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DESIGN CALCULATION

THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT NOS: 10, 11, 12, 13, 13A, 23, 24, 24A1, 24A &24B, DOOR NO: 62\63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY NO:80(PART), T.S.NO:13, 14, 15, 16 & 17 BLOCK NO:15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

STRUCTURAL CONSULTANTS:-

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1.0 DESIGN BRIEF:

THIS DOCUMENT FURNISHES THE STRUCTURAL DESIGN CALCULATIONS FOR THE PROPOSED CONSTRUCTION OF STILT + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT NOS: 10, 11, 12, 13, 13A, 23, 24, 24A1, 24A &24B, DOOR NO: 62\63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY NO:80(PART), T.S.NO:13, 14, 15, 16 & 17 BLOCK NO:15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

2.0 GENERAL DESIGN CRITERIA

2.1. Description of the structure

The Hostel Building consists of Ground Floor + 5 Upper floors the structure is designed as a RCC framed structure.

1.	Size of the building	: 135'-8" x 132'-0"
2.	Height of the building	: 18.00m
3.	Number of storeys above GL	: Ground Floor + 5
4.	Floor to floor height of this building	: Ground and First floors - 3.05m : Typical floor – 3.05m
1.	Type of foundation	:Isolated Footings @ 3.0 Below N.G.L. as per geotechnical report
5.	Software used	: Staad pro Vi8, all the RCC member are designed used the software

2.2. Materials Used

Following materials are generally used in the design of the various components of the structure.
For Concrete Structure

- M25 grade concrete for all reinforced concrete parts of the structure
- Fe500 grade Structural reinforcement steel
- Masonry for all walls : Brick / Block

2.3. Design Codes & Standards

Following codes and specifications have been generally used in the design of the members of the structure.

- IS 456 : 2000 Code of practice for Plain and Reinforced concrete
- SP: 16 Design Aids for Reinforced concrete
- IS 875 : 1987 Design Loads for building and structures
- IS 1893 : 2002 Criteria for Earthquake Resistant design of structures
- IS 13920: 1993 Ductile Detailing of R.C structures subjected to Seismic forces
- SP: 34 Handbook on Concrete Reinforcement & Detailing
- IS 800 : 1984 Code of practice for general construction in steel
- IS 2062 : 1999 Steel for general structural purposes specification
- IS 1786: 1985 Specification for high strength deformed bars and wires for concrete reinforcement

3.0 LOADING

Primary Load:

- Dead Load (DL)
- Live Load (LL)
- Seismic Load (SL)
- Wind (WL)

3.1. Dead load (DL)

Material weight

- Density of Concrete =25 kN/m^3
- D.L. due to partitions
  (Light Partition as per IS 875) =1.50 kN/m^2
- D.L due to floor finish 50mm thick = 0.05x25 = 1.25 kN/m^2

The self-weight of the structure has been considered using SELFWEIGHT option of STAAD.PRO, which automatically calculates the dead weight of each member using the density of material of construction. Beams and columns modelled in the STAAD.PRO. For Slab load, weight of slabs is transfers based on load distribution, automatically.

3.2. Live load (LL)

Minimum Uniformly Distributed Live Loads:

Occupancy or use	**Live Load (kn/m^2)**
Living rooms, bed rooms and dormitories	2.00
Kitchens and laundries	3.00
Dining rooms, cafeterias and	4.00
Store rooms	5.00
Live Load in toilets	2.00
Dining rooms, cafeterias and restaurants	4.00
Office rooms	2.50
Baths and toilets	2.00
Corridors, passages, staircases	3.00
Rooms for indoor games	0.5
L.L. reduction factor	=0.50 (Hostel Building)
Basic wind speed	=50 m/sec
Seismic Zone	=Zone II
Design mix	=M25 for all R.C members
Temperature change which Causes axial elongation	=18° C

3.3 Wind load (WL)

Wind Load Calculation:

The wind pressure is calculated based on the basic wind speed and other provisions laid in IS 875(part-3)-1987. The wind speed is considered in the analysis for the specified location is 50 m/sec. The design parameters for wind load calculation is as follows

Assumption considered as per IS 875:1987

- Basic Wind Speed ‘Vb’ (Puducherry) = 50m/s
- Risk Co-efficient ‘k1’ =1.00
- Terrain, Height and Structure size factor ‘k2’ =1.08
- Topography factor ‘k3’ =1.00

- The Design Wind Speed 'Vz' =Vb x k1 x k2 x k3
  =54.0 m/s
- Design Wind Pressure 'pz' $=0.6 \times Vz^2$
  $=1749.6N/m^2 \approx 1.75kN/m^2$

3.4 SEISMIC load (SL)

Seismic Load Calculation:

The Proposed building at Chennai falls under Zone III as per the IS Code. Seismic Coefficient Method for seismic analysis of R.C.C. frames as recommended by IS: 1893 is used.

- Seismic Zone (Chennai) =Zone III
- Zone Factor 'Z' =0.16
- Response Reduction Factor 'R' (for SMRF) =5.00
- Importance Factor 'I' =1.50 (Commercial Building)
- Type of Structure =1.00
- Type of Soil = I (Rock or Hard Soil)

3.5 Loading Combinations

The following combinations of Loads as per IS 1893 is considered in the STAAD Analysis

- 1.5(DL +LL) 1.5(DL +LL + TL)
- 1.2(DL + LL ± WL) 1.2(DL + LL + TL ± WL)
- 1.2(DL +LL ± EL) 1.2(DL +LL + TL ± EL)
- 1.5(DL ± EL) 1.5(DL+TL ± EL)
- 0.9DL ± 1.5EL 0.9DL + TL ± 1.5EL

The below load combinations are used to check the structure in serviceability condition.

- 1.0(DL +LL) 1.0(DL +LL +TL)
- 1.0(DL + LL ± WL) 1.0(DL + LL +TL ± WL)
- 1.0(DL +LL ± EL) 1.0(DL +LL +TL ± EL)
- 1.0(DL ± EL) 1.0(DL +TL ± EL)
- 0.9DL ± 1.0EL 0.9DL +TL ± 1.0EL

4.0 STRUCTURAL MATERIAL:

4.1 Concrete Material Specifications:

It is advisable to use 43 grade cements for all R.C.C structural works for durability reasons. Some of manufactured ULTRATECH, BIRLA, RAMCO

Concrete compressive cube strength	- 25 N/mm^2 (1:1.5:3)
Minimum cement content	- 340kg – 360kg
Cement type	- OPC
Free water cement ratio	- 0.5 (Maximum)
Nominal maximum size of aggregate	- 20mm UNO

4.2 Reinforcement:

Reinforcement steel of grade Fe 500 can be of TMT bars manufactured by Tata steel (TISCON), Vizag steel (RINL), SISCOL or SAIL purchased directly from the manufacturer.
Steel reinforcement shall be deformed bars, the characteristic of reinforcement bars shall conform to the following specification:

Grade of Steel	Actual Yield Strength (MPa)
Grade Fe500	Minimum 500 MPa,

4.4 Concrete cover:

Cover for Reinforcement is considered as per Table 16A of NBC, for a Fire resistance of 2 hrs.

- Raft Slab = 50mm
- Footing = 50mm
- RC Wall = 30mm
- Columns = 40mm
- Beams = 30mm
- Slabs = 25mm

5.0 Structural Description

5.1. Method of analysis

Structure analysis & design:

The structure is analyzed as a Space frame structure in STADD Pro Vi8. Columns, Footing, Basement walls, slabs, Beams and Staircases are designed as reinforced concrete members.

5.2. Framing System, Analysis and Design

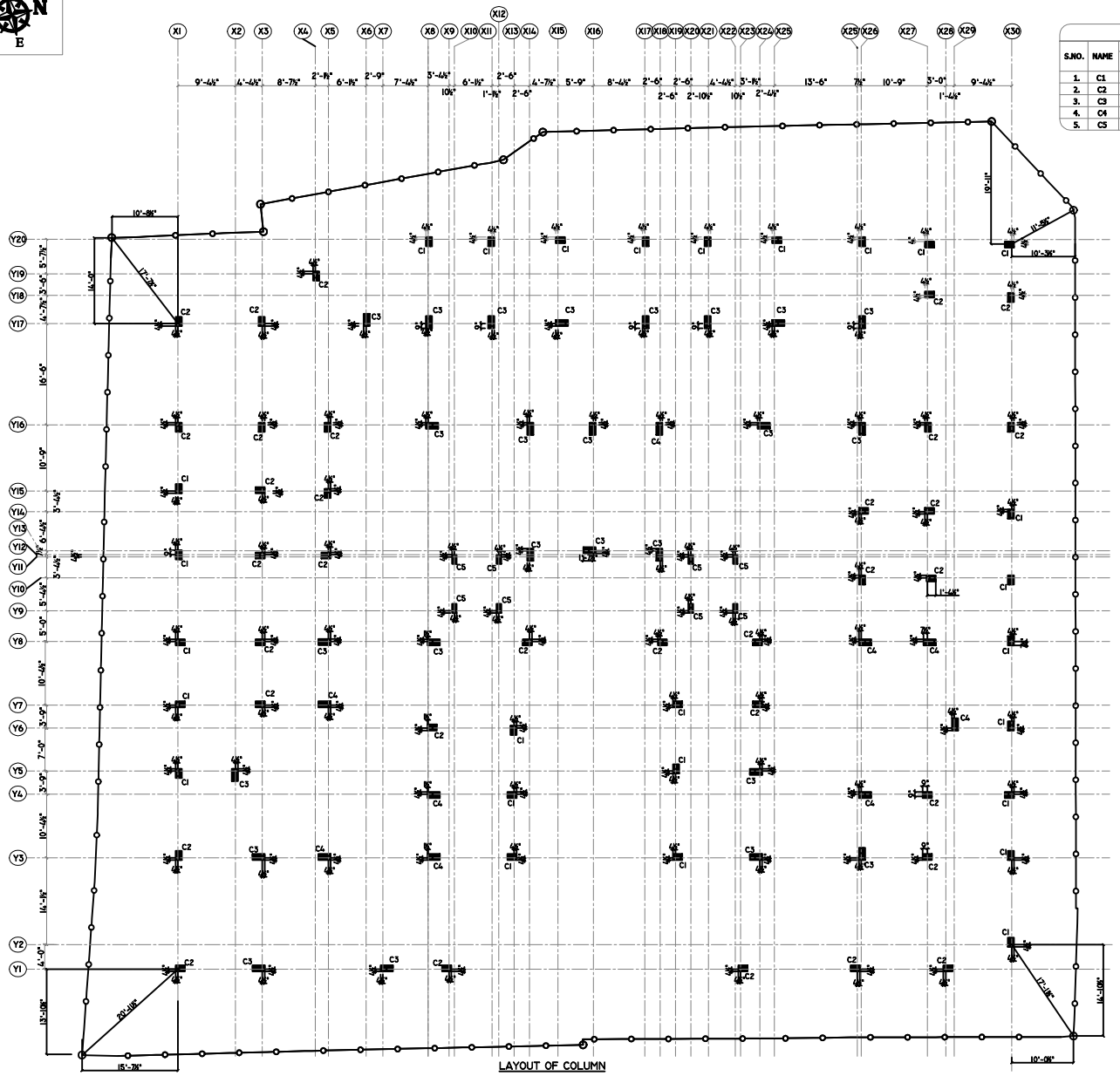
Limit State concept of design will be used as per IS: 456-2000 & SP - 16. The detailing of reinforcement shall be done satisfying the requirements of IS: 456-2000, SP-16, IS: 13920, IS: 4326-1993 and SP-34.

The Slabs and beams are checked for deflection as per IS 456:2000. Cover for Reinforcement is considered as per Table 16A of NBC, for a Fire resistance of 2 hrs.

5.2 Design concept

Limit State concept of design will be used as per IS: 456-2000 & SP - 16. The detailing of reinforcement shall be done satisfying the requirements of IS: 456-2000, SP-16, IS: 4326-1993 and SP-34. The Slabs and beams are checked for deflection as per IS 456:2000. Cover for Reinforcement is considered as per Table 16A of NBC, for a Fire resistance of 2 hrs.

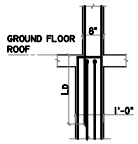
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LAYOUT OF COLUMN

COLUMN SCHEDULE

S.NO.	NAME	SIZE		
		UPTO GROUND ROOF	GROUND ROOF TO TFR	THIRD ROOF TO TOP
1.	C1	1'-0" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"
2.	C2	1'-0" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"
3.	C3	1'-0" X 2'-0"	0'-9" X 2'-0"	0'-9" X 1'-6"
4.	C4	1'-0" X 2'-0"	0'-9" X 2'-0"	0'-9" X 2'-0"
5.	C5	0'-9" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"



TYPICAL COLUMN REDUCTION DETAILS

NOTE:
FOR COLUMN REINFORCEMENT DETAILS REFER DWG.NO: 001A

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

Iv) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

11) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   a) COLUMN = 1½ "
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. COLUMNS AND FOOTINGS ARE DESIGNED FOR G+5 FLOOR LOADS AND SBC OF THE SOIL IS 150KN/SQM. @ 8'-0" BELOW N.G.L.
7. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
8. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	J.P	R.M	02.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

LAYOUT & R.C DETAILS OF COLUMN

DATE	SCALE	JOB.NO	DRG.NO
01.02.24	1" : 11'	--------	001

ARCHITECT / CONSULTANTS :-

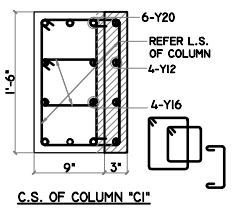
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No: 56, Moore Street.,
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Tel : 2352 21 954 Fax : 2352 01 250

STRUCTURAL CONSULTANTS :-

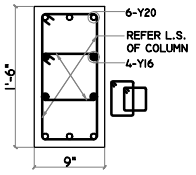
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A2

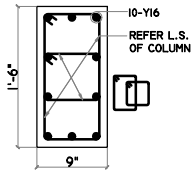
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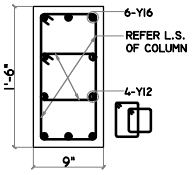
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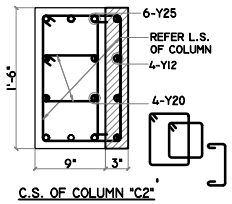
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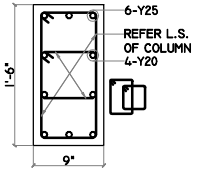
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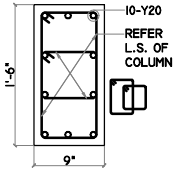
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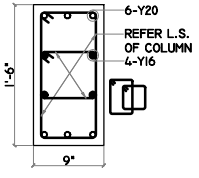
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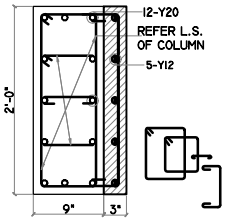
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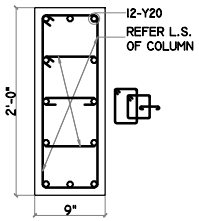
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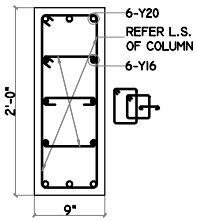
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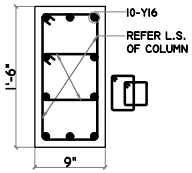
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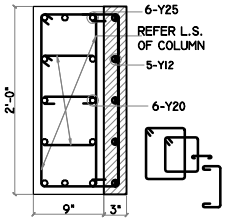
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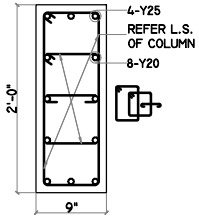
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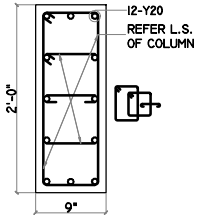
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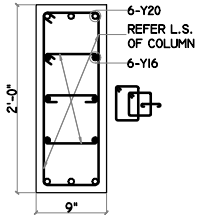
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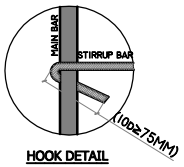
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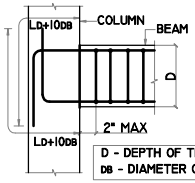
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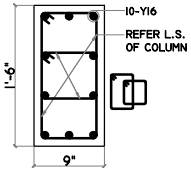


HOOK DETAIL

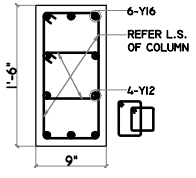


D - DEPTH OF THE BEAM
DB - DIAMETER OF THE BAR

TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



C.S. OF COLUMN "C5"
(0'-9" x 1'-6")
(UPTO FFR)



