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DIGITALLY VERIFIED RECORD

Proposed Construction Of Stilt Floor + 5 Floors (Height – 18.30m) Residential Building With 20 Dwelling Units For Affordable Housing At Plot Nos.29, 30, 35 & 36, (Cmda Approved Layout – 132/1990) Indira Priyadarshini Nagar Annexe, Perumbakkam, Chennai 600100 Comprised In Old S.No.455/1a1a2 (Document), New S.No.455/1A1A2A, 455/27 & 455/26 (Patta) Of Perumbakkam Village, Within The Limit Of St.Thomas Mount Panchayat Union.

DESIGN BASIS REPORT – STRUCTURAL

REV	DATE	DESCRIPTION	PREPARED BY
R0	15.04.26	ISSUED FOR APPROVAL	C.ARUL

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1. PROJECT BRIEF:

Proposed construction of Stilt floor + 5 floors (Height – 18.30m) Residential Building with 20 dwelling units for Affordable Housing at Plot Nos.29, 30, 35 & 36, (CMDA Approved Layout – 132/1990) Indira Priyadarshini Nagar Annexe, Perumbakkam, Chennai 600100 comprised in Old S.No.455/1A1A2 (Document), New S.No.455/1A1A2A, 455/27 & 455/26 (Patta) of Perumbakkam Village, within the limit of St.Thomas Mount Panchayat Union with Two Wheelers parking & Car Parking. This specification covers the general requirements for structural design and analysis of proposed residential development project.

2. STRUCTURAL SYSTEM

The structural system adopted is as below, based on preliminary analysis and design, which have been elaborated later in this report:

- The building is basically a RC framed structure. The analysis and design are done using STAAD/SAFE/RCDC software.
- Conventional RC beam-slab system is adopted for substation areas respectively.
- For obtained bearing capacity of soil, isolated foundation system is recommended by the soil consultant.

3. DESIGN STANDARDS:

Sl.No.	Code	Title
1	IS-875(Part 1)-1987 (Reaffirm 2013)	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures - Unit Weights of Buildings Materials and Stored Material
2	IS-875(Part 2)-1987 (Reaffirm 2013)	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures - Imposed Loads
3	IS-875(Part 3)-1987(Reaffirm 2013)	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures - Wind Loads
4	IS-875(Part 5)-1987(Reaffirm 2013)	Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures - Special Loads and Load Combinations
5	IS:456-2000	Code of Practice for Plain and Reinforced Concrete
6	IS:432(Part 2)-1982	Specification for Mild Steel and Medium Tensile Steel Bars and Hard Drawn Steel Wire for Concrete Reinforcement – Hard Drawn Steel Wire

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7	IS: 1893:2002	Criteria for Earthquake Resistant Design of Structures Part - 1 General Provisions and Buildings
8	IS: 800-2007	General construction of steel- code of practice.
9	IS 1080 :1985	Code of practice for design & construction of shallow foundations in soil
10	IS 1904 :1986	Code of practice for design & construction of foundations in soil general requirements
11	IS 2950, Part 1:1981	Code of practice for design & construction of raft Foundations, Part I - Design
12	IS 2911 Pt. 1 Section- I 1979	Code of Practice for Design and Construction of Pile Foundation.- Driven Cast in situ concrete pile
13	IS 2911 Pt. 1 Section- II -1979	Code of Practice for Design and Construction of Pile Foundation. – Bored cast in situ piles
14	IS 2911 Pt. IV 1985	Code of Practice for Design and Construction of Pile Foundation – Load test on piles
15	IS 6403:1981	Code of Practice for determination of bearing capacity of shallow foundations
16	IS 13920 : 1993 (Reaffirmed 1998) Edition 1.2 (2002-03)	Ductile Detailing Of Reinforced Concrete Structures Subjected to Seismic Forces – Code of Practice

4. SOIL DATA:

With reference to "Geotechnical Report" submitted by GEO ENGINEERING CONSULTANT, 12B, Second Floor, Anbu Nagar, 3rd Street, Alwarthirunagar, Chennai - 600087 have recommended foundation system shall be Pile foundation.

As per the soil test report the Pile foundation of 23ft deep from existing ground level, Where the Highly weathered rock has been met and 550MM dia pile and Pile vertical load carrying capacity shall be 80 t.

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5. LOADING DATA

a. Dead load

Self-weight of the materials shall be calculated on the basis of unit weights given in (IS: 875 -1987(PART- I).

- ✓ Unit weight of concrete - 25.0 kN /m^3
- ✓ Unit weight of AAC block - 6.0 kN /m^3
- ✓ Unit weight of solid block - 20.0 kN /m^3
- ✓ Unit weight of steel - 78.5 kN /m^3
- ✓ Unit weight of floor finishes - 20.0 kN /m^3
- ✓ Unit weight of water - 9.807 kN /m^3
- ✓ Partitions, ducts, False ceiling - 1.50 kN /m^2

b. Wall load

The load from wall shall be calculated separately and assigned in the analysis.

c. Floor load

TERRACE FLOOR SLAB:

Weathering Coarse - 4.00 kN/m^2 (screed is 200mm)

FIRST – SECOND FLOOR SLAB:

Toilet - 7.00 kN/m^2 (Sunken is 350mm)

Floor finishes - 2.00 kN/m^2 (Finishes of 100mm)

d. Live load:

On the basis of intended occupancy and use, the loading shall be based on IS: 875 -1987(PART-II).

All Room & Kitchen	- 2.00 kN/m^2
Toilet & bath room	- 2.00 kN/m^2
Corridors, passages, staircases including tire escapes and store	- 3.00 kN/m^2
Balconies	- 3.00 kN/m^2
Terrace floor with access	- 1.50 kN/m^2

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Live load reduction:

Live load reduction is considered for foundation and column design as per IS 875 – 1987 (Part-2).

e. Wind load:

Wind loads design of structures shall be based on the following parameters to arrive design wind speeds. (IS: 875 -1987(PART- III).

Basic wind speed (Vb)	- 33 m/sec
Risk Coefficient, K1	- 1.0
Terrain, Height, structure size factor, K2	- Ter.category-3& class B
Topography factor, K3	- 1.0
Design wind speed (Vz)	- Vb x K1 x K2 x K3
Design wind pressure (Pz)	- 0.6 Vz^2

f. Seismic load:

Seismic loads design of structures shall be considered as per IS 1893-2002.

Zone	- III
Zone factor (Z)	- 0.16
Importance factor (I)	- 1.0 - Table 6of IS 1893-2002
Response reduction factor (R)	- 3.0 (OMRF) Table 7of IS 1893-2002

Avg. response acceleration coefficients (Sa/g) for soil conditions as per Fig 2 of IS 1893-2002

Design Horizontal seismic coefficient (A_h) = 0.01667 x (Sa/g)

Time period - moment-resisting frame building without brick infill panels ($0.075\ h^{0.75}$)

The building is designed for static analysis.

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6. DESIGN LOAD COMBINATIONS:

The building is designed using the limit state method with appropriate load factors as per IS: 456-2000.

