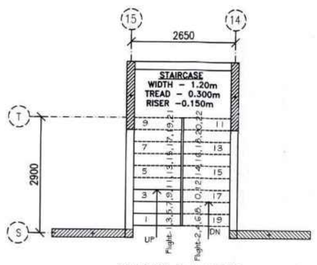
LEGEND:

- ⊕ – Two way slab
- —— – Top Bar
- —— – Bottom Bar

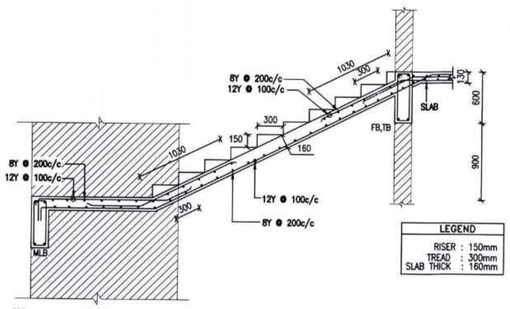
LEGEND:
(a) – 10Y @ 180 c/c
(b) – 12Y @ 180 c/c



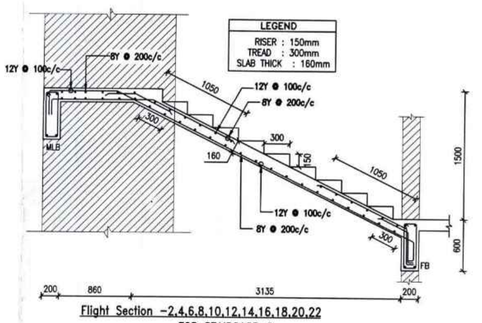
STAIRCASE-BEAM LAYOUT
FOR STAIRCASE-2



STAIRCASE-PLAN LAYOUT
FOR STAIRCASE-2



Flight Section -1,3,5,7,9,11,13,15,17,19,21
FOR STAIRCASE-2



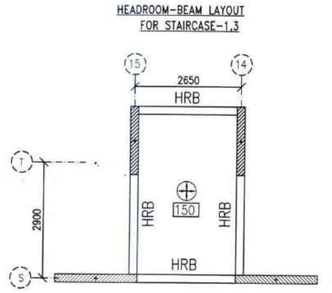
Flight Section -2,4,6,8,10,12,14,16,18,20,22
FOR STAIRCASE-2

TYPICAL MIDLANDING BEAM REINFORCEMENT DETAILS

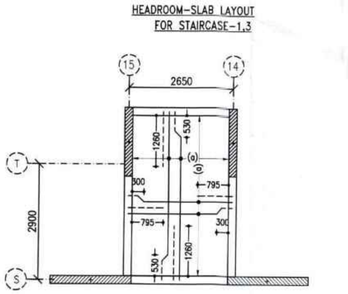
BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
MLB 200x600	200; 2x16Y(I) + 2x12Y(II); 2L-8Y@100 mm c/c; 600; 2x12Y(II) + 2x16Y(I)	200; 2x16Y; 2L-8Y@100 mm c/c; 600; 2x16Y	200; 2x16Y(I) + 2x12Y(II); 2L-8Y@100 mm c/c; 600; 2x12Y(II) + 2x16Y(I)

TYPICAL HEADROOM FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
HRB 230x450	230; 2x16Y; 2L-8Y@100mm c/c; 450; 2x16Y	230; 2x16Y; 2L-8Y@150mm c/c; 450; 2x16Y	230; 2x16Y; 2L-8Y@100mm c/c; 450; 2x16Y



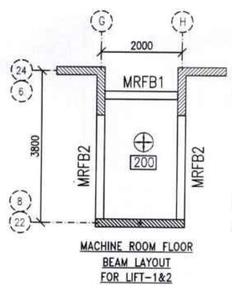
HEADROOM-BEAM LAYOUT
FOR STAIRCASE-1,3



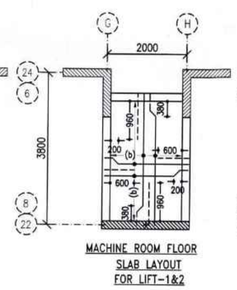
HEADROOM-SLAB LAYOUT
FOR STAIRCASE-1,3

STAIRCASE-BEAM LAYOUT
FOR STAIRCASE-2

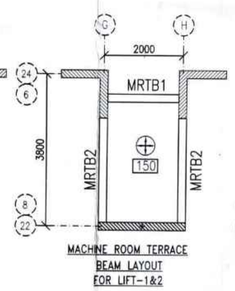
STAIRCASE-BEAM LAYOUT
FOR STAIRCASE-2



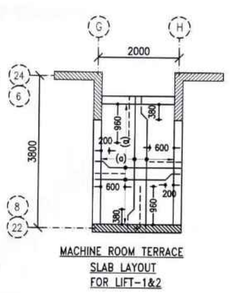
MACHINE ROOM FLOOR
BEAM LAYOUT
FOR LIFT-1&2



MACHINE ROOM FLOOR
SLAB LAYOUT
FOR LIFT-1&2



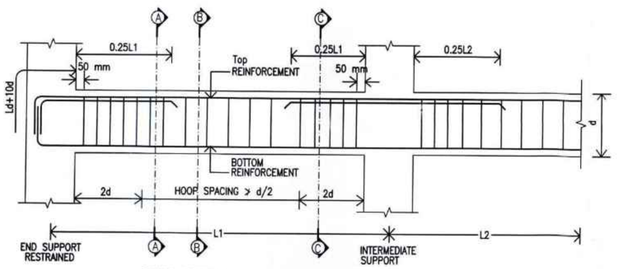
MACHINE ROOM TERRACE
BEAM LAYOUT
FOR LIFT-1&2



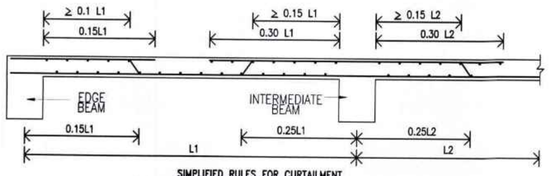
MACHINE ROOM TERRACE
SLAB LAYOUT
FOR LIFT-1&2

HEAD ROOM, MACHINE ROOM BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
MRFB1 200x450	200; 2x16Y; 2L-8Y@75 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@75 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@75 mm c/c; 450; 2x16Y
MRFB2 200x450	200; 2x16Y; 2L-8Y@100 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@150 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@100 mm c/c; 450; 2x16Y
MRTB1 200x450	200; 2x16Y; 2L-8Y@100 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@150 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@100 mm c/c; 450; 2x16Y
MRTB2 200x450	200; 2x16Y; 2L-8Y@100 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@150 mm c/c; 450; 2x16Y	200; 2x16Y; 2L-8Y@100 mm c/c; 450; 2x16Y



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

NOTE: Base slab of water tank should be 1000mm above the terrace floor level

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and mode use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.E.,FIV.,MISE.,MSSE.,MIEC.,MACAG,MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/015	SHEET NO:015	REV NO: R0

DRAWING TITLE :
STAIRCASE, HEAD ROOM & MACHINE ROOM REINFORCEMENT DETAILS

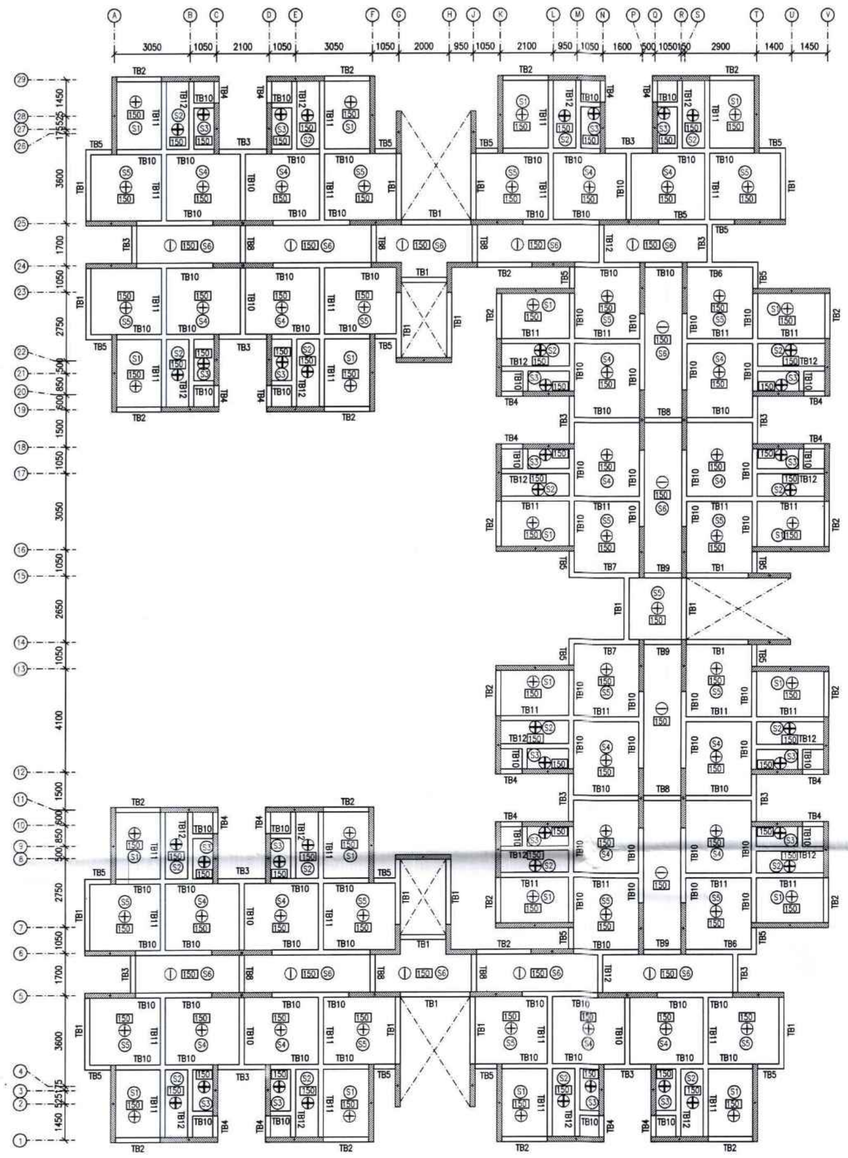
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



TERRACE FLOOR BEAM AND SLAB REINFORCEMENT DETAILS

TERRACE FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
TB1 200x600	200 2x16Y; 600; 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 600; 2L-8Y@175mm c/c; 2x16Y	200 2x16Y; 600; 2L-8Y@100mm c/c; 2x16Y
TB2 200x600	200 2x16Y; 600; 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 600; 2L-8Y@150mm c/c; 2x16Y	200 2x16Y; 600; 2L-8Y@100mm c/c; 2x16Y
TB3 200x600	200 2x16Y; 600; 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 600; 2L-8Y@125mmc/c; 2x16Y	200 2x16Y; 600; 2L-8Y@100mmc/c; 2x16Y
TB4 200x600	200 2x16Y; 600; 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 600; 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 600; 2L-8Y@100mmc/c; 2x16Y
TB5 200x600	200 2x16Y; 600; 2L-8Y@75mmc/c; 2x16Y	200 2x16Y; 600; 2L-8Y@75mmc/c; 2x16Y	200 2x16Y; 600; 2L-8Y@75mmc/c; 2x16Y
TB6 200x600	200 2x16Y; 600; 2L-10Y@100mmc/c; 2x16Y	200 2x16Y; 600; 2L-10Y@100mmc/c; 2x16Y	200 2x16Y; 600; 2L-10Y@100mmc/c; 2x16Y
TB7 200x600	200 2x16Y; 600; 2L-10Y@75mmc/c; 2x16Y	200 2x16Y; 600; 2L-10Y@75mmc/c; 2x16Y	200 2x16Y; 600; 2L-10Y@75mmc/c; 2x16Y

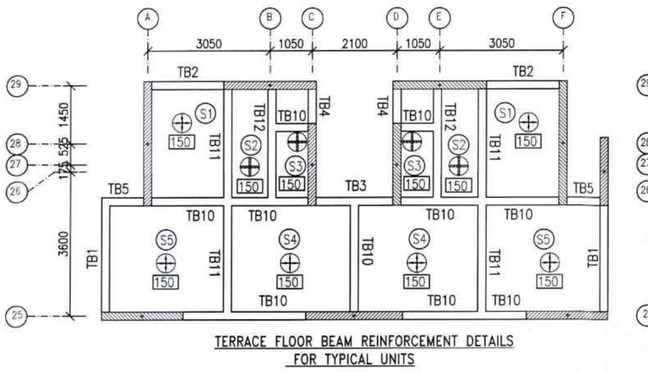
TERRACE FLOOR BEAM REINFORCEMENT DETAILS

TB8 200x450	200 2x16Y; 450; 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 450; 2L-8Y@150mm c/c; 2x16Y	200 2x16Y; 450; 2L-8Y@100mm c/c; 2x16Y
TB9 200x450	200 2x16Y; 450; 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 450; 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 450; 2L-8Y@100mm c/c; 2x16Y
TB10 200x450	200 2x16Y; 450; 2L-8Y@75mm c/c; 2x16Y	200 2x16Y; 450; 2L-8Y@75mm c/c; 2x16Y	200 2x16Y; 450; 2L-8Y@75mm c/c; 2x16Y
TB11 200x450	200 2x16Y; 450; 2L-10Y@100mm c/c; 2x16Y	200 2x16Y; 450; 2L-10Y@100mm c/c; 2x16Y	200 2x16Y; 450; 2L-10Y@100mm c/c; 2x16Y
TB12 200x450	200 2x16Y; 450; 2L-10Y@75mm c/c; 2x16Y	200 2x16Y; 450; 2L-10Y@75mm c/c; 2x16Y	200 2x16Y; 450; 2L-10Y@75mm c/c; 2x16Y

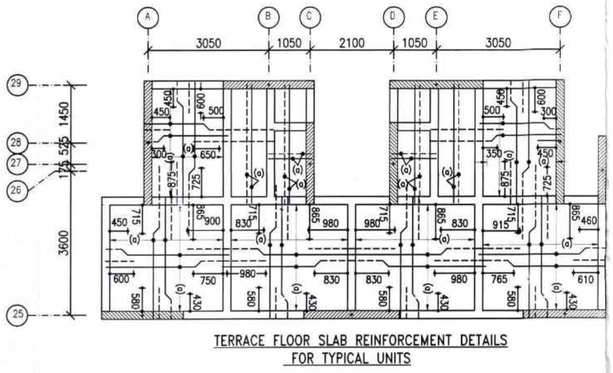
SLAB REINFORCEMENT DETAILS (TERRACE FLOOR)

SL NO	SLABS	THICK	MAIN BARS SHORT SPAN (a) DIA	MAIN BARS LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP) SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP) LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
2	S2	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
3	S3	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
4	S4	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
5	S5	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
6	S6	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C

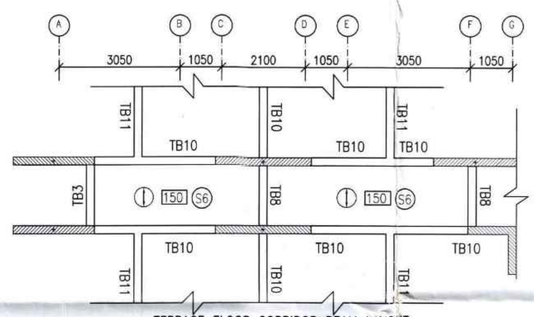
LEGEND:
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar



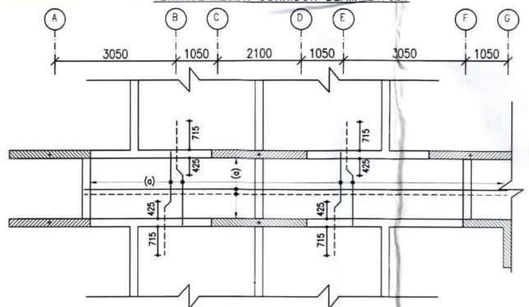
TERRACE FLOOR BEAM REINFORCEMENT DETAILS FOR TYPICAL UNITS



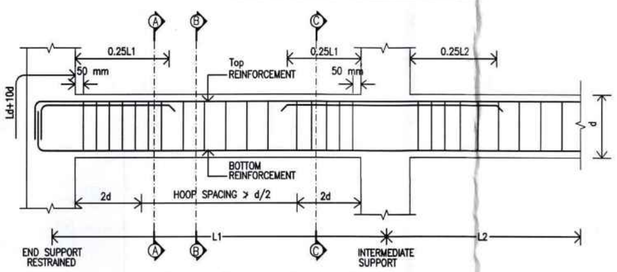
TERRACE FLOOR SLAB REINFORCEMENT DETAILS FOR TYPICAL UNITS



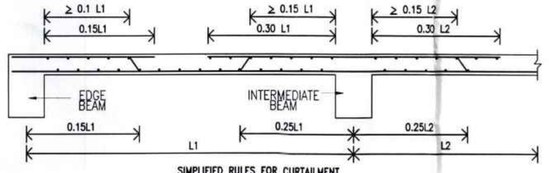
TERRACE FLOOR CORRIDOR BEAM LAYOUT



TERRACE FLOOR CORRIDOR SLAB LAYOUT



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.Struct.E., FIV, MSE., MSSE., MIC., MIWDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory
Proof Checked By:
Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/014	SHEET NO:014	REV NO: R0

DRAWING TITLE : TERRACE FLOOR REINFOREMENT DETAILS

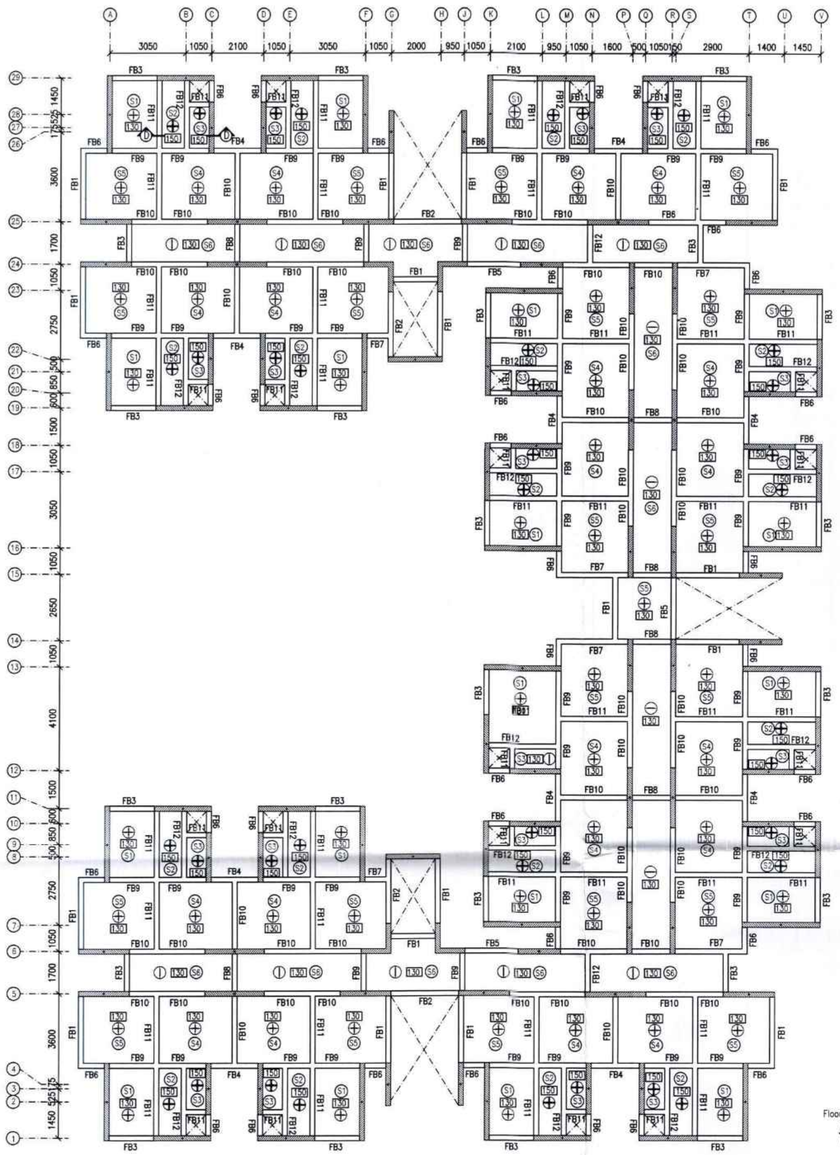
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



SEVENTH FLOOR BEAM AND SLAB REINFORCEMENT DETAILS

SEVENTH FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB1 200x600	200 / 2x16Y / 600 / 2L-8Y@100mm c/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@175mm c/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@100mm c/c / 2x16Y
FB2 200x600	200 / 2x16Y / 600 / 2L-8Y@100mm c/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@150mm c/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@100mm c/c / 2x16Y
FB3 200x600	200 / 2x16Y / 600 / 2L-8Y@100mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@125mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@100mmc/c / 2x16Y
FB4 200x600	200 / 2x16Y / 600 / 2L-8Y@100mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@100mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@100mmc/c / 2x16Y
FB5 200x600	200 / 2x16Y(I) + 2x12Y(II) / 600 / 2L-8Y@100mmc/c / 2x12Y(II) + 2x16Y(I)	200 / 2x16Y / 600 / 2L-8Y@100mmc/c / 2x16Y	200 / 2x16Y(I) + 2x12Y(II) / 600 / 2L-8Y@100mmc/c / 2x12Y(II) + 2x16Y(I)
FB6 200x600	200 / 2x16Y / 600 / 2L-8Y@75mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@75mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-8Y@75mmc/c / 2x16Y
FB7 200x600	200 / 2x16Y / 600 / 2L-10Y@100mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-10Y@100mmc/c / 2x16Y	200 / 2x16Y / 600 / 2L-10Y@100mmc/c / 2x16Y

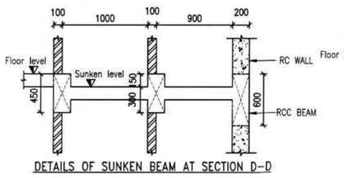
SEVENTH FLOOR BEAM REINFORCEMENT DETAILS

FB8 200x450	200 / 2x16Y / 450 / 2L-8Y@100mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-8Y@175mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-8Y@100mm c/c / 2x16Y
FB9 200x450	200 / 2x16Y / 450 / 2L-8Y@100mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-8Y@100mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-8Y@100mm c/c / 2x16Y
FB10 200x450	200 / 2x16Y / 450 / 2L-8Y@75mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-8Y@75mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-8Y@75mm c/c / 2x16Y
FB11 200x450	200 / 2x16Y / 450 / 2L-10Y@100mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-10Y@100mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-10Y@100mm c/c / 2x16Y
FB12 200x450	200 / 2x16Y / 450 / 2L-10Y@75mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-10Y@75mm c/c / 2x16Y	200 / 2x16Y / 450 / 2L-10Y@75mm c/c / 2x16Y

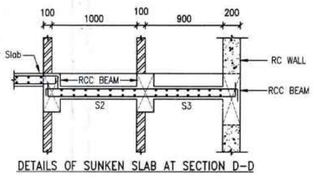
LEGEND:
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar

SLAB REINFORCEMENT DETAILS (SEVENTH FLOOR)

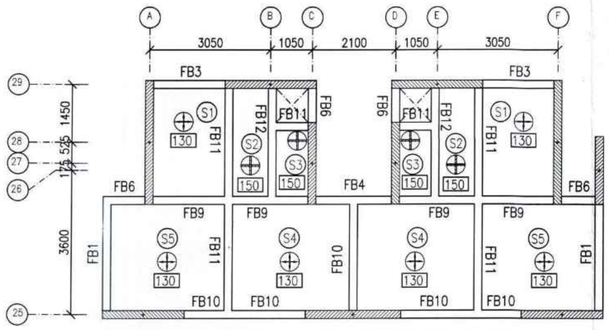
SL NO	SLABS	THICK	MAIN BARS: SHORT SPAN (a) DIA	MAIN BARS: LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP): SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP): LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
2	S2	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
3	S3	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
4	S4	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
5	S5	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
6	S6	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C



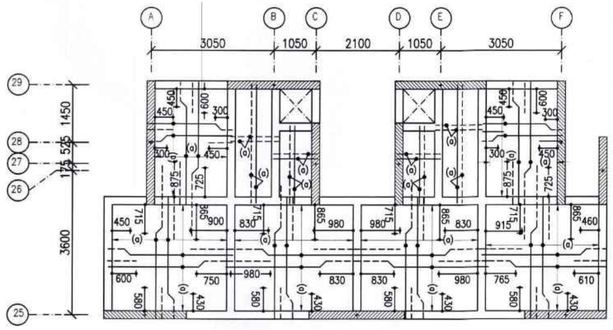
DETAILS OF SUNKEN BEAM AT SECTION D–D



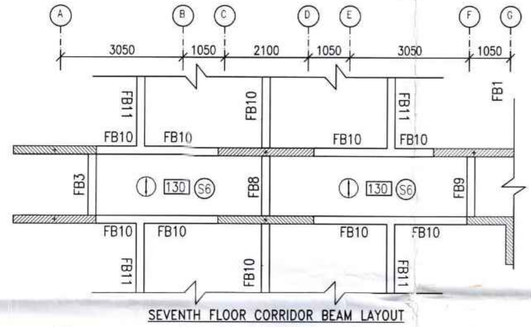
DETAILS OF SUNKEN SLAB AT SECTION D–D



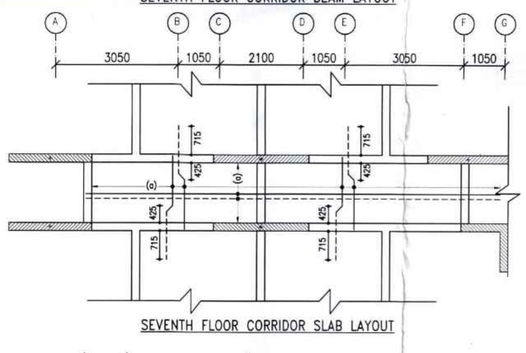
SEVENTH FLOOR BEAM REINFORCEMENT DETAILS FOR TYPICAL UNITS



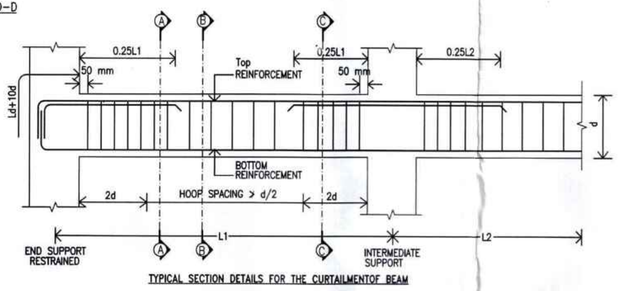
SEVENTH FLOOR SLAB REINFORCEMENT DETAILS FOR TYPICAL UNITS



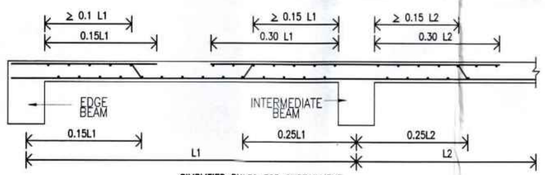
SEVENTH FLOOR CORRIDOR BEAM LAYOUT



SEVENTH FLOOR CORRIDOR SLAB LAYOUT



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:
1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.IAStructE., FIV., MISE., MSSE., MIBC., MINSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory
Proof Checked By:
Dr A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B–01/013	SHEET NO:013	REV NO: R0

DRAWING TITLE :
SEVENTH FLOOR REINFOREMENT DETAILS

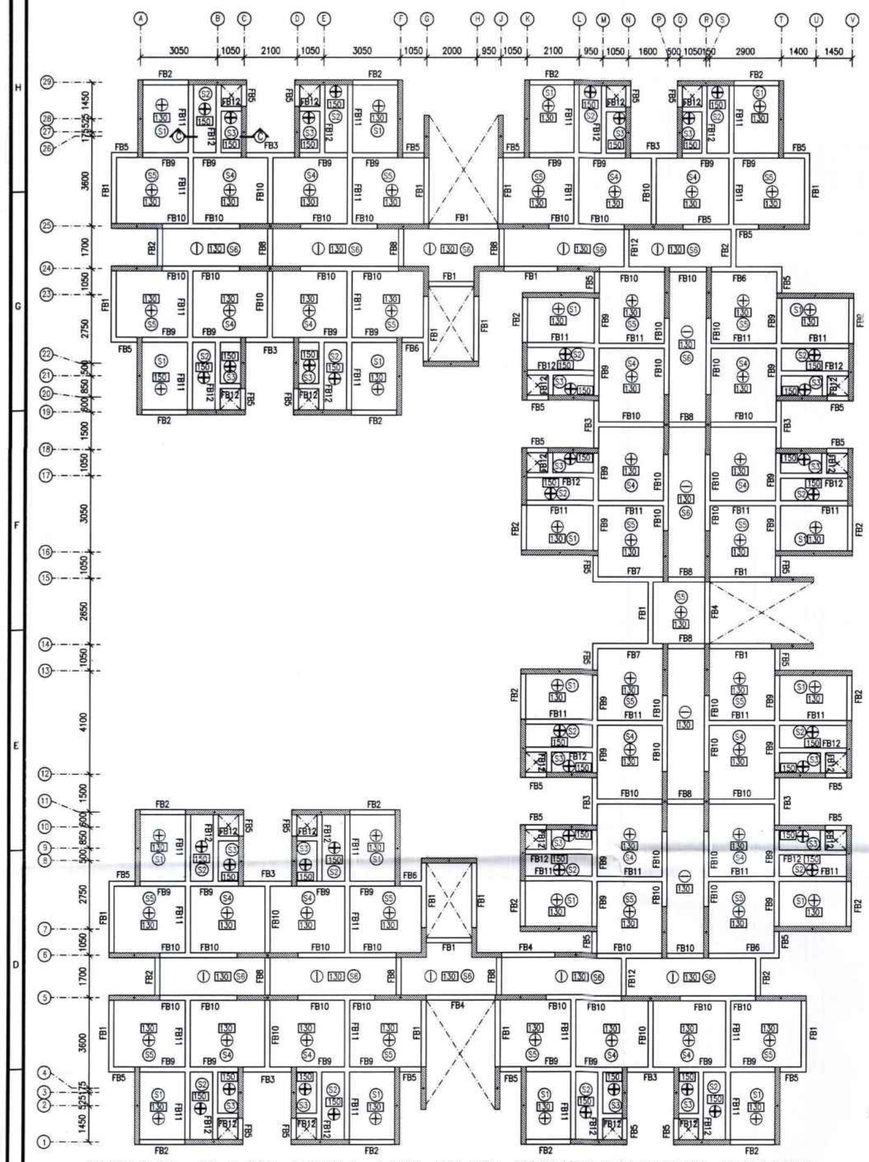
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL ☑CONSTRUCTION ☐INFORMATION	DATE OF ISSUE
	21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



TYPICAL FLOOR BEAM AND SLAB REINFORCEMENT DETAILS
(V,VI,VIII,IX&X FLOORS)

TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB1 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB2 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@125mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB3 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB4 200x600	2x16Y(I) + 2x12Y(II); 2L-8Y@100mmc/c; 2x12Y(II) + 2x16Y(I)	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y(I) + 2x12Y(II); 2L-8Y@100mmc/c; 2x12Y(II) + 2x16Y(I)
FB5 200x600	2x16Y; 2L-8Y@75mmc/c; 2x16Y	2x16Y; 2L-8Y@75mmc/c; 2x16Y	2x16Y; 2L-8Y@75mmc/c; 2x16Y
FB6 200x600	2x16Y; 2L-10Y@100mmc/c; 2x16Y	2x16Y; 2L-10Y@100mm c/c; 2x16Y	2x16Y; 2L-10Y@100mmc/c; 2x16Y
FB7 200x600	2x16Y; 2L-10Y@75mmc/c; 2x16Y	2x16Y; 2L-10Y@75mmc/c; 2x16Y	2x16Y; 2L-10Y@75mmc/c; 2x16Y

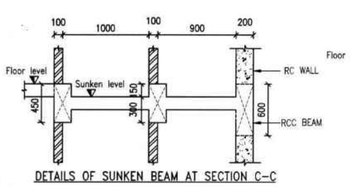
TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB8 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@150mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB9 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB10 200x450	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y
FB11 200x450	2x16Y; 2L-10Y@100mm c/c; 2x16Y	2x16Y; 2L-10Y@100mm c/c; 2x16Y	2x16Y; 2L-10Y@100mm c/c; 2x16Y
FB12 200x450	2x16Y; 2L-10Y@75mm c/c; 2x16Y	2x16Y; 2L-10Y@75mm c/c; 2x16Y	2x16Y; 2L-10Y@75mm c/c; 2x16Y