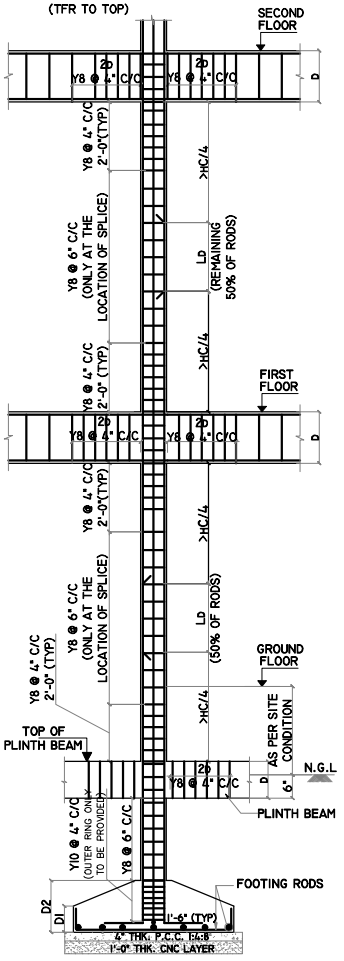
C.S. OF COLUMN "C5"
(0'-9" x 1'-6")
(FFR TO TOP)

COLUMN SCHEDULE

S.NO.	NAME	SIZE		
		UPTO GROUND ROOF	GROUND ROOF TO TFR	THIRD ROOF TO TOP
1.	C1	1'-0" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"
2.	C2	1'-0" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"
3.	C3	1'-0" X 2'-0"	0'-9" X 2'-0"	0'-9" X 1'-6"
4.	C4	1'-0" X 2'-0"	0'-9" X 2'-0"	0'-9" X 2'-0"
5.	C5	0'-9" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"

NOTE:

- N.G.L - NATURAL GROUND LEVEL.
- G.F.R - GROUND FLOOR ROOF.
- F.F.R - FIRST FLOOR ROOF.
- S.F.R - SECOND FLOOR ROOF.
- T.F.R - THIRD FLOOR ROOF.
- WHEREVER LAP SPLICES AND CONFINING TIES ARE NOT REQUIRED, SPACING OF LATERAL TIES SHALL BE Y8 @ 200 C/C.
- ALL HOOKS SHOULD BE BENT TO AN ANGLE OF 135° WITH A LENGTH NOT LESS THAN 75 MM



REINFORCEMENT DETAILING COLUMN
(ALTERNATE RODS TO BE LAPPED IN ALTERNATE FLOORS)

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   a) COLUMN = 1½ "
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. COLUMNS AND FOOTINGS ARE DESIGNED FOR G+5 FLOOR LOADS AND SBC OF THE SOIL IS 150KN/SQM. @ 10'-0" BELOW N.G.L.
7. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
8. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	J.P	R.M	02.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30m HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

R.C DETAILS OF COLUMN

DATE	SCALE	JOB.NO	DRG.NO
01.02.24	1" : 10'	--------	001A

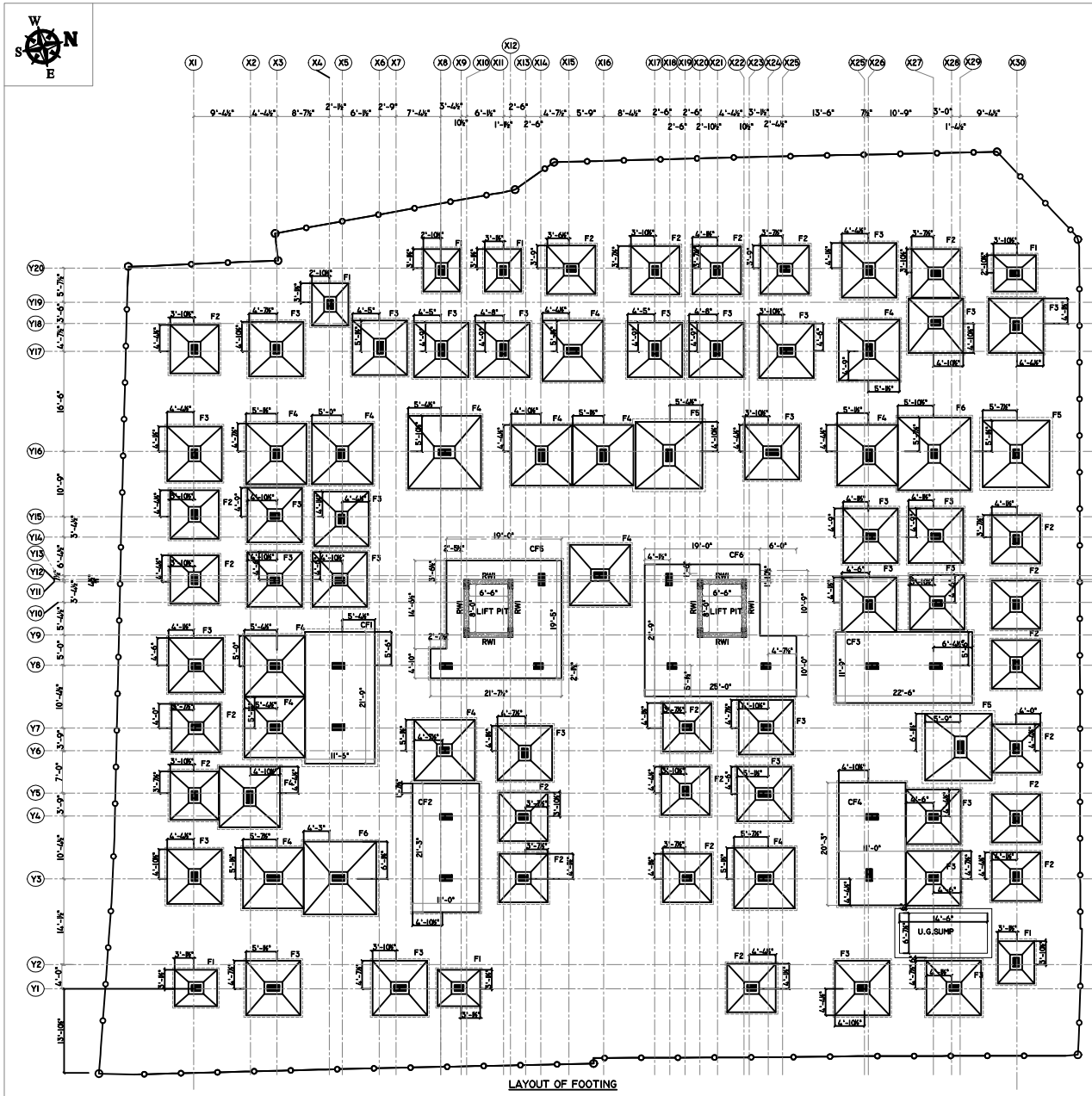
ARCHITECT / CONSULTANTS :-

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Tel : 252 25 994 Fax : 252 91 210

STRUCTURAL CONSULTANTS :-

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Fixed Line :- 044 4859 7100
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aura Engineering Consultants

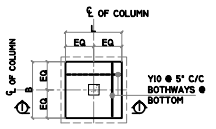
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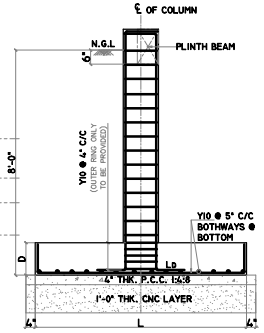
LAYOUT OF FOOTING

NOTE:
FOR FOOTING REINFORCEMENT DETAILS REFER DWG.NO: 002A

NOTE:
N.G.L - NATURAL GROUND LEVEL.



PLAN OF FLAT FOOTING-SF



SECTION "1-1"

COMBINED FOOTINGS SCHEDULE:-

SI.	FOOTING NAME	FOOTING SIZE	FOOTING REINFORCEMENT
01	CF1	11'-6" X 21'-9" X 2'-0"	Y16 @ 4" C/C BOTHWAYS @ BOTTOM Y12 @ 4" C/C BOTHWAYS @ TOP
02	CF2	11'-0" X 21'-3" X 2'-0"	Y16 @ 5" C/C BOTHWAYS @ BOTTOM Y12 @ 5" C/C BOTHWAYS @ TOP
03	CF3	11'-9" X 22'-6" X 2'-0"	Y16 @ 5" C/C BOTHWAYS @ BOTTOM Y12 @ 5" C/C BOTHWAYS @ TOP
04	CF4	11'-0" X 20'-3" X 2'-0"	Y16 @ 5" C/C BOTHWAYS @ BOTTOM Y12 @ 5" C/C BOTHWAYS @ TOP
05	CF5	REFER PLAN	Y12 @ 6" C/C BOTHWAYS @ TOP & BOTTOM
06	CF6	REFER PLAN	Y12 @ 6" C/C BOTHWAYS @ TOP & BOTTOM

FOOTINGS SCHEDULE:-

SI.	FOOTING NAME	FOOTING SIZE	FOOTING REINFORCEMENT X =MAIN REINFD Y =DISTRIBUTOR REINFD
01	F1	6'-0" X 7'-0" D1=1'-0" D2=1'-6" SLOPED FOOTING	Y10 @ 5" C/C BOTHWAYS @ BOTTOM
02	F2	8'-0" X 8'-0" D1=1'-3" D2=1'-9" SLOPED FOOTING	Y12 @ 5" C/C BOTHWAYS @ BOTTOM
03	F3	9'-0" X 9'-0" D1=1'-6" D2=2'-0" SLOPED FOOTING	Y12 @ 4" C/C BOTHWAYS @ BOTTOM
04	F4	10'-0" X 10'-0" D1=2'-0" D2=2'-6" SLOPED FOOTING	Y12 @ 4" C/C BOTHWAYS @ BOTTOM
05	F5	11'-0" X 11'-0" D1=2'-0" D2=2'-6" SLOPED FOOTING	Y16 @ 5" C/C BOTHWAYS @ BOTTOM
06	F6	12'-0" X 12'-0" D1=2'-6" D2=3'-0" SLOPED FOOTING	Y16 @ 5" C/C BOTHWAYS @ BOTTOM
07	F7	13'-6" X 13'-6" D1=2'-6" D2=3'-0" SLOPED FOOTING	Y16 @ 4" C/C BOTHWAYS @ BOTTOM
08	SF	4'-0" X 4'-0" D1=1'-3" FLAT FOOTING	Y10 @ 5" C/C BOTHWAYS @ BOTTOM

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

Iv) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   a) COLUMN = 1½ "
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REV.	DESCRIPTIONS	DRN	CHK	DATE
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DRAWING TITLE :-

LAYOUT & R.C DETAILS OF COLUMN

DATE	SCALE	JOB.NO	DRG.NO
14.02.24	1" : 11'	--------	001

ARCHITECT / CONSULTANTS :-

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STRUCTURAL CONSULTANTS :-

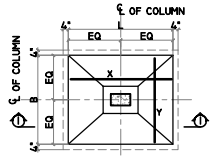
AURA ENGINEERING CONSULTANTS
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A2

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COLUMN SCHEDULE

S.NO.	NAME	SIZE		
		UPTO GROUND ROOF	GROUND ROOF TO TFR	THIRD ROOF TO TOP
1.	C1	1'-0" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"
2.	C2	1'-0" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"
3.	C3	1'-0" X 2'-0"	0'-9" X 2'-0"	0'-9" X 1'-6"
4.	C4	1'-0" X 2'-0"	0'-9" X 2'-0"	0'-9" X 2'-0"
5.	C5	0'-9" X 1'-6"	0'-9" X 1'-6"	0'-9" X 1'-6"



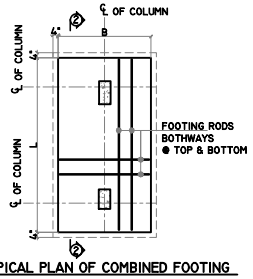
TYPICAL PLAN OF SLOPED FOOTING

NOTE:

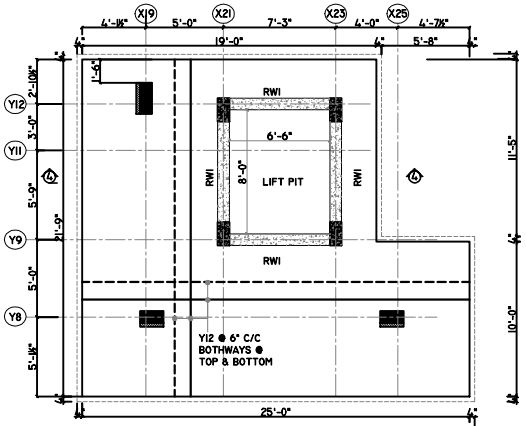
N.G.L - NATURAL GROUND LEVEL.

F.F.L - FLOOR FINISH LEVEL

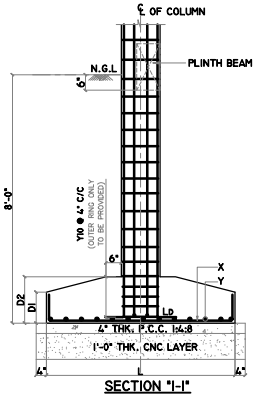
CNC - CAN BE NON PLASTIC WELL GRADED CLEAN RIVER SAND/ SAND:GRAVEL MIX



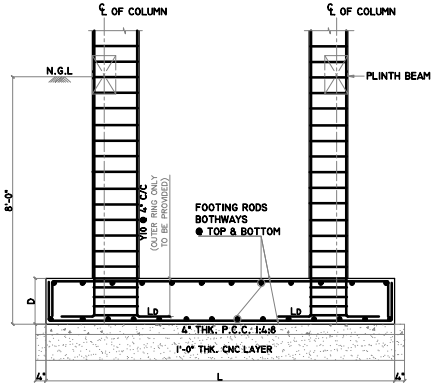
TYPICAL PLAN OF COMBINED FOOTING



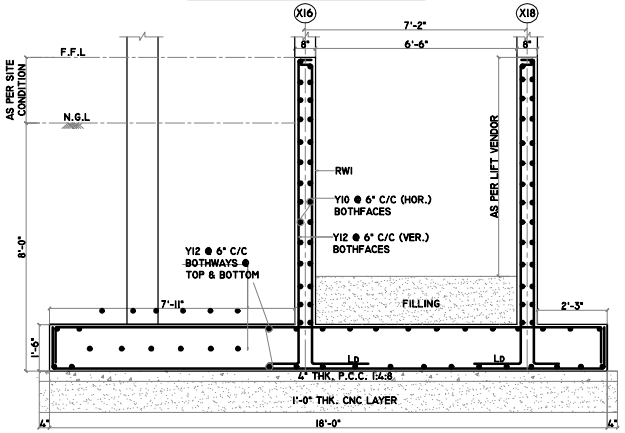
PLAN OF COMBINED FOOTING -"CF6"



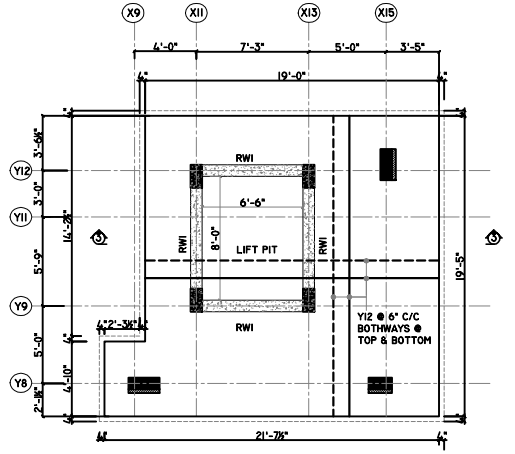
SECTION "1-1"



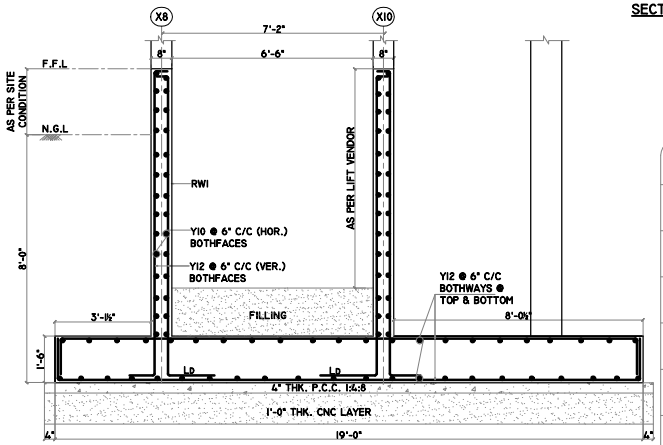
SECTION "2-2"



SECTION "4-4"



PLAN OF COMBINED FOOTING -"CF5"



SECTION "3-3"

COMBINED FOOTINGS SCHEDULE:-

Sl.	FOOTING NAME	FOOTING SIZE	FOOTING REINFORCEMENT
01	CF1	11'-6" X 21'-9" X 2'-0"	Y16 ● 4" C/C BOTHWAYS ● BOTTOM Y12 ● 4" C/C BOTHWAYS ● TOP
02	CF2	11'-0" X 21'-3" X 2'-0"	Y16 ● 5" C/C BOTHWAYS ● BOTTOM Y12 ● 5" C/C BOTHWAYS ● TOP
03	CF3	11'-9" X 22'-6" X 2'-0"	Y16 ● 5" C/C BOTHWAYS ● BOTTOM Y12 ● 5" C/C BOTHWAYS ● TOP
04	CF4	11'-0" X 20'-3" X 2'-0"	Y16 ● 5" C/C BOTHWAYS ● BOTTOM Y12 ● 5" C/C BOTHWAYS ● TOP
05	CF5	REFER PLAN	Y12 ● 6" C/C BOTHWAYS ● TOP & BOTTOM
06	CF6	REFER PLAN	Y12 ● 6" C/C BOTHWAYS ● TOP & BOTTOM