TABLE: PARTIAL SAFETY FACTORS FOR LOADS, γf, FOR LIMIT STATES

LoadCombination	Limit State of Collapse			Limit State of Serviceability		
	DL	LL	WL/EL	DL	LL	WL/EL
DL + LL	1.5	1.5	--	1	1	--
DL + LL ±WL	1.2	1.2	1.2	1	0.8	0.8
DL + LL ±EL	1.2	1.2	1.2	1	0.8	0.8
DL ± WL	1.5 or 0.9[$]	--	1.5	1	--	1
DL ± EL	1.5 or 0.9[$]	--	1.5	1	--	1

Where,DL - Dead Load, LL - Live Load, WLX, WLZ - Wind load in X and Z direction,

ELX, ELZ - Seismic load in X and Z direction

7. DESIGN PARAMETERS

Material specifications

Concrete and reinforcement strengths:

a) Grade of concrete - M20
b) Grade of reinforcement - Fe 500

Exposure conditions and cover for RCC members

Nominal cover for all structural members shall be based on "MILD" exposure condition and 2 hours Fire rating whichever is governing.

Structural element Cover to reinforcement

Floor slab - 25 mm
Beam/walls - 30 mm
Column - 40 mm
Foundations - 50 mm

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8. ANALYSIS

1. The structure is idealized as 3D frame and analyzed using software package both vertical and lateral loads.
2. The lateral loads include wind loads and earthquake loads.
3. Seismic load intensity of Zone - III is considered Seismic analysis and design purpose.
4. Forces and moments from the three-dimensional analysis output the worst combination are used the design of the structure. The foundation is designed critical un-factored load combinations.
5. The support conditions of all the columns are assumed to be fixed.

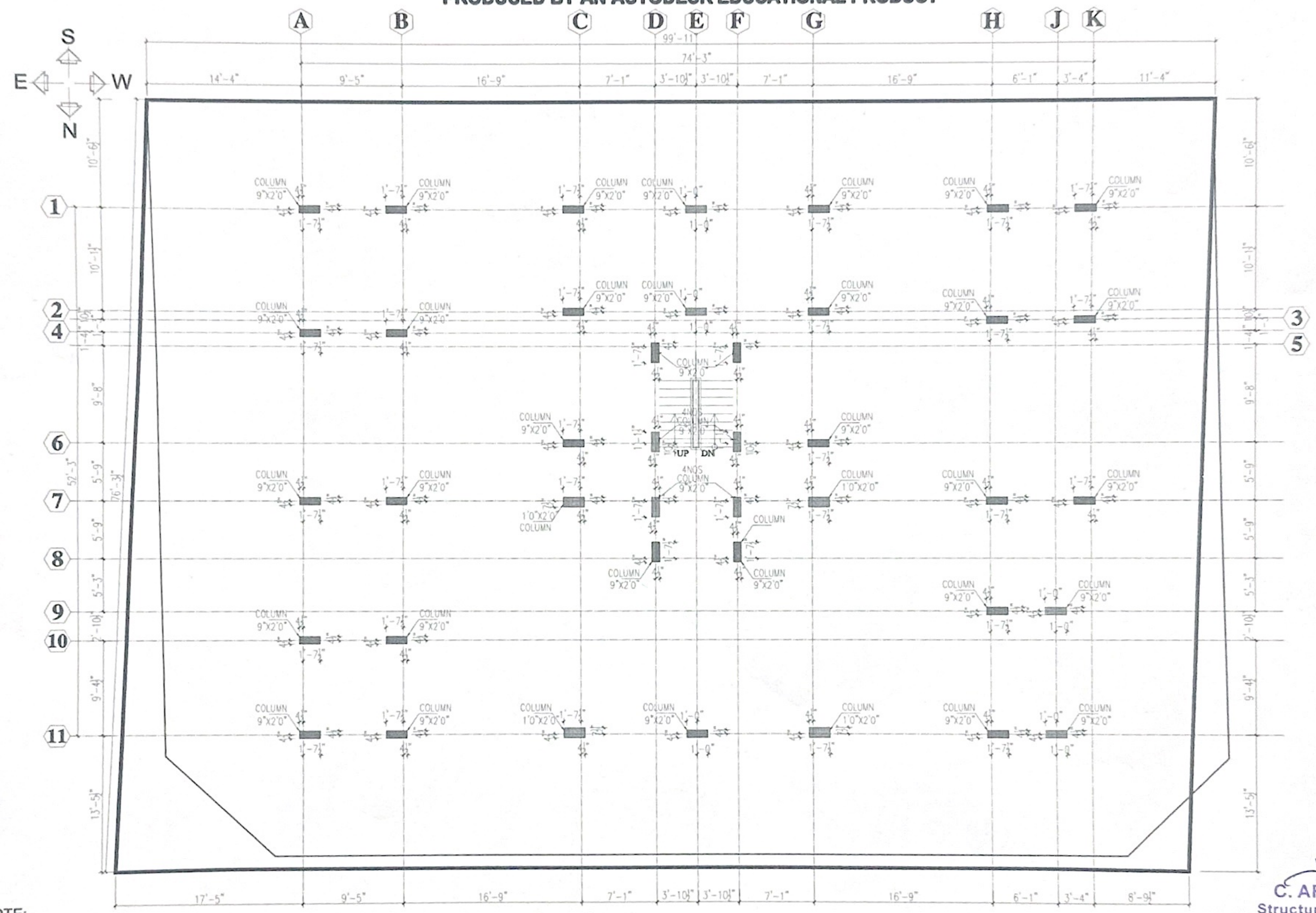
9. DESIGN AND DETAILING:

The designs of the RCC elements are made using the limit state method with appropriate load factors as per IS: 456 – 2000 in consonance with SP 34-1987 for detailing.

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COLUMN CENTER LINE

NOTE:-
PILE CAPACITY 1'9" DIA - 80T AT 23 FT DEPTH
FOUNDATION DESIGNED FOR S+5

NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB, RAFT, WALL - 1"
3. FINISHED GROUND LEVEL IS TAKEN AS +/-0.0LVL

PROJECT:

SG-PERUMBAKKAM

TITLE: COLUMN CENTER LINE

Scale : N.T.S | Date : 15/07/2025

DRAWN BY : KAVINESH | CHECKED BY : C.ARUL

Vivek Designs
STRUCTURAL / ARCHITECTURAL/ INTERIOR CONSULTANT
2/3,RAILWAY COLONY
1st STREET, 1st FLOOR
VENKATESWARA ROAD,
PURASAIWALKAM, CHENNAI-600 007.