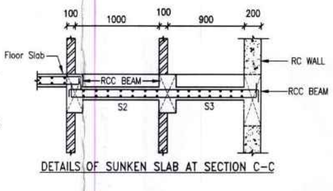
LEGEND:
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar

SLAB REINFORCEMENT DETAILS (TYPICAL FLOOR)

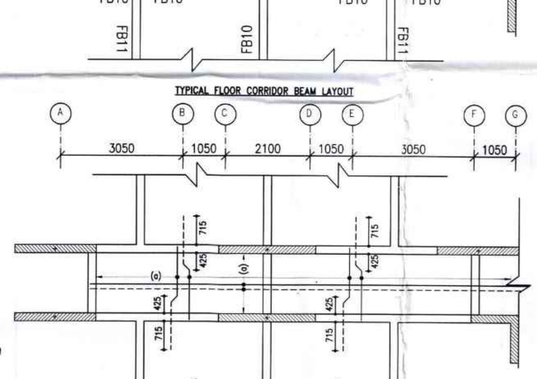
SL NO	SLABS	THICK	MAIN BARS: SHORT SPAN (a) DIA	MAIN BARS: LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP): SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP): LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
2	S2	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
3	S3	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
4	S4	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
5	S5	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
6	S6	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C



DETAILS OF SUNKEN BEAM AT SECTION C–C

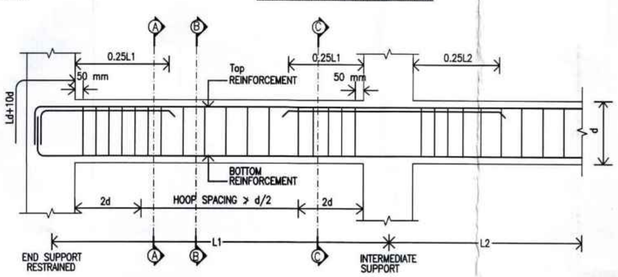


DETAILS OF SUNKEN SLAB AT SECTION C–C

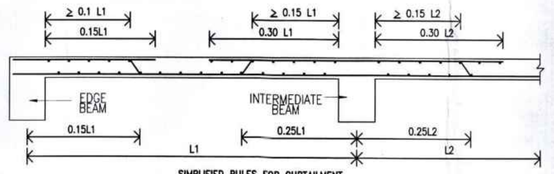


TYPICAL FLOOR CORRIDOR BEAM LAYOUT

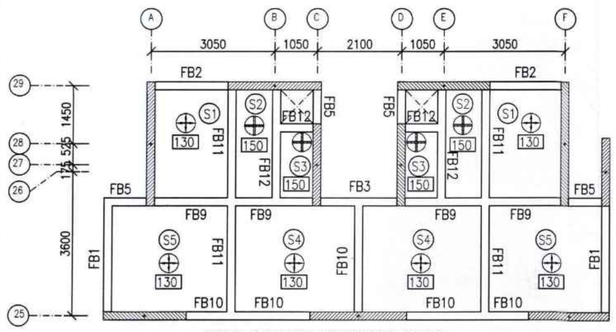
TYPICAL FLOOR CORRIDOR SLAB LAYOUT



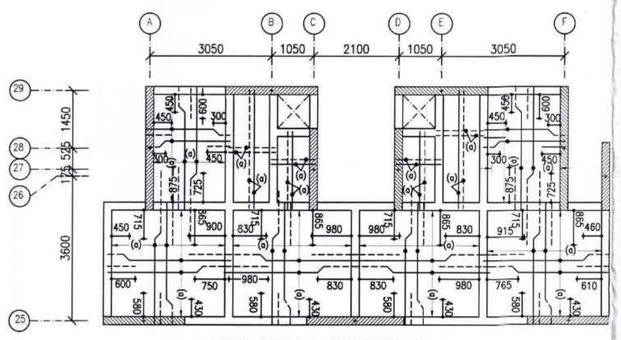
TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB



TYPICAL FLOOR BEAM REINFORCEMENT DETAILS
FOR TYPICAL UNITS



TYPICAL FLOOR SLAB REINFORCEMENT DETAILS
FOR TYPICAL UNITS

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and mode use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:
1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR ,STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.E., F.IV., M.I.E., M.S.E., M.I.C., M.I.E.D.A.G., M.I.S.T.E.,
Centre for Urbanization, Buildings & Environment
I.I.T Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/077328

Proof Checked By: Structural Drawings - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai-600036

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B–01/012	SHEET NO: 012	REV NO: R0

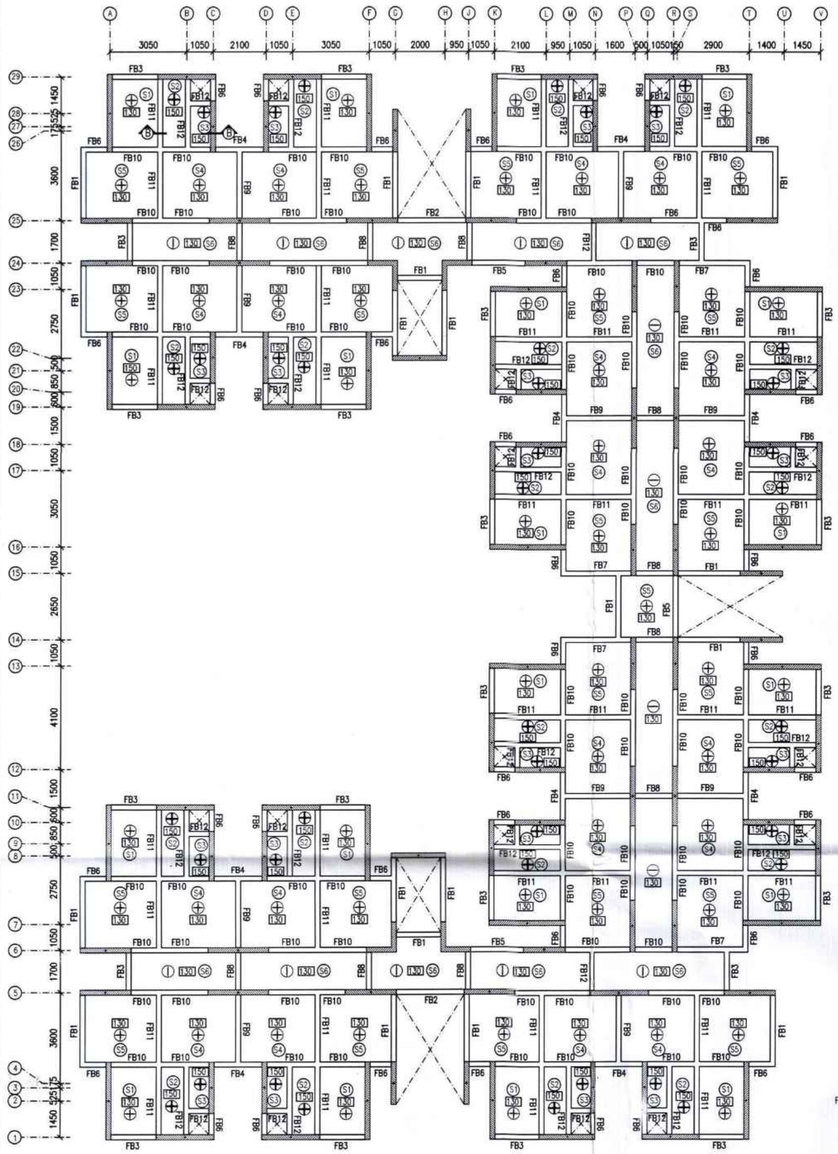
DRAWING TITLE :
TYPICAL FLOOR REINFOREMENT DETAILS (V,VI,VIII,IX&X FLOORS)

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

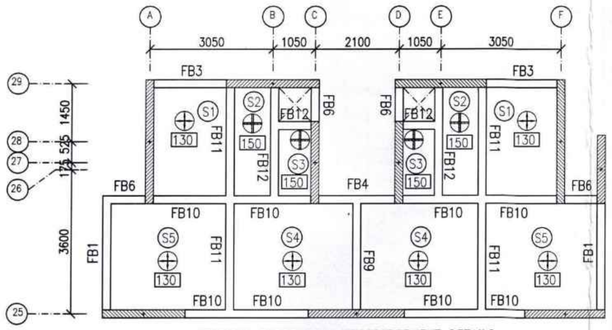
ISSUED FOR:

☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 21–11–2022
DESIGNED BY:		DRAWN BY:	
CHECKED BY:		APPROVED BY:	

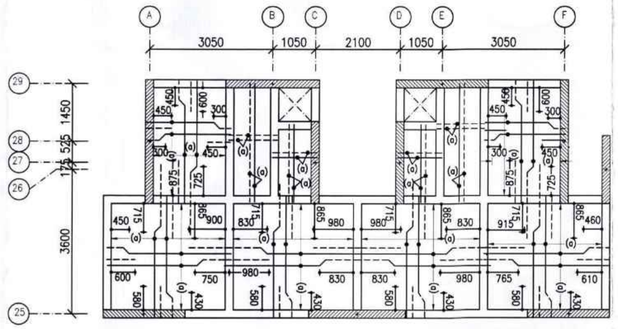
NOTE: ALL DIMENSION ARE IN mm



TYPICAL FLOOR BEAM AND SLAB REINFORCEMENT DETAILS (II–IV FLOORS)



TYPICAL FLOOR BEAM REINFORCEMENT DETAILS FOR TYPICAL UNITS



TYPICAL FLOOR SLAB REINFORCEMENT DETAILS FOR TYPICAL UNITS

TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
FB1 200x600	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@175mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB2 200x600	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@150mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB3 200x600	2x16Y; 2L–8Y@100mmc/c; 2x16Y	2x16Y; 2L–8Y@125mmc/c; 2x16Y	2x16Y; 2L–8Y@100mmc/c; 2x16Y
FB4 200x600	2x16Y; 2L–8Y@100mmc/c; 2x16Y	2x16Y; 2L–8Y@100mmc/c; 2x16Y	2x16Y; 2L–8Y@100mmc/c; 2x16Y
FB5 200x600	2x16Y(I) + 2x12Y(II); 2L–8Y@100mmc/c; 2x12Y(II) + 2x16Y(I)	2x16Y; 2L–8Y@100mmc/c; 2x16Y	2x16Y(I) + 2x12Y(II); 2L–8Y@100mmc/c; 2x12Y(II) + 2x16Y(I)
FB6 200x600	2x16Y; 2L–8Y@75mmc/c; 2x16Y	2x16Y; 2L–8Y@75mmc/c; 2x16Y	2x16Y; 2L–8Y@75mmc/c; 2x16Y
FB7 200x600	2x16Y; 2L–10Y@75mmc/c; 2x16Y	2x16Y; 2L–10Y@75mmc/c; 2x16Y	2x16Y; 2L–10Y@75mmc/c; 2x16Y

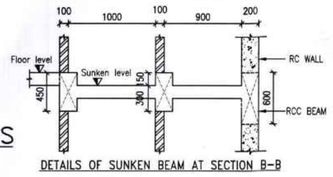
TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
FB8 200x450	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@150mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB9 200x450	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@125mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB10 200x450	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB11 200x450	2x16Y; 2L–10Y@100mm c/c; 2x16Y	2x16Y; 2L–10Y@100mm c/c; 2x16Y	2x16Y; 2L–10Y@100mm c/c; 2x16Y
FB12 200x450	2x16Y; 2L–10Y@75mm c/c; 2x16Y	2x16Y; 2L–10Y@75mm c/c; 2x16Y	2x16Y; 2L–10Y@75mm c/c; 2x16Y

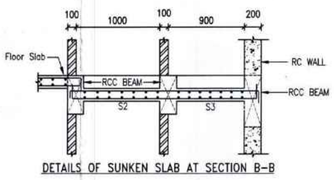
LEGEND:
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- —— – Top Bar
- —— – Bottom Bar

SLAB REINFORCEMENT DETAILS (TYPICAL FLOOR)

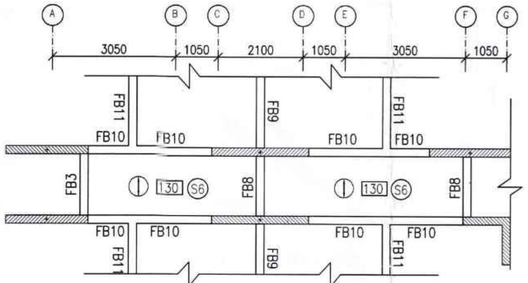
SL NO	SLABS	THICK	MAIN BARS: SHORT SPAN (a) DIA	MAIN BARS: LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP): SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP): LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
2	S2	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
3	S3	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
4	S4	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
5	S5	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
6	S6	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C



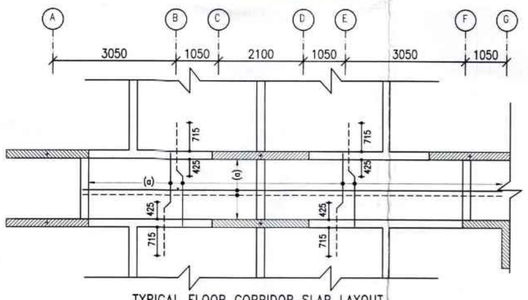
DETAILS OF SUNKEN BEAM AT SECTION B–B



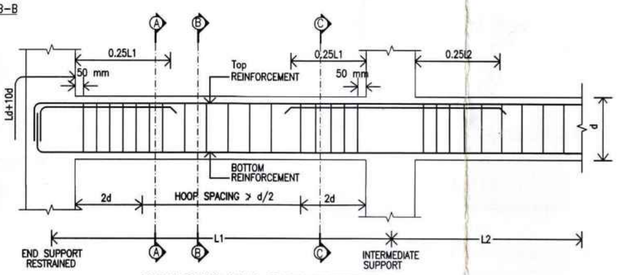
DETAILS OF SUNKEN SLAB AT SECTION B–B



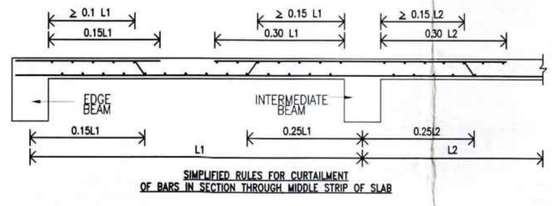
TYPICAL FLOOR CORRIDOR BEAM LAYOUT



TYPICAL FLOOR CORRIDOR SLAB LAYOUT



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:
1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.,F.IV.,MISE.,MISSE.,MIEC.,MNAFAQ.,MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory

Proof Checked By

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B–01/011	SHEET NO: 011	REV NO: R0

DRAWING TITLE :
TYPICAL FLOOR REINFOREMENT DETAILS (II–IV FLOORS)

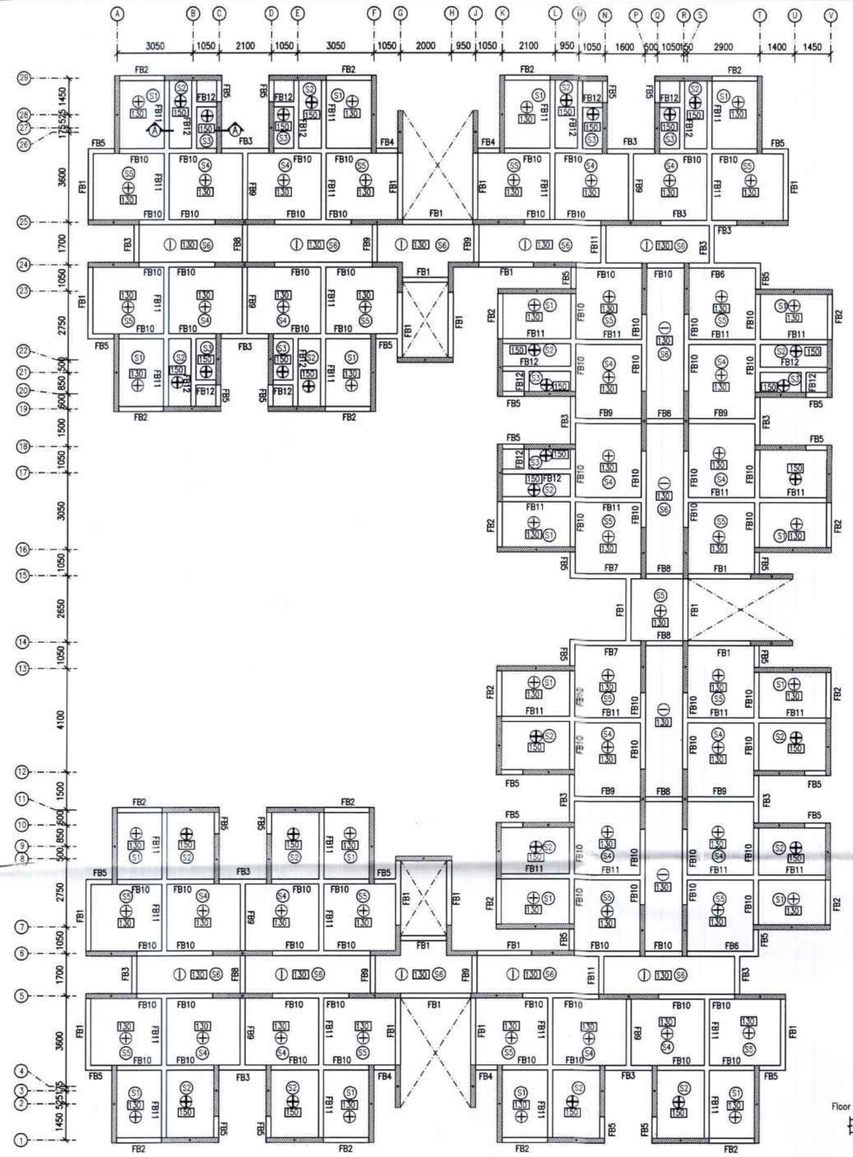
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



FIRST FLOOR BEAM AND SLAB REINFORCEMENT DETAILS

FIRST FLOOR BEAM REINFORCEMENT DETAILS

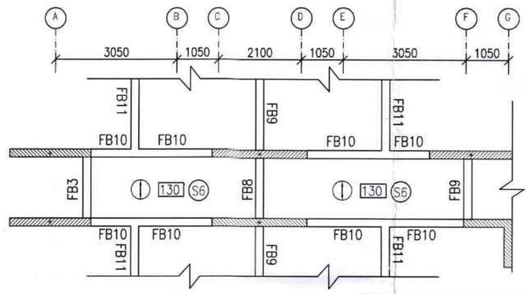
BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB1 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB2 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@150mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB3 200x600	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y; 2L-8Y@125mmc/c; 2x16Y	2x16Y; 2L-8Y@100mmc/c; 2x16Y
FB4 200x600	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y; 2L-8Y@100mmc/c; 2x16Y
FB5 200x600	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y
FB6 200x600	2x16Y; 2L-10Y@100mmc/c; 2x16Y	2x16Y; 2L-10Y@100mmc/c; 2x16Y	2x16Y; 2L-10Y@100mmc/c; 2x16Y
FB7 200x600	2x16Y; 2L-10Y@75mmc/c; 2x16Y	2x16Y; 2L-10Y@75mmc/c; 2x16Y	2x16Y; 2L-10Y@75mmc/c; 2x16Y

FIRST FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB8 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB9 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@150mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB10 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@125mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB11 200x450	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y
FB12 200x450	2x16Y; 2L-10Y@100mm c/c; 2x16Y	2x16Y; 2L-10Y@100mm c/c; 2x16Y	2x16Y; 2L-10Y@100mm c/c; 2x16Y

LEGEND:

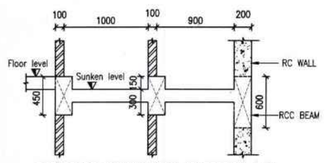
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar



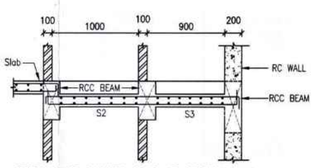
FIRST FLOOR CORRIDOR BEAM LAYOUT

SLAB REINFORCEMENT DETAILS (FIRST FLOOR)

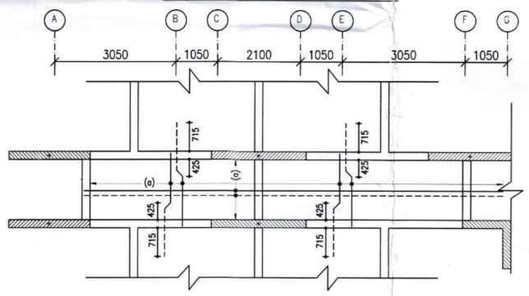
SL NO	SLABS	THICK	MAIN BARS: SHORT SPAN (a) DIA	MAIN BARS: LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP): SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP): LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
2	S2	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
3	S3	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
4	S4	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
5	S5	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
6	S6	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C



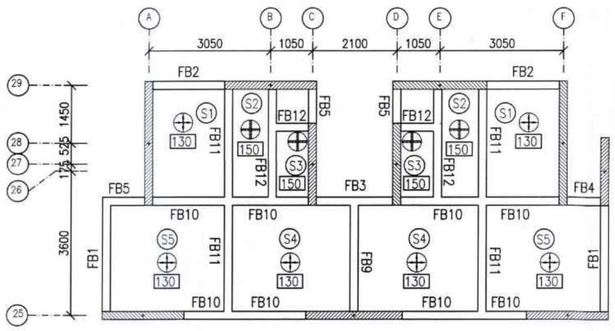
DETAILS OF SUNKEN BEAM AT SECTION A–A



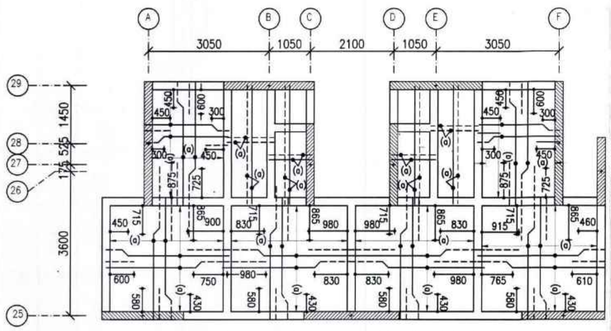
DETAILS OF SUNKEN SLAB AT SECTION A–A



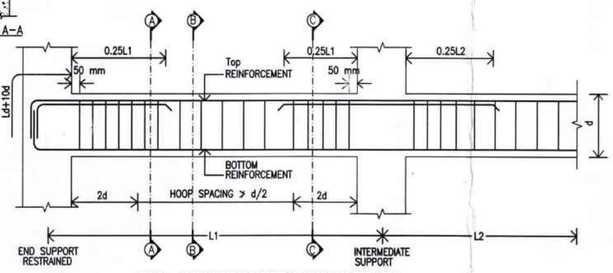
FIRST FLOOR CORRIDOR SLAB LAYOUT



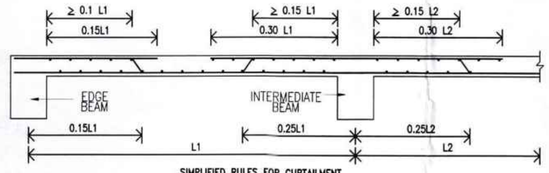
FIRST FLOOR BEAM REINFORCEMENT DETAILS FOR TYPICAL UNITS



FIRST FLOOR SLAB REINFORCEMENT DETAILS FOR TYPICAL UNITS



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY
	SYMBOL	DESCRIPTION			
NOTE:	NGL	NATURAL GROUND LEVEL			

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,FAIStructE.,FIV, MISE, MSSE, MIEC, MINSDAG,MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory

Proof Checked By:

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B–01/010	SHEET NO:010	REV NO: R0

DRAWING TITLE :
FIRST FLOOR REINFOREMENT DETAILS

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

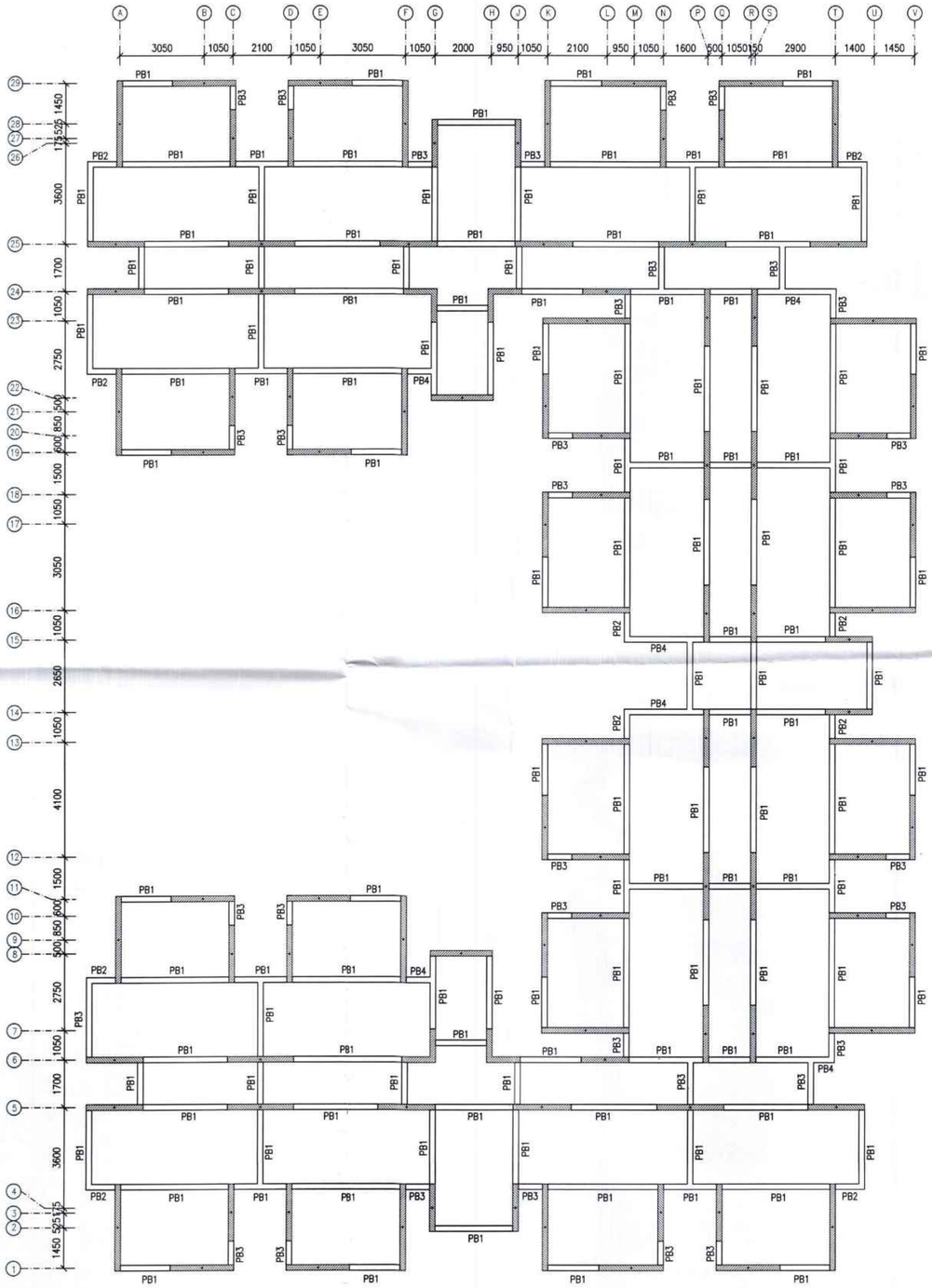
ISSUED FOR:

☐ PRELIMINARY ☐ TENDER ☐ INFORMATION
☐ APPROVAL ☑ CONSTRUCTION

DATE OF ISSUE 21–11–2022

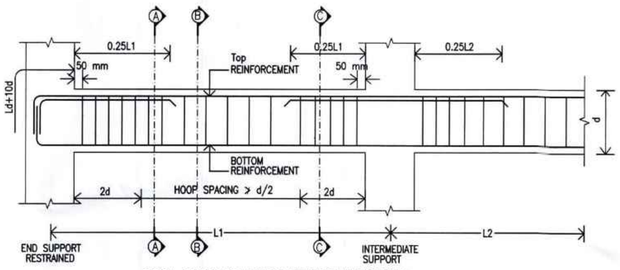
DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



PLINTH BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
PB1 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@175 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y
PB2 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@150 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y
PB3 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@125 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y
PB4 200x450	200, 2x16Y, 450, 2L–8Y@75 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@75 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@75 mm c/c, 2x16Y



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.I.Struct.E., FIV., M.ISE., M.ISSE., M.IEC., M.ASCAE, M.ISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Structural Design Proof - Checked and Found Satisfactory

Proof Checked By:

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B–01/009	SHEET NO:009	REV NO: R0

DRAWING TITLE :
PLINTH BEAM REINFOREMENT DETAILS

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

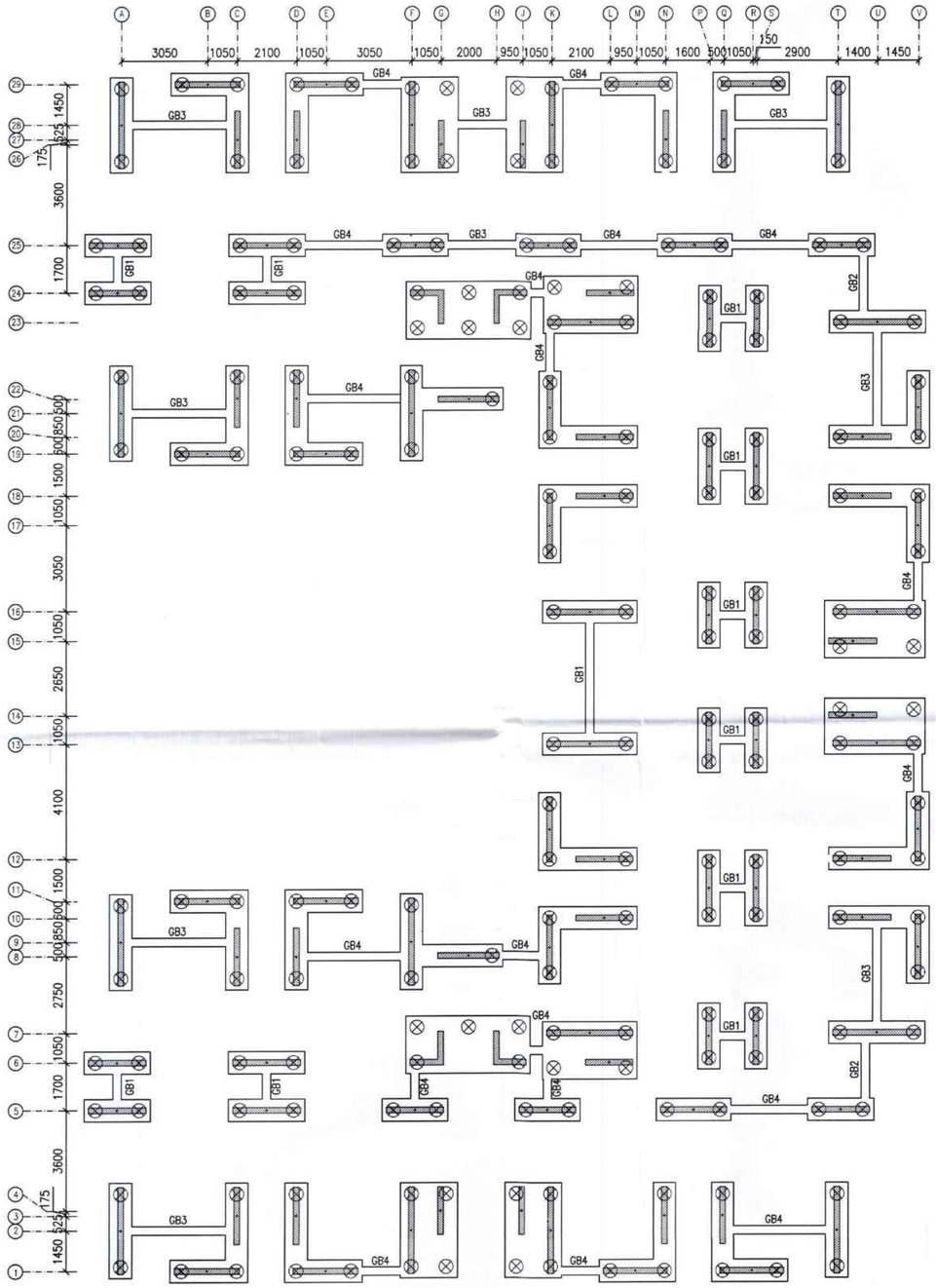
ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm