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

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2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   a) FOOTING = 2" b) R.C WALL= 1"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. COLUMNS AND FOOTINGS ARE DESIGNED FOR G+5 FLOOR LOADS AND SBC OF THE SOIL IS 150KN/SQM. @ 8'-0" BELOW N.G.L.
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REV.	DESCRIPTIONS	DRN	CHK	DATE
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DRAWING TITLE :-

R.C DETAILS OF FOOTING

DATE	SCALE	JOB.NO	DRG.NO
14.02.24	1" : 12'	--------	002A

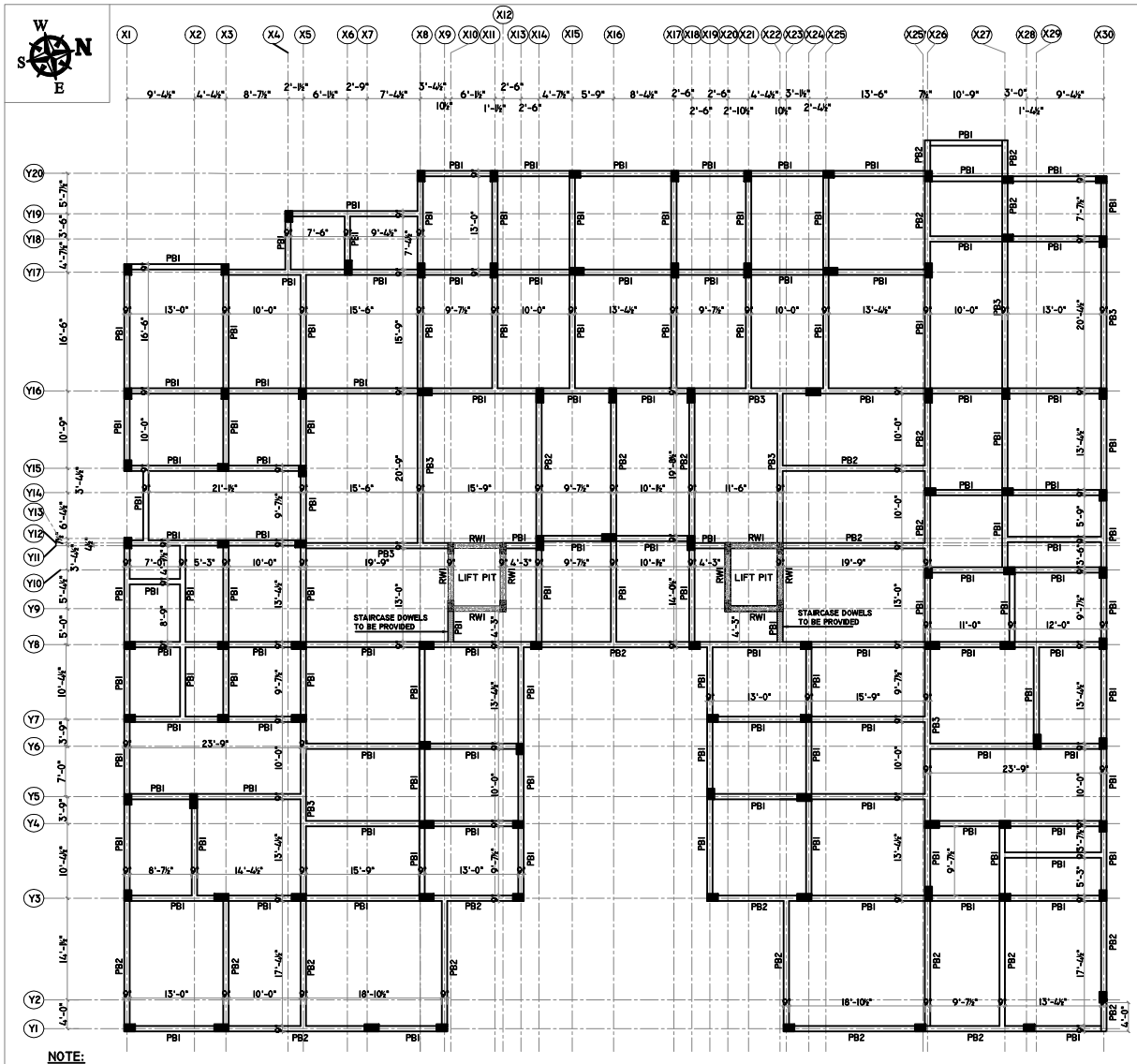
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projects.auraengg@gmail.com
projects@auraengineers.co.in
http://auraengineers.co.in/
aura Engineering Consultants

A2

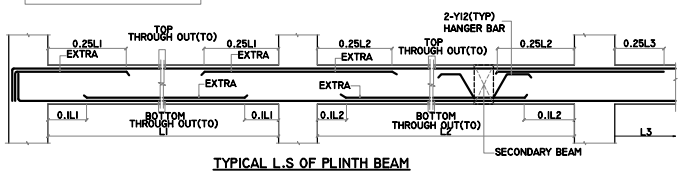


LAYOUT OF PLINTH BEAM

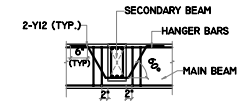
NOTE:

N.G.L - NATURAL GROUND LEVEL.

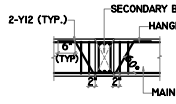
F.F.L - FLOOR FINISH LEVEL



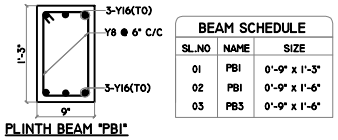
TYPICAL L.S OF PLINTH BEAM



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)

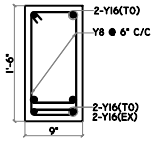


TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION

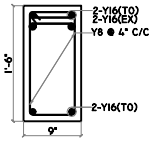


PLINTH BEAM "PB1"
(0'-9" x 1'-3")

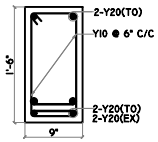
BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	PB1	0'-9" x 1'-3"
02	PB1	0'-9" x 1'-6"
03	PB3	0'-9" x 1'-6"



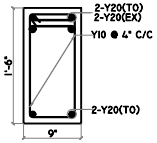
PLINTH BEAM "PB2"
(0'-9" x 1'-6")
(@ MID SUPPORT)



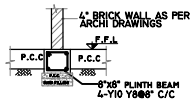
PLINTH BEAM "PB2"
(0'-9" x 1'-6")
(@ END SUPPORT)



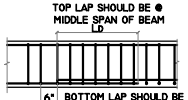
PLINTH BEAM "PB3"
(0'-9" x 1'-6")
(@ MID SUPPORT)



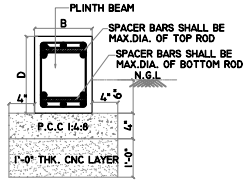
PLINTH BEAM "PB3"
(0'-9" x 1'-6")
(@ END SUPPORT)



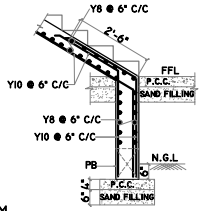
TYPICAL DETAILS OF PLINTH BEAM UNDERNEATH 4.5" BRICK WORK



TYP. LAP SPLICE IN BEAM



TYPICAL DETAIL OF PLINTH BEAM



TYP. DETAIL OF STAIRCASE DOWELS

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   a) BEAM= 1" b) R.C WALL= 1"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. COLUMNS AND FOOTINGS ARE DESIGNED FOR G+5 FLOOR LOADS AND SBC OF THE SOIL IS 150KN/SQM. @ 8'-0" BELOW N.G.L.
7. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
8. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR ESTIMATION	M.R	R.M	02.03.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

LAYOUT & R.C DETAILS OF PLINTH BEAM

DATE	SCALE	JOB.NO	DRG.NO
02.03.24	1" : 11'	--------	003

ARCHITECT / CONSULTANTS :-

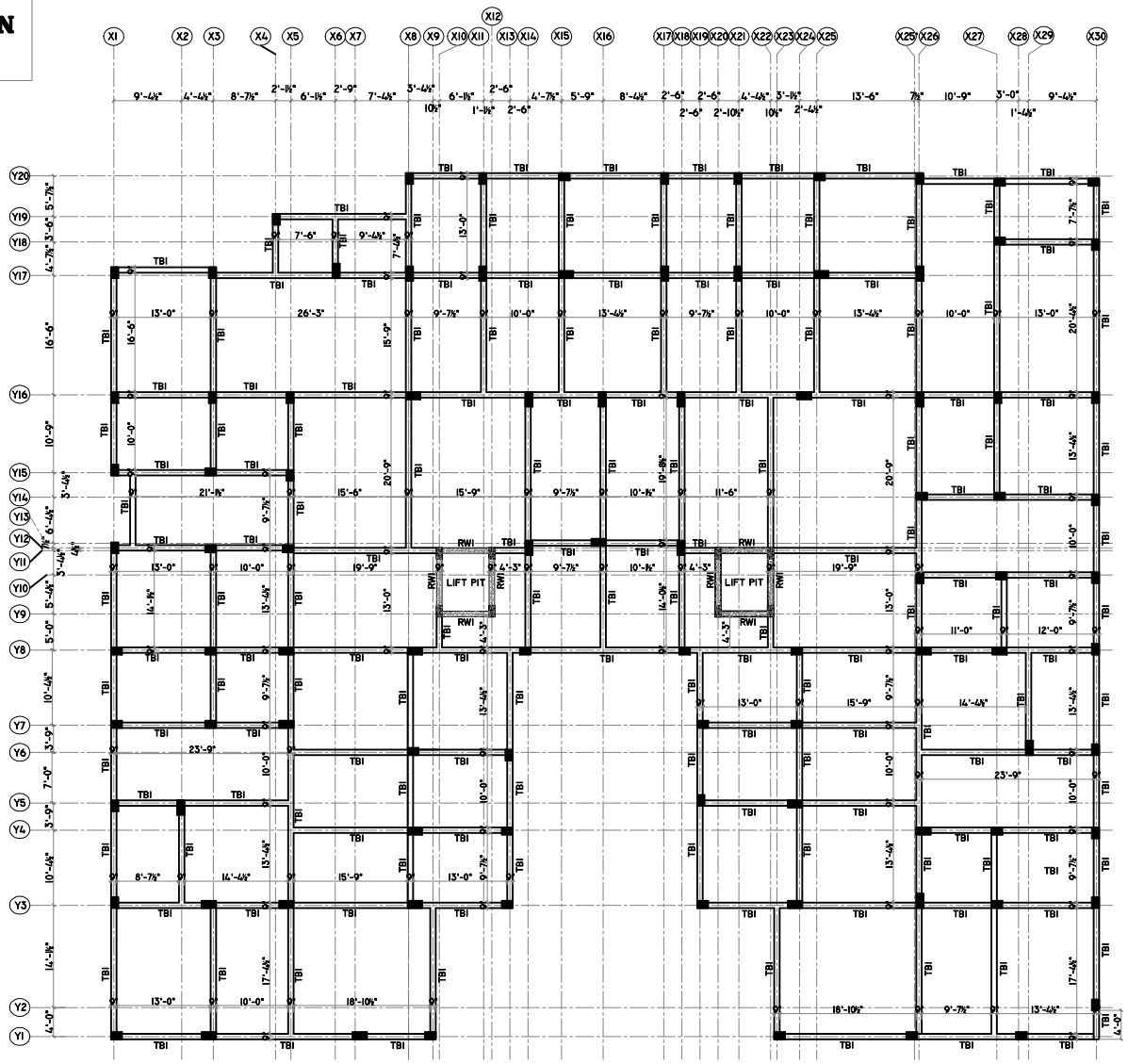
AKBAR HUSSAIN AKBARI B.Arch., A.I.I.A.
No: 86, Moore Street, Chennai - 600 001. Tel : 2522 22 594 Fax : 25291218

STRUCTURAL CONSULTANTS :-

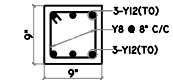
AURA ENGINEERING CONSULTANTS
NO:13/27, 66th STREET
R.V NAGAR, ASHOK NAGAR,CHENNAI- 600 083.
Fixed Line :- 044 4859 7100
projects.auraengg@gmail.com
projects@auraengineers.co.in
http://auraengineers.co.in/
aura Engineering Consultants

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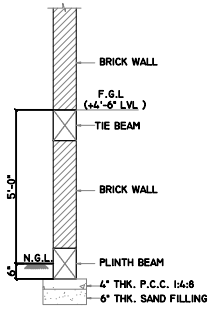
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LAYOUT OF TIE BEAM



TIE BEAM "TBI"
(0'-9" x 0'-9")



TYPICAL SECTION OF "TIE BEAM"

NOTE:

N.G.L - NATURAL GROUND LEVEL.

F.G.L - FOAMING GROUND LEVEL

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

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VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

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GENERAL NOTES:

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REV.	DESCRIPTIONS	DRN	CHK	DATE
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DRAWING TITLE :-

LAYOUT & R.C DETAILS OF TIE BEAM

DATE	SCALE	JOB.NO	DRG.NO
02.03.24	1" : 11'	--------	003A

ARCHITECT / CONSULTANTS :-

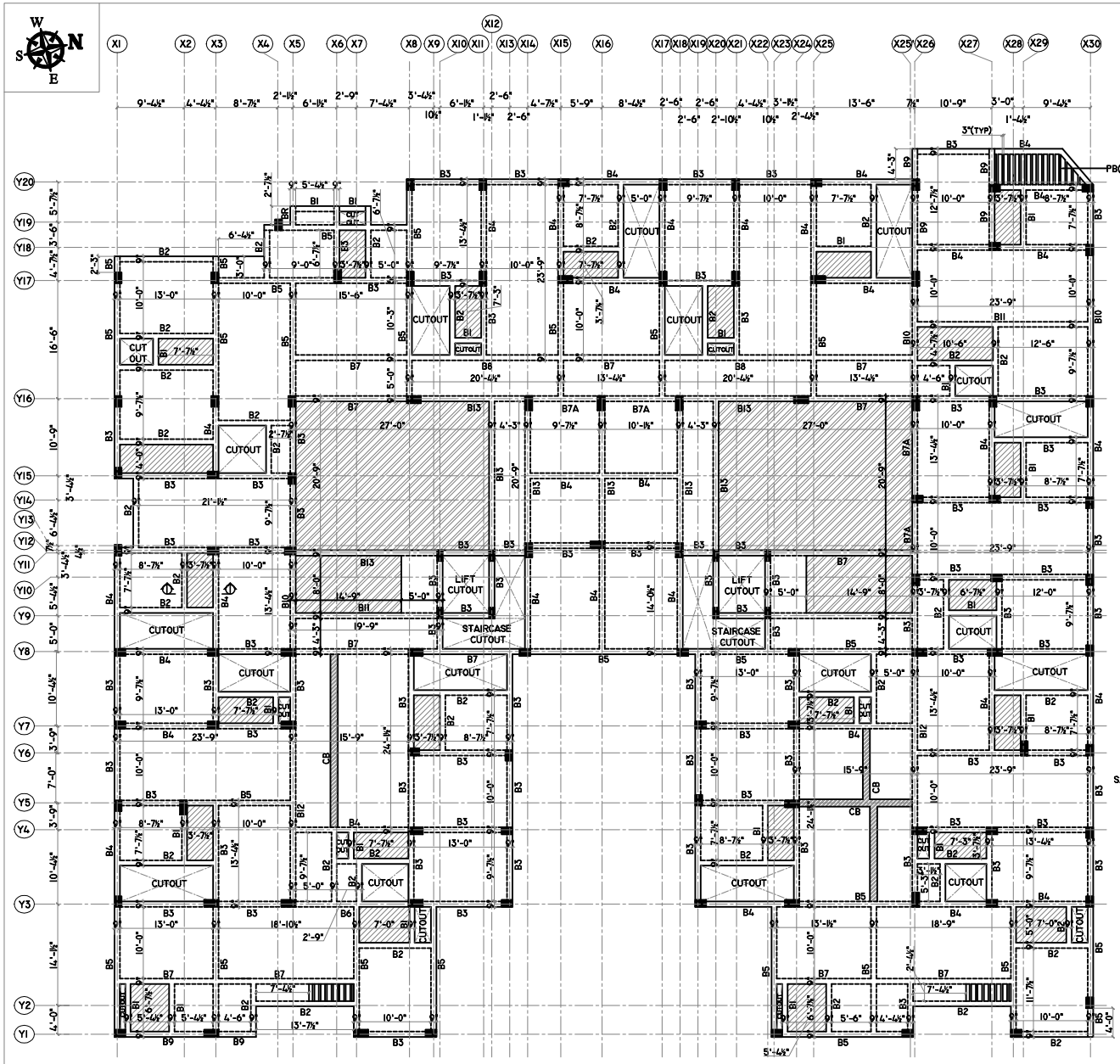
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Chennai - 600 001.
Tel : 2522 23 284 Fax : 25209 218

STRUCTURAL CONSULTANTS :-

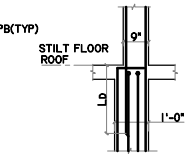
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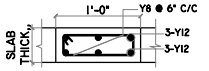


LAYOUT OF STILT FLOOR ROOF BEAM & SLAB

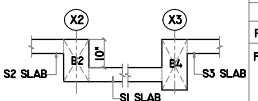


TYPICAL COLUMN REDUCTION DETAILS

BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	BI	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	BI0	0'-9" X 2'-0"
012	BII	0'-9" X 2'-0"
013	BI2	0'-9" X 2'-0"
014	BI3	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



C.S OF CONCEALED BEAM-"CB"
(1'-0" X "SLAB THICKNESS")



SECTION "I-I"

NOTE:

- SLAB SUNK BY 0'-10"
- SLAB SUNK BY 0'-9"
- PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED
- FOR SLAB REINFORCEMENT DETAILS REFER DWG.NO : 004A
- FOR BEAM REINFORCEMENT DETAILS REFER DWG.NO : 004B

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

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LAP JOINTS FOR REINFORCEMENT BARS :

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IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

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3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
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DRAWING TITLE :-

LAYOUT OF STILT FLOOR ROOF
BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
19.02.24	1" : 10'	--------	004

ARCHITECT / CONSULTANTS :-

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No: 86, Moore Street, Chennai - 600 001.
Tel : 2522 23 284 Fax : 25201218

STRUCTURAL CONSULTANTS :-

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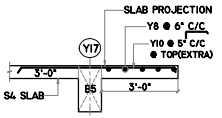
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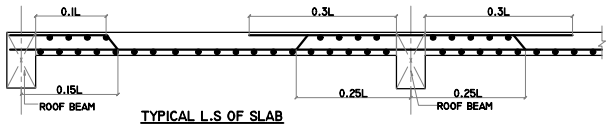


R.C LAYOUT OF STILT FLOOR ROOF BEAM & SLAB

SLAB SCHEDULE		
SL.NO	NAME	THICK
01	S1	5" THK.
02	S2	5" THK.
03	S3	5" THK.
04	S4	5" THK.
05	S5	6" THK.
06	S6	8" THK.