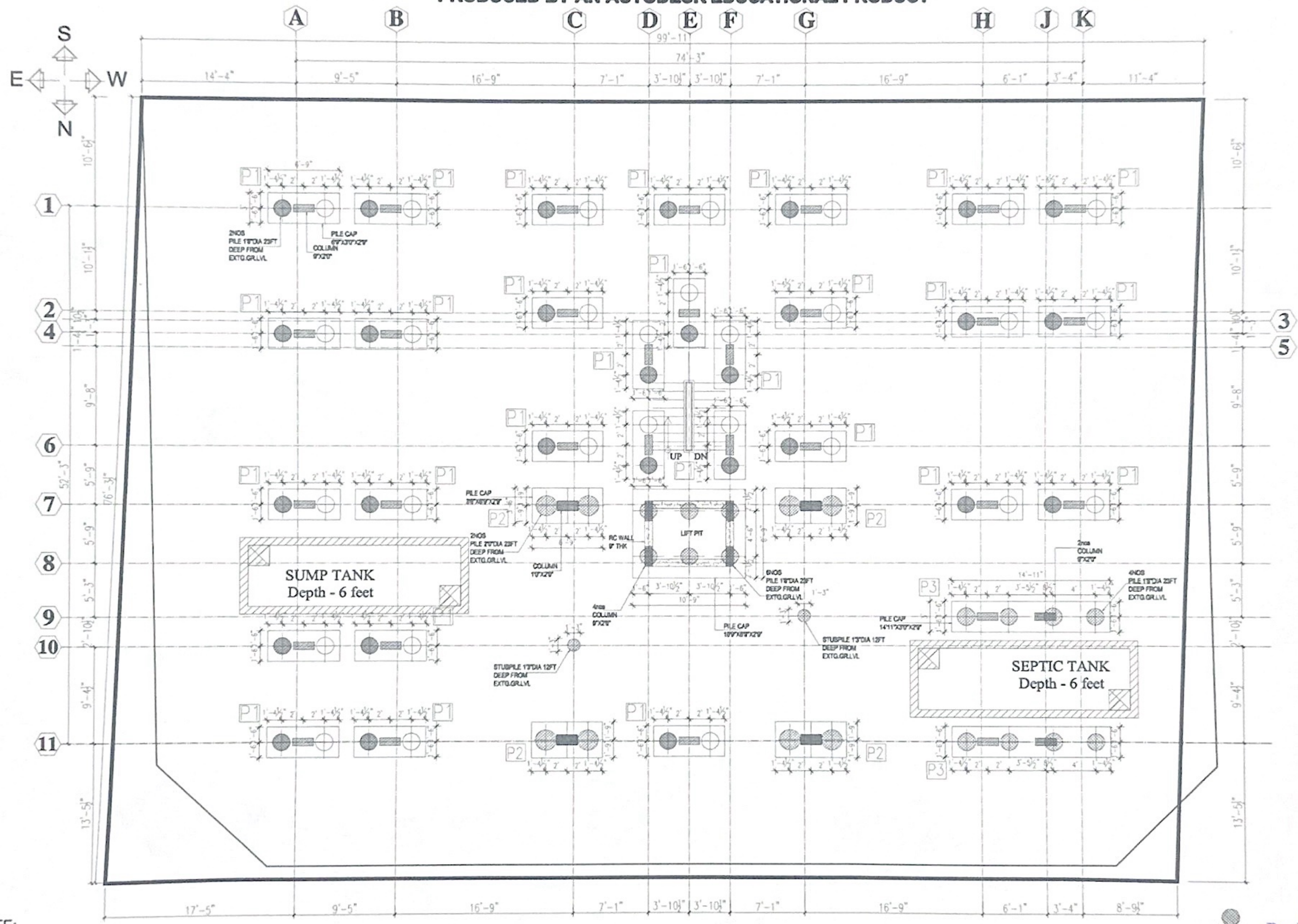
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NOTE:-
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PROJECT:

SG-PERUMBAKKAM

TITLE: FOUNDATION PLAN

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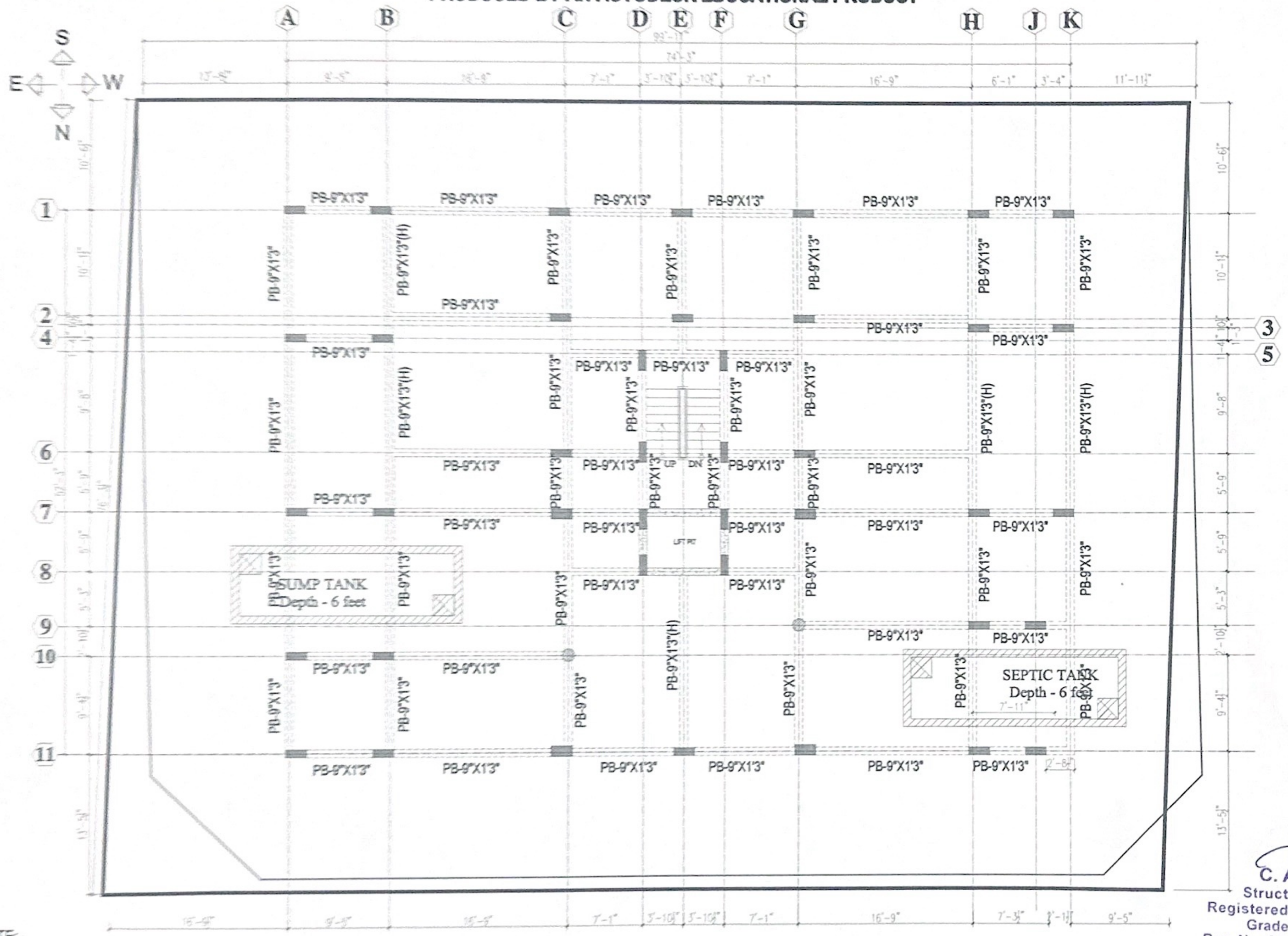
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1st STREET, 1st FLOOR,

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PLINTH BEAM LAYOUT

NOTE:-
PILE CAPACITY 1'8" DIA - 60T AT 23 FT DEPTH
FOUNDATION DESIGNED FOR S+5

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PROJECT:
SG-PERUMBAKKAM

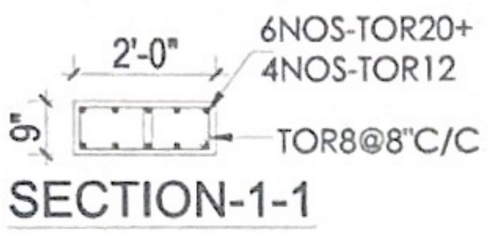
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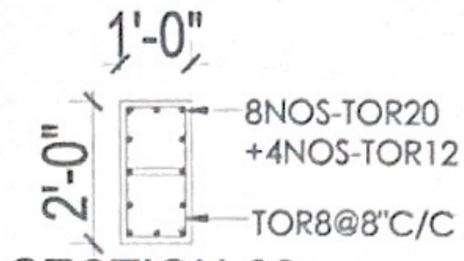
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9 SIVARAJ WAY COLONY
1st STREET, 1st FLOOR,