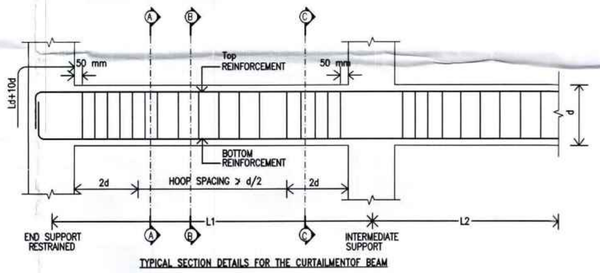
PLINTH BEAM REINFORCEMENT DETAILS



GRADE BEAM LAYOUT

GRADE BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
GB1 300x450	300 × 450: 4x16Y; 2L-8Y@100mm c/c; 4x16Y	300 × 450: 4x16Y; 2L-8Y@130mm c/c; 4x16Y	300 × 450: 4x16Y; 2L-8Y@100mm c/c; 4x16Y
GB2 300x450	300 × 450: 4x20Y; 2L-8Y@100mm c/c; 4x16Y(II) 4x20Y(I)	300 × 450: 4x20Y; 2L-8Y@130mm c/c; 4x20Y(I)	300 × 450: 4x20Y; 2L-8Y@100mm c/c; 4x16Y(II) 4x20Y(I)
GB3 300x450	300 × 450: 3x25Y(I) 3x25Y(II); 2L-10Y@100mm c/c; 3x16Y(II) 3x25Y(I)	300 × 450: 3x25Y(I); 2L-10Y@130mm c/c; 3x25Y(I)	300 × 450: 3x25Y(I) 3x25Y(II); 2L-10Y@100mm c/c; 3x16Y(II) 3x25Y(I)
GB4 300x450	300 × 450: 3x25Y(I) 3x25Y(II); 2L-12Y@100mm c/c; 3x25Y(II) 3x25Y(I)	300 × 450: 3x25Y(I); 2L-12Y@100mm c/c; 3x25Y(I)	300 × 450: 3x25Y(I) 3x25Y(II); 2L-12Y@100mm c/c; 3x25Y(II) 3x25Y(I)



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY
	SYMBOL	DESCRIPTION			
NOTE:	NGL	NATURAL GROUND LEVEL			

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct., F.V., M.ISE., M.IC., M.INDIAG, M.ISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/008	SHEET NO:008	REV NO: R0

DRAWING TITLE :
GRADE BEAM REINFORCEMENT DETAILS

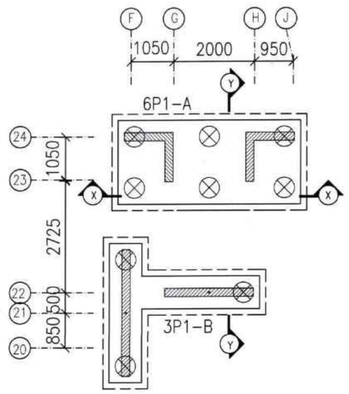
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

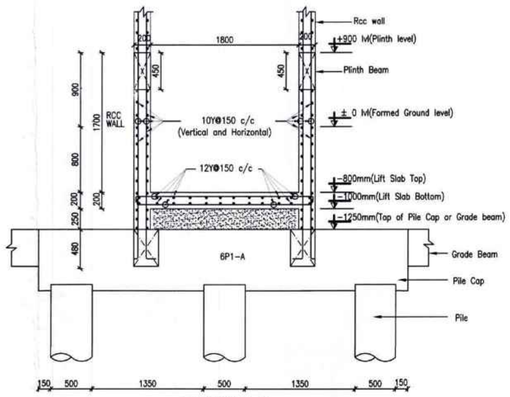
☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

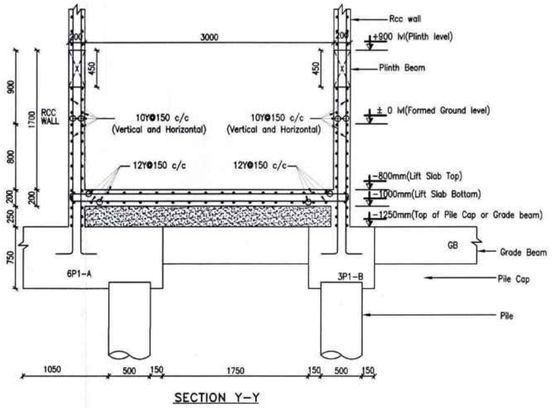
NOTE: ALL DIMENSION ARE IN mm



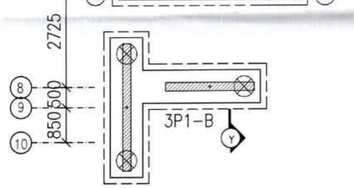
LIFT WELL GRADE BEAM-1
LAYOUT -1250mm LEVEL



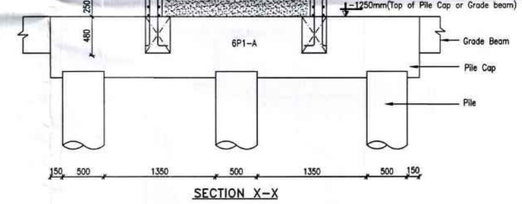
SECTION X-X



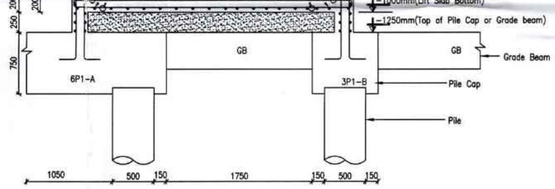
SECTION Y-Y



LIFT WELL GRADE BEAM-2
LAYOUT -1250mm LEVEL



SECTION X-X



SECTION Y-Y

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R Balamourougane
M.Tech., F.I.A.Struct.E., FIV., MISE., MSSE., MISC., MIRSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment,
IIT Madras Research Park, Chennai - 600 113.
Registered Structural Engineer (GR - I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/007	SHEET NO:007	REV NO: R0

DRAWING TITLE :
LIFT WELL REINFORCEMENT DETAILS

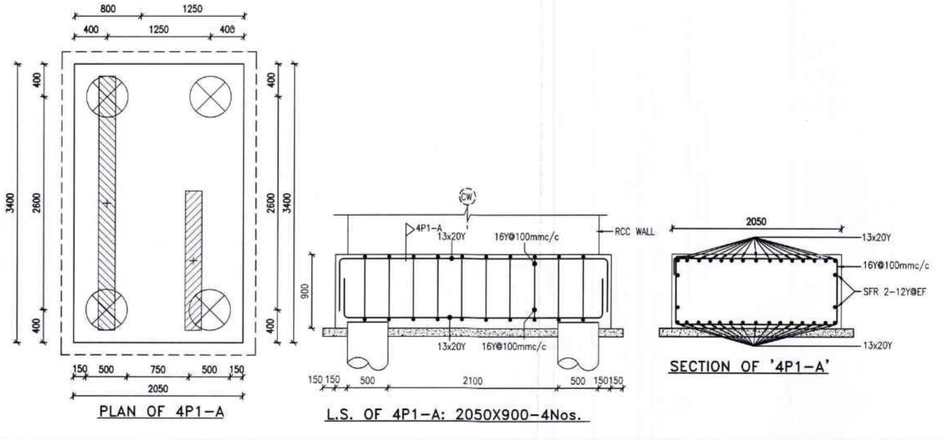
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

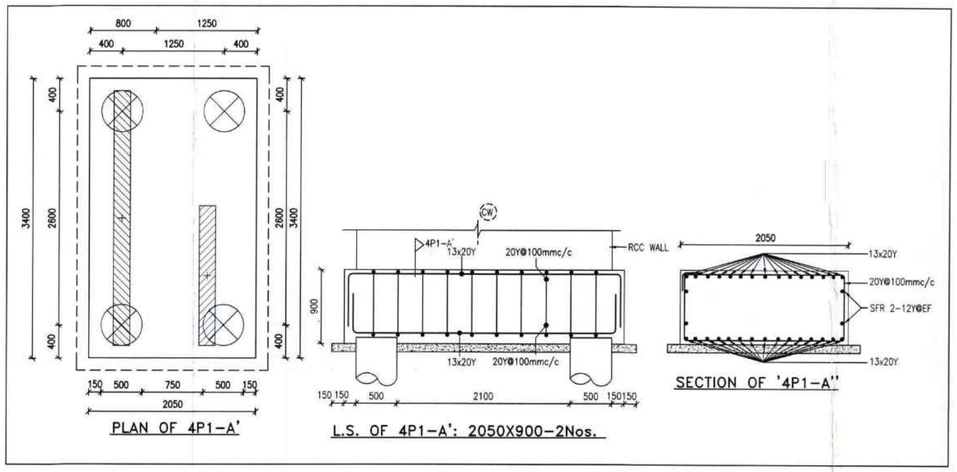
ISSUED FOR:

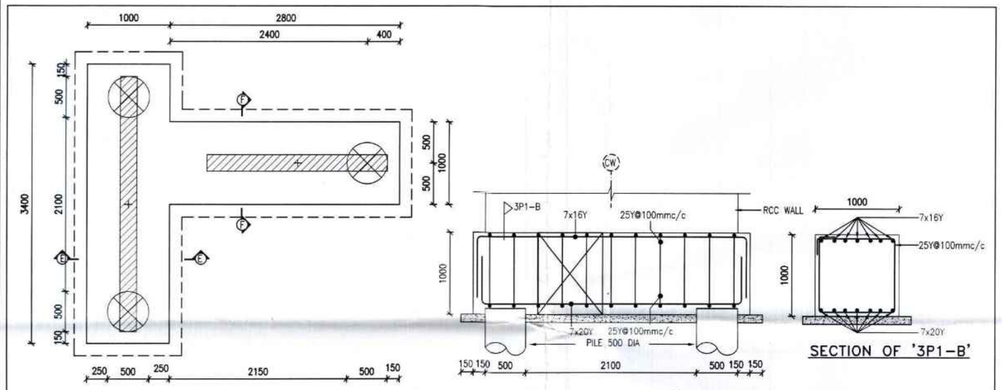
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 21-11-2022

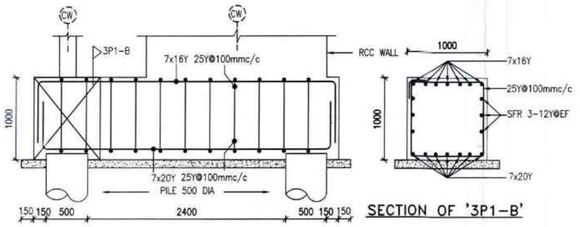
DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

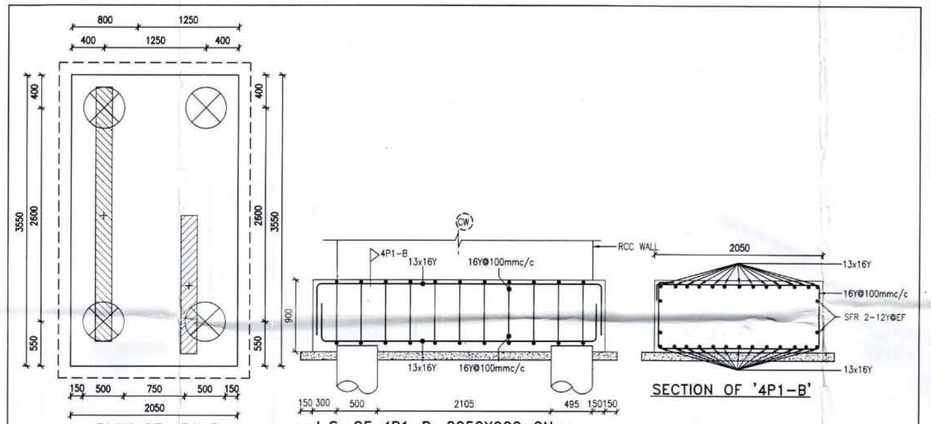
NOTE: ALL DIMENSION ARE IN mm

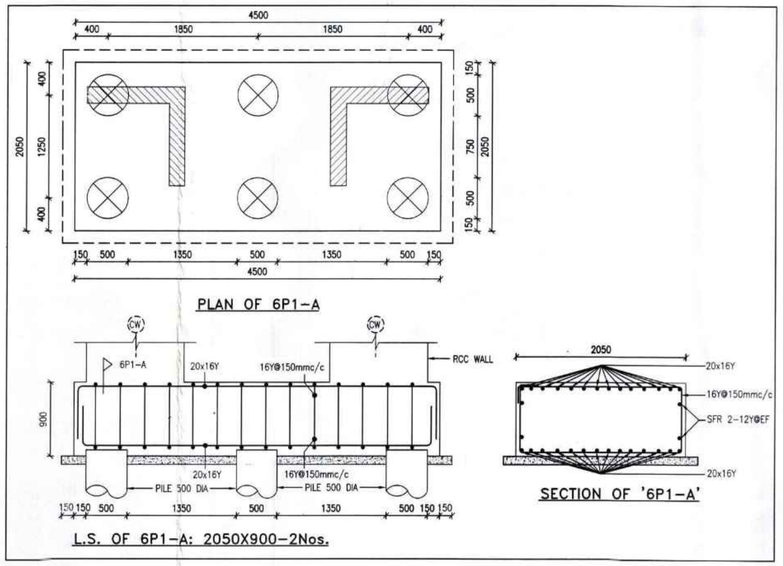












This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL — NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,FIAStructE.,FIV.,MISE.,MISSE.,MISC.,MINSDAG,MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai - 600 113.
Registered Structural Engineer (GR - I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/006	SHEET NO:006	REV NO: R0

DRAWING TITLE :
PILE CAP REINFORCEMENT DETAILS

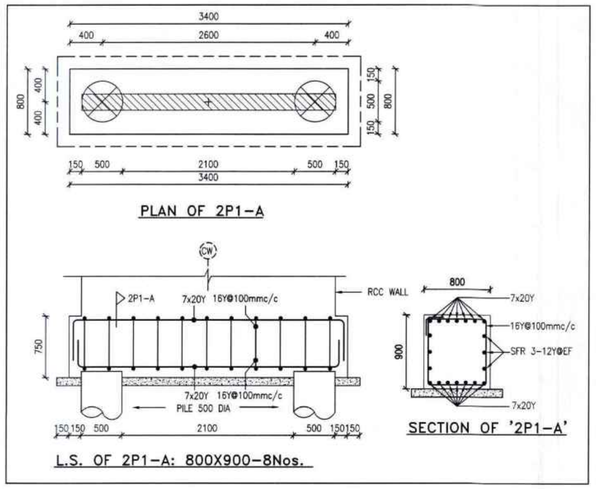
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

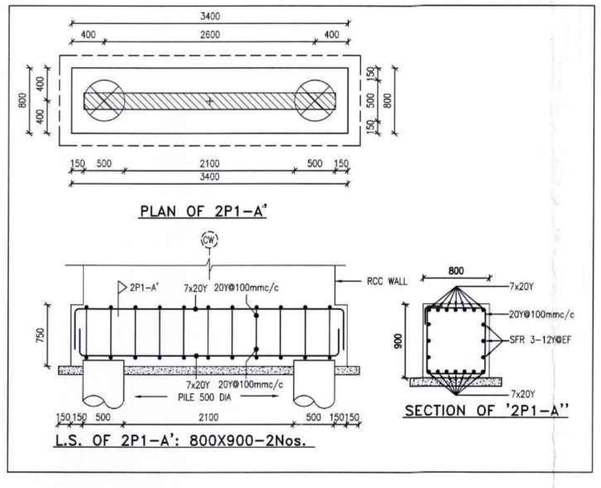
ISSUED FOR:

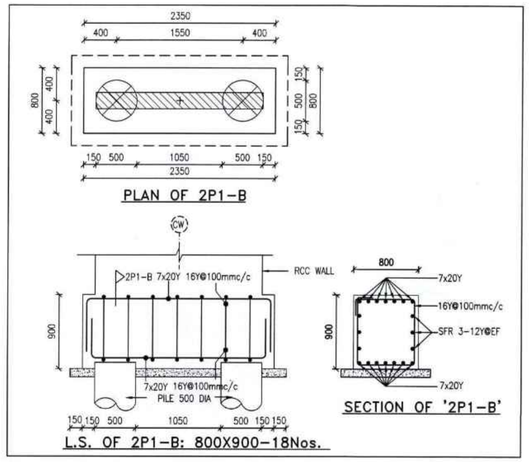
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 21-11-2022

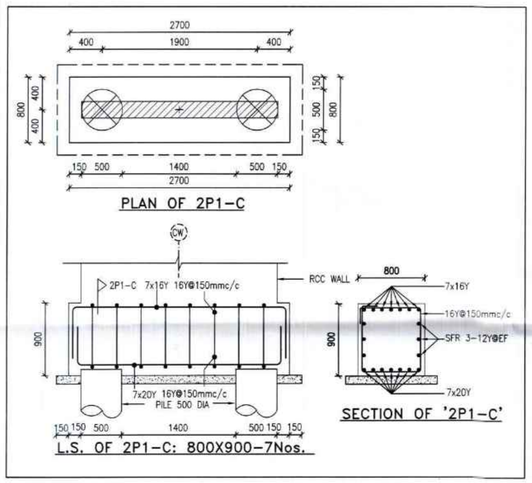
DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

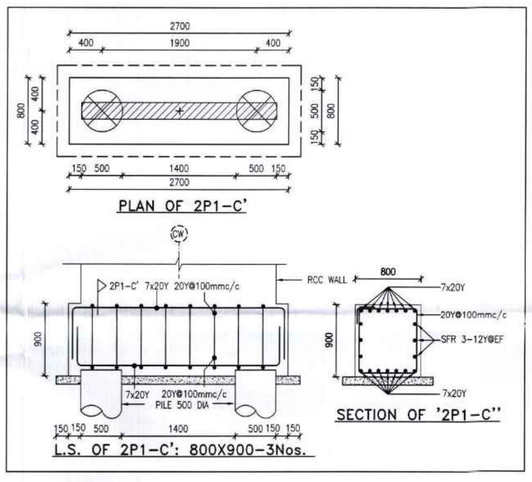
NOTE: ALL DIMENSION ARE IN mm

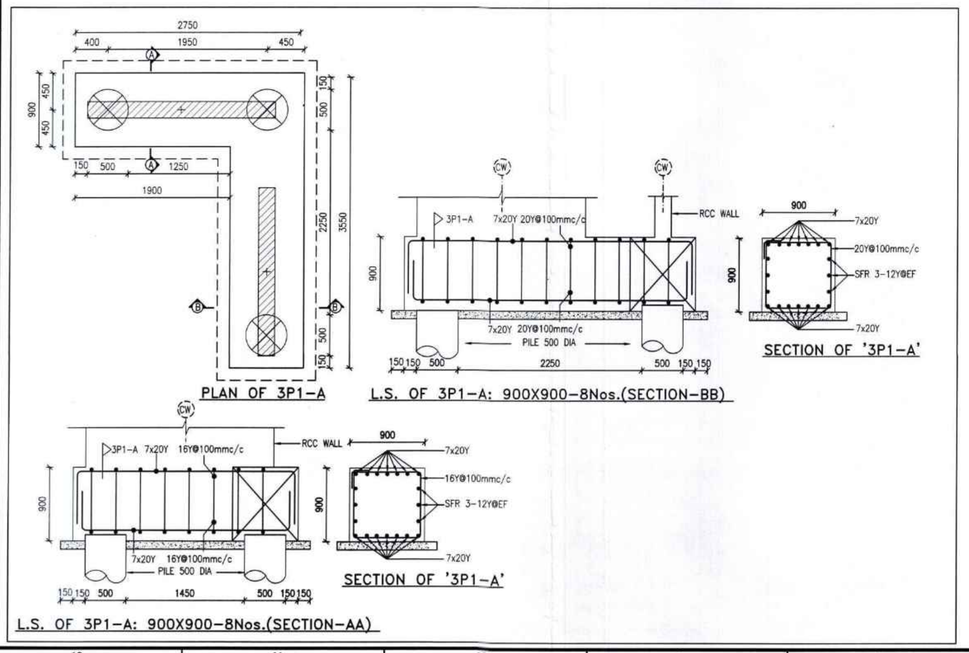


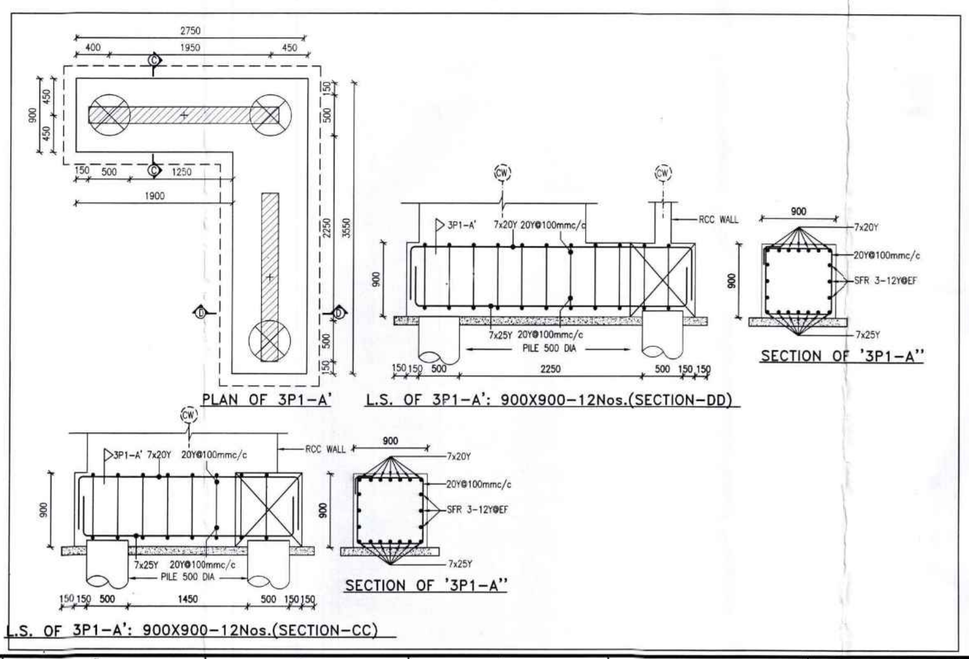












This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.IAStructE.,F.IV., MISE., MSSE., MRC., MIASQAO, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/005	SHEET NO:005	REV NO: R0

DRAWING TITLE :
PILE CAP REINFORCEMENT DETAILS

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm

RC WALL REINFORCEMENT SCHEDULE

MACHINE ROOM +39.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		–	–	–	–	–	–	–	–	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	–	–	–	–
	STEEL	–				–				16–12Y				–			
		–				–				18–12Y				–			
HEADROOM +36.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	–	–	–	–
	STEEL	12–12Y				16–12Y				16–12Y				–			
		14–12Y				16–12Y				18–12Y				–			
SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y				16–12Y				16–12Y				16–12Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–12Y				16–12Y				16–12Y				16–12Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
FIRST FLOOR +3.8m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–16Y				16–16Y				16–16Y				16–16Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
PILE CAP –2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM			
	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	300 300 1700 200 •16Y ○12Y				450 450 2050 200 •16Y ○12Y				450 450 2200 200 •16Y ○12Y				450 450 2300 200 •16Y ○12Y			
	STEEL	12–16Y				16–16Y				16–16Y				16–16Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
RC WALL NAME		CW1				CW2				CW3				CW4			
TOTAL		08				38				02				20			

RC WALL REINFORCEMENT SCHEDULE

SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	16–12Y				20–12Y			
		22–12Y				26–12Y			
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	16–12Y				20–12Y			
		22–12Y				26–12Y			
FIRST FLOOR +3.8m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	16–16Y				20–16Y			
		22–12Y				26–12Y			
PILE CAP –2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM			
	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	450 450 2400 200 •16Y ○12Y				600 600 3100 200 •16Y ○12Y			
	STEEL	16–16Y				20–16Y			
		22–12Y				26–12Y			
RC WALL NAME		CW5				CW7			
TOTAL		10				20			

RC WALL REINFORCEMENT SCHEDULE

MACHINE ROOM +39.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y			
		20–12Y			
HEADROOM +36.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y			
		20–12Y			
SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y			
		20–12Y			
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–12Y			
		20–12Y			
FIRST FLOOR +3.8m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–16Y			
		20–12Y			
PILE CAP –2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM			
	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	200 200 1200 800 200 200 •16Y ○12Y			
	STEEL	12–16Y			
		20–12Y			
RC WALL NAME		CWL1			
TOTAL		04			

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in portly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

	SYMBOL	DESCRIPTION
NOTE:		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,FIASIRWCE.,FN..MISE..MISE..MIE..MISSAG.MISTE.
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR.I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-01/003	SHEET NO: 003	REV NO: R0

DRAWING TITLE :
RC WALLS REINFORCEMENT SCHEDULE

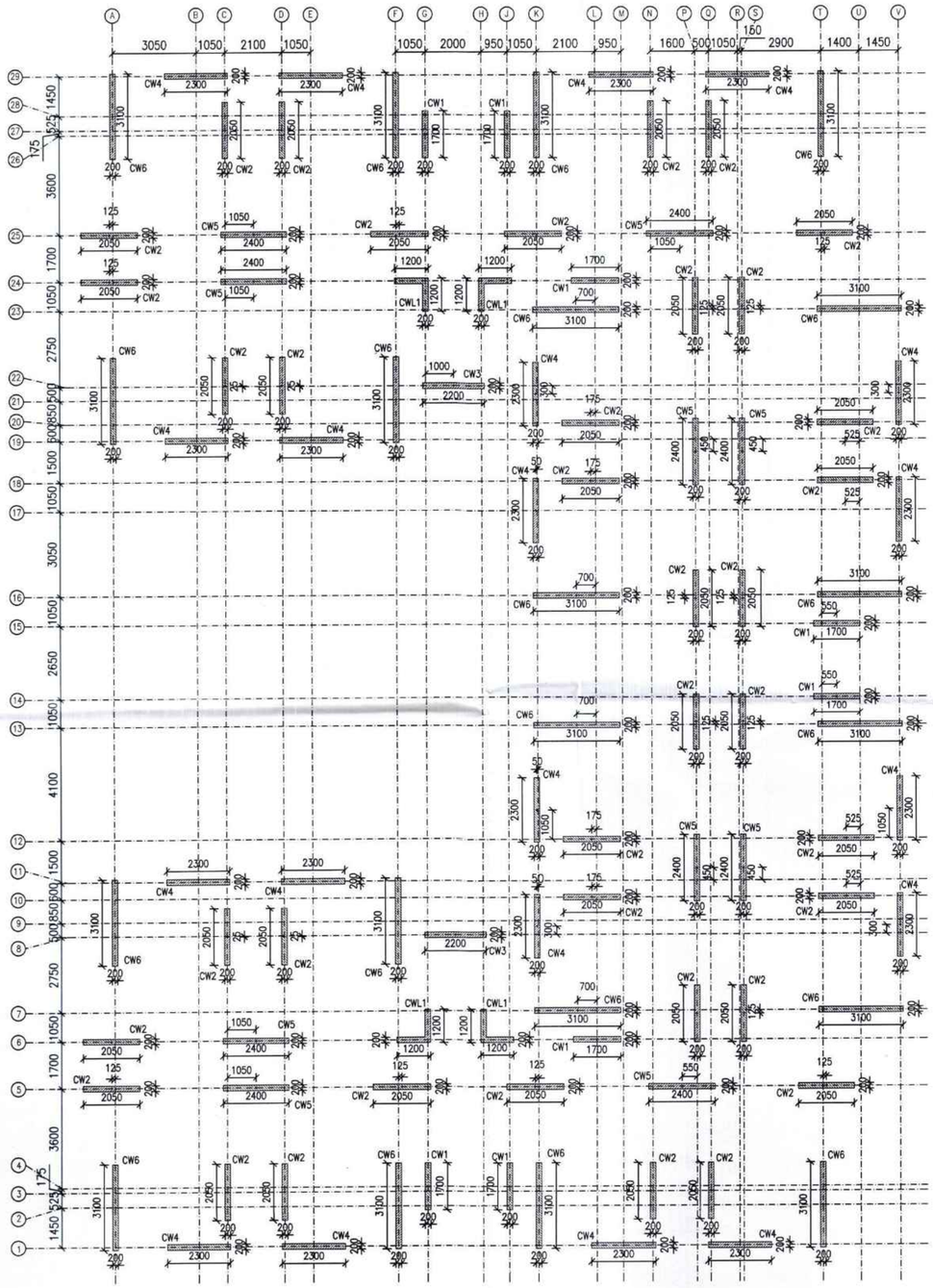
BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



RC WALL CENTER LINE LAYOUT

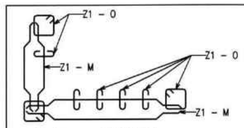
WALL SCHEDULE

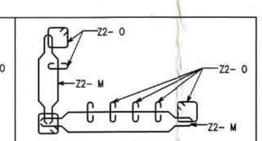
RC WALL NAME	RC WALL	NO. OF WALLS
CW1	1700	08
CW2	2050	38
CW3	2200	02
CW4	2300	20
CW5	2400	10
CW6	3100	20
CWL1	1200 / 1200 / 200	04
	TOTAL	102

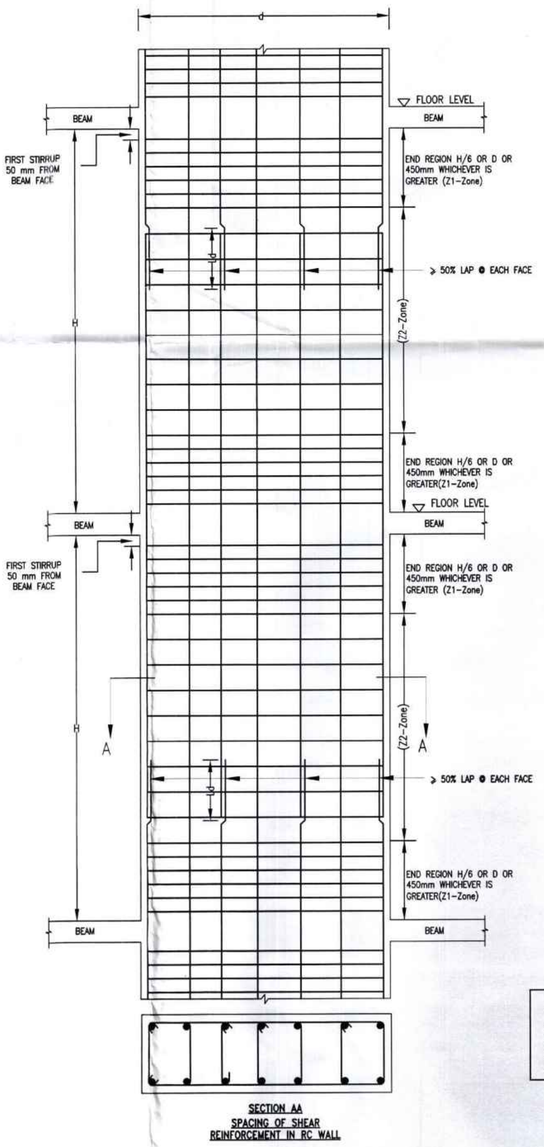
NOTES:

Z1 – SPECIAL CONFINING ZONE AS PER IS-13920

Z2 – REMAINING ZONES AS PER IS 456







LAP SPLICES SHALL NOT BE PROVIDED
a. WITHIN A JOINT
b. WITHIN A DISTANCE OF 2d FROM JOINT
c. WITHIN A QUARTER LENGTH OF THE MEMBER
(NOT MORE THAN 50% BARS SHALL BE SPLICED AT ONE SECTION)

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and mode use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.IAStructE.,F.IV, M.I.E., M.S.S.E., M.I.S.C.,M.I.M.S.D.A.G, M.I.S.T.E.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:
Structural Design Proof - Checked and Found Satisfactory
Dr A. MEHER PRASAD
Prof
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 6

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B–01/002	SHEET NO:002	REV NO: R0

DRAWING TITLE : RC WALLS CENTER LINE LAYOUT

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET:A1

ISSUED FOR:

☐ PRELIMINARY ☐ APPROVAL ☐ TENDER ☑ CONSTRUCTION ☐ INFORMATION

DATE OF ISSUE 21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm

GENERAL

1) ALL STRUCTURAL KEY PLANS AND DETAILS ARE TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL DRAWINGS, SERVICE DRAWINGS, SPECIFICATIONS, BILLS OF QUANTITIES AND ALL OTHER RELEVANT DOCUMENTS. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER-IN-CHARGE.
2) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NEITHER THE BARS SHALL BE COUNTED NOR THE DIMENSIONS SCALED FROM THE DRAWING.