SECTION "2-2"



TYPICAL L.S OF SLAB

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

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EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

11) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	14.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-
R.C LAYOUT OF STILT FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
14.02.24	1" : 11'	--------	004A

ARCHITECT / CONSULTANTS :-
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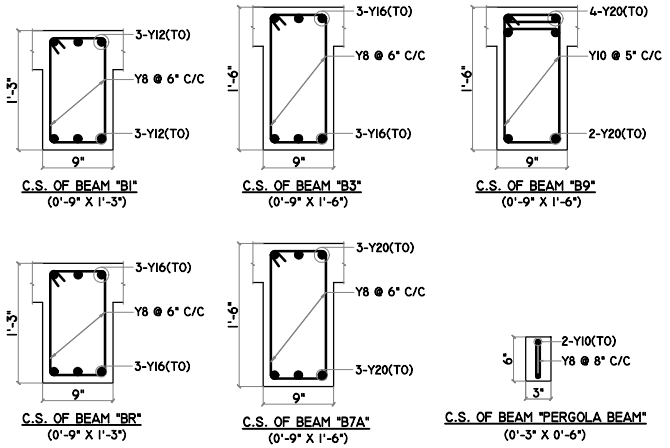
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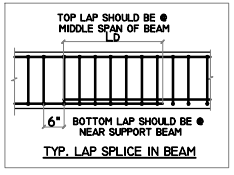
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NAME	MID SPAN	END SUPPORT
B2 (0'-9" X 1'-3")	3-Y16(TO); Y8 @ 7" C/C; 2-Y16(TO)+ 2-Y16(EXT); 1'-3"; 9"	3-Y16(TO); Y8 @ 4" C/C; 2-Y16(TO); 1'-3"; 9"
B4 (0'-9" X 1'-6")	2-Y16(TO); Y8 @ 7" C/C; 3-Y20(TO); 1'-6"; 9"	2-Y16(TO)+ 2-Y20(EXT); Y8 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B5 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B6 (0'-9" X 1'-6")	3-Y25(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B7 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)+ 3-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 3-Y20(EXT); Y10 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B8 (0'-9" X 1'-6")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	2-Y20(TO)+ 2-Y25(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"

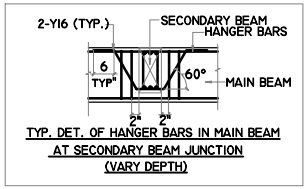
NAME	MID SPAN	END SUPPORT
B10 (0'-9" X 2'-0")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	2-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 2'-0"; 9"
B11 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 3-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO); 2'-0"; 9"
B12 (0'-9" X 2'-0")	3-Y25(TO); Y10 @ 4" C/C; 2-Y25(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y25(TO); 2'-0"; 9"
B13 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 2-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y20(TO); 2'-0"; 9"



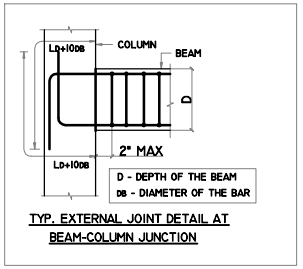
BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	B1	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	B10	0'-9" X 2'-0"
012	B11	0'-9" X 2'-0"
013	B12	0'-9" X 2'-0"
014	B13	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



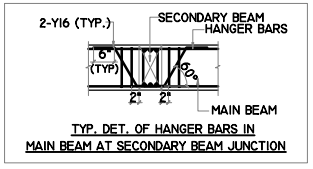
TYP. LAP SPLICE IN BEAM



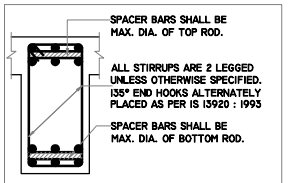
TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)



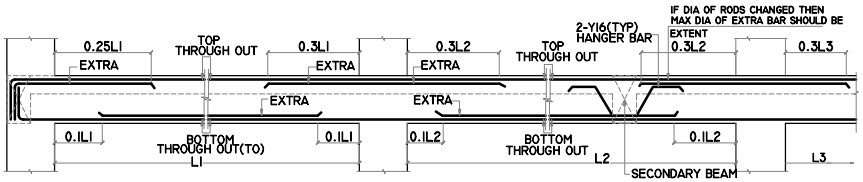
TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION



TYP. DETAIL



TYPICAL L.S OF ROOF BEAM

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	19.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

R.C DETAILS OF STILT FLOOR
ROOF BEAM

DATE	SCALE	JOB.NO	DRG.NO
19.02.24	1" : 9'	------	004B

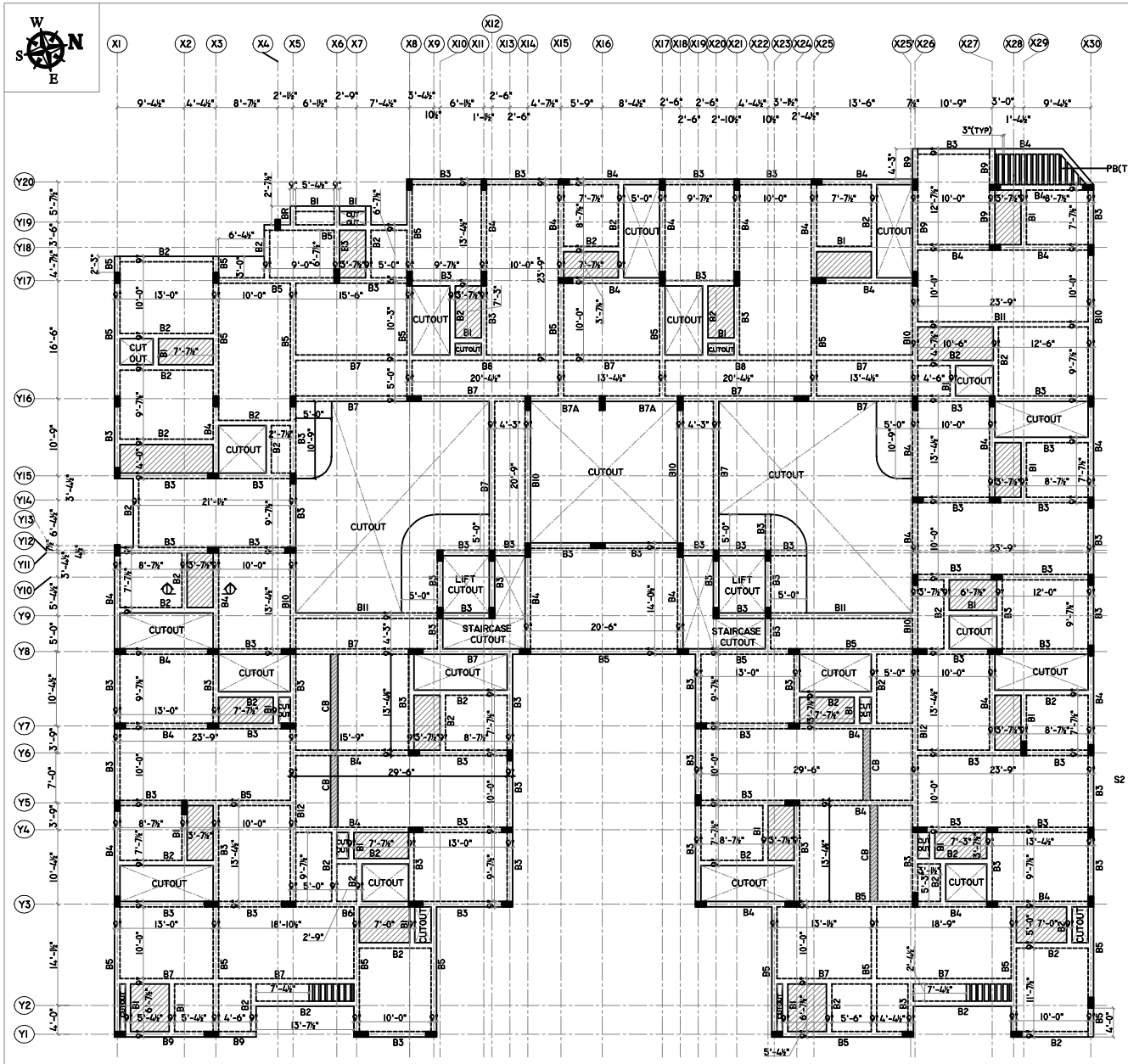
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STRUCTURAL CONSULTANTS :-

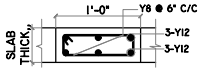
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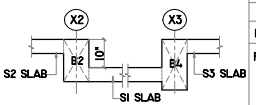


LAYOUT OF FIRST FLOOR ROOF BEAM & SLAB

BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	BI	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	BI0	0'-9" X 2'-0"
012	BII	0'-9" X 2'-0"
013	BI2	0'-9" X 2'-0"
014	BR	0'-9" X 1'-3"



C.S OF CONCEALED BEAM-"CB"
(1'-0" X "SLAB THICKNESS")



SECTION "I-I"

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

FOR SLAB REINFORCEMENT DETAILS REFER DWG.NO : 005A

FOR BEAM REINFORCEMENT DETAILS REFER DWG.NO : 005B

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

iv) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

LAYOUT OF FIRST FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 10'	--------	005

ARCHITECT / CONSULTANTS :-

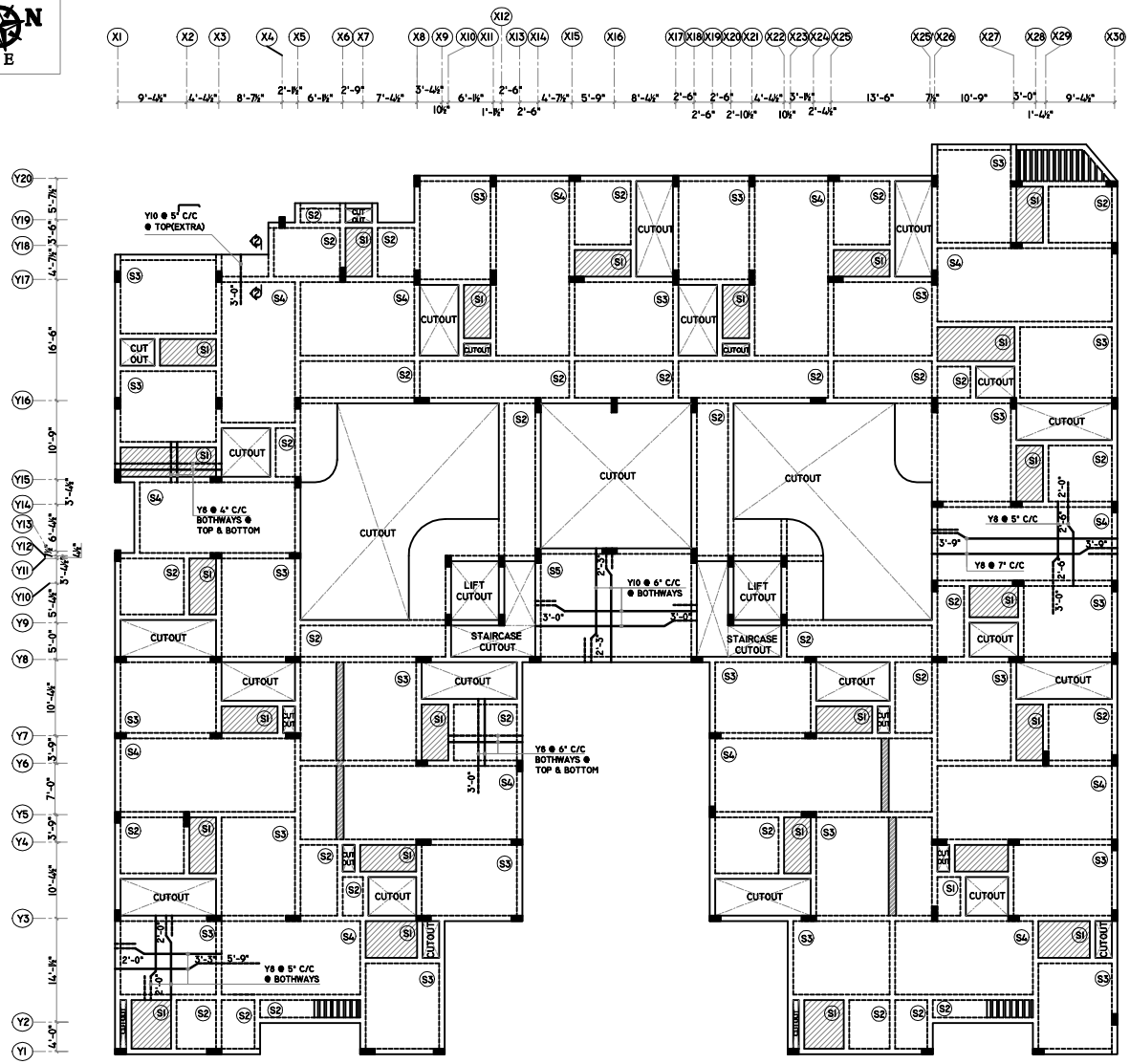
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STRUCTURAL CONSULTANTS :-

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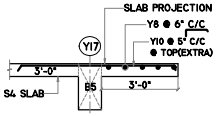
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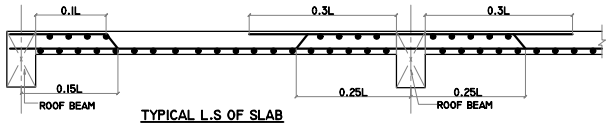


R.C LAYOUT OF FIRST FLOOR ROOF BEAM & SLAB

SLAB SCHEDULE		
SL.NO	NAME	THICK
01	S1	5" THK.
02	S2	5" THK.
03	S3	5" THK.
04	S4	5" THK.
05	S5	6" THK.