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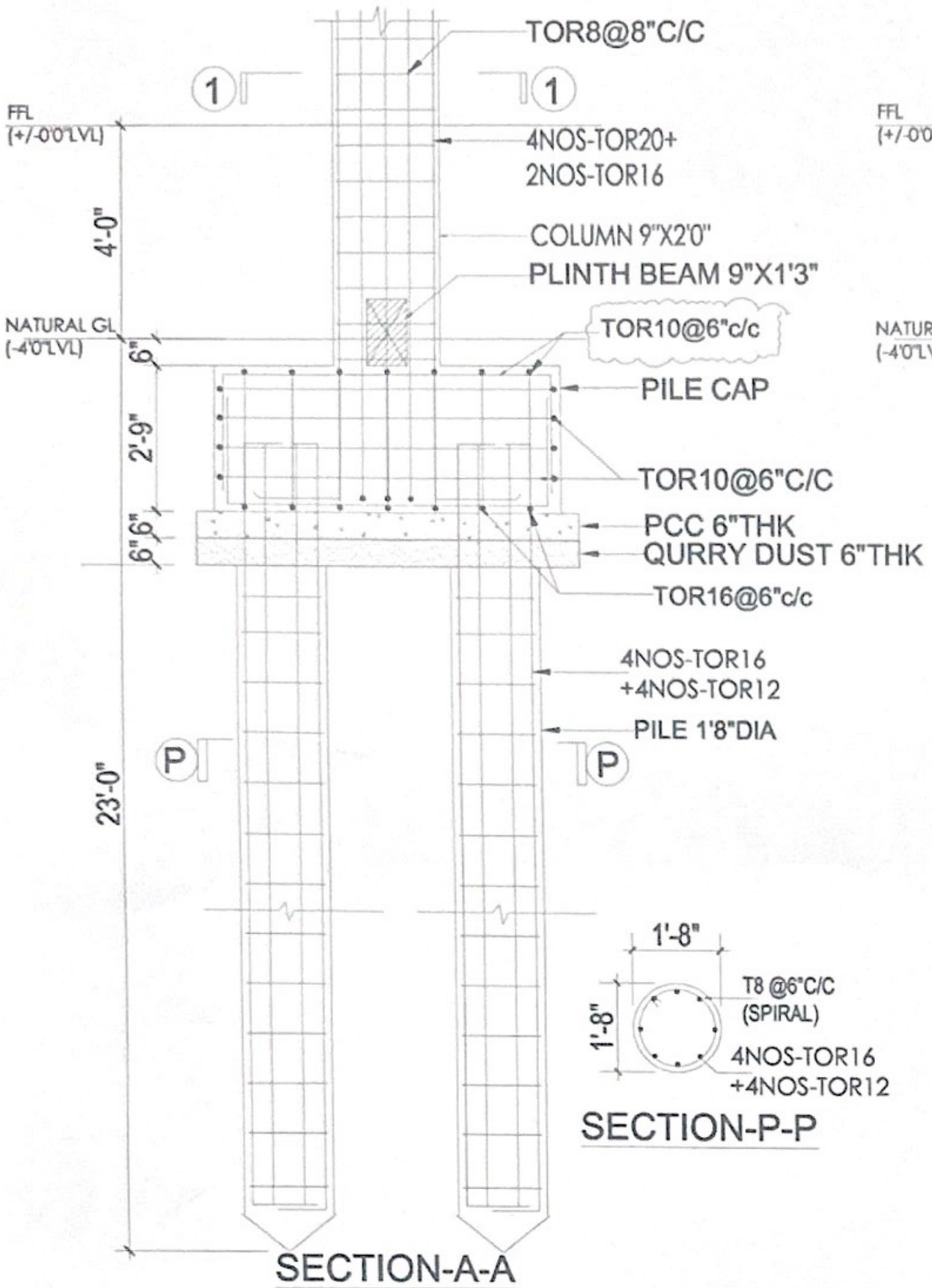
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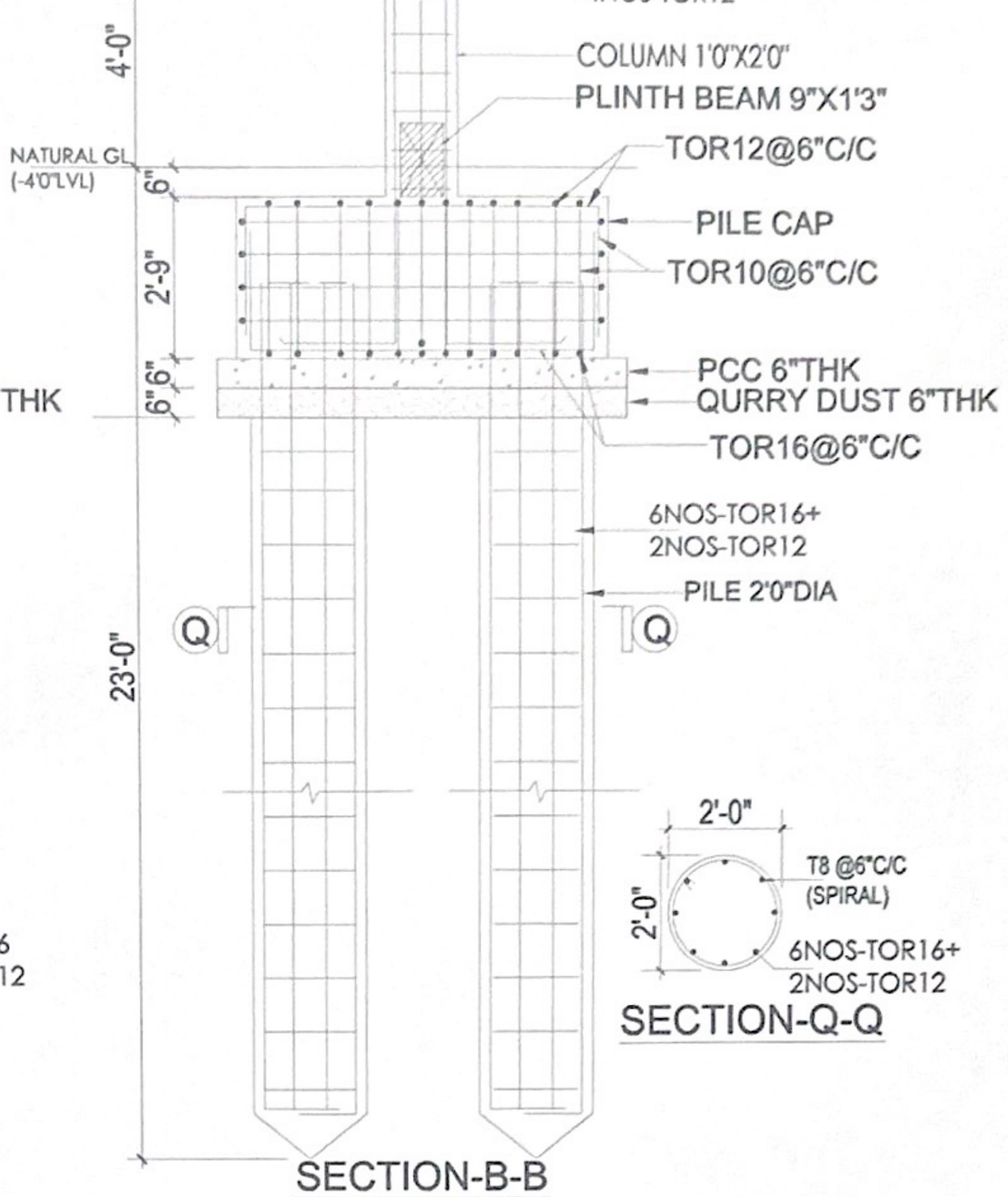