FOUNDATIONS

1) FOUNDATIONS ARE DESIGNED FOR THE SBC SPECIFIED IN THE FOUNDATION DRAWING. MIX FOR ALL RCC WORKS SHALL BE AS SPECIFIED IN THE STRUCTURAL DRAWINGS.
2) IF ASSUMED SAFE BEARING CAPACITY OF THE SOIL IS NOT FOUND AT THE SPECIFIED FOUNDING LEVEL, THE SAME SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER-IN-CHARGE FOR FURTHER DIRECTIONS.
3) FORMATION LEVELS OF FOUNDATIONS SHALL BE DETERMINED BY THE ENGINEER-IN-CHARGE BASED UPON EXISTING ROAD LEVEL, WATER TABLE LEVEL AND REQUIREMENT OF PROVISION OF SERVICES.
4) FOUNDATIONS ARE DESIGNED TO BE AT SAME FOUNDING LEVEL. ANY VARIATIONS IN THE GROUND LEVEL BEYOND 600MM AND THE DIFFERENCE IN LEVEL OF TWO ADJACENT FOOTINGS GREATER THAN HALF OF THE CLEAR DISTANCE BETWEEN THEM SHALL BE BROUGHT TO THE NOTICE OF ENGINEER-IN-CHARGE.
5) ANY LOOSE POCKETS OR PROTUDING BOULDERS SHALL BE REMOVED BEFORE LAYING BED CONCRETE FOR FOUNDATIONS AND SHALL BE LEVELLED BY FILLING WITH PCC.
6) THE TOP LEVEL OF THE GRADE BEAMS OF THE EXTERNAL WALL SHALL BE 150MM BELOW GROUND LEVEL AND OTHER BEAMS OF INTERNAL WALLS SHALL BE 40MM BELOW THE PLINTH LEVEL.

CONCRETE

1) GRADE OF CONCRETE IS M30 FOR PILE AND OTHER STRUCTURAL ELEMENT, MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED.
2) ALL OPENINGS FOR PIPING AND CONDUITS ETC., SHALL BE FORMED IN POSITION BEFORE THE CASTING OF CONCRETE.
3) NO HOLES OR CHASES ARE PERMITTED IN THE STRUCTURAL CONCRETE MEMBERS OTHER THAN AS DETAILED OR APPROVED BY THE ENGINEER-IN-CHARGE.
4) THE CLEAR DEPRESSION OF SLAB FOR BATH, WASHBASIN AND E.W.C SHALL BE 300MM AND FOR I.W.C SHALL BE 500MM. DEPRESSION IN SLAB FOR BALCONY SHALL BE 20MM FROM THE ADJACENT FLOOR LEVELS. NECESSARY PROVISION FOR OUTLETS FROM TRAPS SHALL BE KEPT WHILE CASTING THE BEAMS.
5) WHEN THE SPAN IS MORE THAN 6.00M, PROVIDE CAMBER @ SPAN/250 FOR BEAMS AND SLABS.
6) THE FREE END OF CANTILEVER SLABS OR BEAMS SHALL BE RAISED BY 2% OF THE SPAN. TORSIONAL REINFORCEMENT AT DISCONTINUOUS EDGES OF TWO WAY REINFORCED SLABS SHALL BE AS PER IS 456-2000.
7) ALL CONCRETE IS TO BE CURED BY AN APPROVED METHOD- WATER PONDING, POLYTHENE/HESSIAN SHEET, CURING COMPOUND.

REINFORCEMENT

1) ALL STEEL REINFORCEMENT SHALL BE OF TMT BARS CONFORMING TO IS 1786 WITH MINIMUM YIELD STRESS / 0.2% PROOF STRESS OF 500 N/SQ.MM
2) GRADE FE 500D FOR ALL STRUCTURES DESIGNED FOR SEISMIC RESISTANCE UNDER ZONE-III OF IS 1893-2016.
3) ALL REBARS SHALL BE CUT AND BENT CONFORMING TO THE LATEST EDITION OF IS 1786. MECHANICAL COUPLERS CONFORMING TO IS 16172 SHALL BE USED WHEN LONGITUDINAL STEEL BARS HAVE TO BE CONTINUED FOR BEAM SPANS LARGER THAN THEIR MANUFACTURED LENGTH.
4) WELDING OF REBARS WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER-IN-CHARGE. WELDING OF LINKS, TIES, INSERTS OR OTHER SIMILAR ELEMENTS TO VERTICAL REINFORCEMENT BARS REQUIRED AS PER DESIGN IS NOT PERMITTED, IN ANY SEISMIC ZONE.
5) ALL REBARS ARE TO BE FIRMLY SUPPORTED ON APPROVED CHAIRS OR CONCRETE BLOCKS PLACED AT NOT GREATER THAN 750MM CENTRES BOTH WAYS.
6) NOT MORE THAN 50% OF AREA OF STEEL BARS ON EITHER TOP OR BOTTOM FACE SHALL BE SPLICED AT ANY ONE SECTION. LAPPING OF REBARS SHALL AS FAR AS POSSIBLE BE AWAY FROM THE SECTIONS OF MAXIMUM STRESS AND BE STAGGERED. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED, IF THE CENTRE TO CENTRE DISTANCE OF THE SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH.
7) LAP / MECHANICAL COUPLERS / WELDED SPLICES SHOULD NOT BE PROVIDED
   A) WITHIN A JOINT
   B) WITHIN A DISTANCE OF 2D FROM THE COLUMN, WHERE 'D' IS THE EFFECTIVE DEPTH OF THE MEMBER.
   C) WITHIN A DISTANCE 1/4 LENGTH OF MEMBER FROM THE COLUMN.
8) LAP LENGTH INCLUDING ANCHORAGE VALUE OF HOOKS FOR BARS IN FLEXURAL TENSION SHALL BE LD OR 30DIA .WHICHEVER IS GREATER. THE STRAIGHT LENGTH OF THE LAP SHALL NOT BE LESS THAN 15DIA OR 200MM. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF THE SMALLER BAR.
9) THE HORIZONTAL DISTANCE BETWEEN TWO PARALLEL MAIN REINFORCING BARS SHALL BE NOT LESS THAN THE DIAMETER OF THE LARGER BAR USED OR 5MM MORE THAN THE NOMINAL MAXIMUM SIZE OF COARSE AGGREGATE USED, WHICHEVER IS GREATER.
10) WHENEVER REINFORCEMENT IS PROVIDED IN TWO LAYERS IN BEAMS, SPACER BAR SHALL BE PROVIDED TO MAINTAIN 25MM GAP OR MAXIMUM DIA OF THE MAIN BAR WHICHEVER IS MORE BETWEEN TWO LAYERS.
11) IN CASE OF CANTILEVER BEAMS / SLABS THE TOP REINFORCEMENT SHALL BE TAKEN BEYOND THE INNER FACE OF THE SUPPORTS TO ATLEAST THE SPAN OF THE CANTILEVER WHEREVER POSSIBLE. IN CASE IT IS NOT POSSIBLE TO ADOPT THE ABOVE SAID PRACTICE, THE REINFORCEMENT SHALL BE PROPERLY ANCHORED INTO THE SUPPORTING MEMBER.
12) LAP / DEVELOPMENT LENGTH FOR MAIN REINFORCEMENT BARS (IN TENSION / COMPRESSION) FOR DIFFERENT GRADES OF CONCRETE MIX SHALL BE AS FOLLOWS:

CONCRETE MIX	Fe 500D (FOR ZONE-III STRUCTURES)
M30	45d (TENSION) & 36d (COMP)

WHERE d IS THE DIAMETER OF THE BAR.

13) WHERE OPENINGS ARE SMALL AND THE SLAB IS NOT SUBJECTED TO ANY SPECIAL TYPE LOADING OR VIBRATION CONDITIONS, THE FOLLOWING GENERAL DETAILING RULES MAY BE FOLLOWED AROUND OPENINGS.
   A) DIAMETER OF TRIMMER BARS SHALL BE SIMILAR TO BIGGER REINFORCING BARS OF THE STRUCTURE THROUGH WHICH THE OPENING IS FORMED.
   B) NO TRIMMER BARS ARE REQUIRED FOR OPENINGS LESS THAN 200MM WIDE. NO REINFORCING BARS SHALL BE CUT BUT THESE SHALL BE ADJUSTED IN POSITION TO AVOID OPENINGS.
   C) TRIMMER BARS SHALL BE NOT LESS THAN THE NOS. OF BARS CUT BY OPENING.
   D) MINIMUM 2 NOS. EACH AT TOP AND BOTTOM AND BAR DIAMETER AS SPECIFED ABOVE BUT NOT LESS THAN 10ϕ.
   E) BOTH PERPENDICULAR AND DIAGONAL TRIMMING BARS SHALL BE PROVIDED AS SHOWN IN SKETCHES.
14) WHENEVER THE REINFORCEMENT IS PROJECTED FROM THE STRUCTURAL MEMBERS AS A PROVISION MADE TOWARDS FUTURE EXTENSION OF THE BUILDING THE SAME SHALL BE APPROPRIATELY PROTECTED FROM CORROSION BY TREATING WITH EPOXY AFTER COMPLETELY REMOVING SCALES OR RUST, IF ANY. THIS REINFORCEMENT MAY BE ENCASED IN A CONCRETE MIX OF 1:3:6 OR LEFT EXPOSED OR PROTECTED IN ANY OTHER MANNER AS DIRECTED BY ENGINEER-IN-CHARGE.
15) THE NOMINAL COVER GIVEN BELOW FOR MODERATE EXPOSURE CONDITION SHALL BE MEASURED FROM THE OUTER FACE OF THE STRUCTURAL ELEMENT TO THE STIRRUPS / LINKS.

RAFTS	-60MM	PILES	-50MM	STRIP BEAM	-75MM	FOOTINGS	-60MM	PILECAP	-75MM
BEAMS	-25MM	SLABS	-25MM	WALLS	-25MM	TANK WALLS	-40MM	TANK BASES	-50MM

WATER AND DRAINAGE LINES WITHIN STRUCTURAL ELEMENTS:

1) THE CONTRACTOR SHALL SUBMIT FOR APPROVAL DETAILS OF EXIT AND ENTRY OF PIPES THROUGH STRUCTURAL ELEMENTS.
2) THESE POINTS ARE TO HAVE ADDITIONAL FUSION BONDED EPOXY COATED REINFORCEMENT PLACED AROUND THE PIPE.

RC WALLS FOR BASEMENTS:

1) IF THE LEVEL OF THE WATER TABLE OR ANY SEEPAGE IS FOUND TO BE WITHIN THE DEPTH OF EXCAVATION, THE SAME SHALL BE BROUGHT TO THE NOTICE OF ENGINEER-IN-CHARGE.
2) 100MM THICK BLINDING CONCRETE OF GRADE M15 IS TO BE PLACED BELOW THE WATER TANKS BASE SLAB.
3) WATER BARS ARE TO BE INCORPORATED IN ALL VERTICAL AND HORIZONTAL JOINTS.
4) ALL WALL KICKERS SHALL BE CAST MONOLITHICALLY WITH THE BASE SLAB.

CONSTRUCTION JOINTS:

1) THESE ARE TO BE PROVIDED AT LOCATIONS OF ZERO OR MINIMUM SHEAR IN BEAMS AND SLABS AND AT LOCATIONS OF MINIMUM STEEL CONGESTION.
2) THESE ARE TO BE PERPENDICULAR TO THE COMPRESSIVE FORCES ACROSS THE JOINT. IN MOST CASES THE JOINTS WILL HAVE TO BE PERPENDICULAR TO THE AXIS OF THE MEMBER.
3) ALL REINFORCING BARS INTERSECTED BY THE CONSTRUCTION JOINTS ARE TO EXTEND THROUGH THE JOINTS WITHOUT INTERCEPTION.
4) VERTICAL JOINTS SHALL BE FORMED WITH TIMBER FORMWORK COATED WITH AN APPROVED SURFACE RETARDER AND THE VERTICAL FACE IS TO BE WASHED TO EXPOSE THE AGGREGATE BEFORE FINAL SET OF THE CONCRTE HAS TAKEN PLACE.
5) HORIZONTAL JOINTS SHALL BE SCRABBLED TO REMOVE ALL LAITANCE AND WEAK CONCRETE BEFORE CONCRETE FOR THE NEXT LIFT IS PLACED. NECESSARY KEYS SHALL BE PROVIDED IN THE APPROVED METHODOLOGY AS REQUIRED BY THE ENGINEER-IN-CHARGE.
6) WATERJET CLEANING AND FLUSHING THE JOINT WITH MORTAR OR GROUT ARE TO PRECEDE THE POURING OF FRESH CONCRETE.

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY
	SYMBOL	DESCRIPTION			
NOTE:	NGL	NATURAL GROUND LEVEL			

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.IAStructE., FIV., MISSE., MISSC., MNSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai - 600 113.
Registered Structural Engineer (GR - I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By
Structural Engineering Department Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-01/001	SHEET NO:001	REV NO: R0

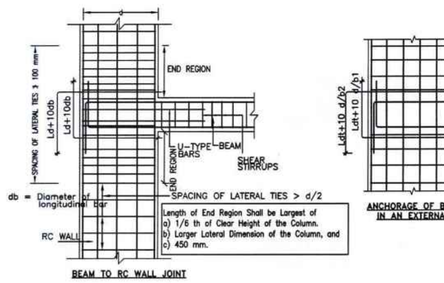
DRAWING TITLE : GENERAL NOTES

BLOCK NO: 01 OF 03	SCALE: NTS	SIZE OF SHEET:A1

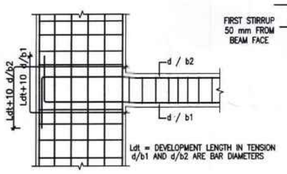
ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022
DESIGNED BY:		DRAWN BY:	
CHECKED BY:		APPROVED BY:	

NOTE: ALL DIMENSION ARE IN mm

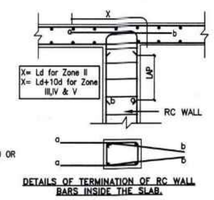


BEAM TO RC WALL JOINT



ANCHORAGE OF BEAM BARS IN AN EXTERNAL JOINT

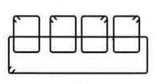
SECTION AA
SPACING OF SHEAR REINFORCEMENT IN RC WALL

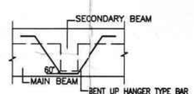


DETAILS OF TERMINATION OF RC WALL BARS INSIDE THE SLAB.

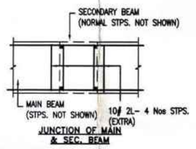


DETAILS OF CLEAR COVER

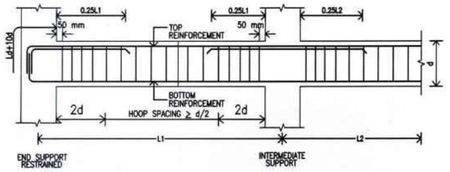

DETAILS OF STIRRUPS



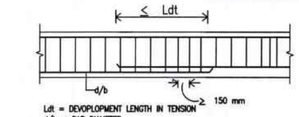
DETAILS AT JUNCTION OF MAIN BEAM AND SECONDARY BEAM



JUNCTION OF MAIN & SEC. BEAM



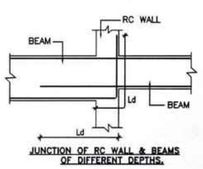
TYPICAL BEAM LONGITUDINAL SECTION



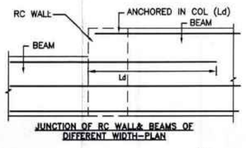
Ldt = DEVOLOPMENT LENGTH IN TENSION
d/b = BAR DIAMETER

LAP SPLICES SHALL NOT BE PROVIDED
a. WITHIN A JOINT
b. WITHIN A DISTANCE OF 2d FROM JOINT
c. WITHIN A QUARTER LENGTH OF THE MEMBER
(NOT MORE THAN 50% BARS SHALL BE SPLICED AT ONE SECTION)

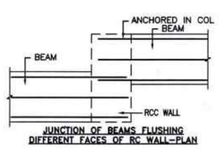
LAP SPLICE IN BEAM



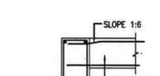
JUNCTION OF RC WALL & BEAMS OF DIFFERENT DEPTHS.



JUNCTION OF RC WALL& BEAMS OF DIFFERENT WIDTH-PLAN



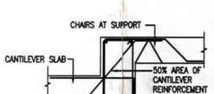
JUNCTION OF BEAMS FLUSHING DIFFERENT FACES OF RC WALL-PLAN



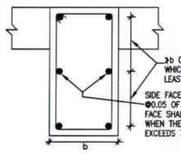
JUNCTION OF MAIN & SEC. BEAM (UNEQUAL DEPTHS)



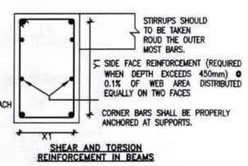
JUNCTION OF MAIN & SEC. BEAM (EQUAL DEPTHS)



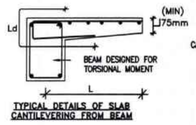
CANTILEVER AT THE TOP OF BEAMS



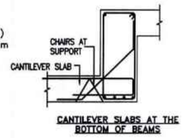
SIDE FACE REINFORCEMENT IN BEAMS



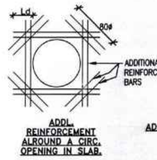
SHEAR AND TORSION REINFORCEMENT IN BEAMS



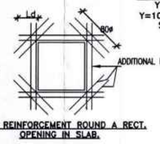
TYPICAL DETAILS OF SLAB CANTILEVERING FROM BEAM



CANTILEVER SLABS AT THE BOTTOM OF BEAMS



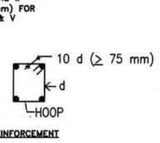
ADDL. REINFORCEMENT ALROUND A CIRC. OPENING IN SLAB.



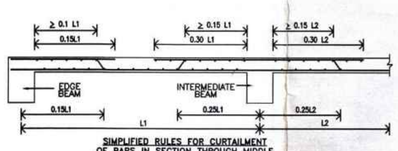
ADDL. REINFORCEMENT ROUND A RECT. OPENING IN SLAB.



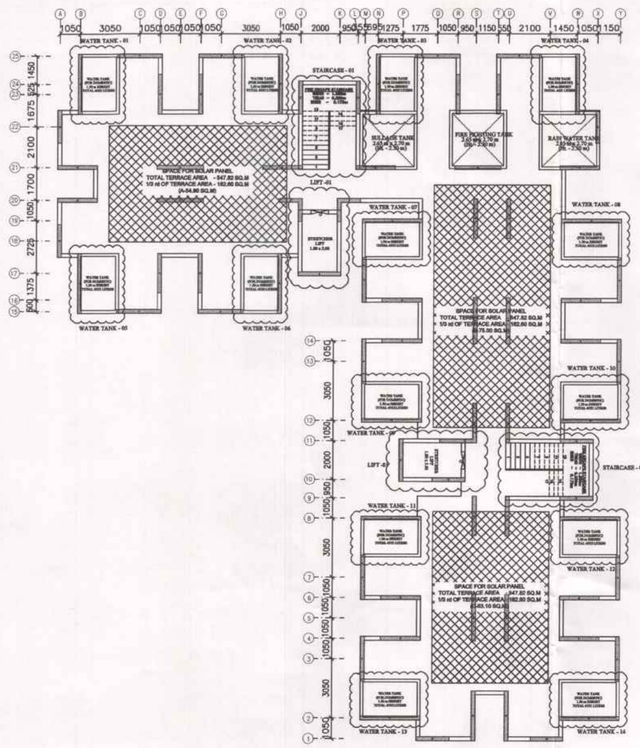
TYPICAL DETAIL OF BEAM STIRRUPS
Y=6d FOR SEISMIC ZONE II
Y=10d (BUT NOT < 75 mm) FOR SEISMIC ZONE III, IV & V



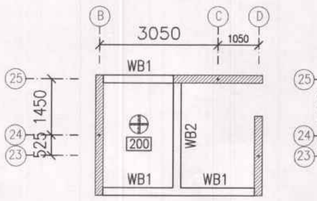
BEAM WEB REINFORCEMENT



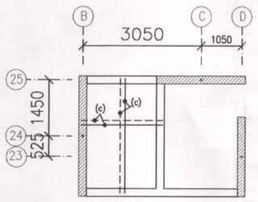
SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB



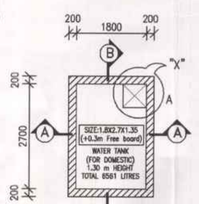
HEADROOM, LIFT & WATER TANK KEY PLAN



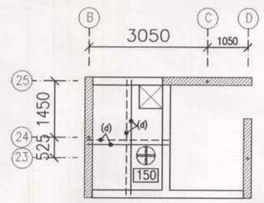
WATER TANK-1,2,3,4,5, 6,7,8,9,10,11,12,13,14 BOTTOM BEAM LAYOUT



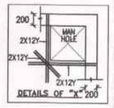
WATER TANK-1,2,3,4,5, 6,7,8,9,10,11,12,13,14 BOTTOM SLAB LAYOUT

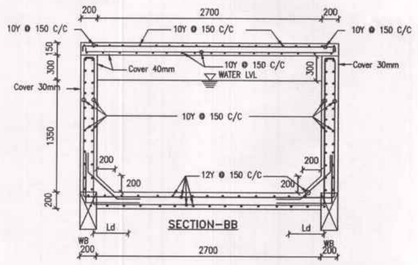


RCC WALL LAYOUT AND MANHOLE DETAILS

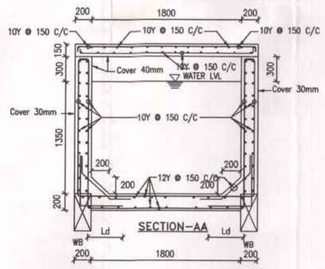


WATER TANK-1,2,3,4,5, 6,7,8,9,10,11,12,13,14 TOP SLAB LAYOUT





SECTION-BB



SECTION-AA

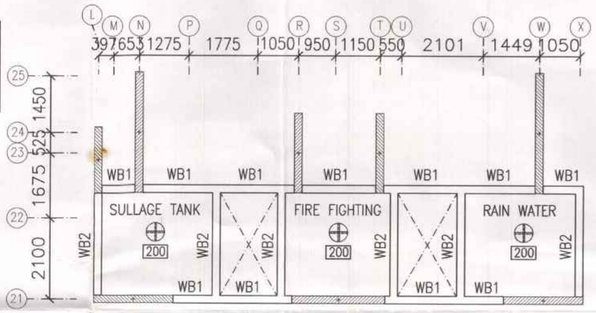
WATER TANK BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
WB1 200x450	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y; 2L-8Y@150mmc/c; 2x16Y	2x16Y; 2L-8Y@100mmc/c; 2x16Y
WB2 200x450	2x16Y; 2L-8Y@75mmc/c; 2x16Y	2x16Y; 2L-8Y@75mmc/c; 2x16Y	2x16Y; 2L-8Y@75mmc/c; 2x16Y

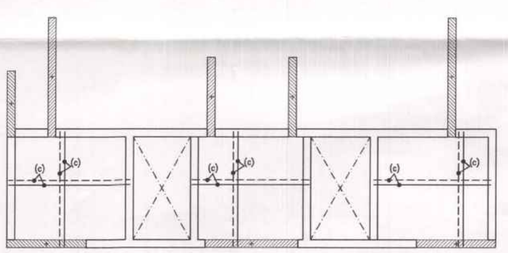
LEGEND:
- ⊕ – Two way slab
- —— – Top Bar
- —— – Bottom Bar

LEGEND:
- (c) – 12Y @ 150 c/c
- (d) – 10Y @ 150 c/c

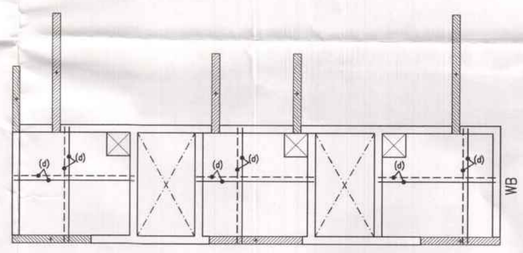
NOTE:
Water tank Inner cover should be 40mm
Water tank Outer cover should be 30mm
The water tank base slab reinforcement and beam top reinforcement shall not be connected to avoid corrosion transfer.



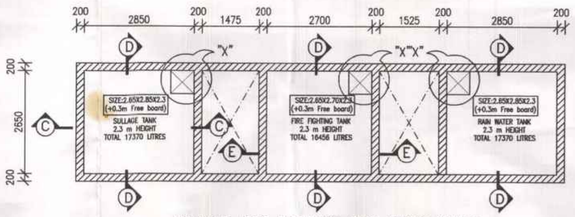
SULLAGE, FIRE FIGHTING, RAIN WATER TANKS BOTTOM BEAM LAYOUT



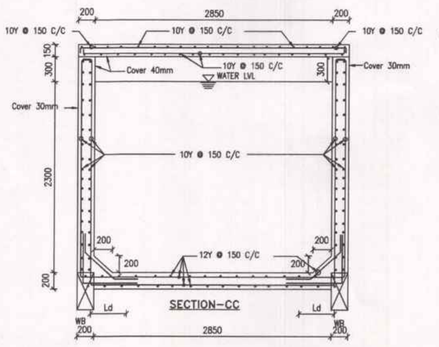
SULLAGE, FIRE FIGHTING, RAIN WATER TANKS BOTTOM SLAB LAYOUT



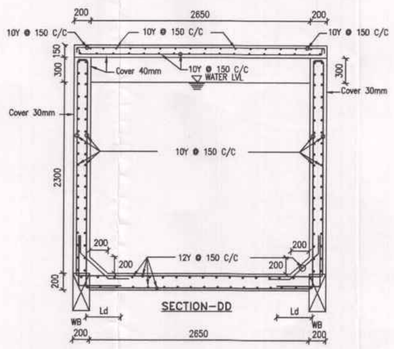
SULLAGE, FIRE FIGHTING, RAIN WATER TANKS TOP SLAB DETAILS



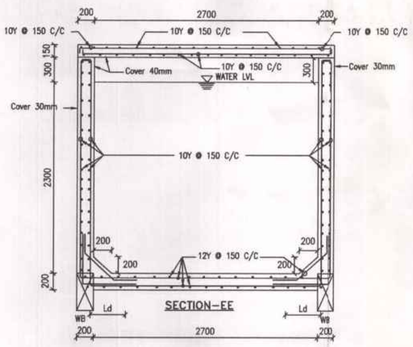
SULLAGE, FIRE FIGHTING, RAIN WATER TANKS RCC WALL LAYOUT & MANHOLE DETAILS



SECTION-CC



SECTION-DD



SECTION-EE

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and mode use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:
1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.,FIV, MISE., MISTE., MIC., MICDAG,MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07328

Structural Design Proof - Check and Found Satisfactory
Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

Proof Checked By:

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/016	SHEET NO: 016	REV NO: R0

DRAWING TITLE :
WATER TANK REINFORCEMENT DETAILS

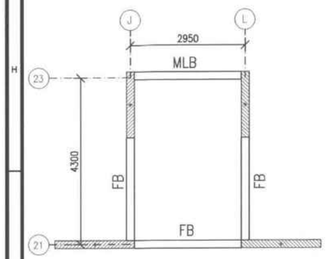
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

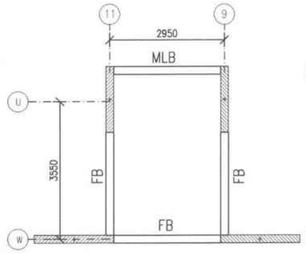
☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 23-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

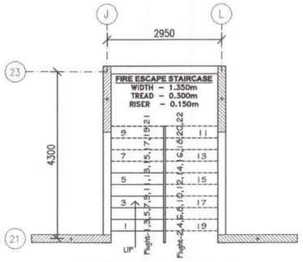
NOTE: ALL DIMENSION ARE IN mm



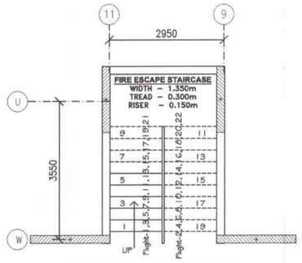
STAIRCASE–BEAM LAYOUT
FOR STAIRCASE–1



STAIRCASE–BEAM LAYOUT
FOR STAIRCASE–2



STAIRCASE–PLAN LAYOUT
FOR STAIRCASE–1



STAIRCASE–PLAN LAYOUT
FOR STAIRCASE–2

LEGEND:

⊕ – Two way slab

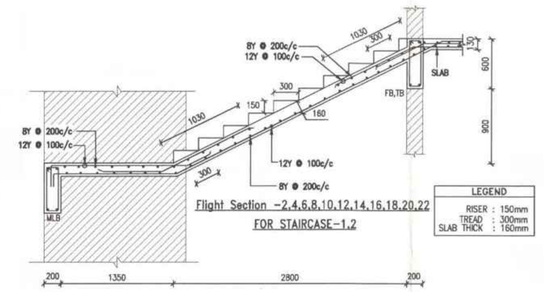
—— – Top Bar

—— – Bottom Bar

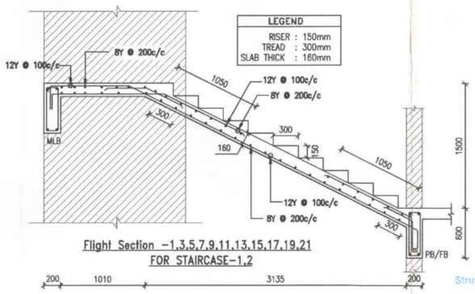
LEGEND:

(a) – 10Y @ 180 c/c

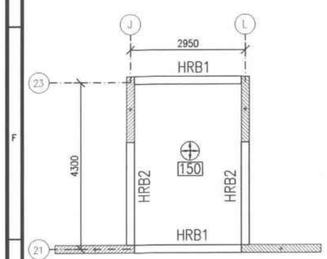
(b) – 12Y @ 180 c/c



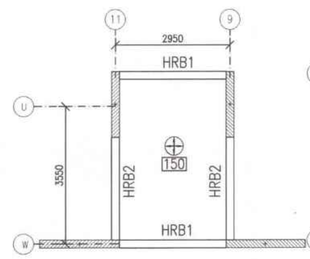
Flight Section –2,4,6,8,10,12,14,16,18,20,22
FOR STAIRCASE–1,2



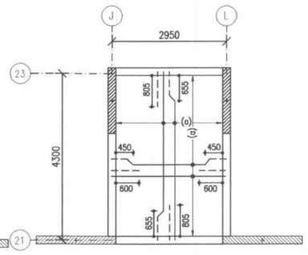
Flight Section –1,3,5,7,9,11,13,15,17,19,21
FOR STAIRCASE–1,2



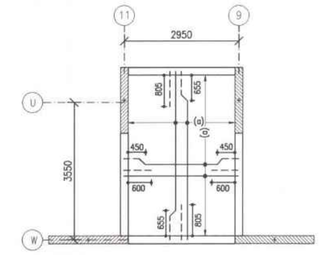
HEADROOM–BEAM LAYOUT
FOR STAIRCASE–1



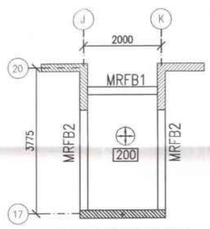
HEADROOM–BEAM LAYOUT
FOR STAIRCASE–2



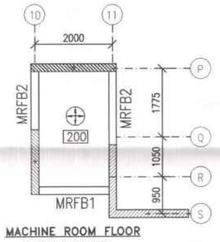
HEADROOM SLAB LAYOUT
FOR STAIRCASE–1



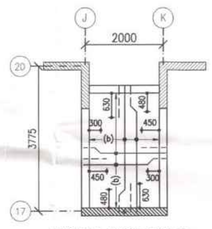
HEADROOM SLAB LAYOUT
FOR STAIRCASE–2



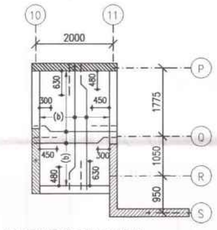
MACHINE ROOM FLOOR
BEAM LAYOUT
FOR LIFT–1



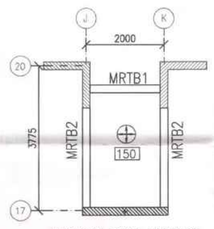
MACHINE ROOM FLOOR
BEAM LAYOUT
FOR LIFT–2



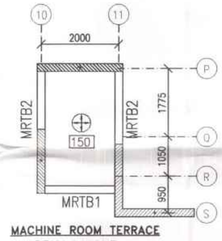
MACHINE ROOM FLOOR
BEAM LAYOUT
FOR LIFT–1



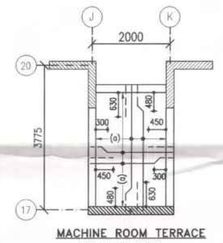
MACHINE ROOM FLOOR
BEAM LAYOUT
FOR LIFT–2



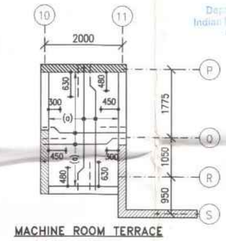
MACHINE ROOM TERRACE
BEAM LAYOUT
FOR LIFT–1