SECTION "2-2"



TYPICAL L.S OF SLAB

NOTE:
SLAB SUNK BY 0'-10"
PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

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IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

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DRAWING TITLE :-
R.C LAYOUT OF FIRST FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 11'	--------	005A

ARCHITECT / CONSULTANTS :-
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Tel : 2522 23 594 Fax : 25291218

STRUCTURAL CONSULTANTS :-
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http://auraengineers.co.in/
aura Engineering Consultants

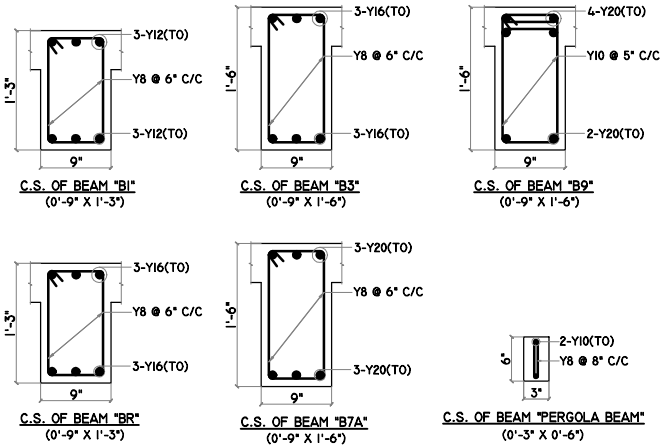
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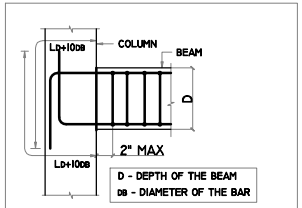
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NAME	MID SPAN	END SUPPORT
B2 (0'-9" X 1'-3")	3-Y16(TO); Y8 @ 7" C/C; 2-Y16(TO)+ 2-Y16(EXT)	3-Y16(TO); Y8 @ 4" C/C; 2-Y16(TO)
B4 (0'-9" X 1'-6")	2-Y16(TO); Y8 @ 7" C/C; 3-Y20(TO)	2-Y16(TO)+ 2-Y20(EXT); Y8 @ 4" C/C; 3-Y20(TO)
B5 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO)
B6 (0'-9" X 1'-6")	3-Y25(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO)
B7 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)+ 3-Y20(EXT)	3-Y20(TO)+ 3-Y20(EXT); Y10 @ 4" C/C; 3-Y20(TO)
B8 (0'-9" X 1'-6")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	2-Y20(TO)+ 2-Y25(EXT); Y10 @ 4" C/C; 2-Y20(TO)

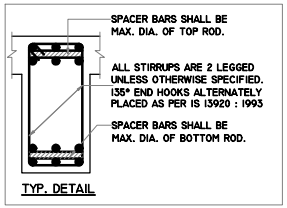
NAME	MID SPAN	END SUPPORT
B10 (0'-9" X 2'-0")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	2-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO)
B11 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 3-Y20(TO)+ 2-Y20(EXT)	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)
B12 (0'-9" X 2'-0")	3-Y25(TO); Y10 @ 4" C/C; 2-Y25(TO)+ 2-Y20(EXT)	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y25(TO)



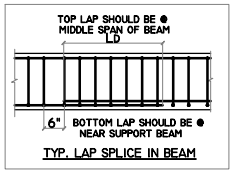
BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	B1	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	B10	0'-9" X 2'-0"
012	B11	0'-9" X 2'-0"
013	B12	0'-9" X 2'-0"
014	BR	0'-9" X 1'-3"



TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



TYP. DETAIL



TYP. LAP SPLICE IN BEAM

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

R.C DETAILS OF FIRST FLOOR ROOF BEAM

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 9'	------	005B

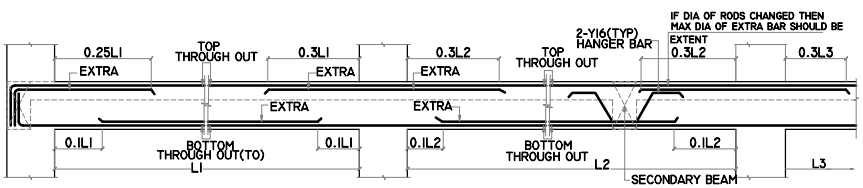
ARCHITECT / CONSULTANTS :-

AKBAR HUSSAIN AKBARI
B.Arch., A.I.I.A.,
No: 56, Moore Street., Chennai - 600 001.
Tel : 252 21 954 Fax : 2521 219

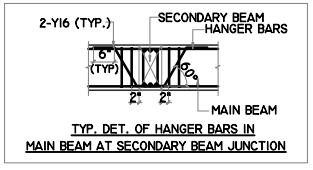
STRUCTURAL CONSULTANTS :-

AURA ENGINEERING CONSULTANTS
#8, 80th St, Sarvamangala Colony, 7th Avenue, ASHOK NAGAR, CHENNAI- 600 083.
Land Line :- 044 4899 7100
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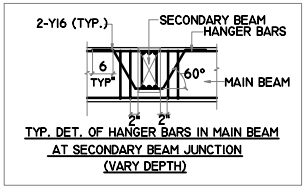
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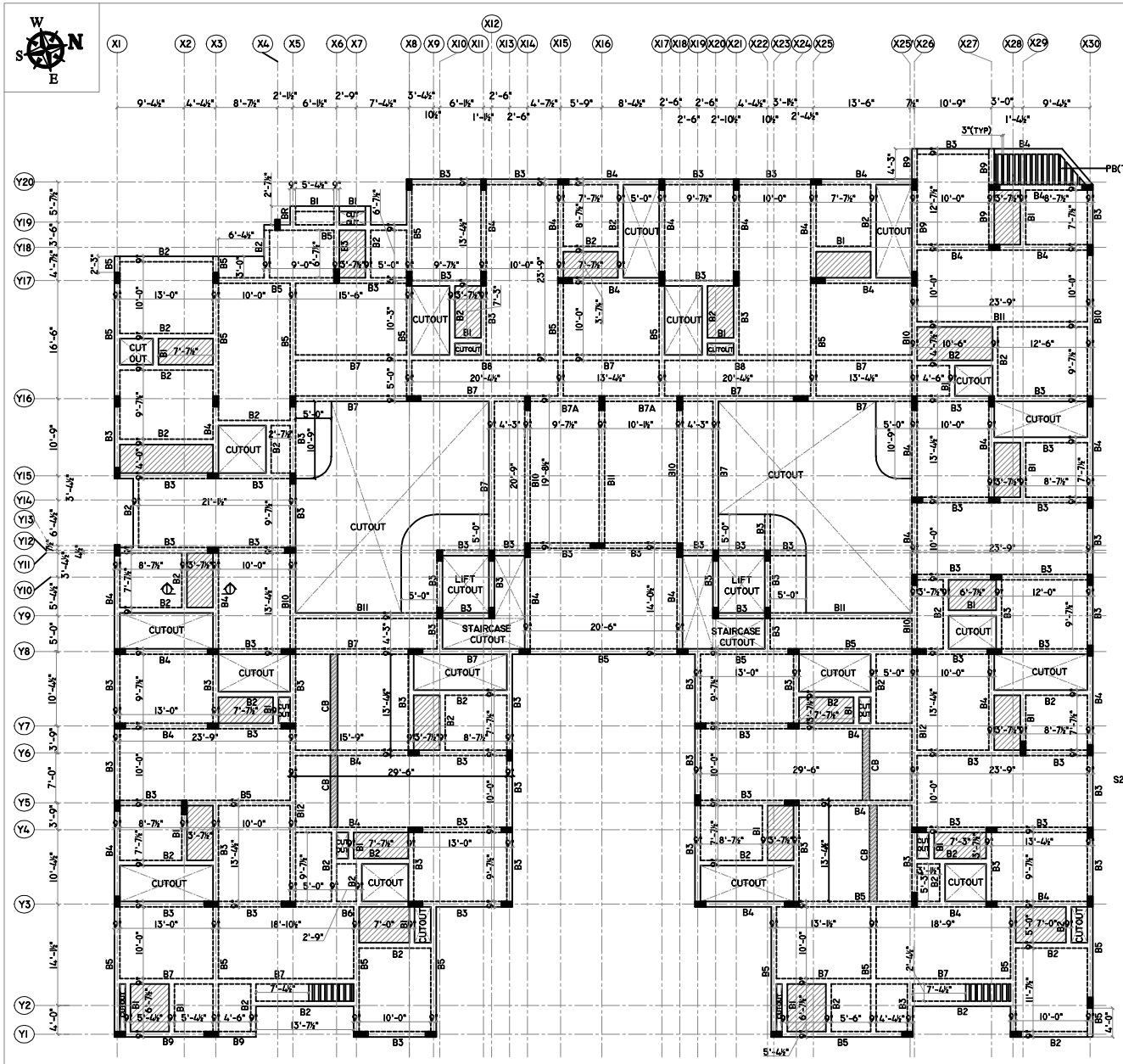
TYPICAL L.S OF ROOF BEAM



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION

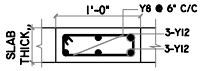


TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)

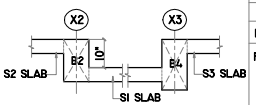


LAYOUT OF SECOND FLOOR ROOF BEAM & SLAB

BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	BI	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	BI0	0'-9" X 2'-0"
012	BII	0'-9" X 2'-0"
013	BI2	0'-9" X 2'-0"
014	BR	0'-9" X 1'-3"



C.S OF CONCEALED BEAM-"CB"
(1'-0" X "SLAB THICKNESS")



SECTION "I-I"

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

FOR SLAB REINFORCEMENT DETAILS REFER DWG.NO : 006A

FOR BEAM REINFORCEMENT DETAILS REFER DWG.NO : 006B

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

iv) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

11) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

LAYOUT OF SECOND FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 10'	--------	006

ARCHITECT / CONSULTANTS :-

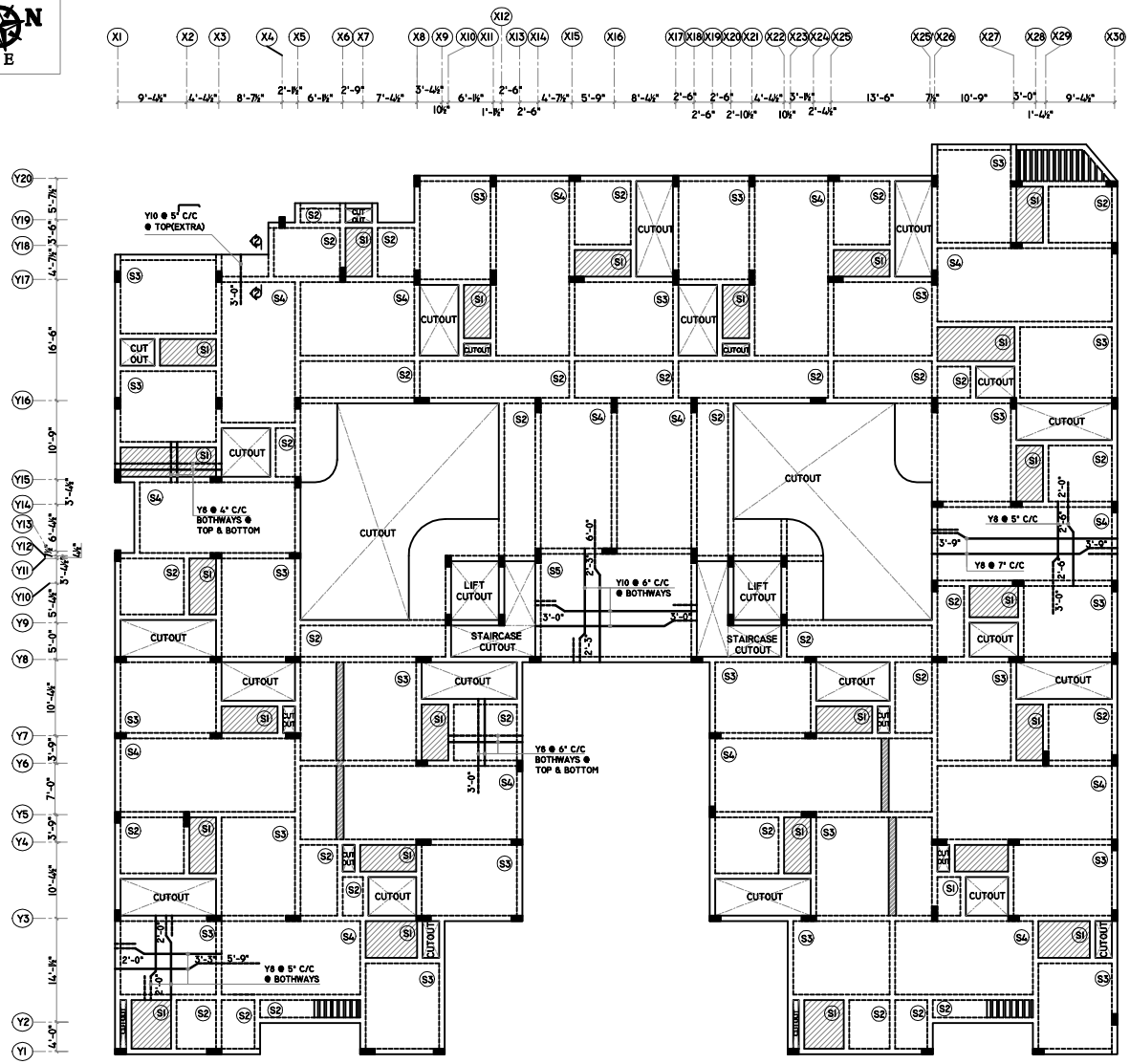
AKBAR HUSSAIN AKBARI
B.Arch., A.I.I.A.
No: 86, Moore Street, Chennai - 600 001.
Tel : 2522 23 594 Fax : 25209 218

STRUCTURAL CONSULTANTS :-

AURA ENGINEERING CONSULTANTS
#8, 50th St, Saravanagala Colony, 7th Avenue, ASHOK NAGAR, CHENNAI- 600 083.
Fixed Line - 044 4859 7100
projects.auraengg@gmail.com
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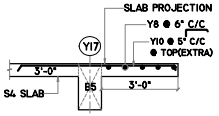
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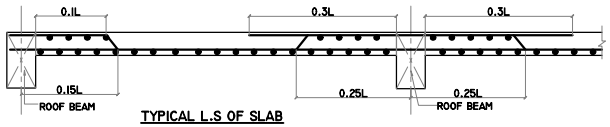


R.C LAYOUT OF SECOND FLOOR ROOF BEAM & SLAB

SLAB SCHEDULE		
SL.NO	NAME	THICK
01	S1	5" THK.
02	S2	5" THK.
03	S3	5" THK.
04	S4	5" THK.
05	S5	6" THK.



SECTION "2-2"



TYPICAL L.S OF SLAB

NOTE:
SLAB SUNK BY 0'-10"
PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

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LAP JOINTS FOR REINFORCEMENT BARS :

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II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

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GENERAL NOTES:

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4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
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REV.	DESCRIPTIONS	DRN	CHK	DATE
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DRAWING TITLE :-
R.C LAYOUT OF SECOND FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 11'	--------	006A

ARCHITECT / CONSULTANTS :-
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STRUCTURAL CONSULTANTS :-
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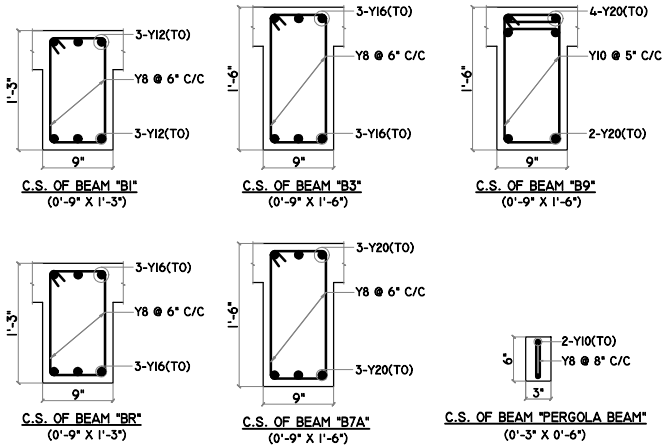
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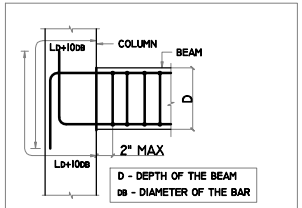
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NAME	MID SPAN	END SUPPORT
B2 (0'-9" X 1'-3")	3-Y16(TO); Y8 @ 7" C/C; 2-Y16(TO)+ 2-Y16(EXT)	3-Y16(TO); Y8 @ 4" C/C; 2-Y16(TO)
B4 (0'-9" X 1'-6")	2-Y16(TO); Y8 @ 7" C/C; 3-Y20(TO)	2-Y16(TO)+ 2-Y20(EXT); Y8 @ 4" C/C; 3-Y20(TO)
B5 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO)
B6 (0'-9" X 1'-6")	3-Y25(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO)
B7 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)+ 3-Y20(EXT)	3-Y20(TO)+ 3-Y20(EXT); Y10 @ 4" C/C; 3-Y20(TO)
B8 (0'-9" X 1'-6")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	2-Y20(TO)+ 2-Y25(EXT); Y10 @ 4" C/C; 2-Y20(TO)

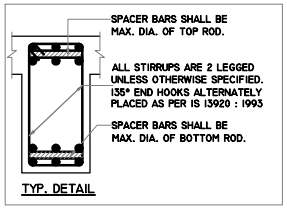
NAME	MID SPAN	END SUPPORT
B10 (0'-9" X 2'-0")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT)	2-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO)
B11 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 3-Y20(TO)+ 2-Y20(EXT)	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)
B12 (0'-9" X 2'-0")	3-Y25(TO); Y10 @ 4" C/C; 2-Y25(TO)+ 2-Y20(EXT)	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y25(TO)



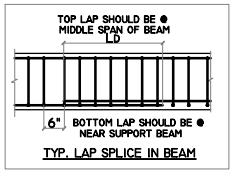
BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	B1	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	B10	0'-9" X 2'-0"
012	B11	0'-9" X 2'-0"
013	B12	0'-9" X 2'-0"
014	BR	0'-9" X 1'-3"



TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



TYP. DETAIL



TYP. LAP SPLICE IN BEAM

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

R.C DETAILS OF SECOND FLOOR ROOF BEAM

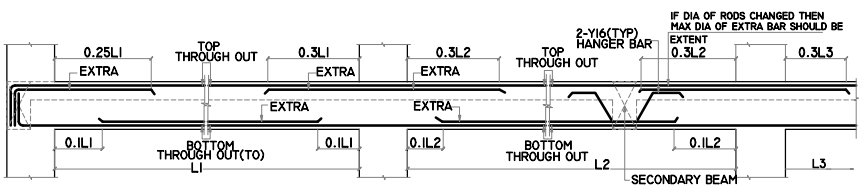
DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 9'	------	006B

ARCHITECT / CONSULTANTS :-

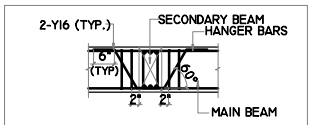
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No: 56, Moore Street., Chennai - 600 001.
Tel : 252 21 954 Fax : 2521 210

STRUCTURAL CONSULTANTS :-

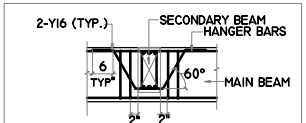
AURA ENGINEERING CONSULTANTS
#8, 80th St, Sarvamangala Colony, 7th Avenue, ASHOK NAGAR, CHENNAI- 600 083.
Land Line :- 044 4899 7100
projects.auraengg@gmail.com
projects@auraengineers.co.in
http://auraengineers.co.in/
aura Engineering Consultants



TYPICAL L.S OF ROOF BEAM

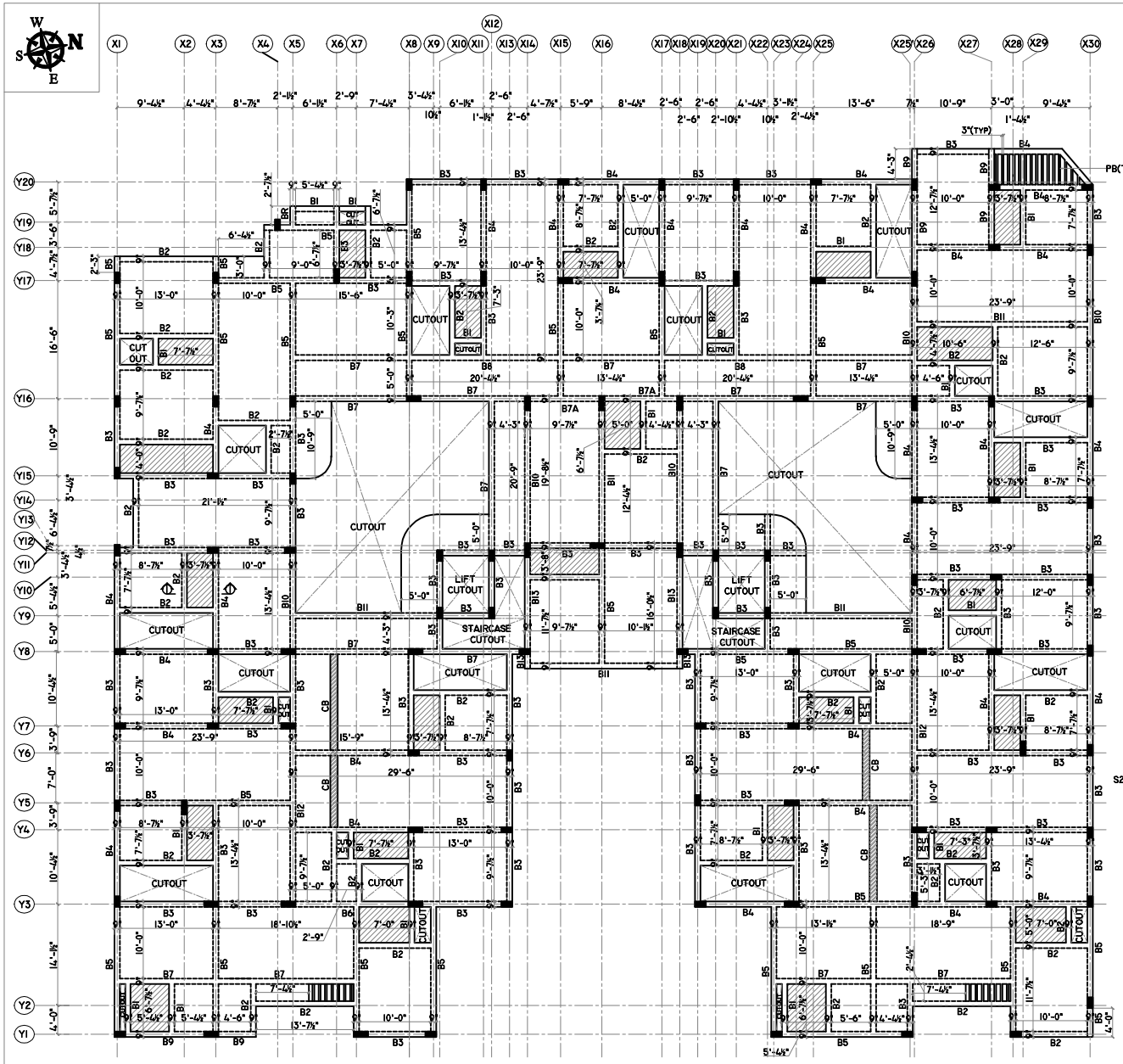


TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION



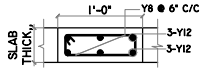
TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)

A2

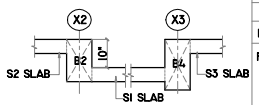


LAYOUT OF THIRD FLOOR ROOF BEAM & SLAB

BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	BI	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	BI0	0'-9" X 2'-0"
012	BII	0'-9" X 2'-0"
013	BI2	0'-9" X 2'-0"
014	BI3	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



C.S OF CONCEALED BEAM-"CB"
(1'-0" X "SLAB THICKNESS")



SECTION "I-I"

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

FOR SLAB REINFORCEMENT DETAILS REFER DWG.NO : 007A

FOR BEAM REINFORCEMENT DETAILS REFER DWG.NO : 007B

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

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DRAWING TITLE :-

LAYOUT OF THIRD FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 10'	--------	007

ARCHITECT / CONSULTANTS :-

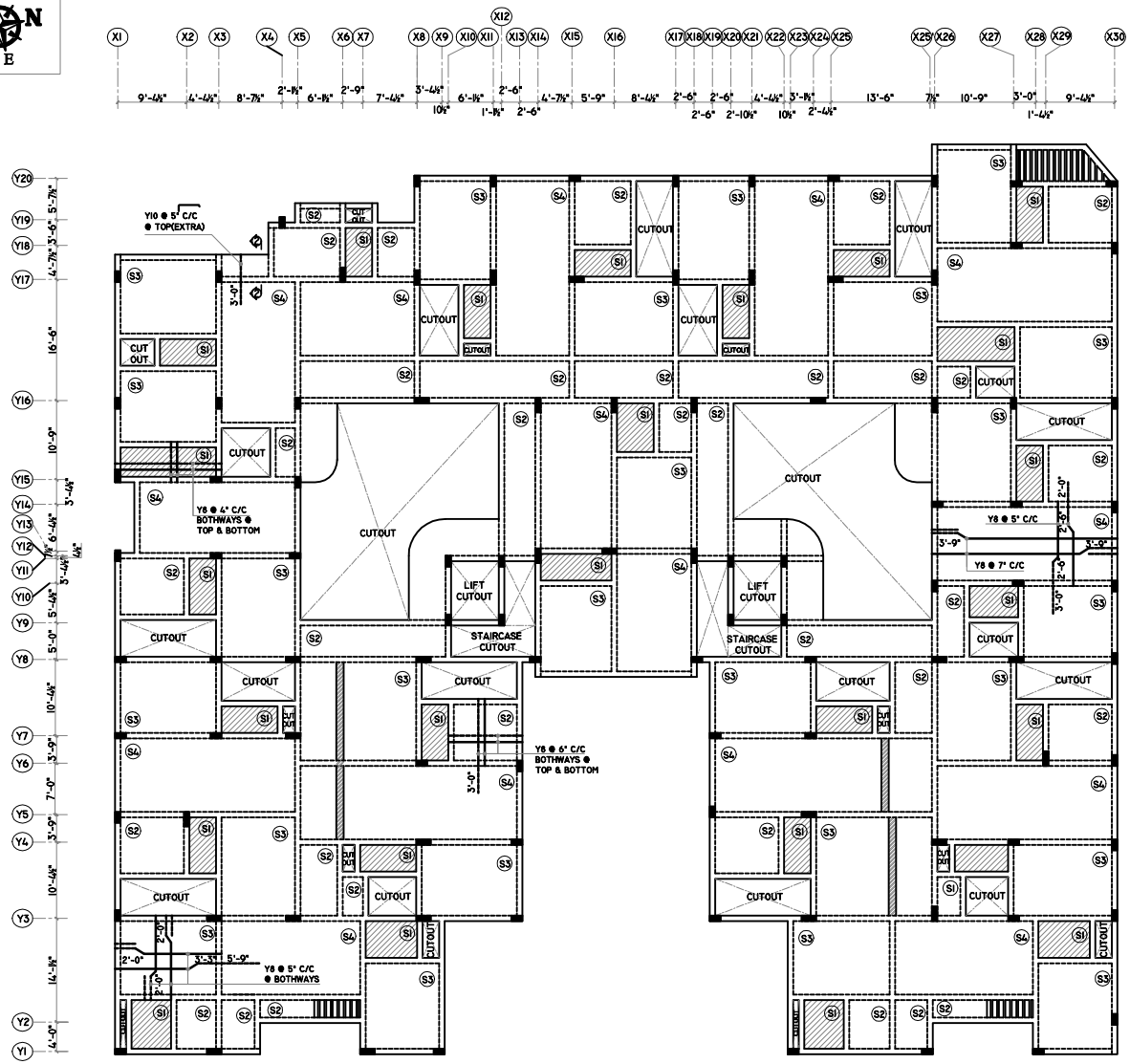
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STRUCTURAL CONSULTANTS :-

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Fixed Line - 044 4859 7100
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projects@auraengineers.co.in
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aura Engineering Consultants

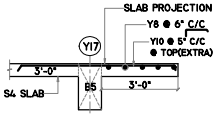
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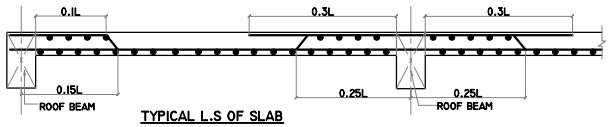


R.C LAYOUT OF THIRD FLOOR ROOF BEAM & SLAB

SLAB SCHEDULE		
SL.NO	NAME	THICK
01	S1	5" THK.
02	S2	5" THK.
03	S3	5" THK.
04	S4	5" THK.



SECTION "2-2"



TYPICAL L.S OF SLAB

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

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EXCAVATION AND BACKFILL

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II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

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   A) BEAM = 1" B) SLAB = 3/4"
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REV.	DESCRIPTIONS	DRN	CHK	DATE
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DRAWING TITLE :-

R.C LAYOUT OF THIRD FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 11'	--------	007A

ARCHITECT / CONSULTANTS :-

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STRUCTURAL CONSULTANTS :-

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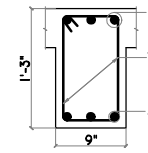
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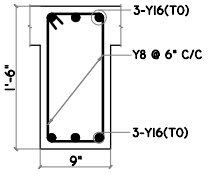
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NAME	MID SPAN	END SUPPORT
B2 (0'-9" X 1'-3")	3-Y16(TO); Y8 @ 7" C/C; 2-Y16(TO)+ 2-Y16(EXT); 1'-3"; 9"	3-Y16(TO); Y8 @ 4" C/C; 2-Y16(TO); 1'-3"; 9"
B4 (0'-9" X 1'-6")	2-Y16(TO); Y8 @ 7" C/C; 3-Y20(TO); 1'-6"; 9"	2-Y16(TO)+ 2-Y20(EXT); Y8 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B5 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B6 (0'-9" X 1'-6")	3-Y25(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B7 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)+ 3-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 3-Y20(EXT); Y10 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B8 (0'-9" X 1'-6")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	2-Y20(TO)+ 2-Y25(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"

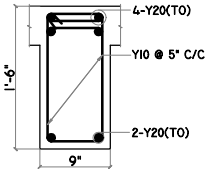
NAME	MID SPAN	END SUPPORT
B10 (0'-9" X 2'-0")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	2-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 2'-0"; 9"
B11 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 3-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO); 2'-0"; 9"
B12 (0'-9" X 2'-0")	3-Y25(TO); Y10 @ 4" C/C; 2-Y25(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y25(TO); 2'-0"; 9"



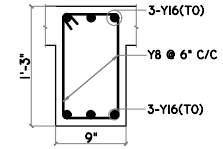
C.S. OF BEAM "B1"
(0'-9" X 1'-3")



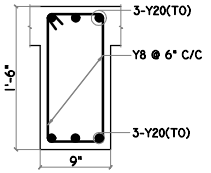
C.S. OF BEAM "B3"
(0'-9" X 1'-6")



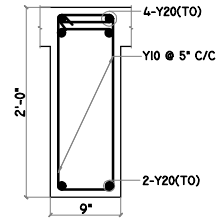
C.S. OF BEAM "B9"
(0'-9" X 1'-6")



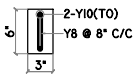
C.S. OF BEAM "BR"
(0'-9" X 1'-3")



C.S. OF BEAM "B7A"
(0'-9" X 1'-6")

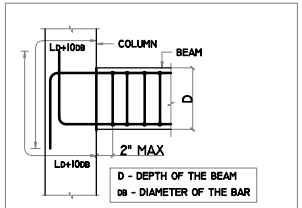


C.S. OF BEAM "B13"
(0'-9" X 2'-0")

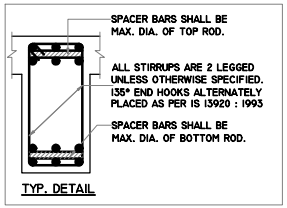


C.S. OF BEAM "PERGOLA BEAM"
(0'-3" X 0'-6")

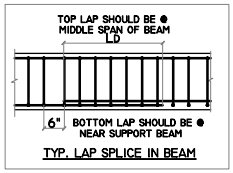
BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	B1	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	B10	0'-9" X 2'-0"
012	B11	0'-9" X 2'-0"
013	B12	0'-9" X 2'-0"
014	B13	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



TYP. DETAIL



TYP. LAP SPLICE IN BEAM

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

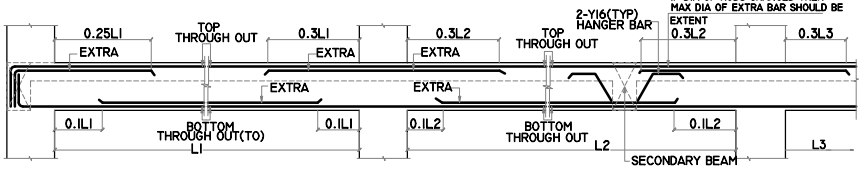
DRAWING TITLE :-

R.C DETAILS OF THIRD FLOOR ROOF BEAM

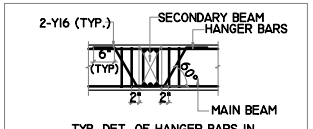
DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 9'	------	007B

ARCHITECT / CONSULTANTS :-

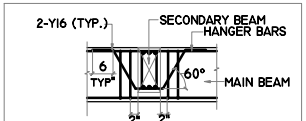
AKBAR HUSSAIN AKBARI
B.Arch., A.I.I.A.,
No: 56, Moore Street., Chennai - 600 001.
Tel : 252 21 954 Fax : 2521 219