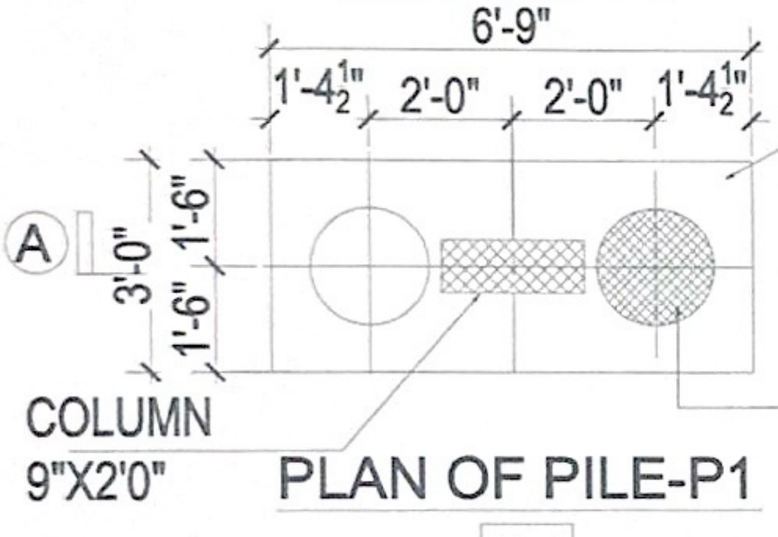
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SECTION-22







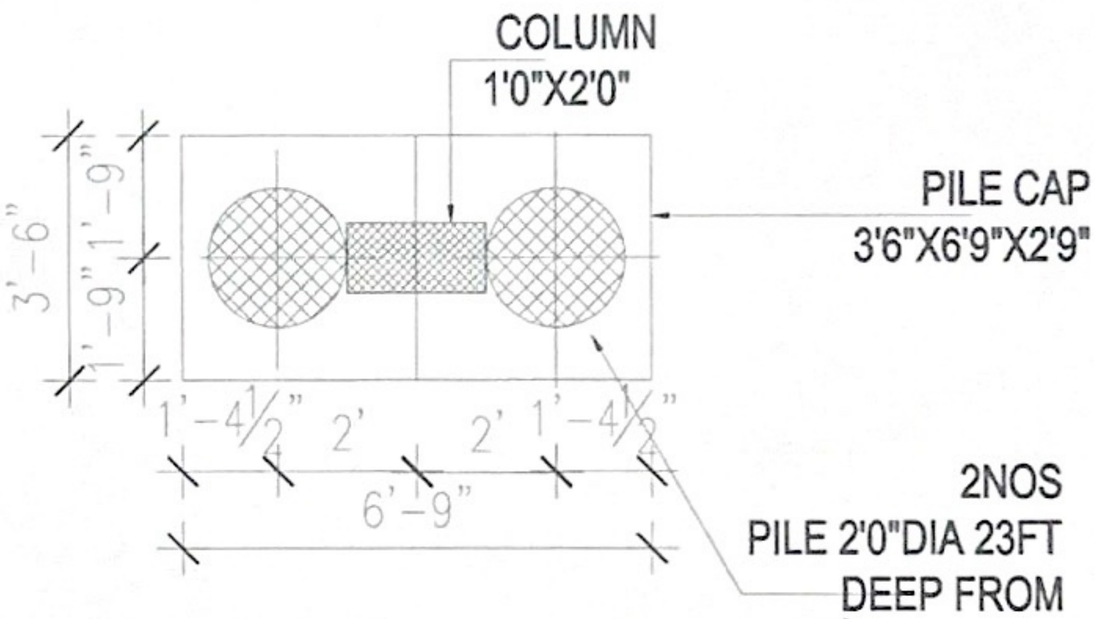
SECTION-P-P

SECTION-Q-Q

SECTION-A-A

SECTION-B-B

PLAN OF PILE-P1



PLAN OF PILE-P2

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3. ROAD IS TAKEN AS +/-0.0LVL
4. FOUNADTION DESIGNED FOR G+5
5. LAP LENGTH 56XDIA OF BAR

PROJECT:

SG-PERUMBAKKAM

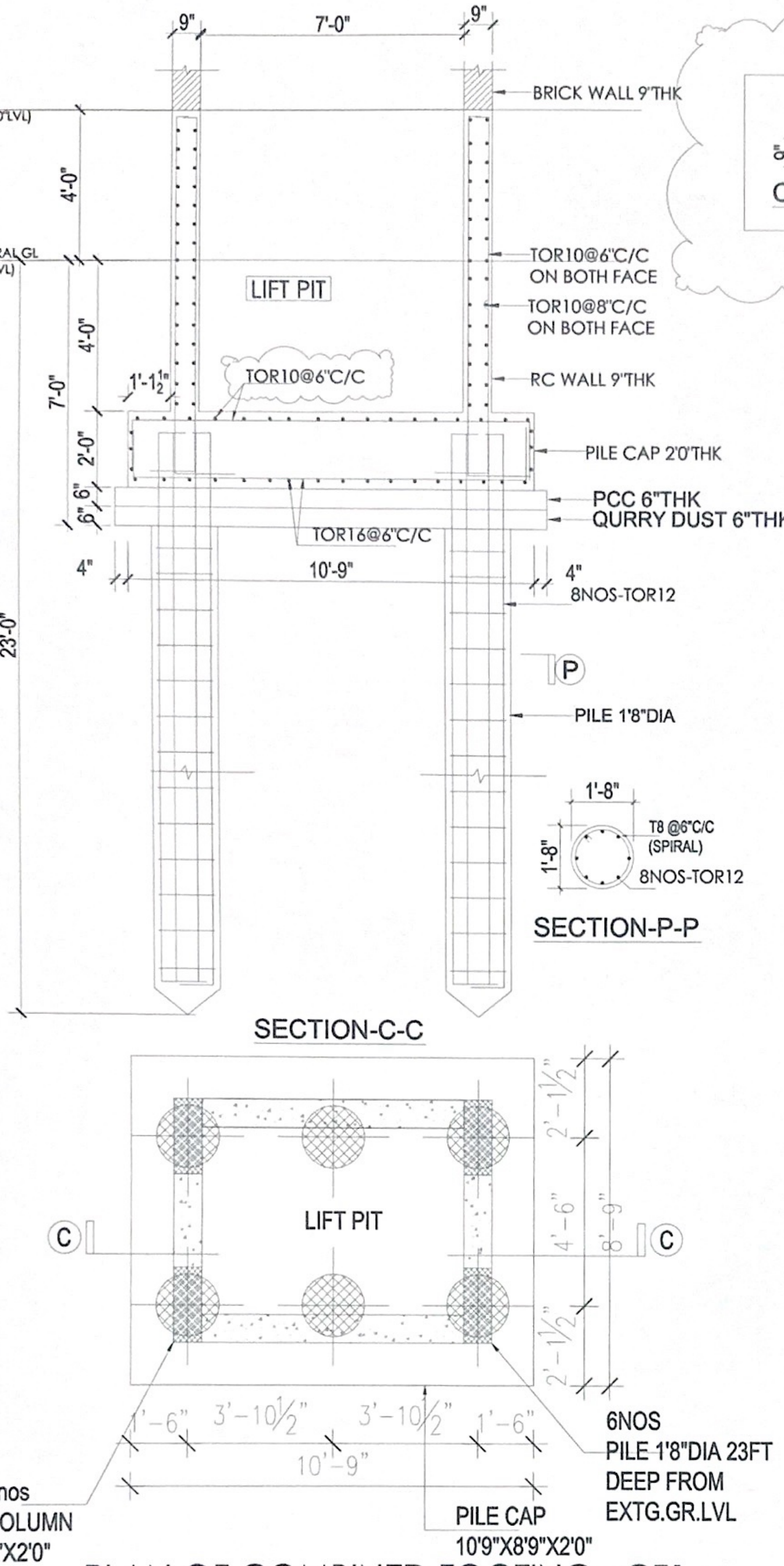
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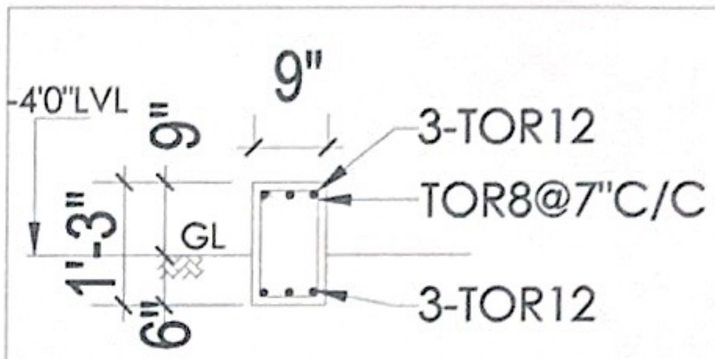