MACHINE ROOM TERRACE
BEAM LAYOUT
FOR LIFT–2



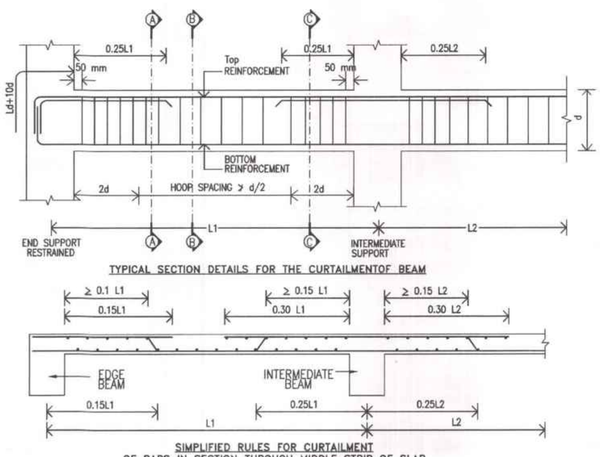
MACHINE ROOM TERRACE
BEAM LAYOUT
FOR LIFT–1



MACHINE ROOM TERRACE
BEAM LAYOUT
FOR LIFT–2

HEAD ROOM, MACHINE ROOM BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
MRFB1 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@150 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y
MRFB2 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y
MRTB1 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@150 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y
MRTB2 200x450	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@150 mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100 mm c/c, 2x16Y



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM

SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

TYPICAL HEADROOM FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
HRB1 230x450	200, 2x16Y, 450, 2L–8Y@100mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@150mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100mm c/c, 2x16Y
HRB2 230x450	200, 2x16Y, 450, 2L–8Y@100mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100mm c/c, 2x16Y	200, 2x16Y, 450, 2L–8Y@100mm c/c, 2x16Y

TYPICAL MIDLANDING BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
MLB 200x600	200, 2x16Y(I) + 2x12Y(II), 600, 2L–8Y@100 mm c/c, 2x12Y(II) + 2x16Y(I)	200, 2x16Y, 600, 2L–8Y@100 mm c/c, 2x16Y	200, 2x16Y(I) + 2x12Y(II), 600, 2L–8Y@100 mm c/c, 2x12Y(II) + 2x16Y(I)

NOTE: Base slab of water tank should be 1000mm above the terrace floor level

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL – NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.,F.N., M.I.E., M.I.S.C., M.I.C.I., M.I.S.T.E.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07328

Structural Design Prect - Checked and Found Satisfactory

Dr.A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B–02/015	SHEET NO: 015	REV NO: R0

DRAWING TITLE :
STAIRCASE, HEAD ROOM AND MACHINE ROOM REINFORCEMENT DETAILS

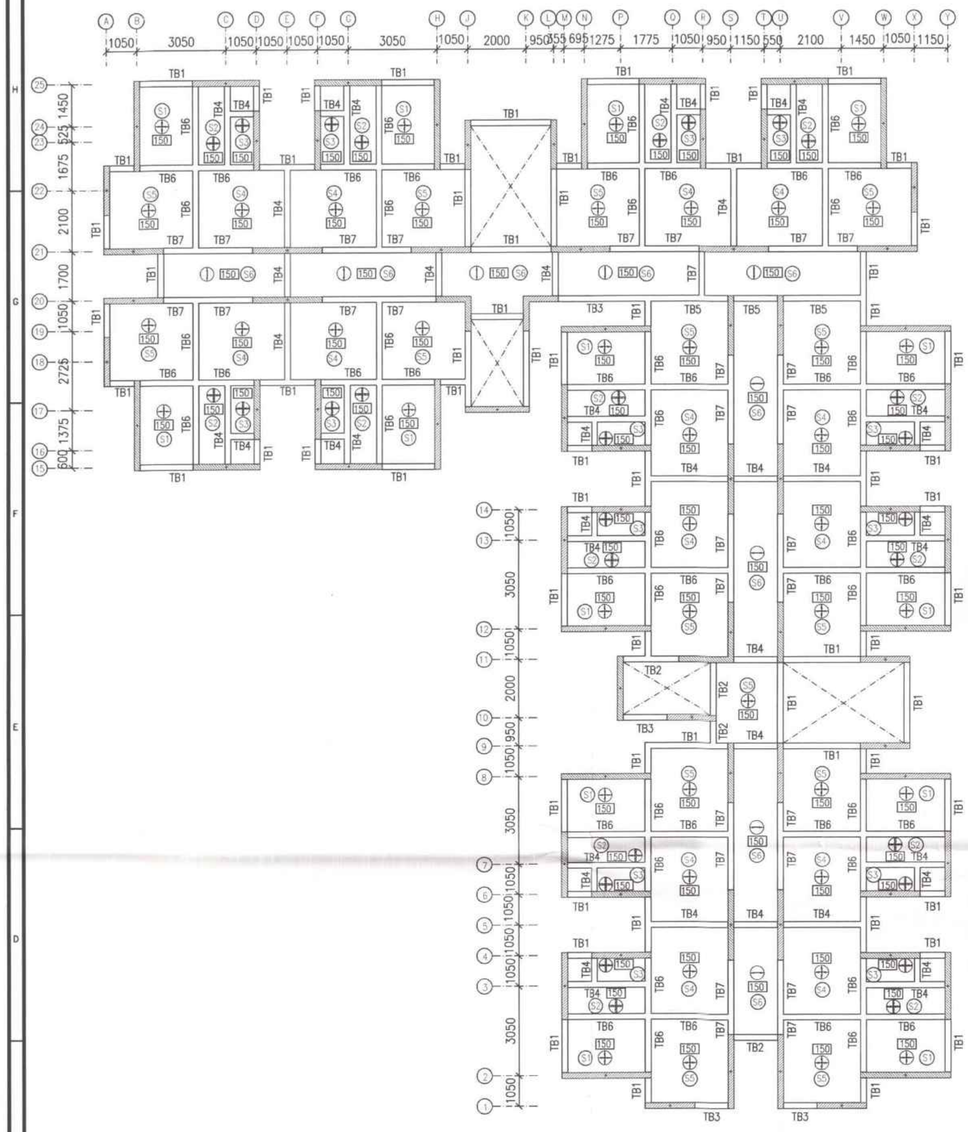
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

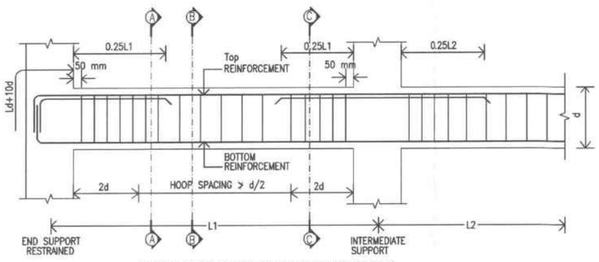
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 23–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

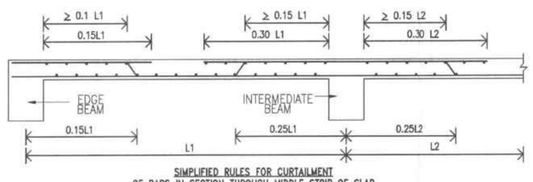
NOTE: ALL DIMENSION ARE IN mm



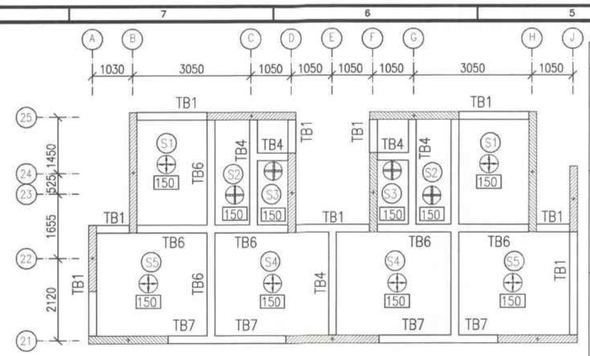
TERRACE FLOOR BEAM AND SLAB REINFORCEMENT DETAILS



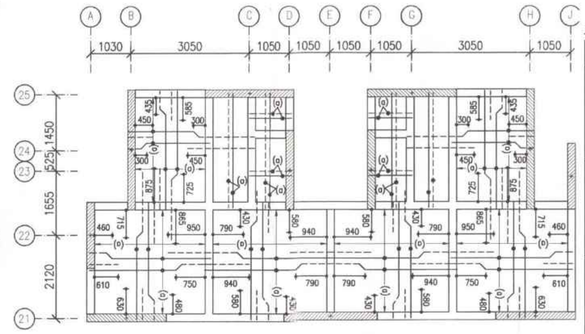
TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



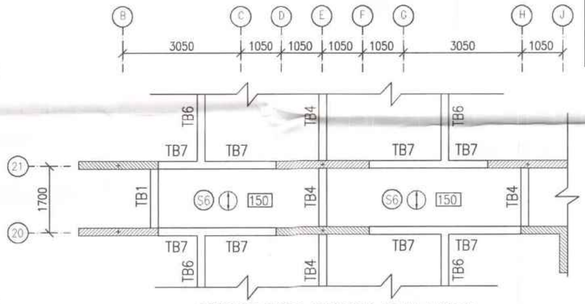
SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB



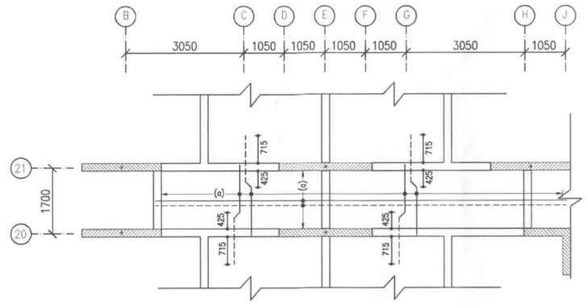
TERRACE FLOOR BEAM LAYOUT



TERRACE FLOOR SLAB LAYOUT
REINFORCEMENT DETAILS



TERRACE FLOOR CORRIDOR BEAM LAYOUT



TERRACE FLOOR CORRIDOR SLAB LAYOUT
REINFORCEMENT DETAILS

SLAB REINFORCEMENT DETAILS (TERRACE FLOOR)

SL NO	SLABS	THICK	MAIN BARS		EXTRA BARS OVER SUPPORT(TOP)		DISTRIBUTION BAR (TOP & BOTTOM) (C)
			SHORT SPAN (a)	LONG SPAN (a)	SHORT SPAN (A')	LONG SPAN (B')	
			DIA	DIA	DIA	DIA	DIA
1	S1	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
2	S2	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
3	S3	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
4	S4	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
5	S5	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C
6	S6	150	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C	(a) -10Y@180 C/C

TERRACE FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
TB1 200x600	2-16Y, 2L-8Y@100mm c/c, 2-16Y	2-16Y, 2L-8Y@175mm c/c, 2-16Y	2-16Y, 2L-8Y@100mm c/c, 2-16Y
TB2 200x600	2-16Y, 2L-8Y@100mm c/c, 2-16Y	2-16Y, 2L-8Y@125mm c/c, 2-16Y	2-16Y, 2L-8Y@100mm c/c, 2-16Y
TB3 200x600	2-16Y, 2L-8Y@100mmc/c, 2-16Y	2-16Y, 2L-8Y@100mmc/c, 2-16Y	2-16Y, 2L-8Y@100mmc/c, 2-16Y

TERRACE FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
TB4 200x450	2-16Y, 2L-8Y@100mm c/c, 2-16Y	2-16Y, 2L-8Y@150mm c/c, 2-16Y	2-16Y, 2L-8Y@100mm c/c, 2-16Y
TB5 200x450	2-16Y, 2L-8Y@100mm c/c, 2-16Y	2-16Y, 2L-8Y@125mm c/c, 2-16Y	2-16Y, 2L-8Y@100mm c/c, 2-16Y
TB6 200x450	2-16Y, 2L-8Y@100mm c/c, 2-16Y	2-16Y, 2L-8Y@100mm c/c, 2-16Y	2-16Y, 2L-8Y@100mm c/c, 2-16Y
TB7 200x450	2-16Y, 2L-8Y@75mm c/c, 2-16Y	2-16Y, 2L-8Y@75mm c/c, 2-16Y	2-16Y, 2L-8Y@75mm c/c, 2-16Y

LEGEND:

- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in portly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL = NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.Struct.E.,FIV.,MISE.,MSE.,MSEC.,MIASDAG,MIGTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328.

Proof Checked By:

Structural Design Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/014	SHEET NO: 014	REV NO: R0

DRAWING TITLE :
TERRACE BEAM REINFORCEMENT DETAILS

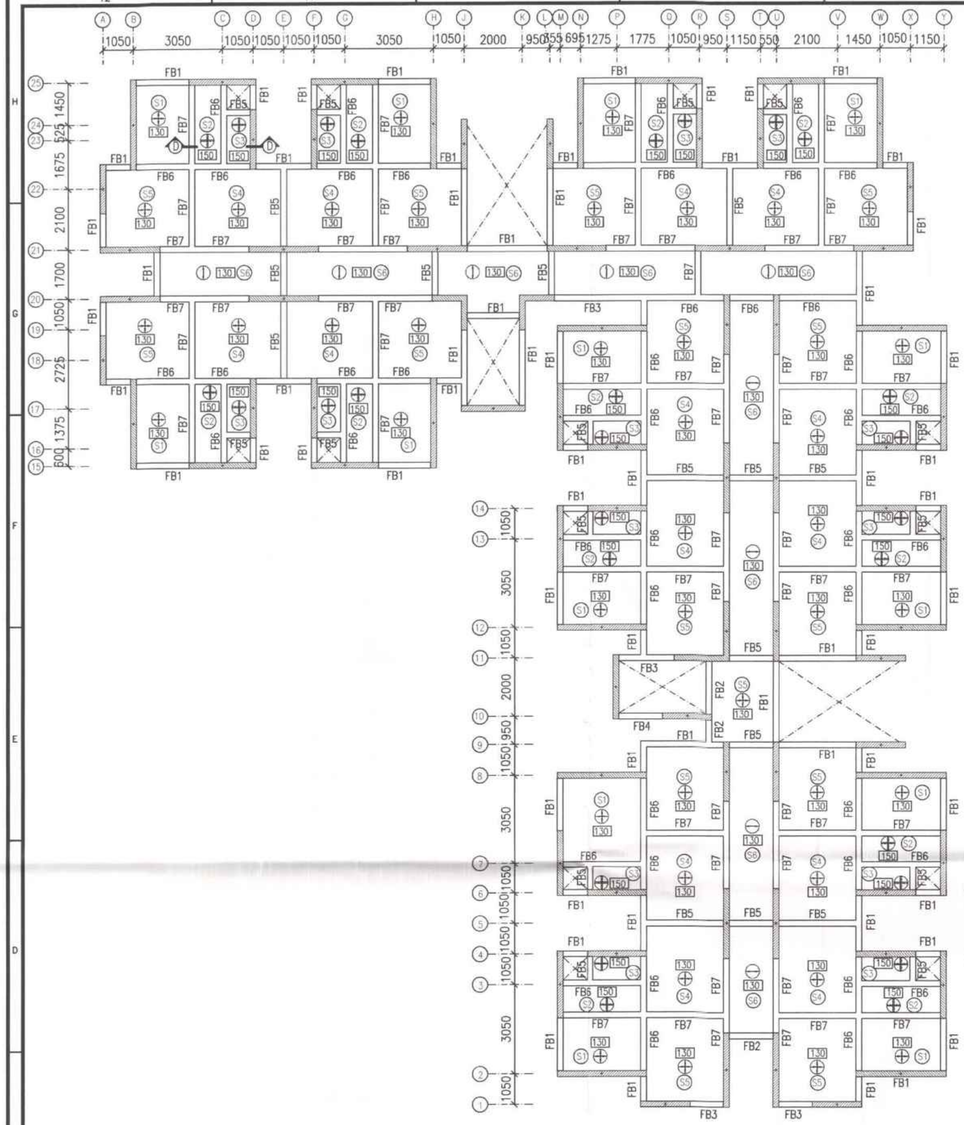
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

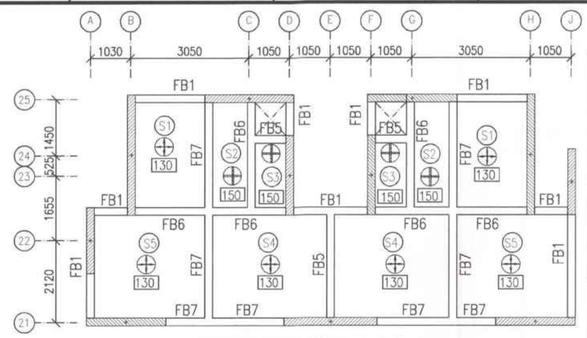
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 23-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

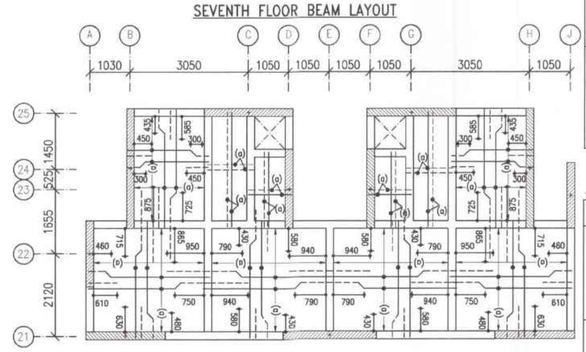
NOTE: ALL DIMENSION ARE IN mm



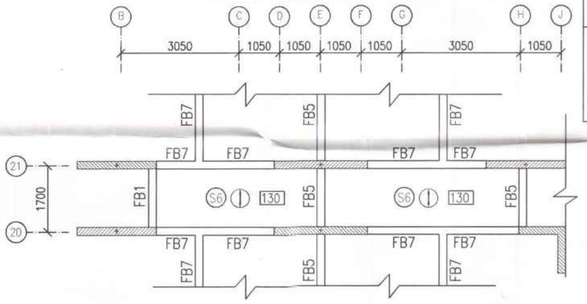
SEVENTH FLOOR BEAM AND SLAB REINFORCEMENT DETAILS



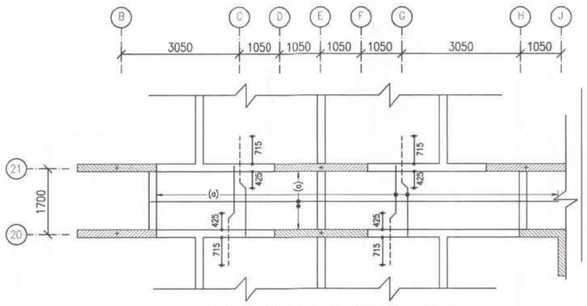
SEVENTH FLOOR BEAM LAYOUT



SEVENTH FLOOR SLAB LAYOUT
REINFORCEMENT DETAILS



SEVENTH FLOOR CORRIDOR BEAM LAYOUT



SEVENTH FLOOR CORRIDOR SLAB LAYOUT
REINFORCEMENT DETAILS

SEVENTH FLOOR BEAM REINFORCEMENT DETAILS

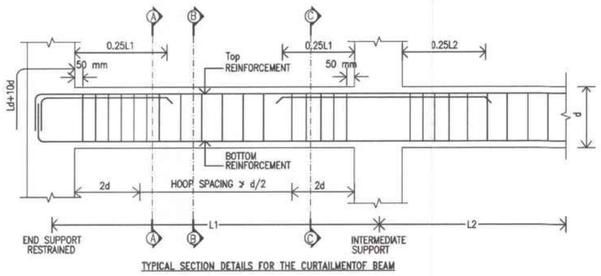
BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB1 200x600	200 2x16Y; 600 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 600 2L-8Y@175mm c/c; 2x16Y	200 2x16Y; 600 2L-8Y@100mm c/c; 2x16Y
FB2 200x600	200 2x16Y; 600 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 600 2L-8Y@150mm c/c; 2x16Y	200 2x16Y; 600 2L-8Y@100mm c/c; 2x16Y
FB3 200x600	200 2x16Y; 600 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 600 2L-8Y@100mmc/c; 2x16Y	200 2x16Y; 600 2L-8Y@100mmc/c; 2x16Y
FB4 200x600	200 2x16Y(I); 2x12Y(II); 600 2L-8Y@75mm c/c; 2x12Y(II); 2x16Y(I)	200 2x16Y; 600 2L-8Y@75mm c/c; 2x16Y	200 2x16Y(I); 2x12Y(II); 600 2L-8Y@75mm c/c; 2x12Y(II); 2x16Y(I)

SEVENTH FLOOR BEAM REINFORCEMENT DETAILS

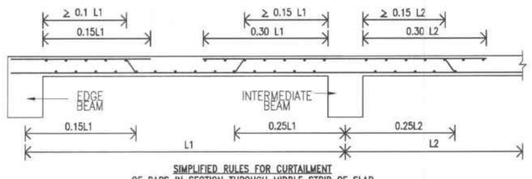
BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB5 200x450	200 2x16Y; 450 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 450 2L-8Y@175mm c/c; 2x16Y	200 2x16Y; 450 2L-8Y@100mm c/c; 2x16Y
FB6 200x450	200 2x16Y; 450 2L-8Y@100mm c/c; 2x16Y	200 2x16Y; 450 2L-8Y@125mm c/c; 2x16Y	200 2x16Y; 450 2L-8Y@100mm c/c; 2x16Y
FB7 200x450	200 2x16Y; 450 2L-8Y@75mm c/c; 2x16Y	200 2x16Y; 450 2L-8Y@75mm c/c; 2x16Y	200 2x16Y; 450 2L-8Y@75mm c/c; 2x16Y

LEGEND:

- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar



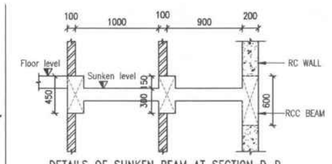
TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



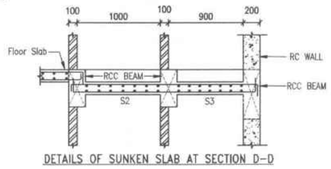
SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

SLAB REINFORCEMENT DETAILS (SEVENTH FLOOR)

SL NO	SLABS	THICK	MAIN BARS SHORT SPAN (a) DIA	MAIN BARS LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP) SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP) LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
2	S2	150	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
3	S3	150	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
4	S4	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
5	S5	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
6	S6	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C



DETAILS OF SUNKEN BEAM AT SECTION D-D



DETAILS OF SUNKEN SLAB AT SECTION D-D

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in portly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R.Balamourougane
M.Tech., F.I.A.Structl.E., F.IV., MISE., MSSE., MIBC., MNSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (CAT – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/013	SHEET NO: 013	REV NO: R0

DRAWING TITLE :
SEVENTH FLOOR REINFORCEMENT DETAILS

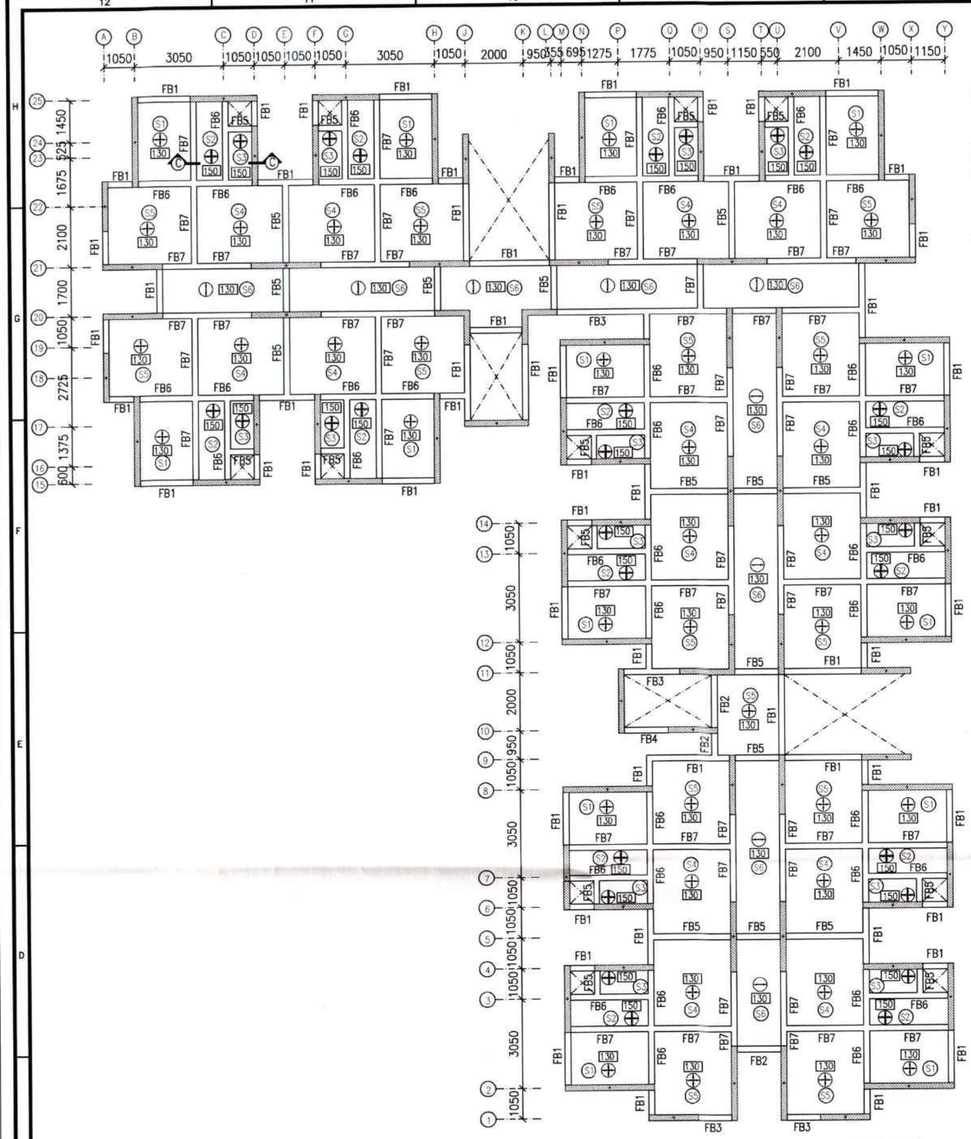
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

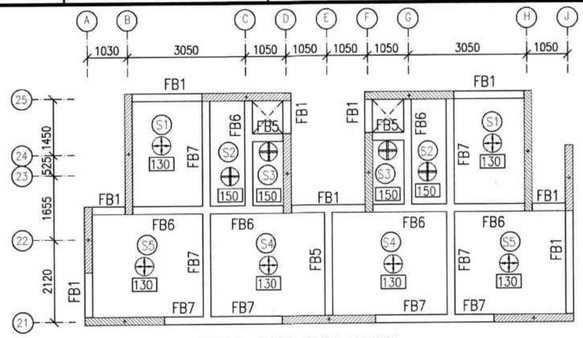
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 23-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

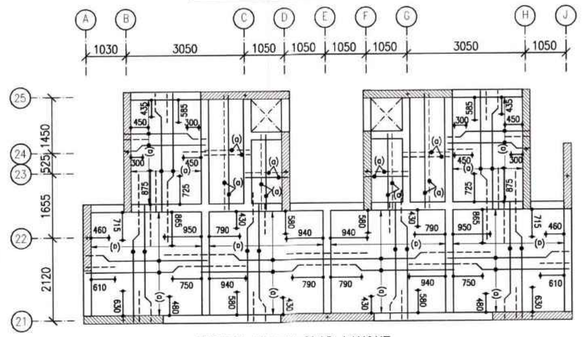
NOTE: ALL DIMENSION ARE IN mm



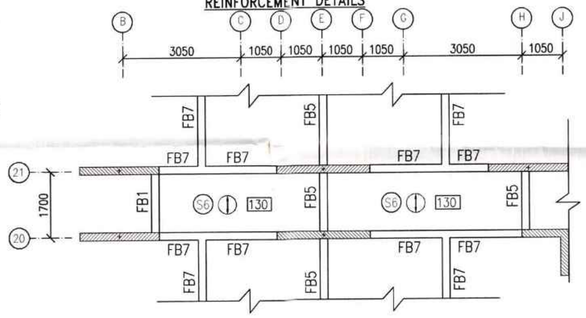
TYPICAL FLOOR BEAM AND SLAB REINFORCEMENT DETAILS
(V,VI,VIII,IX&X FLOORS)



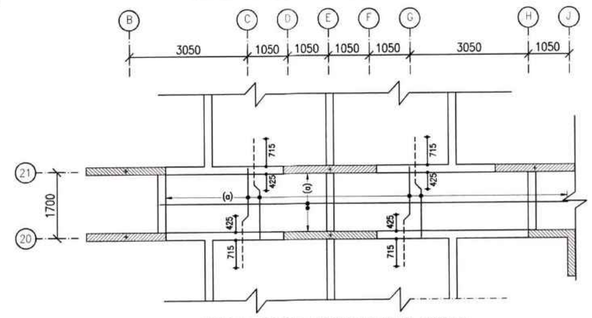
TYPICAL FLOOR BEAM LAYOUT



TYPICAL FLOOR SLAB LAYOUT
REINFORCEMENT DETAILS



TYPICAL FLOOR CORRIDOR BEAM LAYOUT



TYPICAL FLOOR CORRIDOR SLAB LAYOUT
REINFORCEMENT DETAILS

TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

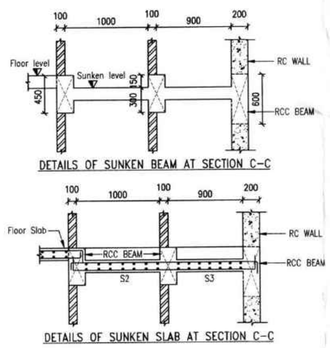
BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB1 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB2 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@150mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB3 200x600	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y; 2L-8Y@100mmc/c; 2x16Y	2x16Y; 2L-8Y@100mmc/c; 2x16Y
FB4 200x600	2x16Y(I) + 2x12Y(II); 2L-8Y@75mmc/c; 2x12Y(II) + 2x16Y(I)	2x16Y; 2L-8Y@75mmc/c; 2x16Y	2x16Y(I) + 2x12Y(II); 2L-8Y@75mmc/c; 2x12Y(II) + 2x16Y(I)

TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB5 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB6 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@125mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB7 200x450	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y	2x16Y; 2L-8Y@75mm c/c; 2x16Y

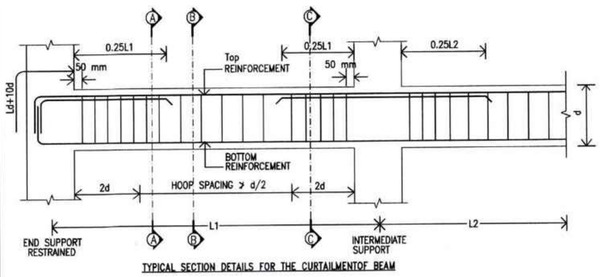
LEGEND:

- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar

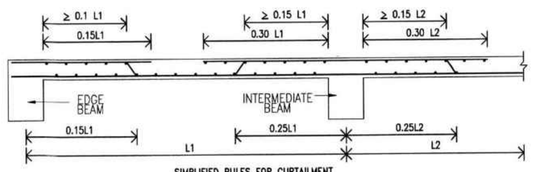


DETAILS OF SUNKEN BEAM AT SECTION C-C

DETAILS OF SUNKEN SLAB AT SECTION C-C



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

SLAB REINFORCEMENT DETAILS (TYPICAL FLOOR)

SL NO	SLABS	THICK	MAIN BARS SHORT SPAN (a) DIA	MAIN BARS LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP) SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP) LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C)
1	S1	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
2	S2	150	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
3	S3	150	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
4	S4	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
5	S5	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
6	S6	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY
	SYMBOL	DESCRIPTION			
NOTE:	NGL	NATURAL GROUND LEVEL			

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R.Balamourougane
M.Tech.,FIASTruct.,FIV, MISE, MISEC, MISTAM, MISTE,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/077328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr.A. MUTHU PRASAD
FIStructE
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-02/012	SHEET NO:012	REV NO: R0