TYPICAL L.S OF ROOF BEAM



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION

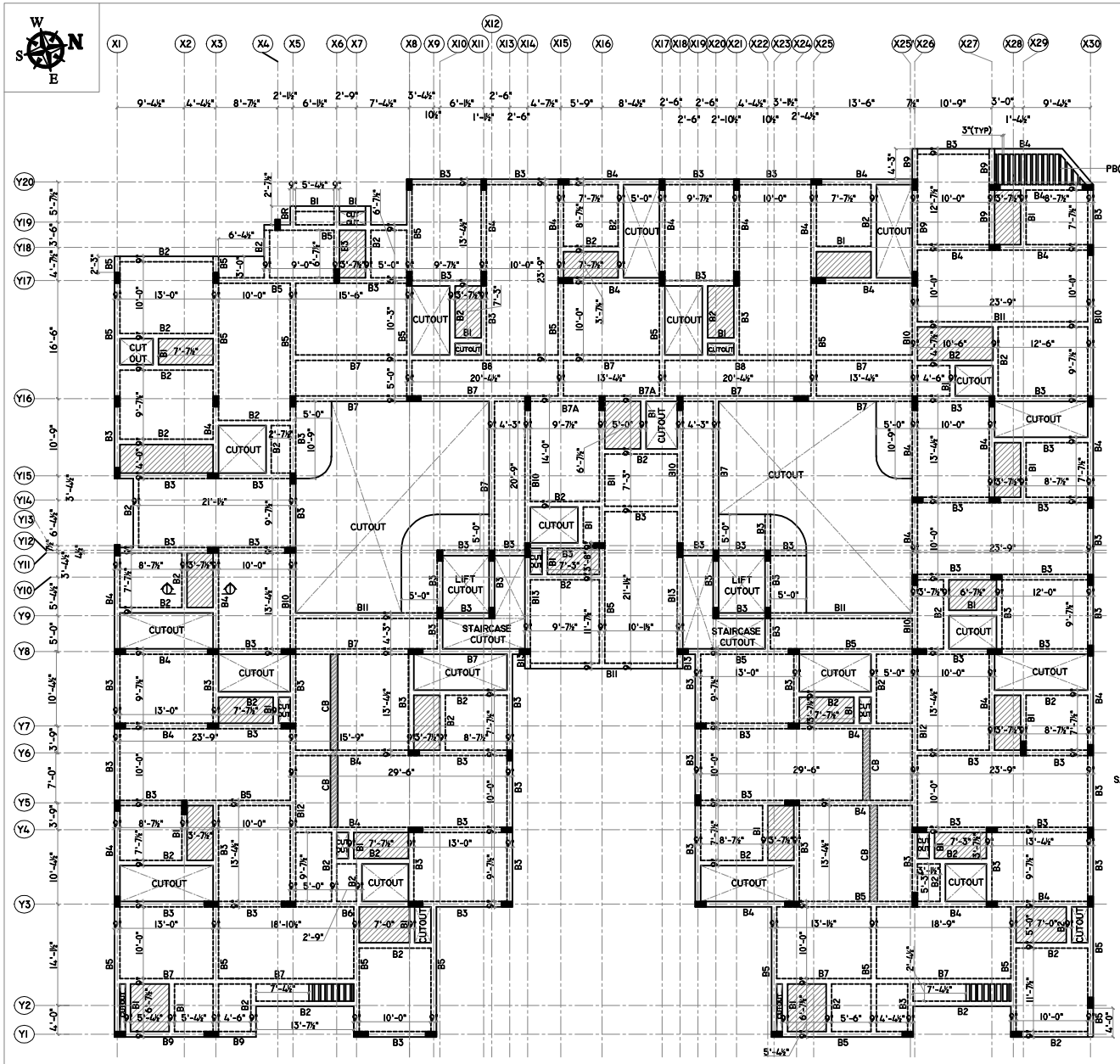


TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)

STRUCTURAL CONSULTANTS :-

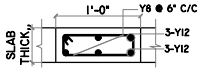
AURA ENGINEERING CONSULTANTS
#8, 80th St, Sarvamangala Colony, 7th Avenue, ASHOK NAGAR, CHENNAI- 600 083.
Fixed Line :- 044 4899 7100
projects.auraengg@gmail.com
projects@auraengineers.co.in
http://auraengineers.co.in/
aura Engineering Consultants

A2

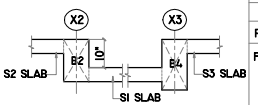


LAYOUT OF FOURTH FLOOR ROOF BEAM & SLAB

BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	BI	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	BI0	0'-9" X 2'-0"
012	BII	0'-9" X 2'-0"
013	BI2	0'-9" X 2'-0"
014	BI3	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



C.S OF CONCEALED BEAM-"CB"
(1'-0" X "SLAB THICKNESS")



SECTION "I-I"

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

FOR SLAB REINFORCEMENT DETAILS REFER DWG.NO : 008A

FOR BEAM REINFORCEMENT DETAILS REFER DWG.NO : 008B

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

iv) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

11) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

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DRAWING TITLE :-

LAYOUT OF FOURTH FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 10'	--------	008

ARCHITECT / CONSULTANTS :-

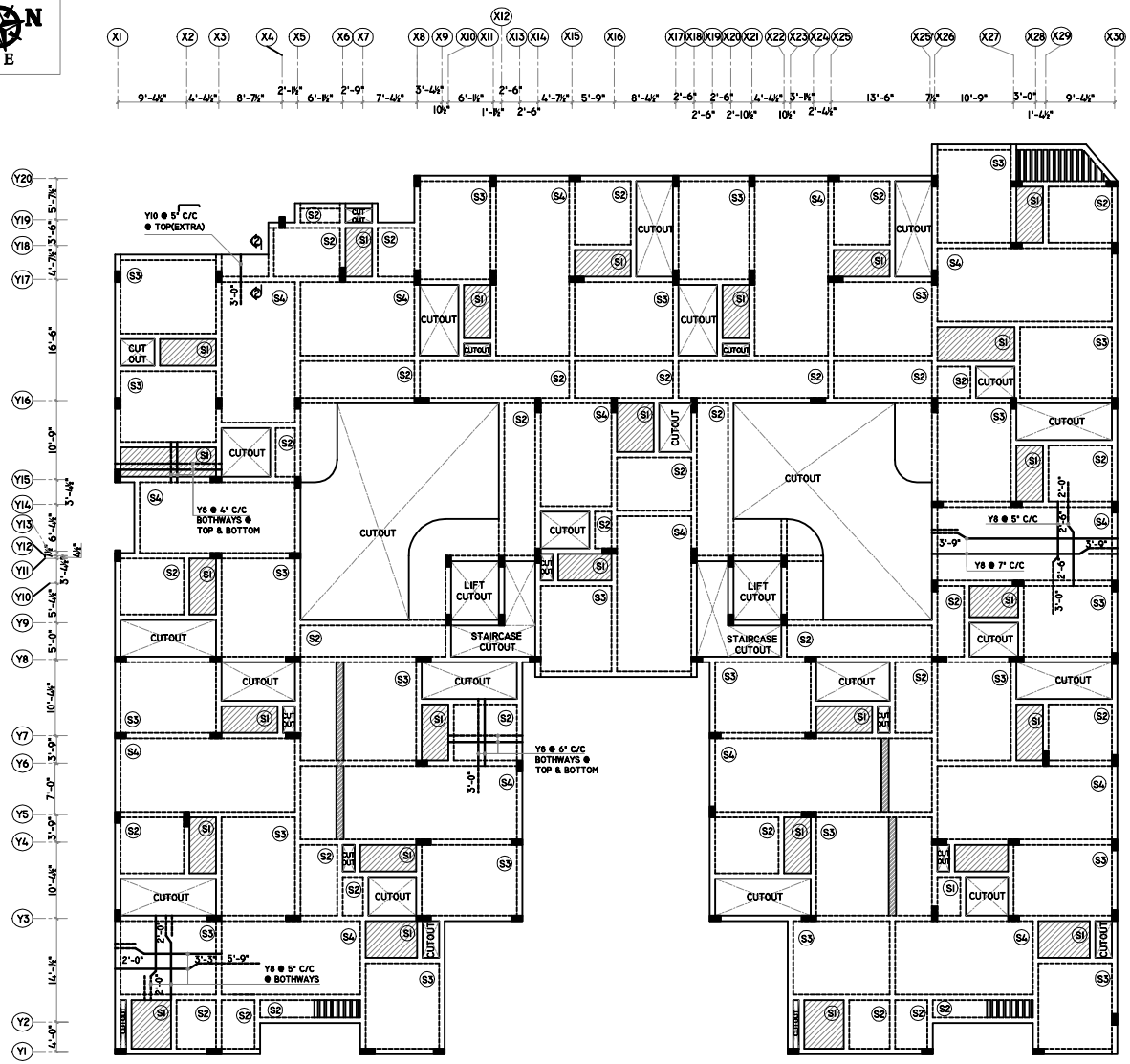
AKBAR HUSSAIN AKBARI
B.Arch., A.I.I.A.
No: 86, Moore Street, Chennai - 600 001.
Tel : 2522 23 594 Fax : 25209 218

STRUCTURAL CONSULTANTS :-

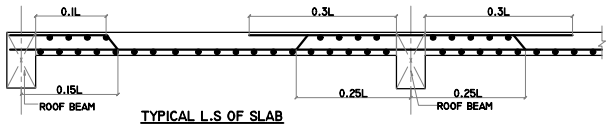
AURA ENGINEERING CONSULTANTS
#8, 50th St, Saravanagala Colony, 7th Avenue, ASHOK NAGAR, CHENNAI- 600 083.
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aura Engineering Consultants

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R.C LAYOUT OF FOURTH FLOOR ROOF BEAM & SLAB



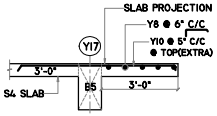
TYPICAL L.S OF SLAB

NOTE:

SLAB SUNK BY 0'-10"

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

SLAB SCHEDULE		
SL.NO	NAME	THICK
01	S1	5" THK.
02	S2	5" THK.
03	S3	5" THK.
04	S4	5" THK.



SECTION "2-2"

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

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b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

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VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

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II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

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GENERAL NOTES:

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4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-
R.C LAYOUT OF FOURTH FLOOR ROOF BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 11'	--------	008A

ARCHITECT / CONSULTANTS :-
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Tel : 2522 23 594 Fax : 25291218

STRUCTURAL CONSULTANTS :-
AURA ENGINEERING CONSULTANTS
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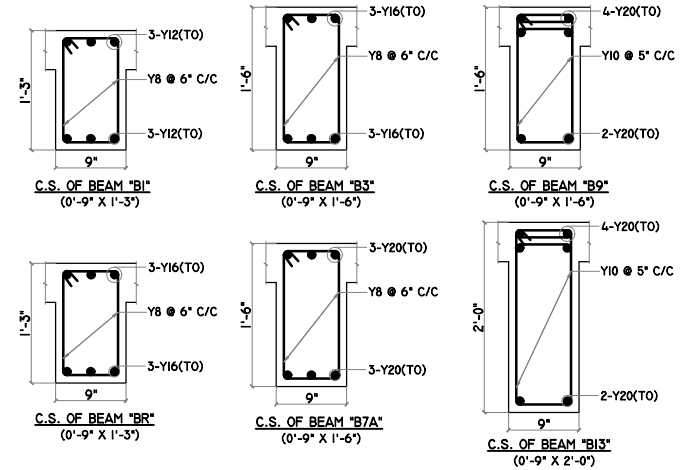
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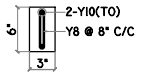
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NAME	MID SPAN	END SUPPORT
B2 (0'-9" X 1'-3")	3-Y16(TO); Y8 @ 7" C/C; 2-Y16(TO)+ 2-Y16(EXT); 1'-3"; 9"	3-Y16(TO); Y8 @ 4" C/C; 2-Y16(TO); 1'-3"; 9"
B4 (0'-9" X 1'-6")	2-Y16(TO); Y8 @ 7" C/C; 3-Y20(TO); 1'-6"; 9"	2-Y16(TO)+ 2-Y20(EXT); Y8 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B5 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B6 (0'-9" X 1'-6")	3-Y25(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B7 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)+ 3-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 3-Y20(EXT); Y10 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B8 (0'-9" X 1'-6")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	2-Y20(TO)+ 2-Y25(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"

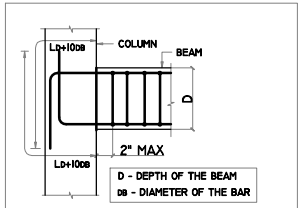
NAME	MID SPAN	END SUPPORT
B10 (0'-9" X 2'-0")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	2-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 2'-0"; 9"
B11 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 3-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO); 2'-0"; 9"
B12 (0'-9" X 2'-0")	3-Y25(TO); Y10 @ 4" C/C; 2-Y25(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y25(TO); 2'-0"; 9"



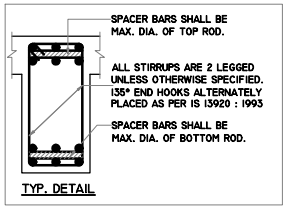


C.S. OF BEAM "PERGOLA BEAM" (0'-3" X 0'-6")

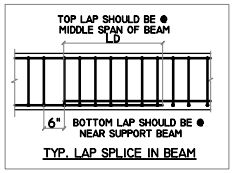
BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	B1	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	B10	0'-9" X 2'-0"
012	B11	0'-9" X 2'-0"
013	B12	0'-9" X 2'-0"
014	B13	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



TYP. DETAIL



TYP. LAP SPLICE IN BEAM

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
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7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

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DRAWING TITLE :-

R.C DETAILS OF FOURTH FLOOR ROOF BEAM

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 9'	------	008B

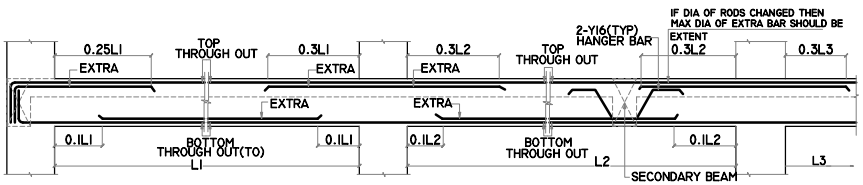
ARCHITECT / CONSULTANTS :-

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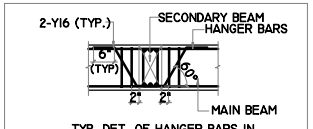
STRUCTURAL CONSULTANTS :-

AURA ENGINEERING CONSULTANTS
#8, 80th St, Sarvamangala Colony, 7th Avenue, ASHOK NAGAR, CHENNAI- 600 083.
Fixed Line :- 044 4899 7100
projects.auraengg@gmail.com
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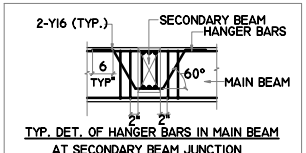
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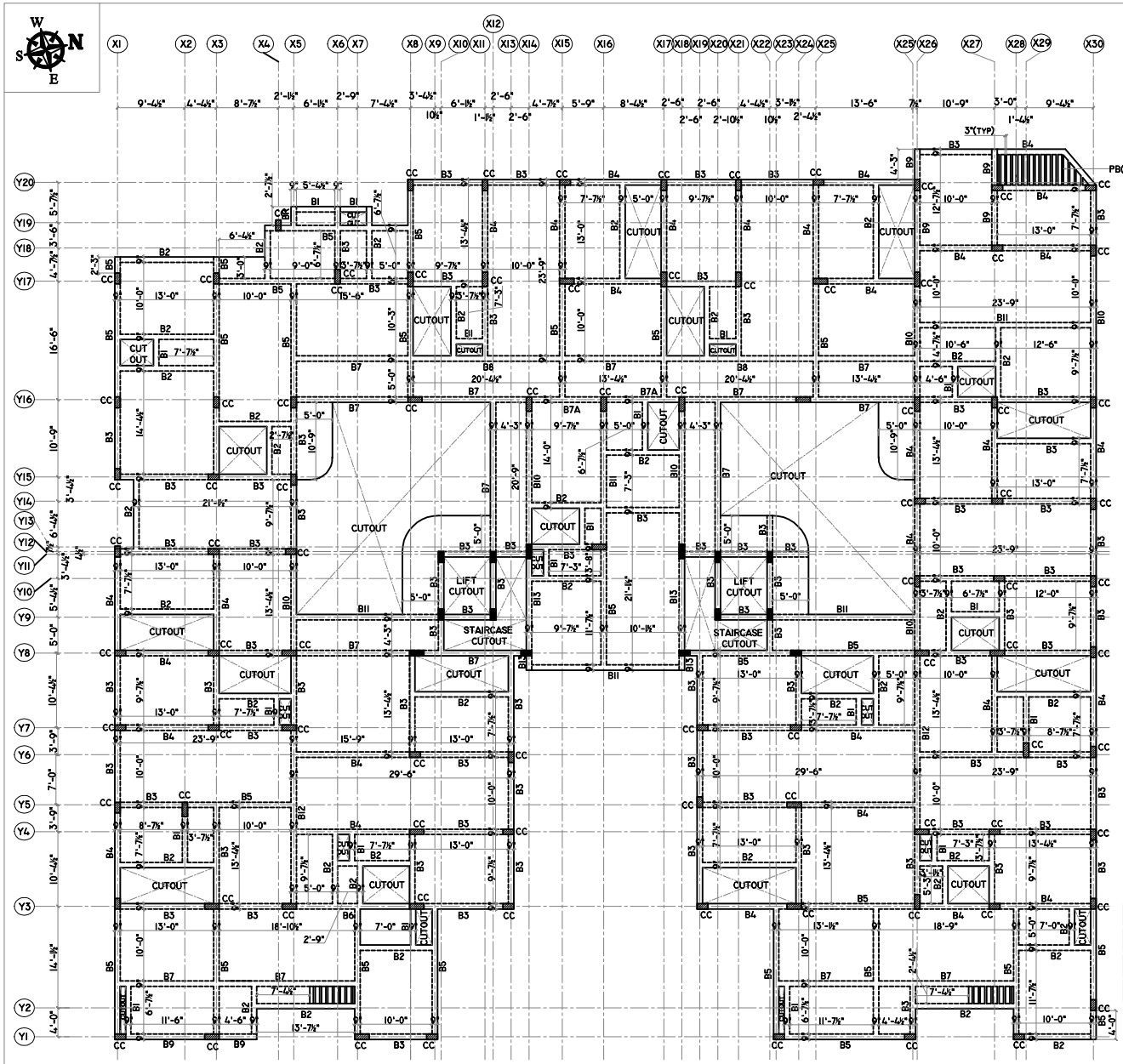
TYPICAL L.S OF ROOF BEAM



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)



LAYOUT OF TERRACE FLOOR BEAM & SLAB

BEAM SCHEDULE		
SL.NO	NAME	SIZE
01	BI	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
05	B5	0'-9" X 1'-6"
06	B6	0'-9" X 1'-6"
07	B7	0'-9" X 1'-6"
08	B7A	0'-9" X 1'-6"
09	B8	0'-9" X 1'-6"
010	B9	0'-9" X 1'-6"
011	BI0	0'-9" X 2'-0"
012	BII	0'-9" X 2'-0"
013	BI2	0'-9" X 2'-0"
014	BI3	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"

NOTE:

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

FOR SLAB REINFORCEMENT DETAILS REFER DWG.NO : 009A

FOR BEAM REINFORCEMENT DETAILS REFER DWG.NO : 009B

CC - COLUMN CURTAILED & RODS TO BE BEND IN TO TOP OF THE SLAB

GENERAL NOTES:

REMOVAL OF FORMWORK(SHUTTERING) :

SHUTTERING OF ANY PART OF THE STRUCTURE SHALL NOT BE REMOVED UNTIL THE CONCRETE ATTAINS 70 % THE SPECIFIED STRENGTH OF CONCRETE. HOWEVER THE FOLLOWING MINIMUM PERIOD (AFTER FINAL POUR) SHALL BE ALLOWED BEFORE REMOVAL OF SHUTTERING AS PER CLAUSE 11.3.1, IS 456:2000

A) VERTICAL SIDE OF SHUTTERING OF COLUMNS,WALLS

LAP JOINTS FOR REINFORCEMENT BARS :

I) AT ANY CROSS SECTION OF THE MEMBER,NOT MORE THAN 50 % THE BARS SHALL BE LAPPED.