PLAN OF COMBINED FOOTING - CF1

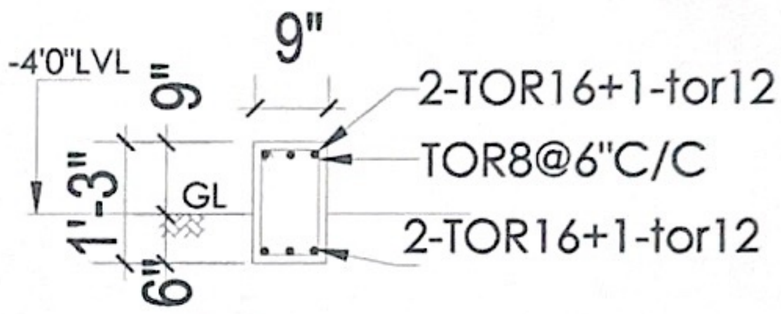
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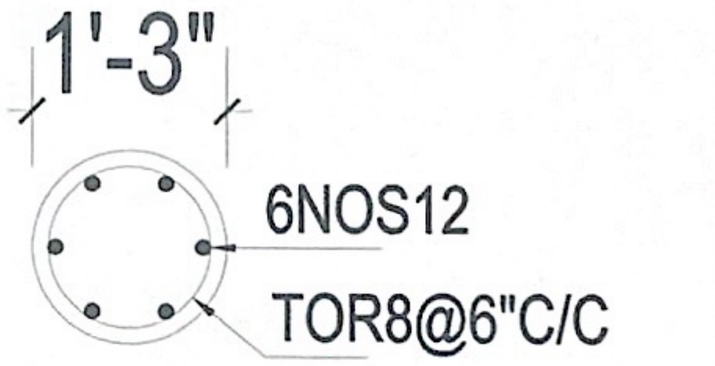
PLINTH BEAM DETAIL



TYP.SEC.THROUGH
PLINTH BEAM 9"X1'3"



TYP.SEC.THROUGH
PLINTH BEAM 9"X1'3"(H)



PILE-1'3" DIA - STUB PILE
12FT DEEP

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NOTES:
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3. ROAD IS TAKEN AS +/-0.0LVL
4. FOUNADTION DESIGNED FOR G+5
5. LAP LENGTH 56XDIA OF BAR

PROJECT:

SG-PERUMBAKKAM

TITLE: FOOTING DETAILS -2

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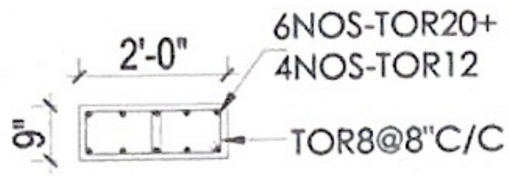
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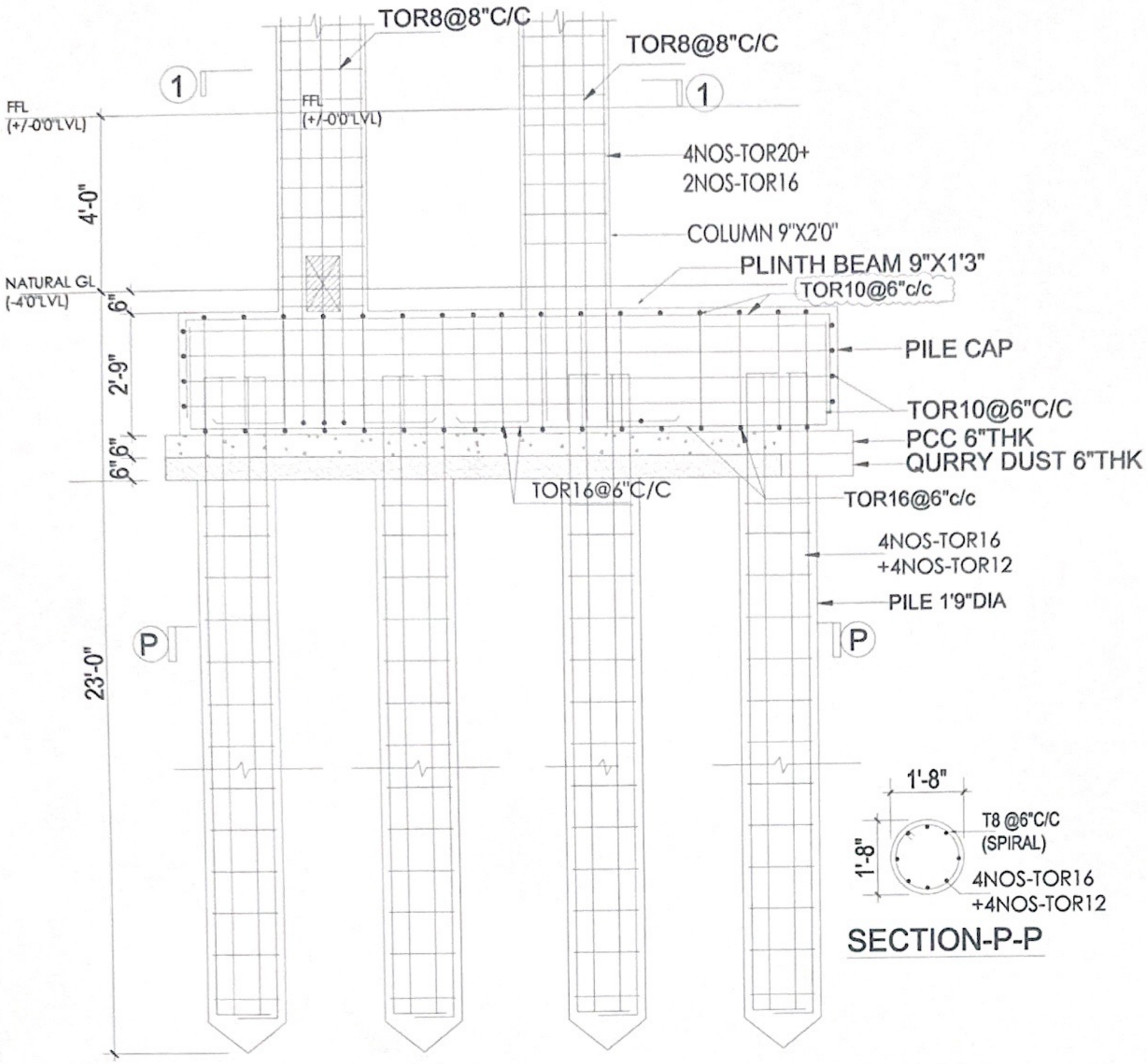
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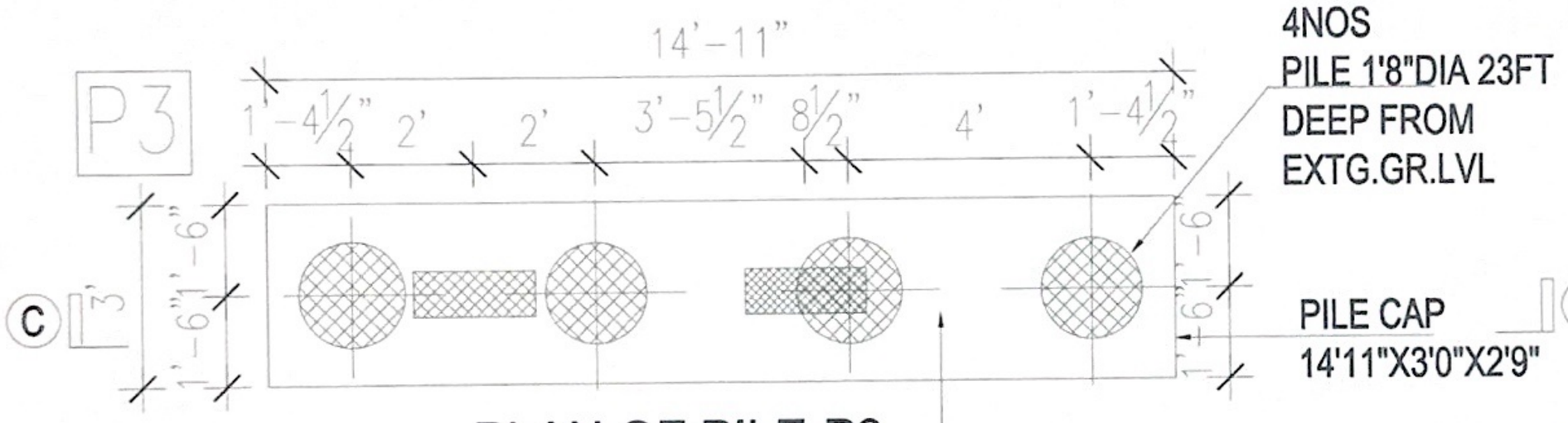