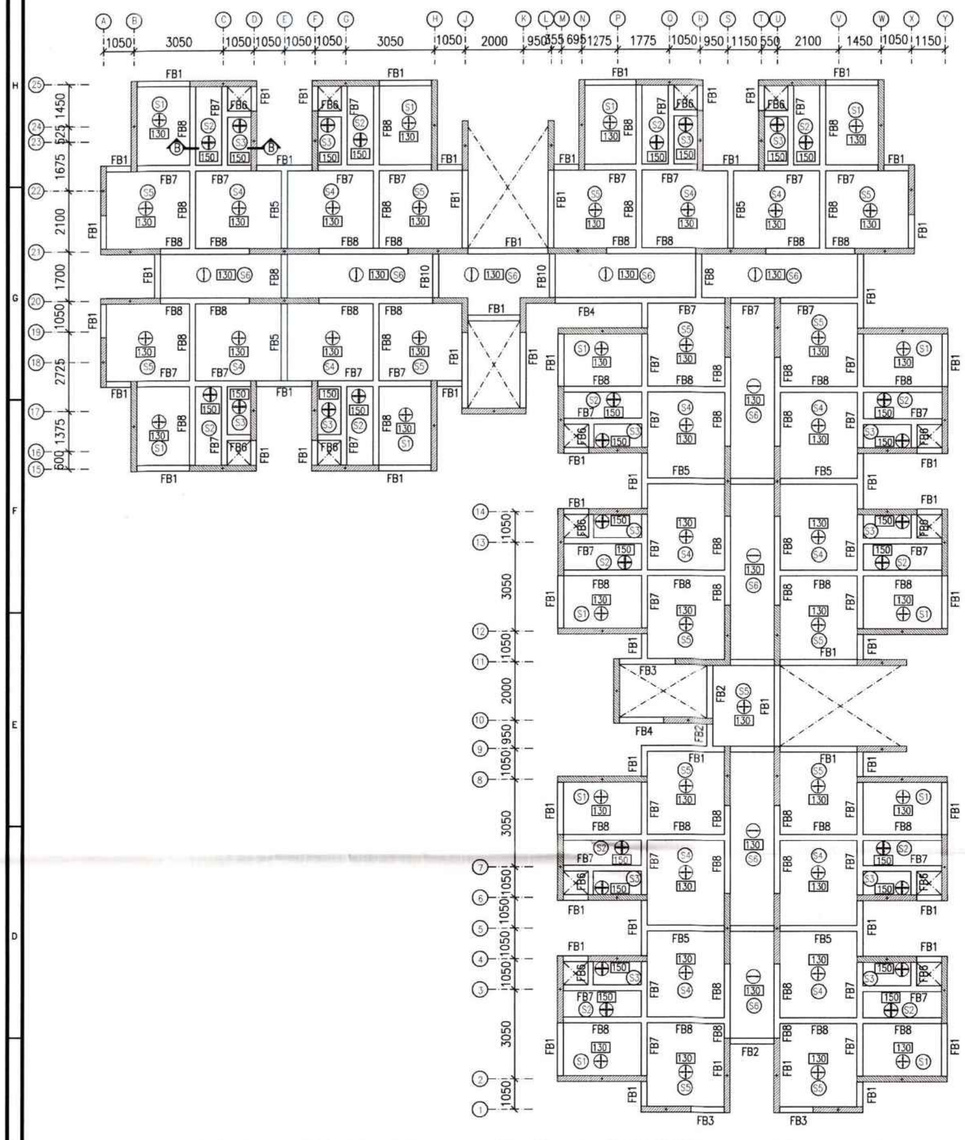
DRAWING TITLE :
TYPICAL FLOOR REINFORCEMENT DETAILS (V,VI,VIII,IX&X FLOORS)

BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

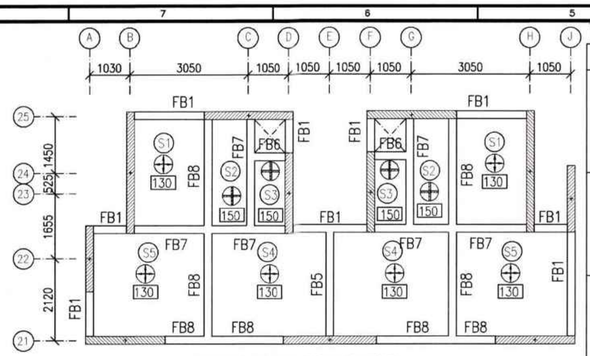
ISSUED FOR:

☐PRELIMINARY ☐APPROVAL ☑CONSTRUCTION ☐TENDER ☐INFORMATION	DATE OF ISSUE 23-11-2022
DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

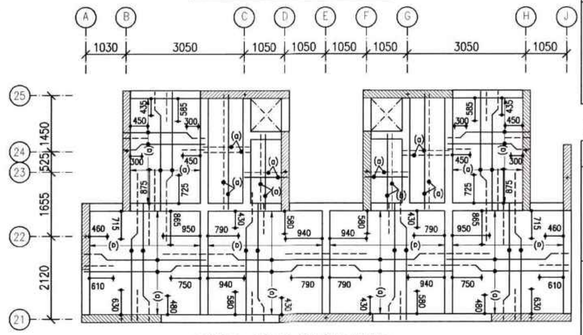
NOTE: ALL DIMENSION ARE IN mm



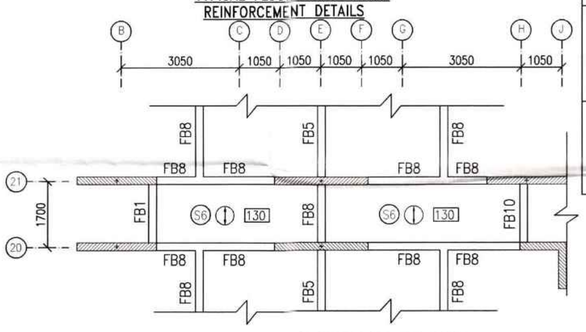
TYPICAL FLOOR BEAM AND SLAB REINFORCEMENT DETAILS
(II–IV FLOORS)



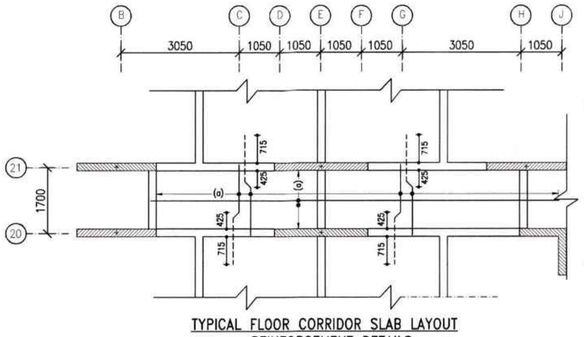
TYPICAL FLOOR BEAM LAYOUT



TYPICAL FLOOR SLAB LAYOUT
REINFORCEMENT DETAILS



TYPICAL FLOOR CORRIDOR BEAM LAYOUT



TYPICAL FLOOR CORRIDOR SLAB LAYOUT
REINFORCEMENT DETAILS

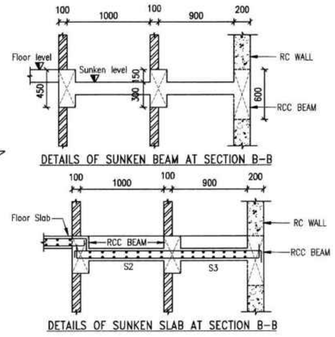
TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
FB1 200x600	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@175mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB2 200x600	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@150mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB3 200x600	2x16Y; 2L–8Y@100mmc/c; 2x16Y	2x16Y; 2L–8Y@100mmc/c; 2x16Y	2x16Y; 2L–8Y@100mmc/c; 2x16Y
FB4 200x600	2x16Y(I); 2x12Y(II); 2L–8Y@75mm c/c; 2x12Y(II); 2x16Y(I)	2x16Y; 2L–8Y@75mm c/c; 2x16Y	2x16Y(I); 2x12Y(II); 2L–8Y@75mm c/c; 2x12Y(II); 2x16Y(I)

TYPICAL FLOOR BEAM REINFORCEMENT DETAILS

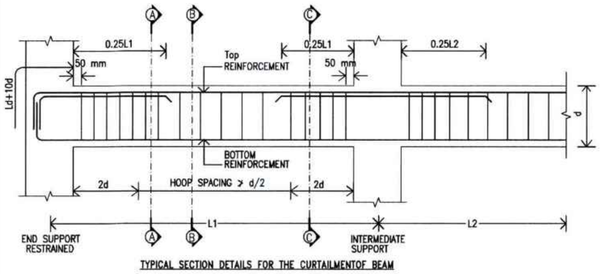
BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
FB5 200x450	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@175mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB6 200x450	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@150mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB7 200x450	2x16Y; 2L–8Y@100mm c/c; 2x16Y	2x16Y; 2L–8Y@125mm c/c; 2x16Y	2x16Y; 2L–8Y@100mm c/c; 2x16Y
FB8 200x450	2x16Y; 2L–8Y@75mm c/c; 2x16Y	2x16Y; 2L–8Y@75mm c/c; 2x16Y	2x16Y; 2L–8Y@75mm c/c; 2x16Y

LEGEND:
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar

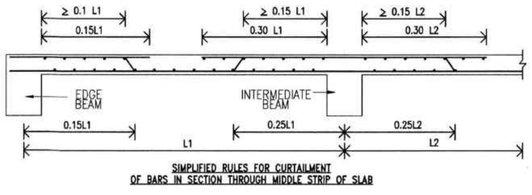


DETAILS OF SUNKEN BEAM AT SECTION B–B

DETAILS OF SUNKEN SLAB AT SECTION B–B



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

SLAB REINFORCEMENT DETAILS (TYPICAL FLOOR)

SL NO	SLABS	THICK	MAIN BARS SHORT SPAN (a) DIA	MAIN BARS LONG SPAN (a) DIA	EXTRA BARS OVER SUPPORT(TOP) SHORT SPAN (A') DIA	EXTRA BARS OVER SUPPORT(TOP) LONG SPAN (B') DIA	DISTRIBUTION BAR (TOP & BOTTOM) (C) DIA
1	S1	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
2	S2	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
3	S3	150	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
4	S4	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
5	S5	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C
6	S6	130	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C	(a) –8Y@180 C/C

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and mode use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:
1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.Struct.E., FIV., M.ISE., M.ISSE., M.ISC., M.ICOAG, M.ISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

Structural Design Proof - Checked and Found Satisfactory

Dr.A.MOHAN PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B–02/011	SHEET NO: 011	REV NO: R0

DRAWING TITLE :
TYPICAL FLOOR REINFORCEMENT DETAILS (II–IV FLOORS)

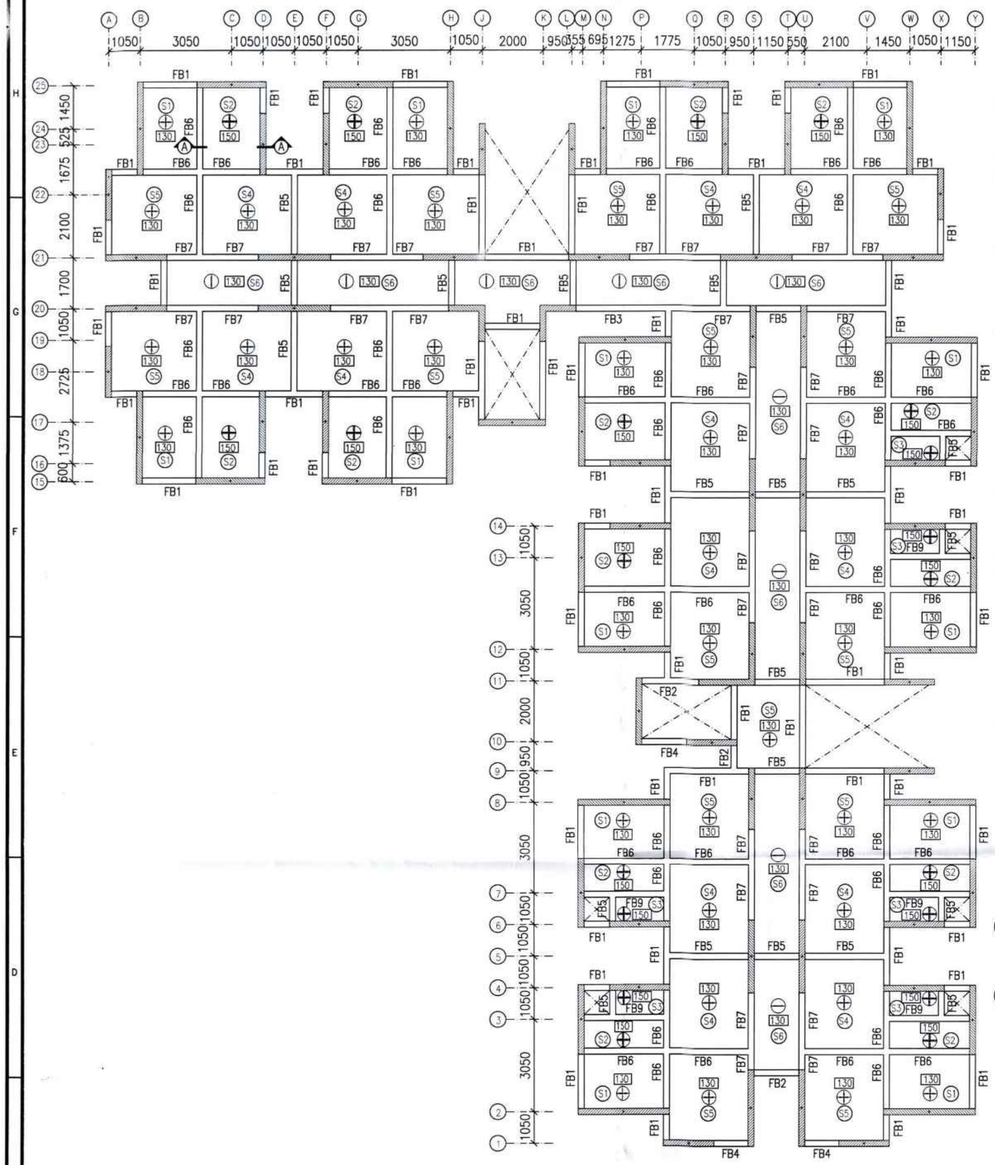
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

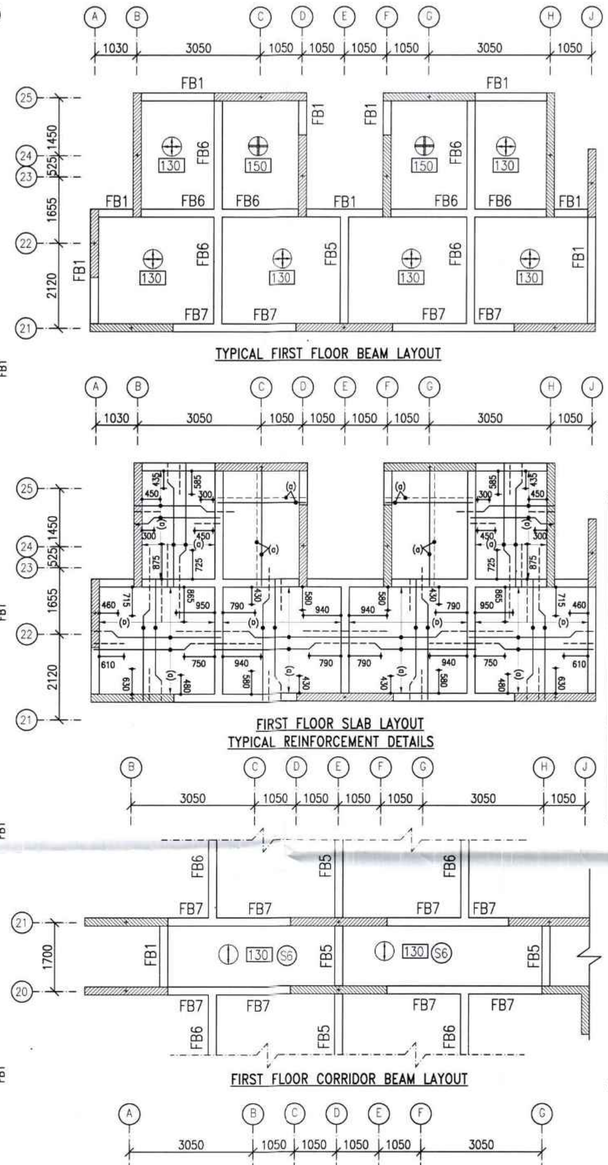
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 23–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



FIRST FLOOR BEAM AND SLAB REINFORCEMENT DETAILS

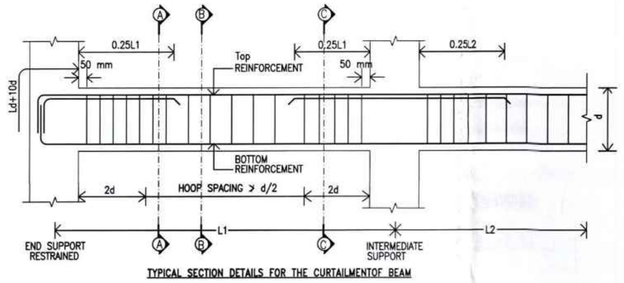


TYPICAL FIRST FLOOR BEAM LAYOUT

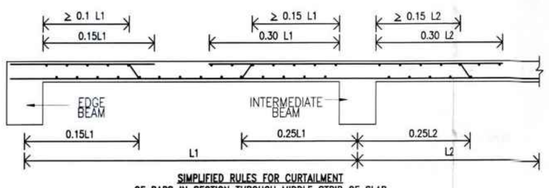
FIRST FLOOR SLAB LAYOUT
TYPICAL REINFORCEMENT DETAILS

FIRST FLOOR CORRIDOR BEAM LAYOUT

FIRST FLOOR CORRIDOR SLAB LAYOUT
REINFORCEMENT DETAILS



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM



SIMPLIFIED RULES FOR CURTAILMENT
OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

SLAB REINFORCEMENT DETAILS (FIRST FLOOR)

SL NO	SLABS	THICK	MAIN BARS		EXTRA BARS OVER SUPPORT(TOP)		DISTRIBUTION BAR (TOP & BOTTOM) (C)
			SHORT SPAN (a)	LONG SPAN (a)	SHORT SPAN (A')	LONG SPAN (B')	
			DIA	DIA	DIA	DIA	DIA
1	S1	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
2	S2	150	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
3	S3	150	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
4	S4	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
5	S5	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C
6	S6	130	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C	(a) -8Y@180 C/C

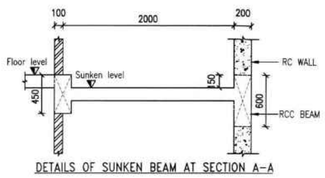
FIRST FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB1 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB2 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@150mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB3 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@125mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB4 200x600	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y

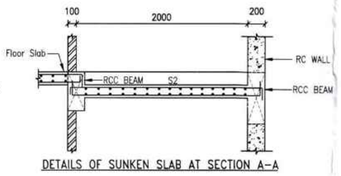
FIRST FLOOR BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
FB5 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@175mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB6 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@150mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y
FB7 200x450	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y	2x16Y; 2L-8Y@100mm c/c; 2x16Y

LEGEND:
- ⊕ – Two way slab
- ⊖ – One way slab
- ⊕ – Double Mat slab
- — – Top Bar
- — – Bottom Bar



DETAILS OF SUNKEN BEAM AT SECTION A-A



DETAILS OF SUNKEN SLAB AT SECTION A-A

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:
1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Struct.E.,FN. MISE., MISSE., MIEC., MINSDAG, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07328

Proof Checked By:

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

Structural Design Proof - Checked and Found Satisfactory
Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

DRAWING NO: TNUHDB/CH/TR/B-02/010	SHEET NO: 010	REV NO: R0

DRAWING TITLE :
FIRST FLOOR REINFORCEMENT DETAILS

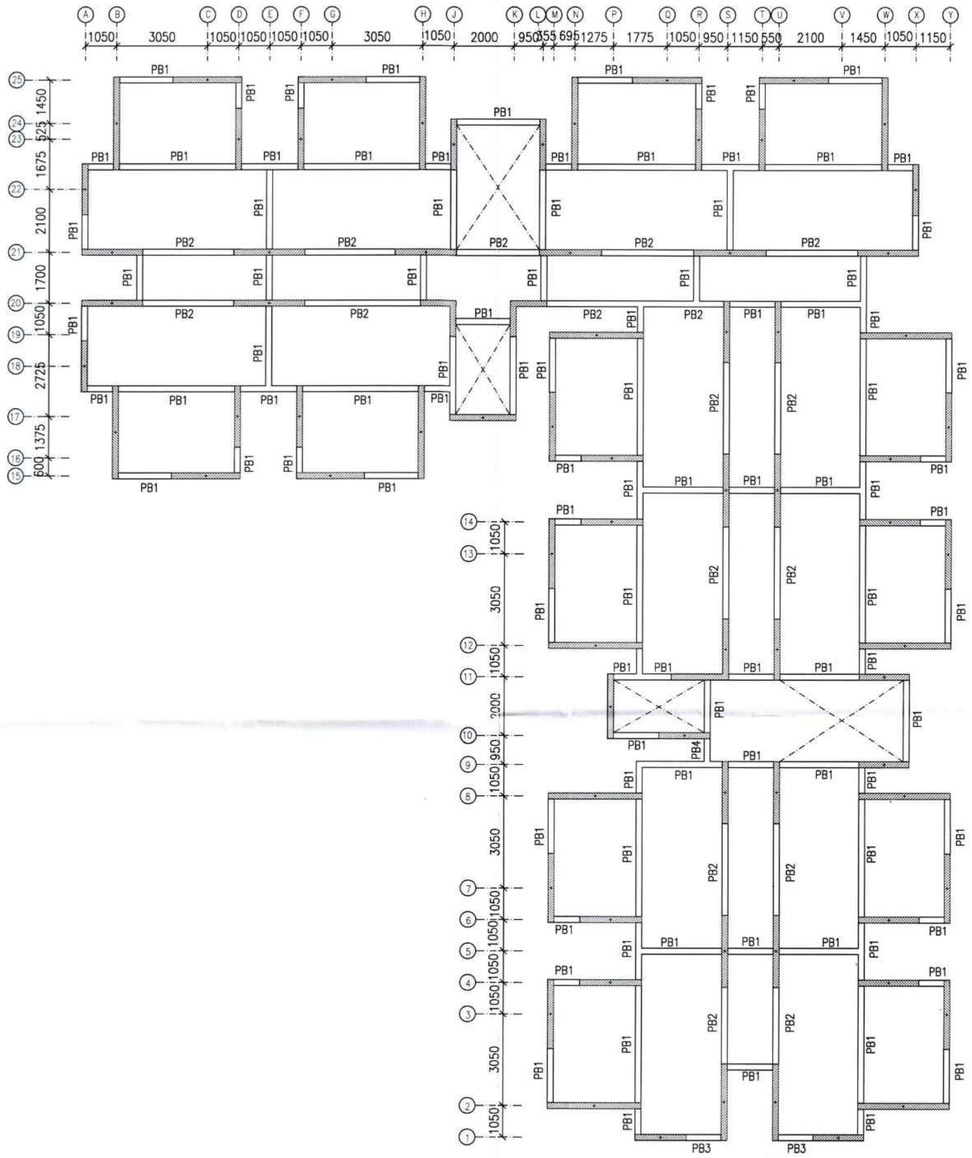
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 23-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

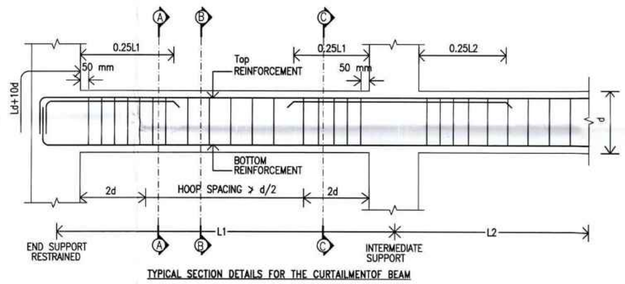
NOTE: ALL DIMENSION ARE IN mm



PLINTH BEAM REINFORCEMENT DETAILS

PLINTH BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A-A	SECTION ALONG B-B	SECTION ALONG C-C
PB1 200x450	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@175 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y
PB2 200x450	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@150 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y
PB3 200x450	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@125 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y
PB4 200x450	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y	200, 2x16Y, 450, 2L-8Y@100 mm c/c, 2x16Y



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in portly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

	SYMBOL	DESCRIPTION
NOTE:		NGL NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory
Dr. A. MEHER PRASAD
Prof. CSRE
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.IAStruct.,F.IV.,MISE.,MSSE.,MIBC.,MINSOAE/MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai - 600 113.
Registered Structural Engineer (CAT - I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/009	SHEET NO: 009	REV NO: R0

DRAWING TITLE :
PLINTH BEAM REINFORCEMENT DETAILS

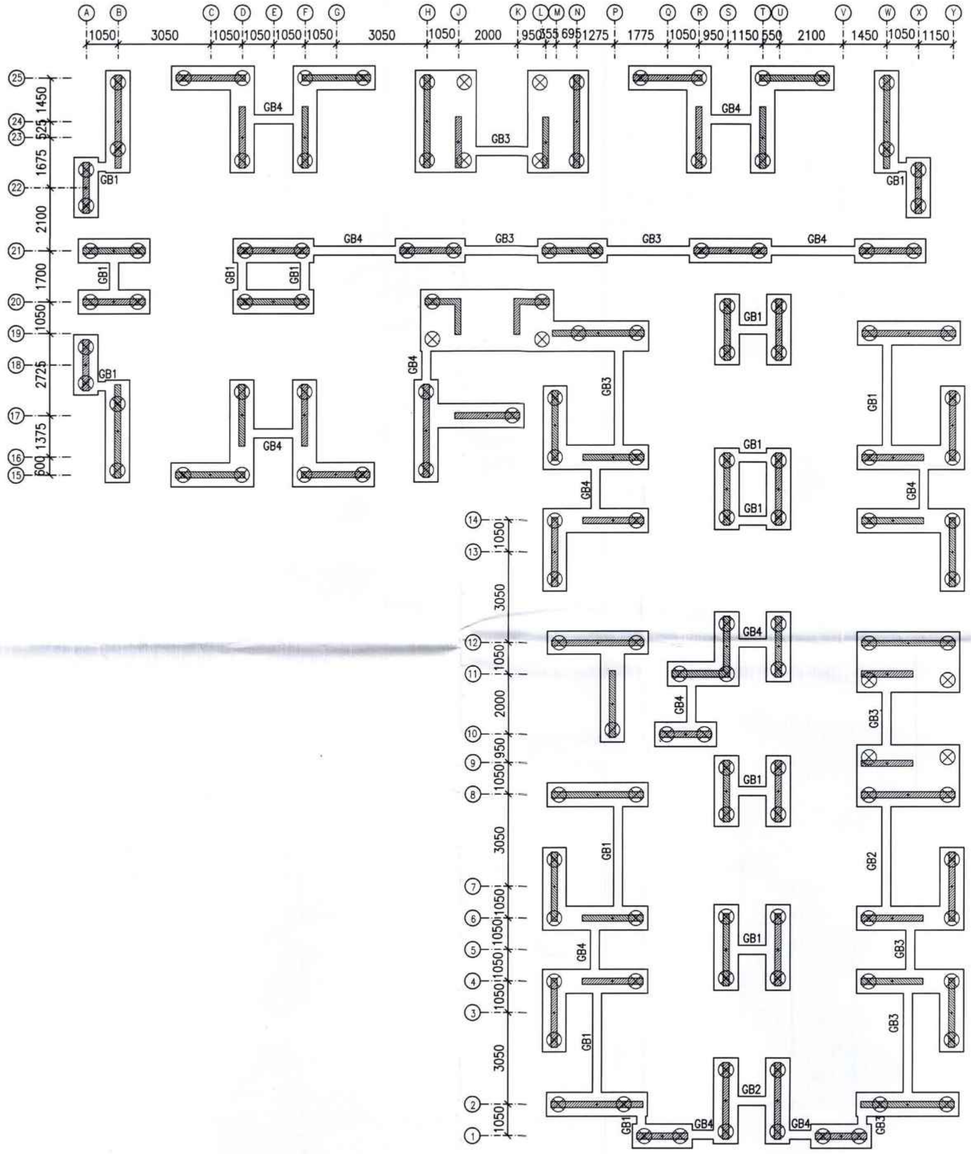
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 23-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

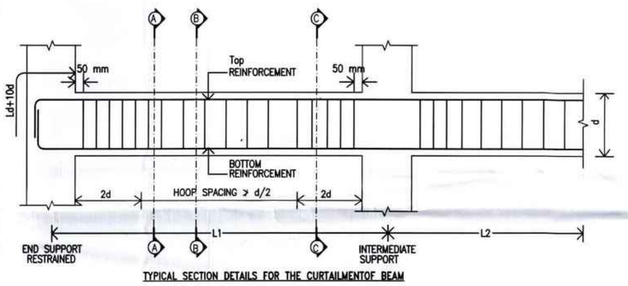
NOTE: ALL DIMENSION ARE IN mm



GRADE BEAM LAYOUT

GRADE BEAM REINFORCEMENT DETAILS

BEAM NAME	SECTION ALONG A–A	SECTION ALONG B–B	SECTION ALONG C–C
GB1 300x450	300 × 450; 4x16Y; 2L–8Y@100mm c/c; 4x16Y	300 × 450; 4x16Y; 2L–8Y@130mm c/c; 4x16Y	300 × 450; 4x16Y; 2L–8Y@100mm c/c; 4x16Y
GB2 300x450	300 × 450; 4x20Y; 2L–8Y@100mm c/c; 4x16Y(II) 4x20Y(I)	300 × 450; 4x20Y; 2L–8Y@130mm c/c; 4x20Y(I)	300 × 450; 4x20Y; 2L–8Y@100mm c/c; 4x16Y(II) 4x20Y(I)
GB3 300x450	300 × 450; 4x20Y(I) 4x20Y(II); 2L–12Y@100mm c/c; 4x20Y(II) 4x20Y(I)	300 × 450; 4x20Y(I); 2L–12Y@100mm c/c; 4x20Y(I)	300 × 450; 4x20Y(I) 4x20Y(II); 2L–12Y@100mm c/c; 4x20Y(II) 4x20Y(I)
GB4 300x450	300 × 450; 3x25Y(I) 3x25Y(II); 2L–12Y@100mm c/c; 3x25Y(II) 3x25Y(I)	300 × 450; 3x25Y(I); 2L–12Y@100mm c/c; 3x25Y(I)	300 × 450; 3x25Y(I) 3x25Y(II); 2L–12Y@100mm c/c; 3x25Y(II) 3x25Y(I)



TYPICAL SECTION DETAILS FOR THE CURTAILMENTOF BEAM

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
		NGL NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.I.A.Struct., F.N. M.S.E., M.ISE., M.SC., M.MDAG, M.I.S.T.E.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B–02/008	SHEET NO: 008	REV NO: R0

DRAWING TITLE : GRADE BEAM REINFORCEMENT DETAILS

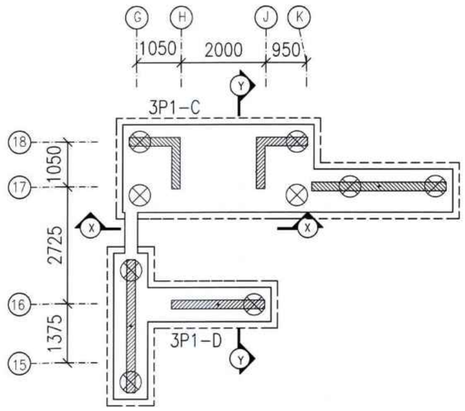
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

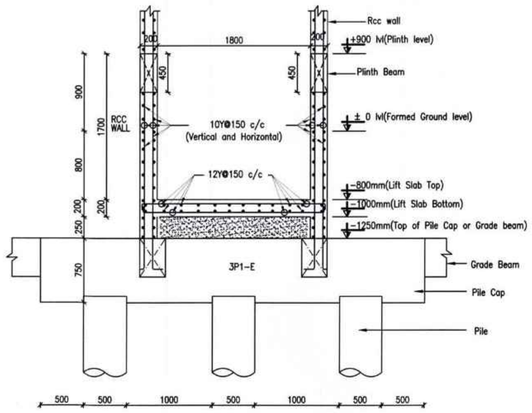
☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

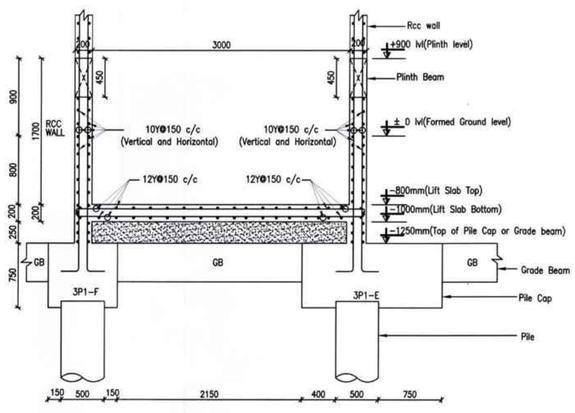
NOTE: ALL DIMENSION ARE IN mm



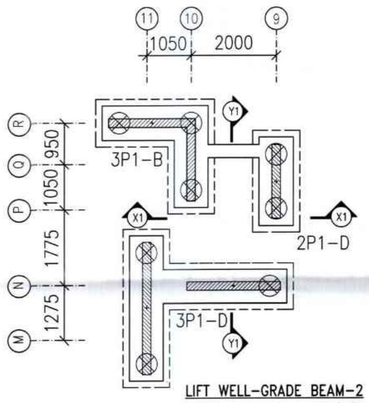
LIFT WELL GRADE BEAM-1
LAYOUT -1250mm LEVEL