II) LAPS SHALL BE STAGGERED WITH A MINIMUM CENTRE TO CENTRE DISTANCE OF 1.3 TIMES LAP LENGTH OF THE BAR FOR TENSION & COMPRESSION MEMBERS.

III) DEVELOPMENT LENGTH (Ld) SHALL BE AS PER (SP:34-1999) TABLE BELOW:

a) DEVELOPMENT LENGTH FOR COLUMN BARS -40D
b) DEVELOPMENT LENGTH FOR BEAM BARS -50D

IV) LAPS IN COLUMNS SHALL BE PROVIDED AT MID HEIGHT OF FLOOR AND NOT AT SLAB LEVEL .

VII) DETAILING OF REBARS SHALL CONFIRM TO SP-34 & IS 13920

EXCAVATION AND BACKFILL

I) BACKFILL FOR FOUNDATIONS AND PITS SHALL BE PLACED EVENLY LAYERS OF 300 mm THICKNESS AND SHALL BE WELL COMPACTED. THE FILL SHALL CONTAIN NO STONES WITH A DIAMETER GREATER THAN 100 mm. THE DEGREE OF COMPACTION OF BACKFILL SHALL BE 95% OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT OBTAINED BY THE MODIFIED PROCTOR COMPACTION TEST.

II) UNSUITABLE MATERIALS LIKE ROCKS/ EXISTING FOOTINGS ARE DETECTED BELOW FOUNDATION LEVEL IN AREAS OF CUT SHALL BE EXCAVATED TO FIRM GROUND. THE RESULTANT EXCAVATION SHALL BE FILLED TO THE REQUIRED LEVELS WITH MASS CONCRETE GRADE M10. ALSO WHEREVER EXCAVATION OCCURS BELOW THE FOUNDATION LEVEL STATED ON THE DESIGN DRAWING THE RESULTING VOID SHALL BE BACK FILLED WITH MASS CONCRETE GRADE-10.

III) BEFORE CASTING FOUNDATIONS, ANY IMMEDIATE OR ADJACENT AREAS OF DISTURBED OR SOFT SOIL MUST BE REMOVED AND REPLACED WITH MASS CONCRETE OF GRADE 10

IV) A LAYER OF BLINDING CONCRETE 100 mm THICK SHALL BE PLACED UNDER ALL FOUNDATIONS. BLINDING CONCRETE SHALL HAVE A CHARACTERISTIC STRENGTH OF 10 N/mm AT 28 DAYS.

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN FOOT UNITS.
2. CONCRETE GRADE SHALL BE M25 CONFIRMING TO IS 456:2000
3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
5. THIS DRG. READ IN CONJECTION WITH ARCH.DRGS.
6. STRUCTURAL ENGINEER RESPONSIBILITY IS LIMITED TO DESIGN & ISSUAL OF STRUCTURAL DRAWING ONLY
7. ONUS OF CONSTRUCTION LIES WITH CONTRACTOR/OWNER

REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-

LAYOUT OF TERRACE FLOOR
BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 10'	--------	009

ARCHITECT / CONSULTANTS :-

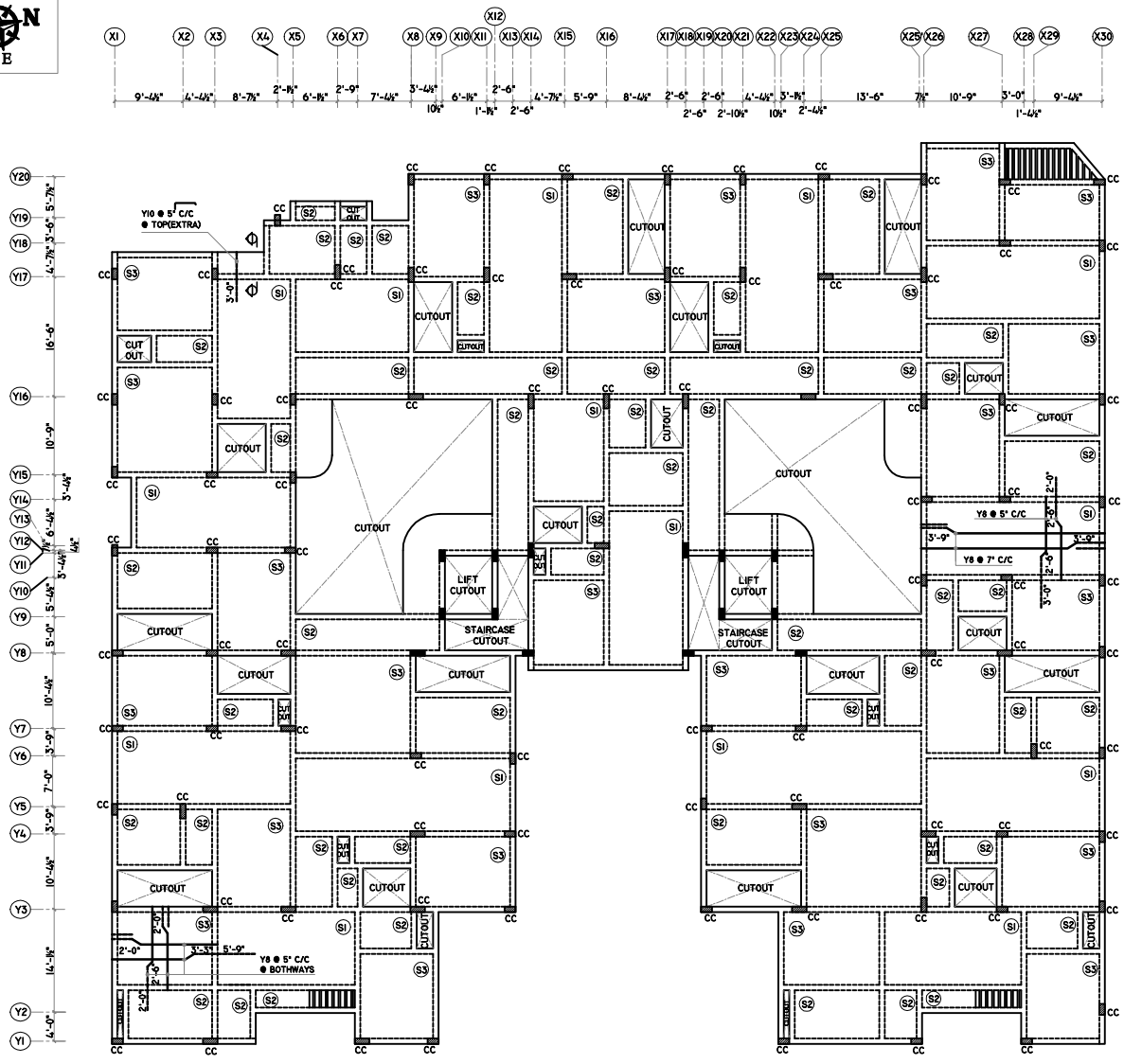
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B.Arch., A.I.I.A.
No: 86, Moore Street, Chennai - 600 001.
Tel : 2522 23 594 Fax : 25209 218

STRUCTURAL CONSULTANTS :-

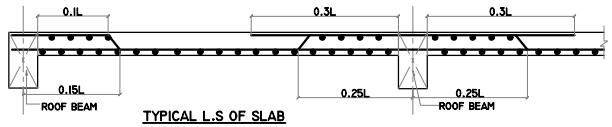
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aura Engineering Consultants

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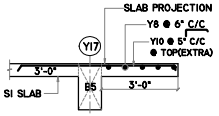


R.C LAYOUT OF TERRACE FLOOR BEAM & SLAB



TYPICAL L.S OF SLAB

SLAB SCHEDULE		
SL.NO	NAME	THICK
01	S1	5" THK.
02	S2	5" THK.
03	S3	5" THK.



SECTION "I-I"

NOTE:

CC - COLUMN CURTAILED & RODS TO BE BEND IN TO TOP OF THE SLAB

PROVIDE Y8 @ 8" C/C AS DISTRIBUTORS WHERE EVER REQUIRED

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GENERAL NOTES:

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3. GRADE OF REINFORCEMENT MARKED THUS (Y) SHALL BE Fe 500 CONFIRMING TO IS 1786-2008
4. CLEAR COVER FOR REINFORCEMENT
   A) BEAM = 1" B) SLAB = 3/4"
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REV.	DESCRIPTIONS	DRN	CHK	DATE
00	ISSUE FOR REVIEW	M.R	R.M	21.02.24

PROJECT :-

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 5 FLOORS (18.30M HEIGHT) RESIDENTIAL BUILDING WITH 60 DWELLING UNITS (AFFORDABLE HOUSING) AVAILING PREMIUM FSI AT PLOT Nos.10,11, 12, 13, 13A, 23, 24, 24A1, 24A & 24B, DOOR No. 62/63, KOTHAVALCHAVADI STREET, SAIDAPET, CHENNAI-600015, COMPRISED IN OLD SURVEY Nos.80(PART), T.S.No.13, 14, 15, 16, & 17 BLOCK No.15 OF MAMBALAM TALUK, CHENNAI DISTRICT, GREATER CHENNAI CORPORATION.

DRAWING TITLE :-
R.C LAYOUT OF TERRACE FLOOR
BEAM & SLAB

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 11'	--------	009A

ARCHITECT / CONSULTANTS :-
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Tel : 2522 23 594 Fax : 25291218

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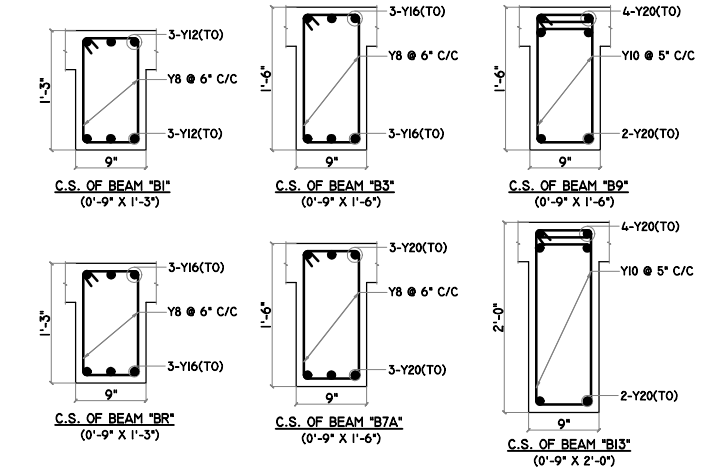
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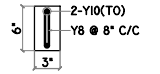
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NAME	MID SPAN	END SUPPORT
B2 (0'-9" X 1'-3")	3-Y16(TO); Y8 @ 7" C/C; 2-Y16(TO)+ 2-Y16(EXT); 1'-3"; 9"	3-Y16(TO); Y8 @ 4" C/C; 2-Y16(TO); 1'-3"; 9"
B4 (0'-9" X 1'-6")	2-Y16(TO); Y8 @ 7" C/C; 3-Y20(TO); 1'-6"; 9"	2-Y16(TO)+ 2-Y20(EXT); Y8 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B5 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B6 (0'-9" X 1'-6")	3-Y25(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"
B7 (0'-9" X 1'-6")	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO)+ 3-Y20(EXT); 1'-6"; 9"	3-Y20(TO)+ 3-Y20(EXT); Y10 @ 4" C/C; 3-Y20(TO); 1'-6"; 9"
B8 (0'-9" X 1'-6")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 1'-6"; 9"	2-Y20(TO)+ 2-Y25(EXT); Y10 @ 4" C/C; 2-Y20(TO); 1'-6"; 9"

NAME	MID SPAN	END SUPPORT
B10 (0'-9" X 2'-0")	2-Y20(TO); Y10 @ 7" C/C; 2-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	2-Y20(TO)+ 2-Y20(EXT); Y10 @ 4" C/C; 2-Y20(TO); 2'-0"; 9"
B11 (0'-9" X 2'-0")	3-Y20(TO); Y10 @ 4" C/C; 3-Y20(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y20(TO); Y10 @ 7" C/C; 3-Y20(TO); 2'-0"; 9"
B12 (0'-9" X 2'-0")	3-Y25(TO); Y10 @ 4" C/C; 2-Y25(TO)+ 2-Y20(EXT); 2'-0"; 9"	3-Y25(TO)+ 2-Y20(EXT); Y10 @ 7" C/C; 2-Y25(TO); 2'-0"; 9"

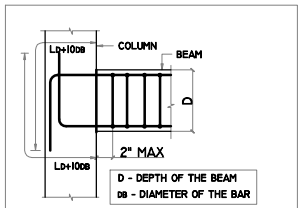




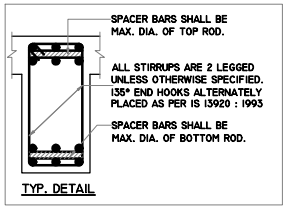
C.S. OF BEAM "PERGOLA BEAM" (0'-3" X 0'-6")

BEAM SCHEDULE

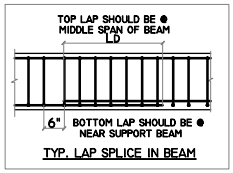
SL.NO	NAME	SIZE
01	B1	0'-9" X 1'-3"
02	B2	0'-9" X 1'-3"
03	B3	0'-9" X 1'-6"
04	B4	0'-9" X 1'-6"
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010	B9	0'-9" X 1'-6"
011	B10	0'-9" X 2'-0"
012	B11	0'-9" X 2'-0"
013	B12	0'-9" X 2'-0"
014	B13	0'-9" X 2'-0"
015	BR	0'-9" X 1'-3"



TYP. EXTERNAL JOINT DETAIL AT BEAM-COLUMN JUNCTION



TYP. DETAIL



TYP. LAP SPLICE IN BEAM

GENERAL NOTES:

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DRAWING TITLE :-

R.C DETAILS OF TERRACE FLOOR BEAM

DATE	SCALE	JOB.NO	DRG.NO
21.02.24	1" : 9'	------	009B

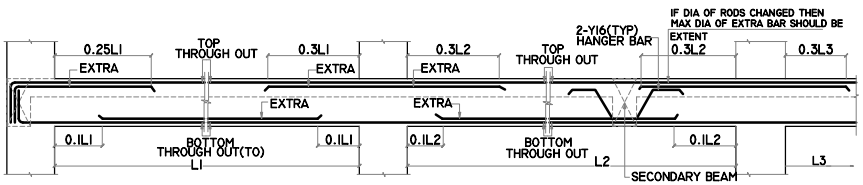
ARCHITECT / CONSULTANTS :-

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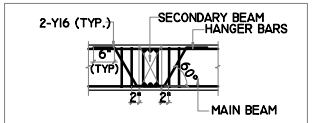
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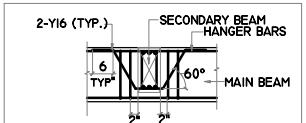
A2



TYPICAL L.S OF ROOF BEAM



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION



TYP. DET. OF HANGER BARS IN MAIN BEAM AT SECONDARY BEAM JUNCTION (VARY DEPTH)



our services doesn't just end there

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