SECTION-1-1



SECTION-C-C

SECTION-P-P



PLAN OF PILE-P3

P3

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SG-PERUMBAKKAM

TITLE: FOOTING DETAILS -3

Scale	: N.T.S	Date	: 15/07/2025
DRAWN BY	: K.VIGNESH	CHECKED BY	: C.ARUL
Job No	:	DRG. NO.	- S/6

Vivek designs
STRUCTURAL / ARCHITECTURAL
INTERIOR CONSULTANT

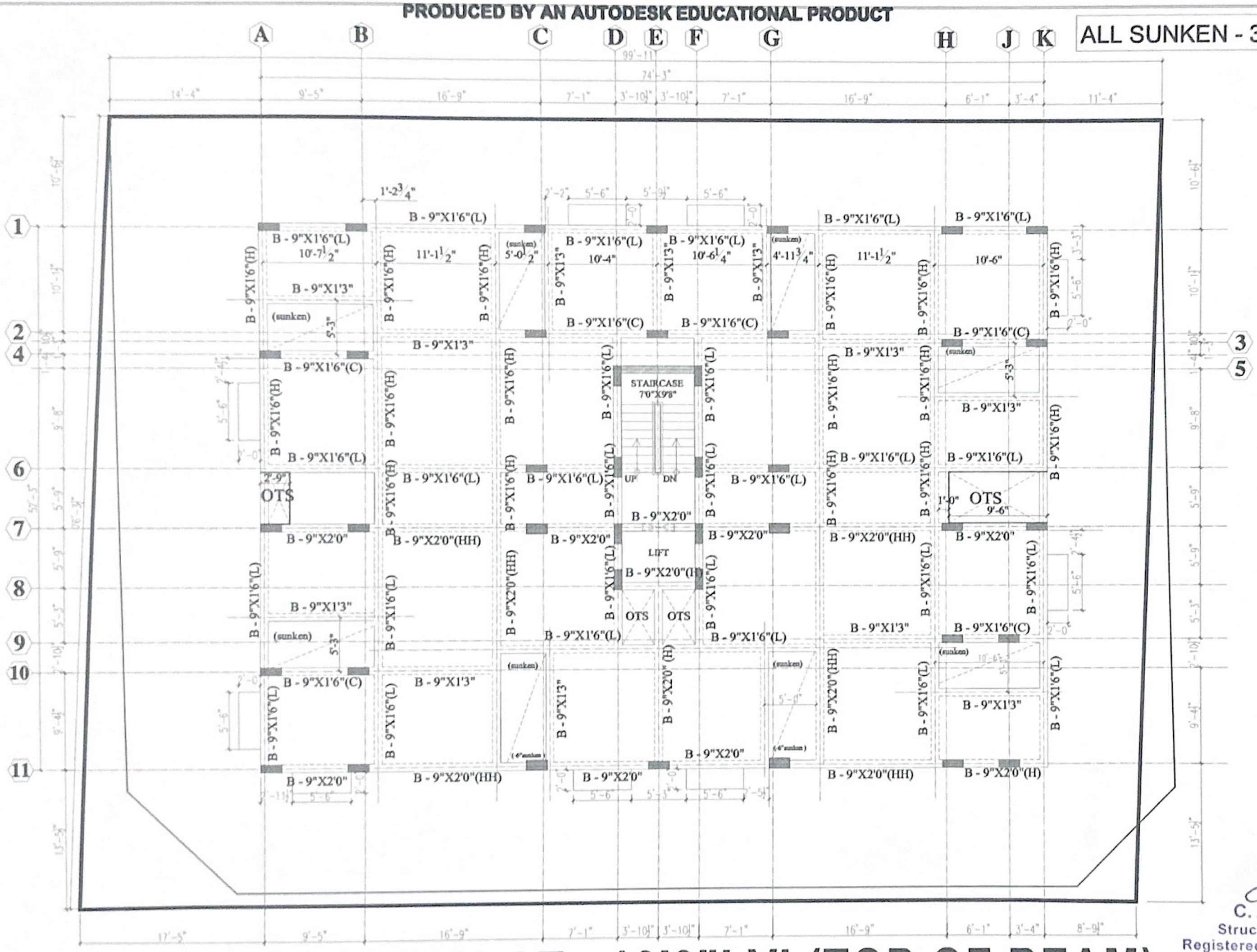
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PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

ALL SUNKEN - 3" DOWN



BEAM LAYOUT AT +10'0"LVL(TOP OF BEAM)

NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB & BEAM 1"
3. GROUND LEVEL IS TAKEN AS +/-0.0LVL
4. LAP LENGTH 50XDIA OF BAR

PROJECT:
SG-PERUMBAKKAM

TITLE: BEAM LAYOUT AT +10'0"LVL (TOP OF BEAM)