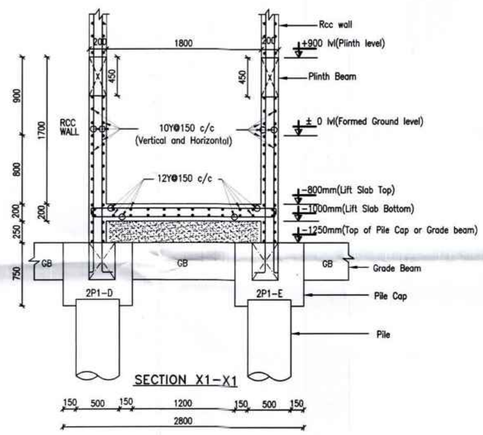
SECTION X-X



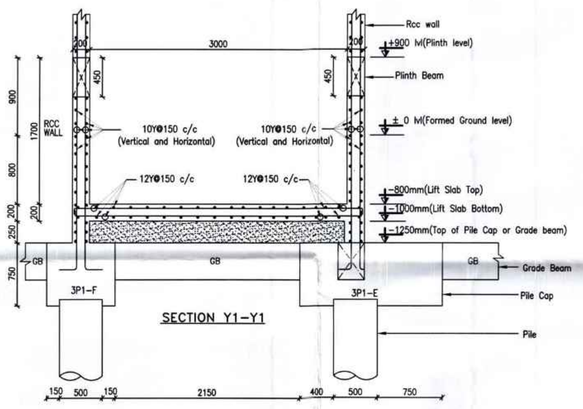
SECTION Y-Y



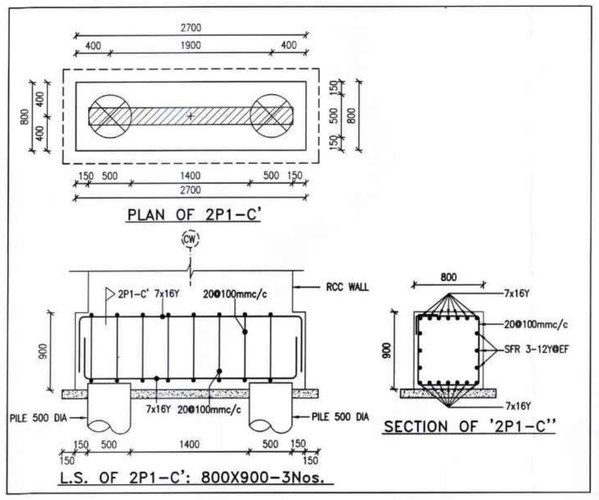
LIFT WELL-GRADE BEAM-2
LAYOUT -1250mm LEVEL

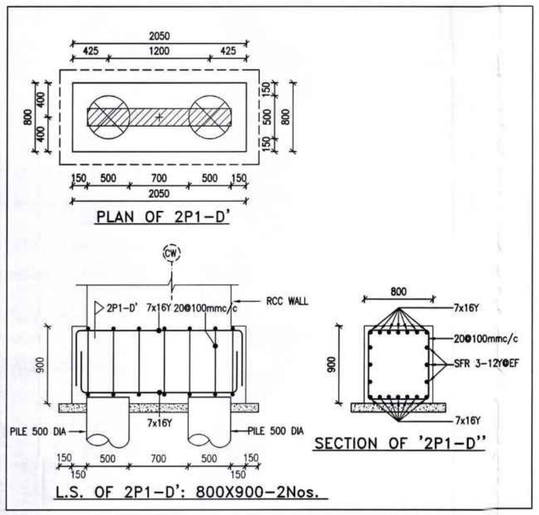


SECTION X1-X1



SECTION Y1-Y1





This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory
A. Meher Prasad
Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.I.A.Structl.E.,FIV, MISE., MISSE., MISC., MINSDAQ, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/007	SHEET NO: 007	REV NO: R0

DRAWING TITLE :
LIFT WELL REINFORCEMENT DETAILS

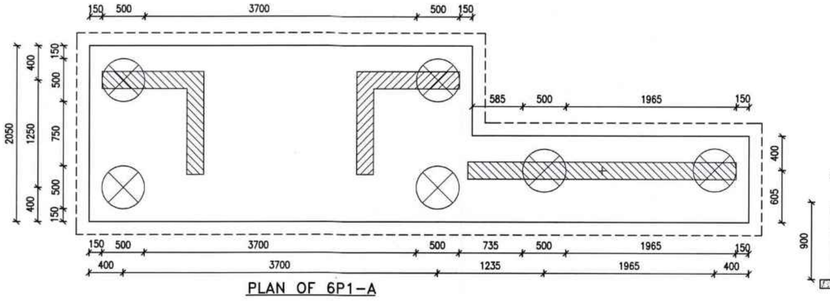
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

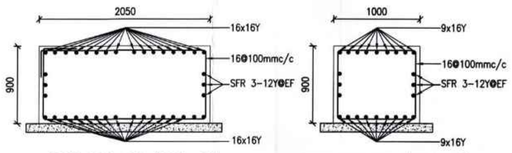
PRELIMINARY APPROVAL	☐ TENDER	☐ INFORMATION	☑ CONSTRUCTION	DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm

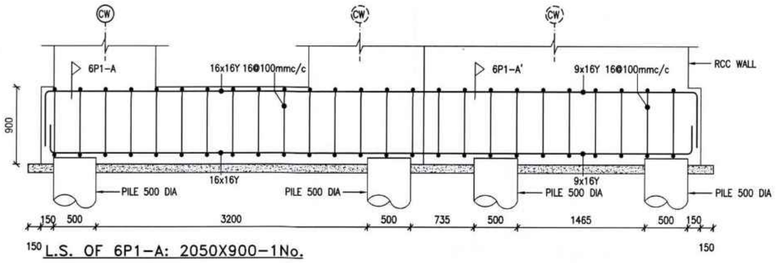


PLAN OF 6P1-A

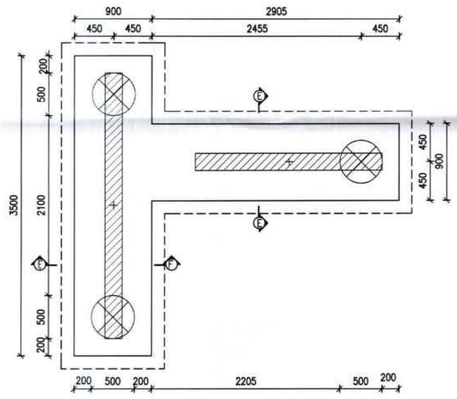


SECTION OF '6P1-A'

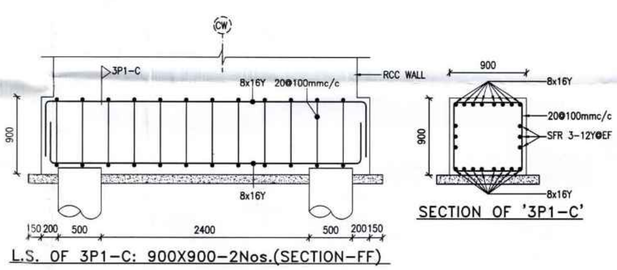
SECTION OF '6P1-A''



L.S. OF 6P1-A: 2050X900-1No.

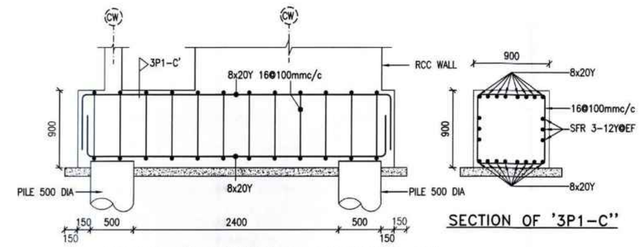


PLAN OF 3P1-C



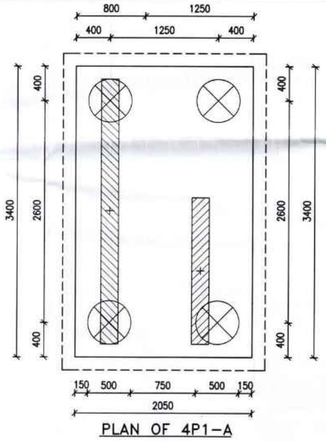
L.S. OF 3P1-C: 900X900-2Nos.(SECTION-FF)

SECTION OF '3P1-C'

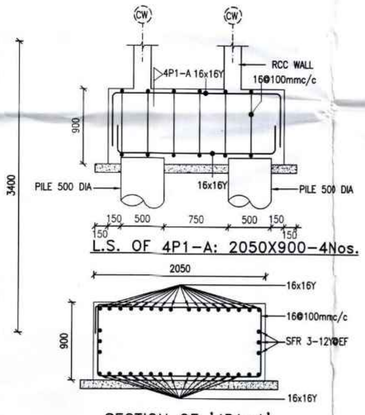


L.S. OF 3P1-C': 900X900-2Nos.(SECTION-EE)

SECTION OF '3P1-C''



PLAN OF 4P1-A



L.S. OF 4P1-A: 2050X900-4Nos.

SECTION OF '4P1-A'

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in portly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:	SYMBOL	DESCRIPTION
	NGL	NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.IAStructE.,FV, MISE., MSSE., MIBC., MINDAQ, MISTE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No: SE/GR-I/2022/07/328

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B-02/006	SHEET NO: 006	REV NO: R0

DRAWING TITLE :
PILE CAP REINFORCEMENT DETAILS

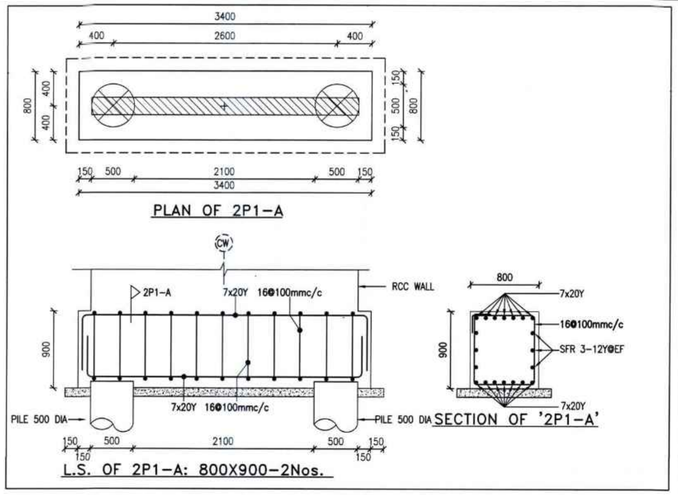
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

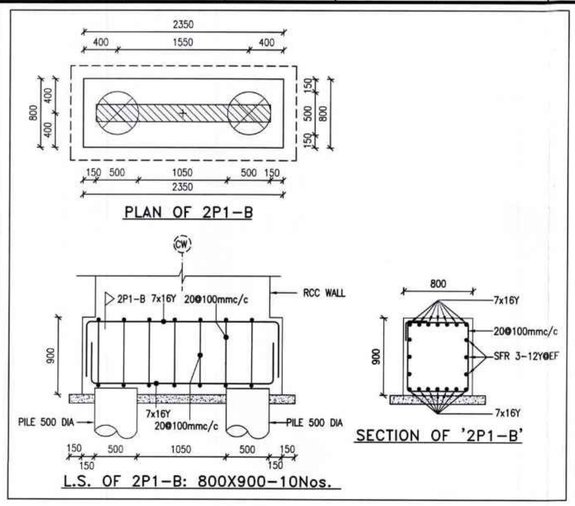
ISSUED FOR:

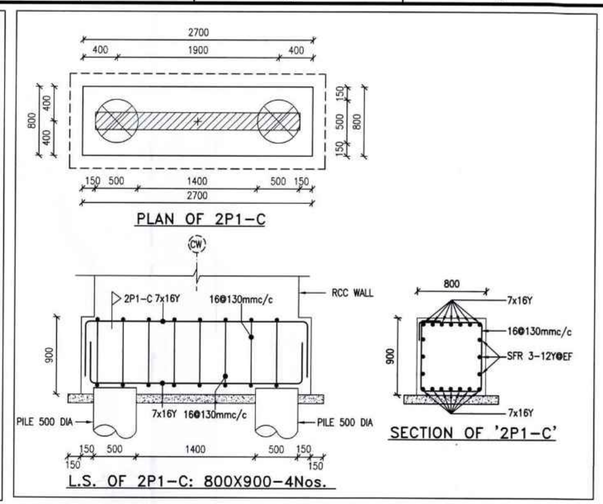
☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21-11-2022

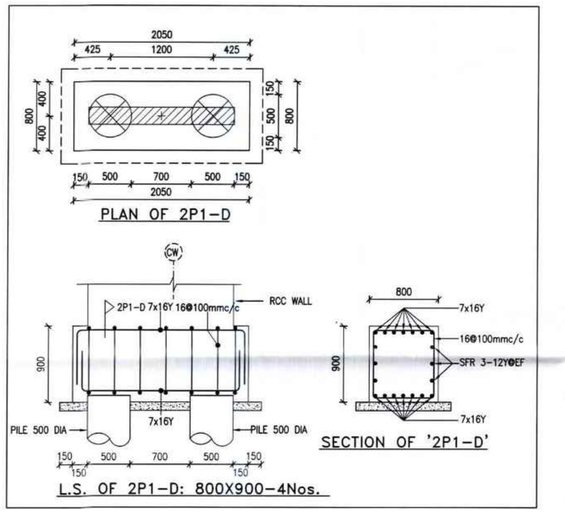
DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

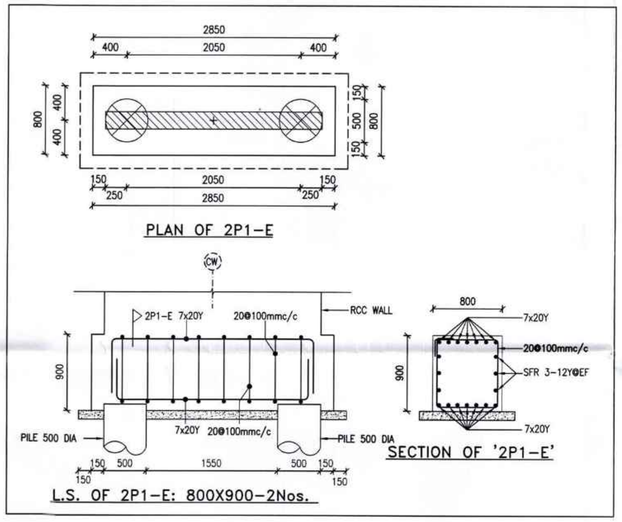
NOTE: ALL DIMENSION ARE IN mm

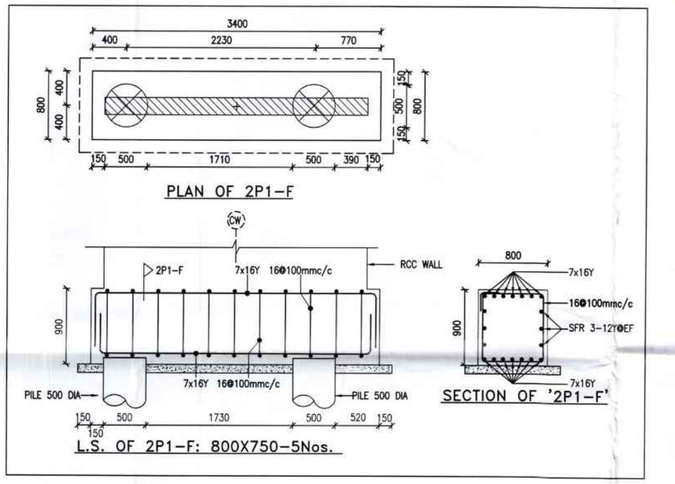


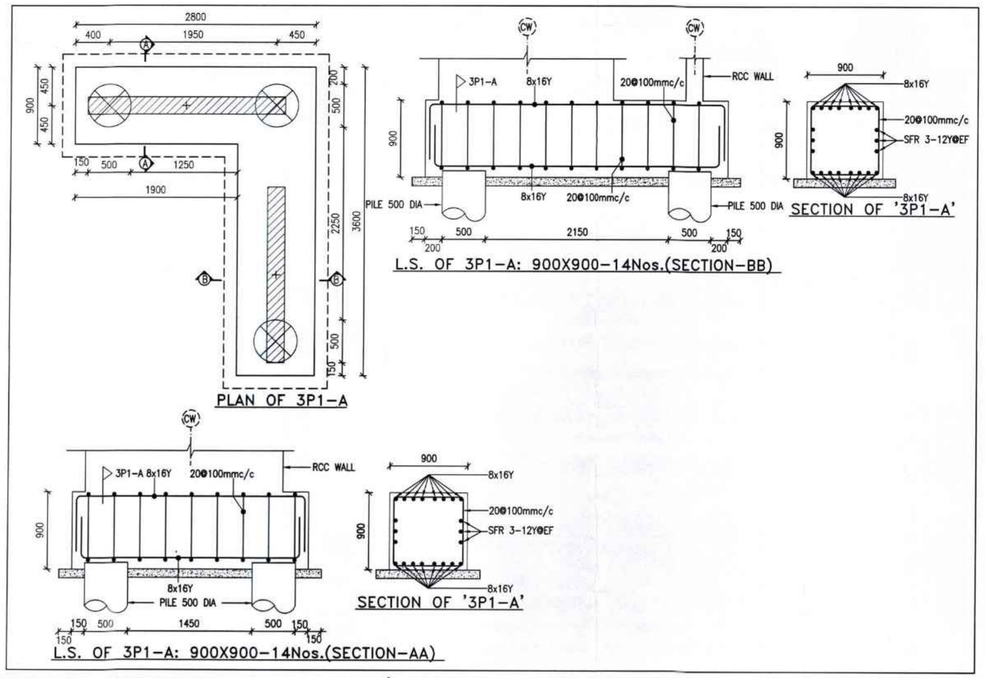


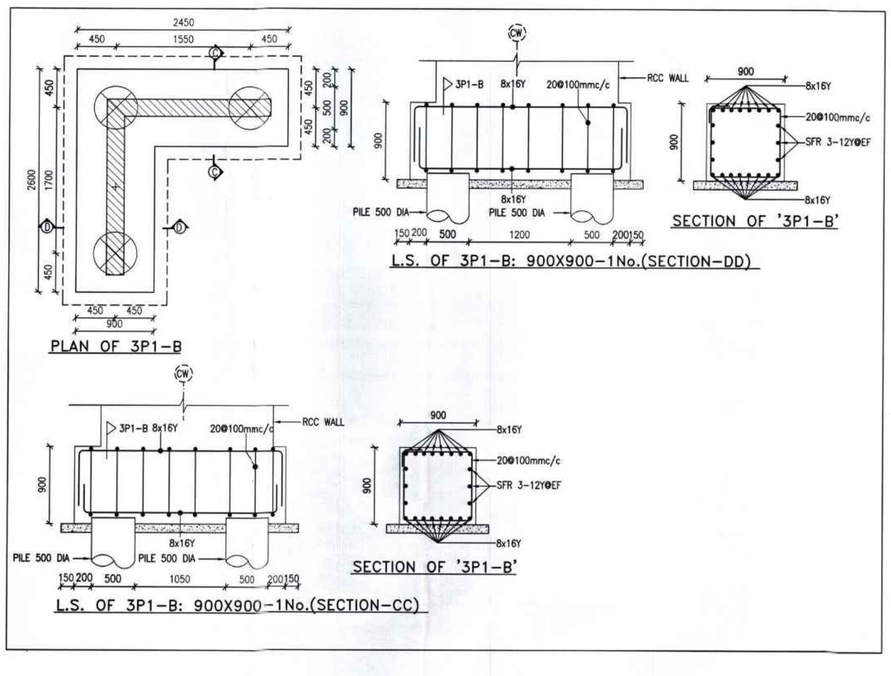












This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

NOTE:

SYMBOL	DESCRIPTION
	NGL NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.I.A.Structl.E., F.IV., M.I.S.E., M.S.S.E., M.I.S.C., M.INSDAG, M.I.S.T.E.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/005	SHEET NO: 005	REV NO: R0

DRAWING TITLE :
PILE CAP REINFORCEMENT DETAILS

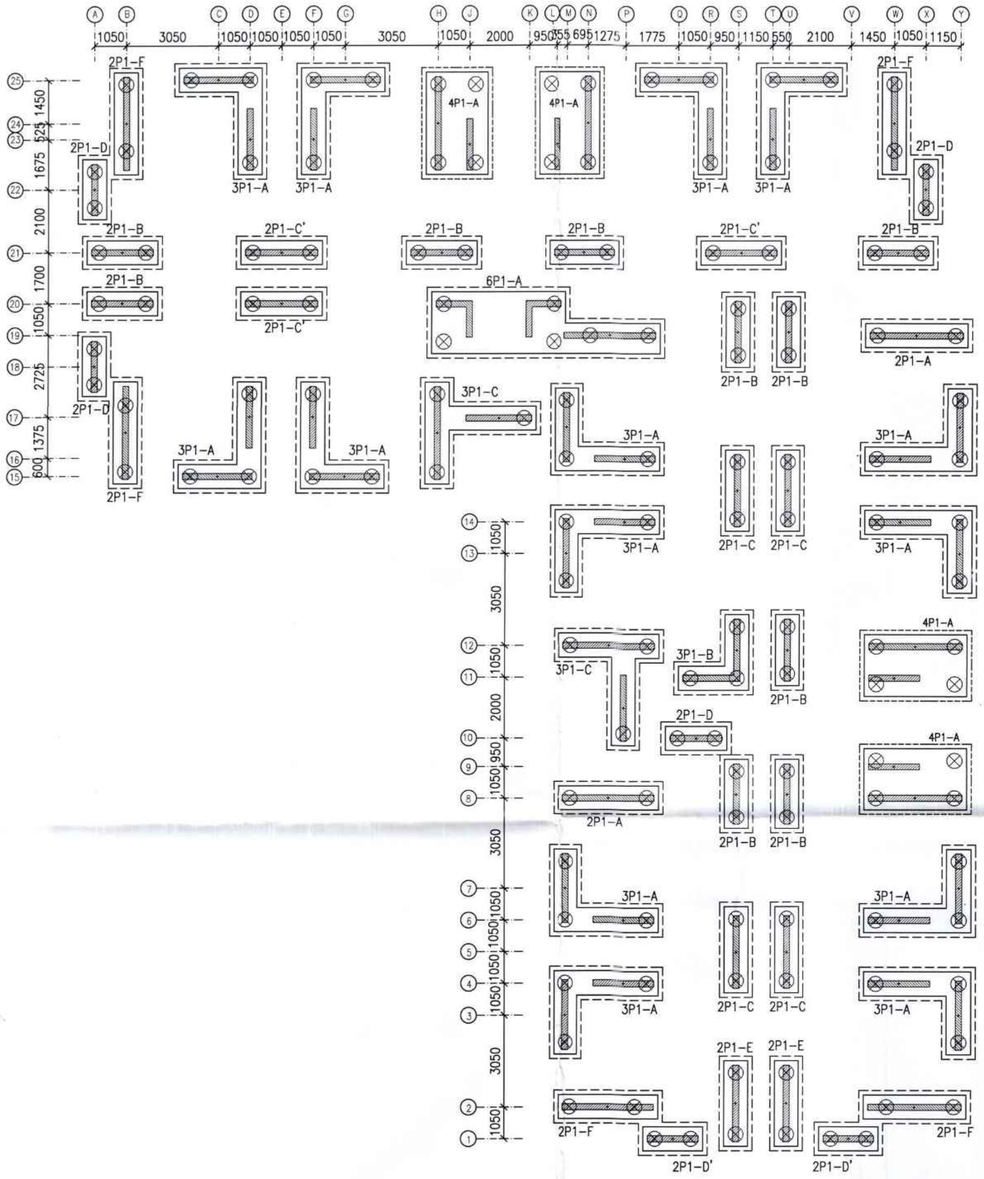
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

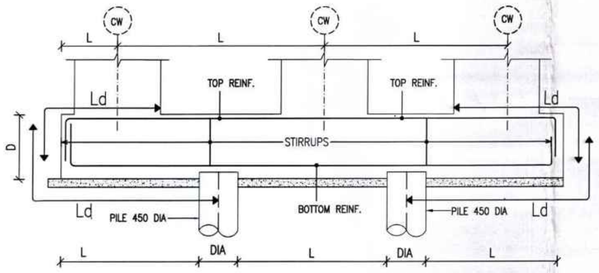
☐ PRELIMINARY	☐ TENDER	☐ INFORMATION	DATE OF ISSUE
☐ APPROVAL	☑ CONSTRUCTION		21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

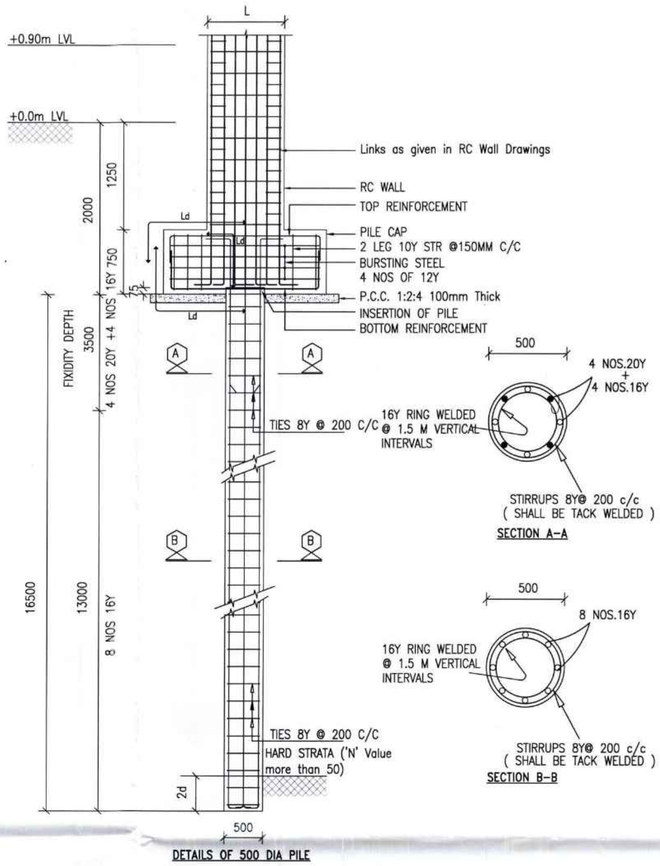
NOTE: ALL DIMENSION ARE IN mm



PILE LAYOUT



TYPICAL STRIP BEAM DETAILS



DETAILS OF 500 DIA PILE

NOTES:

1. ALL DIMENSIONS ARE IN 'MILLI METRES' UNLESS OTHERWISE SPECIFIED. DRAWING SHALL NOT BE SCALED OUT. ONLY WRITTEN DIMENSIONS TO BE FOLLOWED.
2. BORED CAST-IN-SITU PILE CONSTRUCTION WORK IN GENERAL SHALL BE CARRIED OUT AS PER I.S. 2911 (PART I/ SEC - 2) 2010.
3. THE MIX FOR THE R.C.C WORKS SHALL BE DESIGN MIX M30 WITH CEMENT CONTENT NOT LESS THAN 400 kg /cu.m OF CONCRETE.
4. THERMO MECHANICALLY TREATED BARS OF GRADE Fe 500D (ELONGATION NOT LESS THAN 16 %) CONFORMING TO I.S. SPECIFICATION 1786 SHALL BE USED FOR BARS MARKED AS Y.
5. REINFORCEMENT BARS SHALL BE TACK WELDED TO THE LATERAL TIES THROUGHOUT THE LENGTH OF THE PILES TO PROVIDE MORE RIGIDITY TO THE CAGE. ROLLER COVER BLOCKS SHALL BE PROVIDED TO THE CAGE AT APPROXIMATELY TWO METRES INTERVALS AND SUITABLY STAGGERED. ONLY ELECTRICAL WELDING IS PERMITTED.
6. CLEAR COVER TO THE MAIN REINFORCEMENT SHALL BE 60 MM FOR PILES .
7. WATER USED FOR ALL CONCRETE WORK SHALL CONFORM TO CLAUSE 5.4 OF IS 456-2000.
8. THE BORED CAST-IN-SITU PILE SHALL REST ON THE HARD STRATA / WEATHERED ROCK LAYER. THE PILE HAS TO BE TAKEN UPTO THE REFUSAL STRATA.
9. THE VERTICAL LOAD TEST MAY BE CONDUCTED TO ASCERTAIN THE ACTUAL SAFE LOAD CARRYING CAPACITY OF THE PILE IRRESPECTIVE OF THE SAFE LOAD MENTIONED AS PER AGREEMENT ITEM OR IN SOIL INVESTIGATION REPORT AS PER CLAUSE 4.2.3.9 OF IS 2911 - PT - IV. THE TEST SHALL BE CONDUCTED TILL THE SETTLEMENT ATTAINS 12 MM. AS PER CLAUSE 4.2.3.9 OF IS 2911 - PT - IV.
10. THE TENTATIVE SAFE LOAD ON BORED CAST-IN -SITU PILE IS
    (A) 500MM DIA - 91 TONNES

PILE CAP SCHEDULES

Sl.NO.	PILE CAP NAME	NOS
1	2P1-A	02
2	2P1-B	10
3	2P1-C	04
3	2P1-C'	03
4	2P1-D	04
3	2P1-D'	02
5	2P1-E	02
6	2P1-F	05
7	3P1-A	14
8	3P1-B	01
9	3P1-C	02
10	4P1-A	04
11	6P1-A	01
	TOTAL	54

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe-500D CONFORMING TO LATEST INDIAN STANDARDS
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe-500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe-500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

SYMBOL	DESCRIPTION
NOTE:	NGL NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory
Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,F.IA Struct.E.,F.IV..MISE..MSSE..MIEC..MINSDAG.MISTE..
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai - 600 113.
Registered Structural Engineer (GR - I)
CMDA REGD. No. SE/GR-I/2022/07/328

Proof Checked By:

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI-600005

PROOF-CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU-600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS - BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/004	SHEET NO: 004	REV NO: R0

DRAWING TITLE :
PILE LAYOUT

BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:
☐ PRELIMINARY ☐ TENDER ☐ INFORMATION
☐ APPROVAL ☑ CONSTRUCTION
DATE OF ISSUE 21-11-2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm

RC WALL REINFORCEMENT SCHEDULE

MACHINE ROOM +39.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	–	–	–	–	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	–	–	–	–
	STEEL	12–12Y			–	16–12Y			–				–				–
		14–12Y			–	16–12Y			–	18–12Y			–				–
HEADROOM +36.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	–	–	–	–
	STEEL	12–12Y				16–12Y				16–12Y							–
		14–12Y				16–12Y				18–12Y							–
SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y				16–12Y				16–12Y				16–12Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–12Y				16–12Y				16–12Y				16–12Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
FIRST FLOOR +3.8m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–16Y				16–16Y				16–16Y				16–16Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
PILE CAP –2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM			
	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	300 300 200 1700 ●16Y ○12Y				450 450 200 2050 ●16Y ○12Y				450 450 200 2200 ●16Y ○12Y				450 450 200 2300 ●16Y ○12Y			
	STEEL	12–16Y				16–16Y				16–16Y				16–16Y			
		14–12Y				16–12Y				18–12Y				20–12Y			
RC WALL NAME		CW1				CW2				CW3				CW4			
TOTAL		05				24				02				14			

RC WALL REINFORCEMENT SCHEDULE

SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	16–12Y				16–12Y				20–12Y							
		22–12Y				24–12Y				26–12Y							
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	16–12Y				16–12Y				20–12Y							
		22–12Y				24–12Y				26–12Y							
FIRST FLOOR +3.8m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	16–16Y				16–16Y				20–16Y							
		22–12Y				24–12Y				26–12Y							
PILE CAP –2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM				M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM							
	LINKS	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	450 450 200 2400 ●16Y ○12Y				450 450 200 2550 ●16Y ○12Y				600 600 200 3100 ●16Y ○12Y							
	STEEL	16–16Y				16–16Y				20–16Y							
		22–12Y				24–12Y				26–12Y							
RC WALL NAME		CW5				CW6				CW7							
TOTAL		07				02				14							

RC WALL REINFORCEMENT SCHEDULE

MACHINE ROOM +39.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y			
		20–12Y			
HEADROOM +36.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y			
		20–12Y			
SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	12–12Y			
		20–12Y			
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–12Y			
		20–12Y			
FIRST FLOOR +3.8m lvl	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	12–16Y			
		20–12Y			
PILE CAP –2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM			
	LINKS	Z1–M	Z1–O	Z2–M	Z2–M
		10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	200 200 1200 800 200 200 ●16Y ○12Y			
	STEEL	12–16Y			
		20–12Y			
RC WALL NAME		CWL1			
TOTAL		02			

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

SYMBOL	DESCRIPTION
NOTE:	NGL NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.I.A.Structl.E., F.IV., M.I.S.E., M.I.S.S.E., M.I.S.C., M.I.N.S.D.A.G., M.I.S.T.E.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (CR – I)
CMDA REGD. No. SE/GR-I/2022/07328

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO:TNUHDB/CH/TR/B–02/003	SHEET NO:003	REV NO: R0

DRAWING TITLE :
RC WALL REINFORCEMENT DETAILS

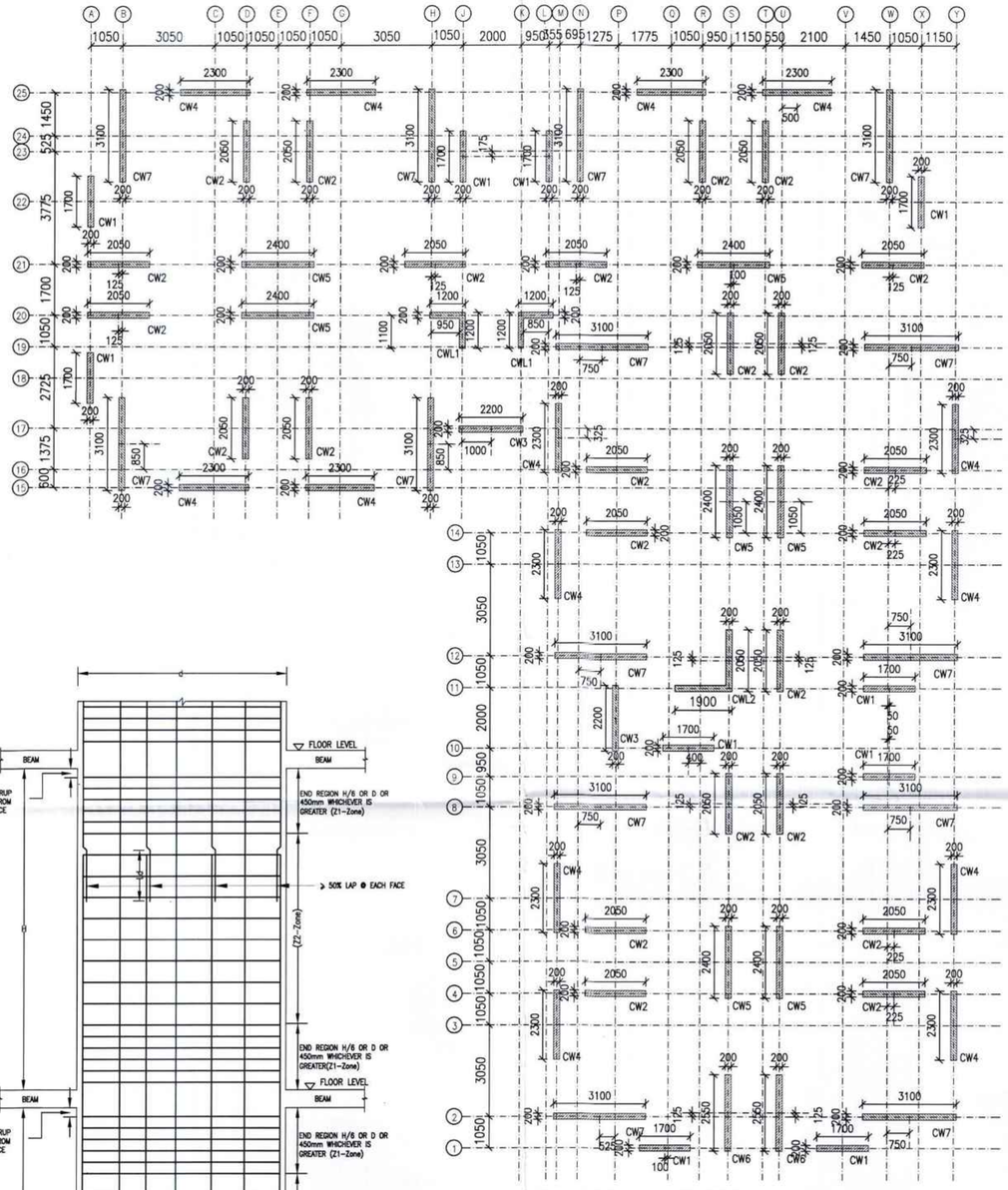
BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐PRELIMINARY ☐APPROVAL	☐TENDER ☑CONSTRUCTION	☐INFORMATION	DATE OF ISSUE 21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm



RC WALL CENTER LINE LAYOUT

SECTION AA
SPACING OF SHEAR REINFORCEMENT IN RC WALL

LAP SPLICES SHALL NOT BE PROVIDED
a. WITHIN A JOINT
b. WITHIN A DISTANCE OF 2d FROM JOINT
c. WITHIN A QUARTER LENGTH OF THE MEMBER
(NOT MORE THAN 50% BARS SHALL BE SPLICED AT ONE SECTION)

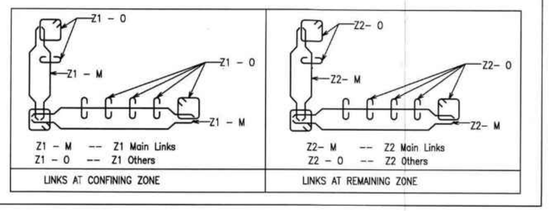
WALL SCHEDULE

RC WALL NAME	RC WALL	NO. OF WALLS
CW1	1700	10
CW2	2050	24
CW3	2200	02
CW4	2300	14
CW5	2400	07
CW6	2550	02
CW7	3100	14
CWL1	1200, 1000, 1200	02
CWL2	1900, 1700, 2050	01
	TOTAL	76

NOTES:

Z1 – SPECIAL CONFINING ZONE AS PER IS-13920

Z2 – REMAINING ZONES AS PER IS 456



RC WALL REINFORCEMENT SCHEDULE

		Z1–M	Z1–0	Z2–M	Z2–M
MACHINE ROOM +39.3m lvl	LINKS	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	16–12Y			
		38–12Y			
HEADROOM +36.3m lvl	LINKS	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	16–12Y			
		38–12Y			
SIXTH FLOOR TO TERRACE FLOOR +33.3m lvl	LINKS	10Y@100c/c	10Y@100c/c	10Y@130c/c	8Y@130c/c
	STEEL	16–12Y			
		38–12Y			
SECOND FLOOR TO FIFTH FLOOR +18.55m lvl	LINKS	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	16–12Y			
		38–12Y			
FIRST FLOOR +3.8m lvl	LINKS	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	STEEL	16–16Y			
		38–12Y			
PILE CAP -2.0m lvl	C.S.	M30 : Fe500D , COVER = 25MM CONFINING ZONE = 500MM			
	LINKS	10Y@100c/c	10Y@100c/c	10Y@100c/c	8Y@100c/c
	C.S.	1900, 1400, 300, 200, 1550, 2050, 300, 200, 200, 300			
	STEEL	16–16Y			
		38–12Y			
RC WALL NAME		CWL2			
TOTAL		01			

Structural Design Proof - Checked and Found Satisfactory
A. Meher Prasad
Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

SYMBOL	DESCRIPTION
NOTE:	NGL NATURAL GROUND LEVEL

SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech., F.I.A.Structl.E., F.IV., M.ISE., M.ISSE., M.IEC., M.INDAG, M.SFE.,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07328

Proof Checked By:

PRINCIPAL DEVELOPER:

OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT
DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:

STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:

CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022-23/005/TNUHDB_SD_THR

PROJECT TITLE:

PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B-02/002	SHEET NO: 002	REV NO: R0

DRAWING TITLE :
RC WALL CENTER LINE LAYOUT

BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐ PRELIMINARY	☐ TENDER	☐ INFORMATION	DATE OF ISSUE
☐ APPROVAL	☑ CONSTRUCTION		21–11–2022

DESIGNED BY:	DRAWN BY:
CHECKED BY:	APPROVED BY:

NOTE: ALL DIMENSION ARE IN mm

GENERAL

1) ALL STRUCTURAL KEY PLANS AND DETAILS ARE TO BE READ IN CONJUNCTION WITH THE RELEVANT ARCHITECTURAL DRAWINGS, SERVICE DRAWINGS, SPECIFICATIONS, BILLS OF QUANTITIES AND ALL OTHER RELEVANT DOCUMENTS. DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER–IN–CHARGE.
2) ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED. ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED. NEITHER THE BARS SHALL BE COUNTED NOR THE DIMENSIONS SCALED FROM THE DRAWING.

FOUNDATIONS

1) FOUNDATIONS ARE DESIGNED FOR THE SBC SPECIFIED IN THE FOUNDATION DRAWING. MIX FOR ALL RCC WORKS SHALL BE AS SPECIFIED IN THE STRUCTURAL DRAWINGS.
2) IF ASSUMED SAFE BEARING CAPACITY OF THE SOIL IS NOT FOUND AT THE SPECIFIED FOUNDING LEVEL, THE SAME SHALL BE BROUGHT TO THE NOTICE OF THE ENGINEER–IN–CHARGE FOR FURTHER DIRECTIONS.
3) FORMATION LEVELS OF FOUNDATIONS SHALL BE DETERMINED BY THE ENGINEER–IN–CHARGE BASED UPON EXISTING ROAD LEVEL, WATER TABLE LEVEL AND REQUIREMENT OF PROVISION OF SERVICES.
4) FOUNDATIONS ARE DESIGNED TO BE AT SAME FOUNDING LEVEL. ANY VARIATIONS IN THE GROUND LEVEL BEYOND 600MM AND THE DIFFERENCE IN LEVEL OF TWO ADJACENT FOOTINGS GREATER THAN HALF OF THE CLEAR DISTANCE BETWEEN THEM SHALL BE BROUGHT TO THE NOTICE OF ENGINEER–IN–CHARGE.
5) ANY LOOSE POCKETS OR PROTUDING BOULDERS SHALL BE REMOVED BEFORE LAYING BED CONCRETE FOR FOUNDATIONS AND SHALL BE LEVELLED BY FILLING WITH PCC.
6) THE TOP LEVEL OF THE GRADE BEAMS OF THE EXTERNAL WALL SHALL BE 150MM BELOW GROUND LEVEL AND OTHER BEAMS OF INTERNAL WALLS SHALL BE 40MM BELOW THE PLINTH LEVEL.

CONCRETE

1) GRADE OF CONCRETE IS M30 FOR PILE AND OTHER STRUCTURAL ELEMENT, MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED.
2) ALL OPENINGS FOR PIPING AND CONDUITS ETC., SHALL BE FORMED IN POSITION BEFORE THE CASTING OF CONCRETE.
3) NO HOLES OR CHASES ARE PERMITTED IN THE STRUCTURAL CONCRETE MEMBERS OTHER THAN AS DETAILED OR APPROVED BY THE ENGINEER–IN–CHARGE.
4) THE CLEAR DEPRESSION OF SLAB FOR BATH, WASHBASIN AND E.W.C SHALL BE 300MM AND FOR I.W.C SHALL BE 500MM. DEPRESSION IN SLAB FOR BALCONY SHALL BE 20MM FROM THE ADJACENT FLOOR LEVELS. NECESSARY PROVISION FOR OUTLETS FROM TRAPS SHALL BE KEPT WHILE CASTING THE BEAMS.
5) WHEN THE SPAN IS MORE THAN 6.00M, PROVIDE CAMBER @ SPAN/250 FOR BEAMS AND SLABS.
6) THE FREE END OF CANTILEVER SLABS OR BEAMS SHALL BE RAISED BY 2% OF THE SPAN. TORSIONAL REINFORCEMENT AT DISCONTINUOUS EDGES OF TWO WAY REINFORCED SLABS SHALL BE AS PER IS 456–2000.
7) ALL CONCRETE IS TO BE CURED BY AN APPROVED METHOD– WATER PONDING, POLYTHENE/HESSIAN SHEET, CURING COMPOUND.

REINFORCEMENT

1) ALL STEEL REINFORCEMENT SHALL BE OF TMT BARS CONFORMING TO IS 1786 WITH MINIMUM YIELD STRESS / 0.2% PROOF STRESS OF 500 N/SQ.MM
2) GRADE FE 500D FOR ALL STRUCTURES DESIGNED FOR SEISMIC RESISTANCE UNDER ZONE–III OF IS 1893–2016.
3) ALL REBARS SHALL BE CUT AND BENT CONFORMING TO THE LATEST EDITION OF IS 1786. MECHANICAL COUPLERS CONFORMING TO IS 16172 SHALL BE USED WHEN LONGITUDINAL STEEL BARS HAVE TO BE CONTINUED FOR BEAM SPANS LARGER THAN THEIR MANUFACTURED LENGTH.
4) WELDING OF REBARS WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER–IN–CHARGE. WELDING OF LINKS, TIES, INSERTS OR OTHER SIMILAR ELEMENTS TO VERTICAL REINFORCEMENT BARS REQUIRED AS PER DESIGN IS NOT PERMITTED, IN ANY SEISMIC ZONE.
5) ALL REBARS ARE TO BE FIRMLY SUPPORTED ON APPROVED CHAIRS OR CONCRETE BLOCKS PLACED AT NOT GREATER THAN 750MM CENTRES BOTH WAYS.
6) NOT MORE THAN 50% OF AREA OF STEEL BARS ON EITHER TOP OR BOTTOM FACE SHALL BE SPLICED AT ANY ONE SECTION. LAPPING OF REBARS SHALL AS FAR AS POSSIBLE BE AWAY FROM THE SECTIONS OF MAXIMUM STRESS AND BE STAGGERED. LAP SPLICES SHALL BE CONSIDERED AS STAGGERED, IF THE CENTRE TO CENTRE DISTANCE OF THE SPLICES IS NOT LESS THAN 1.3 TIMES THE LAP LENGTH.
7) LAP / MECHANICAL COUPLERS / WELDED SPLICES SHOULD NOT BE PROVIDED
   A) WITHIN A JOINT
   B) WITHIN A DISTANCE OF 2D FROM THE COLUMN, WHERE 'D' IS THE EFFECTIVE DEPTH OF THE MEMBER.
   C) WITHIN A DISTANCE 1/4 LENGTH OF MEMBER FROM THE COLUMN.
8) LAP LENGTH INCLUDING ANCHORAGE VALUE OF HOOKS FOR BARS IN FLEXURAL TENSION SHALL BE LD OR 30DIA WHICHEVER IS GREATER. THE STRAIGHT LENGTH OF THE LAP SHALL NOT BE LESS THAN 15DIA OR 200MM. WHEN BARS OF TWO DIFFERENT DIAMETERS ARE TO BE SPLICED, THE LAP LENGTH SHALL BE CALCULATED ON THE BASIS OF DIAMETER OF THE SMALLER BAR.
9) THE HORIZONTAL DISTANCE BETWEEN TWO PARALLEL MAIN REINFORCING BARS SHALL BE NOT LESS THAN THE DIAMETER OF THE LARGER BAR USED OR 5MM MORE THAN THE NOMINAL MAXIMUM SIZE OF COARSE AGGREGATE USED, WHICHEVER IS GREATER.
10) WHENEVER REINFORCEMENT IS PROVIDED IN TWO LAYERS IN BEAMS, SPACER BAR SHALL BE PROVIDED TO MAINTAIN 25MM GAP OR MAXIMUM DIA OF THE MAIN BAR WHICHEVER IS MORE BETWEEN TWO LAYERS.
11) IN CASE OF CANTILEVER BEAMS / SLABS THE TOP REINFORCEMENT SHALL BE TAKEN BEYOND THE INNER FACE OF THE SUPPORTS TO ATLEAST THE SPAN OF THE CANTILEVER WHEREVER POSSIBLE. IN CASE IT IS NOT POSSIBLE TO ADOPT THE ABOVE SAID PRACTICE, THE REINFORCEMENT SHALL BE PROPERLY ANCHORED INTO THE SUPPORTING MEMBER.
12) LAP / DEVELOPMENT LENGTH FOR MAIN REINFORCEMENT BARS (IN TENSION / COMPRESSION) FOR DIFFERENT GRADES OF CONCRETE MIX SHALL BE AS FOLLOWS:

CONCRETE MIX	Fe 500D (FOR ZONE–III STRUCTURES)
M30	45d (TENSION) & 36d (COMP)

WHERE d IS THE DIAMETER OF THE BAR.

13) WHERE OPENINGS ARE SMALL AND THE SLAB IS NOT SUBJECTED TO ANY SPECIAL TYPE LOADING OR VIBRATION CONDITIONS, THE FOLLOWING GENERAL DETAILING RULES MAY BE FOLLOWED AROUND OPENINGS.
   A) DIAMETER OF TRIMMER BARS SHALL BE SIMILAR TO BIGGER REINFORCING BARS OF THE STRUCTURE THROUGH WHICH THE OPENING IS FORMED.
   B) NO TRIMMER BARS ARE REQUIRED FOR OPENINGS LESS THAN 200MM WIDE. NO REINFORCING BARS SHALL BE CUT BUT THESE SHALL BE ADJUSTED IN POSITION TO AVOID OPENINGS.
   C) TRIMMER BARS SHALL BE NOT LESS THAN THE NOS. OF BARS CUT BY OPENING.
   D) MINIMUM 2 NOS. EACH AT TOP AND BOTTOM AND BAR DIAMETER AS SPECIFED ABOVE BUT NOT LESS THAN 10ϕ.
   E) BOTH PERPENDICULAR AND DIAGONAL TRIMMING BARS SHALL BE PROVIDED AS SHOWN IN SKETCHES.
14) WHENEVER THE REINFORCEMENT IS PROJECTED FROM THE STRUCTURAL MEMBERS AS A PROVISION MADE TOWARDS FUTURE EXTENSION OF THE BUILDING THE SAME SHALL BE APPROPRIATELY PROTECTED FROM CORROSION BY TREATING WITH EPOXY AFTER COMPLETELY REMOVING SCALES OR RUST, IF ANY. THIS REINFORCEMENT MAY BE ENCASED IN A CONCRETE MIX OF 1:3:6 OR LEFT EXPOSED OR PROTECTED IN ANY OTHER MANNER AS DIRECTED BY ENGINEER–IN–CHARGE.
15) THE NOMINAL COVER GIVEN BELOW FOR MODERATE EXPOSURE CONDITION SHALL BE MEASURED FROM THE OUTER FACE OF THE STRUCTURAL ELEMENT TO THE STIRRUPS / LINKS.

RAFTS	–60MM	PILES	–50MM	STRIP BEAM	–75MM	FOOTINGS	–60MM	PILECAP	–75MM
BEAMS	–25MM	SLABS	–25MM	WALLS	–25MM	TANK WALLS	–40MM	TANK BASES	–50MM

WATER AND DRAINAGE LINES WITHIN STRUCTURAL ELEMENTS:

1) THE CONTRACTOR SHALL SUBMIT FOR APPROVAL DETAILS OF EXIT AND ENTRY OF PIPES THROUGH STRUCTURAL ELEMENTS.
2) THESE POINTS ARE TO HAVE ADDITIONAL FUSION BONDED EPOXY COATED REINFORCEMENT PLACED AROUND THE PIPE.

RC WALLS FOR BASEMENTS:

1) IF THE LEVEL OF THE WATER TABLE OR ANY SEEPAGE IS FOUND TO BE WITHIN THE DEPTH OF EXCAVATION, THE SAME SHALL BE BROUGHT TO THE NOTICE OF ENGINEER–IN–CHARGE.
2) 100MM THICK BLINDING CONCRETE OF GRADE M15 IS TO BE PLACED BELOW THE WATER TANKS BASE SLAB.
3) WATER BARS ARE TO BE INCORPORATED IN ALL VERTICAL AND HORIZONTAL JOINTS.
4) ALL WALL KICKERS SHALL BE CAST MONOLITHICALLY WITH THE BASE SLAB.

CONSTRUCTION JOINTS:

1) THESE ARE TO BE PROVIDED AT LOCATIONS OF ZERO OR MINIMUM SHEAR IN BEAMS AND SLABS AND AT LOCATIONS OF MINIMUM STEEL CONGESTION.
2) THESE ARE TO BE PERPENDICULAR TO THE COMPRESSIVE FORCES ACROSS THE JOINT. IN MOST CASES THE JOINTS WILL HAVE TO BE PERPENDICULAR TO THE AXIS OF THE MEMBER.
3) ALL REINFORCING BARS INTERSECTED BY THE CONSTRUCTION JOINTS ARE TO EXTEND THROUGH THE JOINTS WITHOUT INTERCEPTION.
4) VERTICAL JOINTS SHALL BE FORMED WITH TIMBER FORMWORK COATED WITH AN APPROVED SURFACE RETARDER AND THE VERTICAL FACE IS TO BE WASHED TO EXPOSE THE AGGREGATE BEFORE FINAL SET OF THE CONCRTE HAS TAKEN PLACE.
5) HORIZONTAL JOINTS SHALL BE SCRABBLED TO REMOVE ALL LAITANCE AND WEAK CONCRETE BEFORE CONCRETE FOR THE NEXT LIFT IS PLACED. NECESSARY KEYS SHALL BE PROVIDED IN THE APPROVED METHODOLOGY AS REQUIRED BY THE ENGINEER–IN–CHARGE.
6) WATERJET CLEANING AND FLUSHING THE JOINT WITH MORTAR OR GROUT ARE TO PRECEDE THE POURING OF FRESH CONCRETE.

This drawing is the property of M/S Centre for urbanization, building and environment (CUBE) and made use either in full or in partly by such person or body without our prior permission in writing. Copyright is retained by this office.

NOTES:

1. ALL DIMENSIONS ARE IN "mm" UNLESS OTHERWISE SPECIFIED.
2. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED, NEITHER THE DRAWING SHALL BE SCALED OUT NOR THE BARS SHALL BE COUNTED.
3. ANY DISCREPANCY FOUND BETWEEN THIS DRAWING AND THE ARCHITECTURAL DRAWING SHALL BE BROUGHT TO THE NOTICE OF THIS OFFICE BEFORE EXECUTION.
4. GRADE OF CONCRETE FOR PILE M30(MINIMUM CEMENT CONTENT FOR PILE SHOULD BE 400KG/CUM UNLESS OTHERWISE SPECIFIED) AND M30 FOR OTHER STRUCTURAL ELEMENT.
5. GRADE OF STEEL SHALL BE Fe–500D CONFORMING TO LATEST INDIAN STANDARDS.
6. ALL REINFORCEMENT SHALL BE FREE FROM LOOSE SCALES, RUST, COAT OF PAINT, OIL OR ANY OTHER SUBSTANCES.
7. THE NOMINAL COVER COVER FOR MAIN REINFORCEMENT ARE AS FOLLOWS

PILE / FOOTING = 50MM	BEAMS = 25MM TO LINKS
RC WALLS = 25MM TO LINKS	SLABS = 25MM

8. THE DEVELOPMENT LENGTH FOR TENSION

		Fe–500D	
M30	Ld	45d	Where d is Diameter of rod

9. THE DEVELOPMENT LENGTH FOR COMPRESSION

		Fe–500D	
M30	Ld	36d	Where d is Diameter of rod

10. STRUCTURE IS DESIGNED AS PER ARCHITECTURAL DRAWING
11. SAFE LOAD CARRYING CAPACITY OF 500mm DIA PILE IS 910 kN.
12. THIS BUILDING IS DESIGNED FOR STILT+10 FLOORS ONLY.

REV NO:	DETAILS	DATE	DRAWN	CHECKED BY	APPROVED BY

	SYMBOL	DESCRIPTION
NOTE:		NGL NATURAL GROUND LEVEL

Structural Design Proof - Checked and Found Satisfactory

Dr. A. MEHER PRASAD
Professor
Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036, India

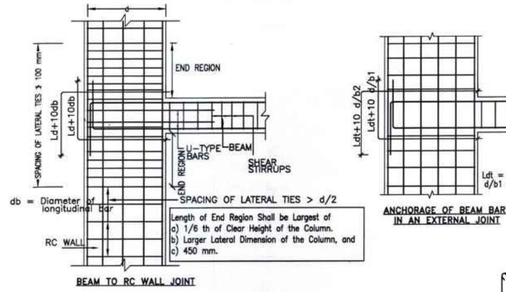
SAFETY AND STRUCTURAL STABILITY CERTIFICATE

Certified that the structural designs and drawings have been perused by me keeping in view the relevant IS codes and Sound Engineering practice these structural drawings are good for construction.

CUBE

R. Balamourougane
M.Tech.,FIAStructE.,FIV, MISE, MSSE, MIEC, MNSDAC MSTE,
Centre for Urbanization, Buildings & Environment
IIT Madras Research Park, Chennai – 600 113.
Registered Structural Engineer (GR – I)
CMDA REGD. No. SE/GR-I/2022/07328

Proof Checked By:

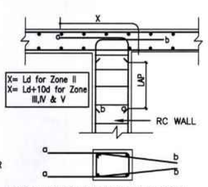


BEAM TO RC WALL JOINT

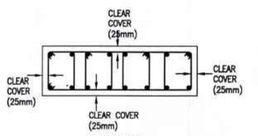
ANCHORAGE OF BEAM BARS IN AN EXTERNAL JOINT

DETAILS OF STIRRUPS

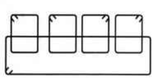
SECTION AA
SPACING OF SHEAR REINFORCEMENT IN RC WALL



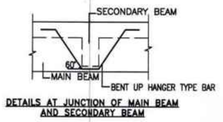
DETAILS OF TERMINATION OF RC WALL BARS INSIDE THE SLAB.



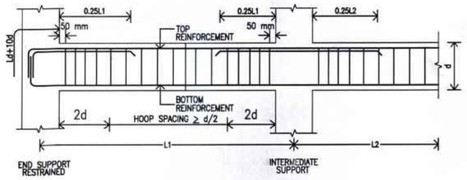
DETAILS OF CLEAR COVER



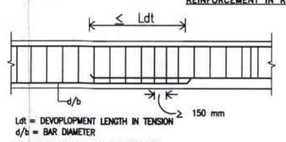
DETAILS OF STIRRUPS



DETAILS AT JUNCTION OF MAIN BEAM AND SECONDARY BEAM



TYPICAL BEAM LONGITUDINAL SECTION

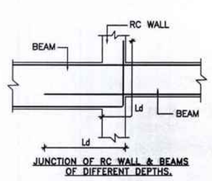


Ldt = DEVOLOPMENT LENGTH IN TENSION
d/b = BAR DIAMETER

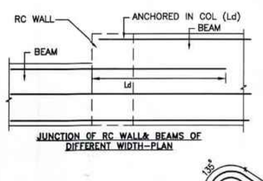
LAP SPLICES SHALL NOT BE PROVIDED
a. WITHIN A JOINT
b. WITHIN A DISTANCE OF 2d FROM JOINT
c. WITHIN A QUARTER LENGTH OF THE MEMBER

(NOT MORE THAN 50% BARS SHALL BE SPLICED AT ONE SECTION)

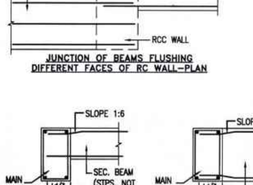
LAP SPLICE IN BEAM



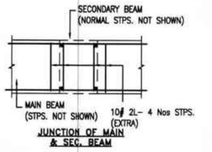
JUNCTION OF RC WALL & BEAMS OF DIFFERENT DEPTHS.



JUNCTION OF RC WALL& BEAMS OF DIFFERENT WIDTH–PLAN



JUNCTION OF BEAMS FLUSHING DIFFERENT FACES OF RC WALL–PLAN

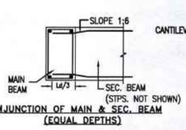


JUNCTION OF MAIN & SEC. BEAM

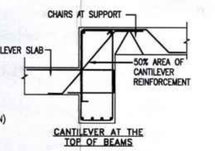


TYPICAL DETAIL OF BEAM STIRRUPS
Y=6d FOR SEISMIC ZONE II
Y=10d (BUT NOT < 75 mm) FOR SEISMIC ZONE III, IV & V

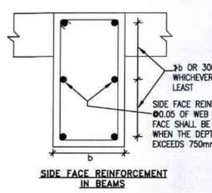
JUNCTION OF MAIN & SEC. BEAM (UNEQUAL DEPTHS)



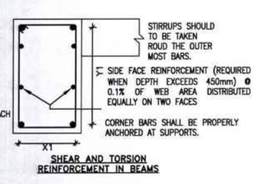
JUNCTION OF MAIN & SEC. BEAM (EQUAL DEPTHS)



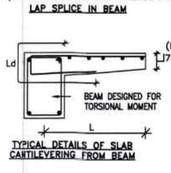
CANTILEVER AT THE TOP OF BEAMS



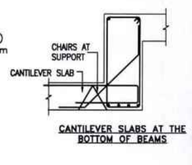
SIDE FACE REINFORCEMENT IN BEAMS



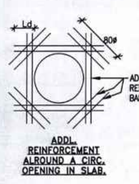
SHEAR AND TORSION REINFORCEMENT IN BEAMS



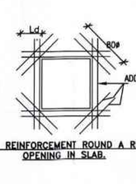
TYPICAL DETAILS OF SLAB CANTILEVERING FROM BEAM



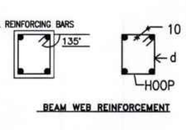
CANTILEVER SLABS AT THE BOTTOM OF BEAMS



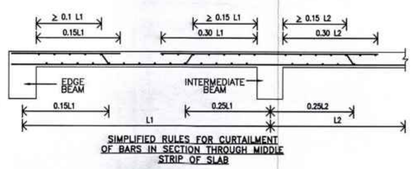
ADDL. REINFORCEMENT ALROUND A CIRC. OPENING IN SLAB.



ADDL. REINFORCEMENT ROUND A RECT. OPENING IN SLAB.



BEAM WEB REINFORCEMENT



SIMPLIFIED RULES FOR CURTAILMENT OF BARS IN SECTION THROUGH MIDDLE STRIP OF SLAB

PRINCIPAL DEVELOPER:
OFFICE OF THE CHIEF ENGINEER,
TAMIL NADU URBAN HABITAT DEVELOPMENT BOARD (TNUHDB)
NO.5 KAMARAJAR SALAI, CHENNAI–600005

PROOF–CHECKING AGENCY:
STRUCTURAL ENGINEERING DEPARTMENT,
INDIAN INSTITUTE OF TECHNOLOGY MADRAS,
CHENNAI, TAMIL NADU–600036

STRUCTURAL CONSULTANT:
CENTRE FOR URBANIZATION, BUILDING & ENVIRONMENT
MODULE NO. 6C, 6TH FLOOR, PHASE II BUILDING,
IIT MADRAS RESEARCH PARK, KANAGAM ROAD,
THARAMANI, CHENNAI, TAMIL NADU 600113

PROJECT CODE: CUBE/B&C/2022–23/005/TNUHDB_SD_THR

PROJECT TITLE:
PLAN SHOWING THE PROPOSED CONSTRUCTION OF GROUP DEVELOPMENT OF RESIDENTIAL BUILDING OF 3 BLOCKS – BLOCK 1 TO 3 OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 470 DWELLING UNITS (3 UNITS USED FOR REFUGE AREA) AT Dr.THOMAS ROAD, T.NAGAR, CHENNAI COMPRISED IN OLD T.S.NO.6578 part, NEW T.S.No.6578/2 part, BLOCK.No.141 OF T.NAGAR VILLAGE WITHIN THE LIMIT OF GREATER CHENNAI CORPORATION.

DRAWING NO: TNUHDB/CH/TR/B–02/001	SHEET NO: 001	REV NO: R0

DRAWING TITLE :
GENERAL NOTES

BLOCK NO: 02 OF 03	SCALE: NTS	SIZE OF SHEET: A1

ISSUED FOR:

☐ PRELIMINARY ☐ APPROVAL	☐ TENDER ☑ CONSTRUCTION	☐ INFORMATION	DATE OF ISSUE 21–11–2022
DESIGNED BY:		DRAWN BY:	
CHECKED BY:		APPROVED BY:	

NOTE: ALL DIMENSION ARE IN mm



our services doesn't just end there

Buying & Selling Services

Property Buying Assistance, Property Selling Support, Market Price Analysis, Owner Outreach and Negotiation.

Legal & Documentation Services

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

Property Development & Approvals

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

NRI & Investment Services

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

Compliance & Special Services

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



empowering your real estate decisions with smart tools

Property Valuation & Cost Estimation

Guideline Value, Apartment Composite Value, Stamp Duty & Registration Fees Calculator, Building Value Calculator, Capital Gains Calculator, Area Unit Converter, Length Unit Converter

Ownership, Compliance & Legal Verification

Encumbrance Certificate (EC) Search, Find Your SRO, Temple Property Check, WAQF Property Check, View Patta/Chitta, View FMB, Patta Analyzer, EC Analyzer

Zoning & Land Use Analysis

Land Use Zone Finder, CRZ Zone Check, Aquifer Zone Check, CBA Check, EWS Check, Road Width Check, Proposed Road Widening Check, FSI Calculator

Property Documentation & Workflow Tools

Forms & Templates, Document Generator, Document Translation, Dictionary

Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

Verified RealEstate™

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

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

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