Scale : N.T.S Date : 14/08/2025

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STRUCTURAL / ARCHITECTURAL/ INTERIOR CONSULTANT

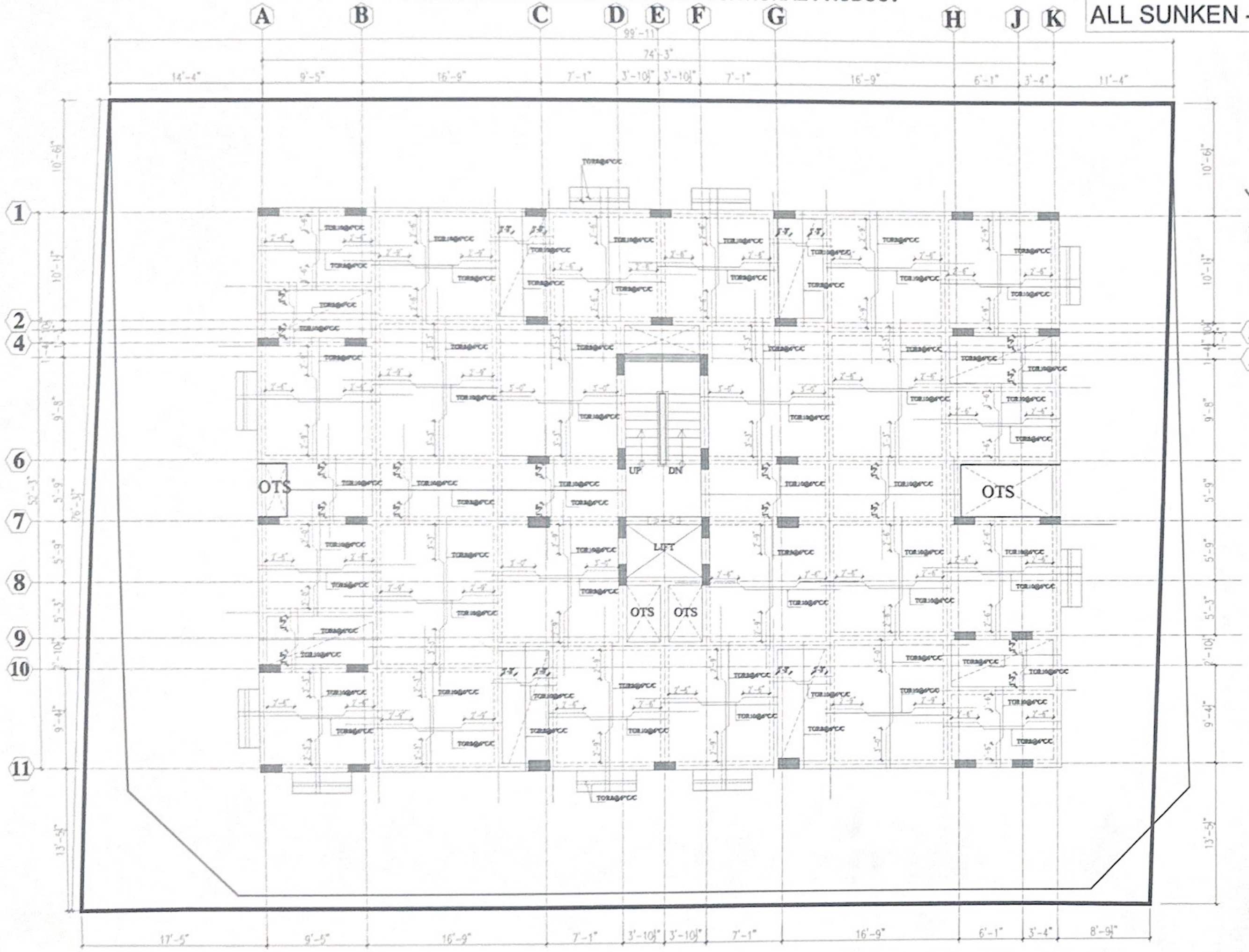
C. ARUL B.Tech
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No.3, Rajaram Metha Nagar Main Road,
Aminjikarai, Chennai - 600 029.

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ALL SUNKEN - 3" DOWN



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NOTE:-
SLAB THICKNESS - 5"
SLAB TOP BARS SHOWN AS ' - - - - '

FRAMING AND SLAB DETAILS AT +10'0" LVL (TOP OF BEAM)

NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB & BEAM 1"
3. GROUND LEVEL IS TAKEN AS +0.0 LVL
4. LAP LENGTH 56XDIA OF BAR

PROJECT:
SG-PERUMBAKKAM

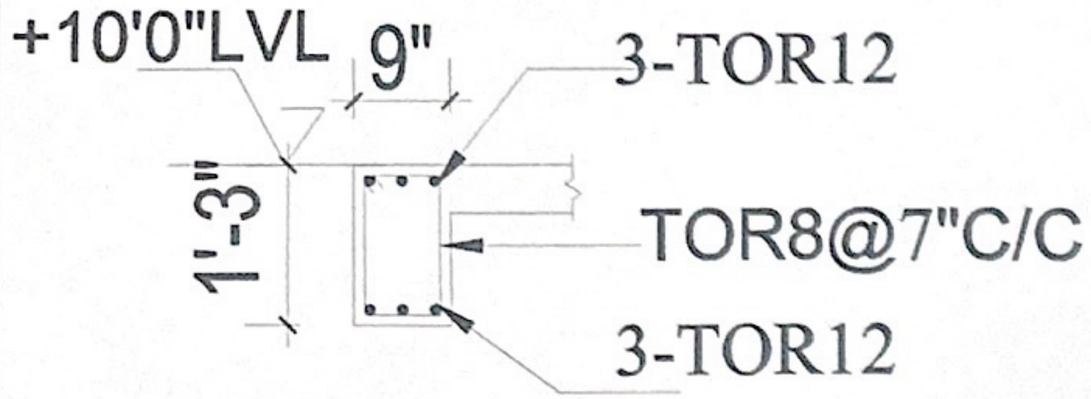
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Scale : N.T.S Date : 14/08/2025

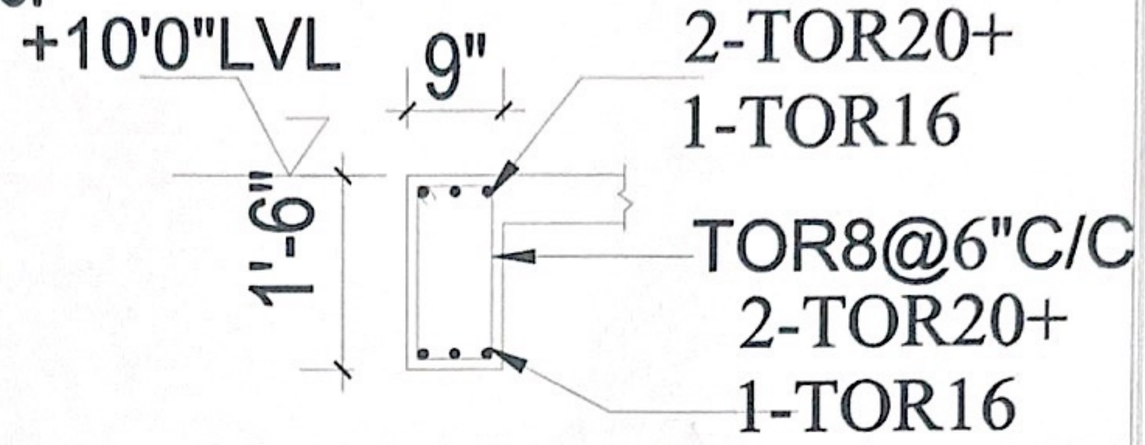
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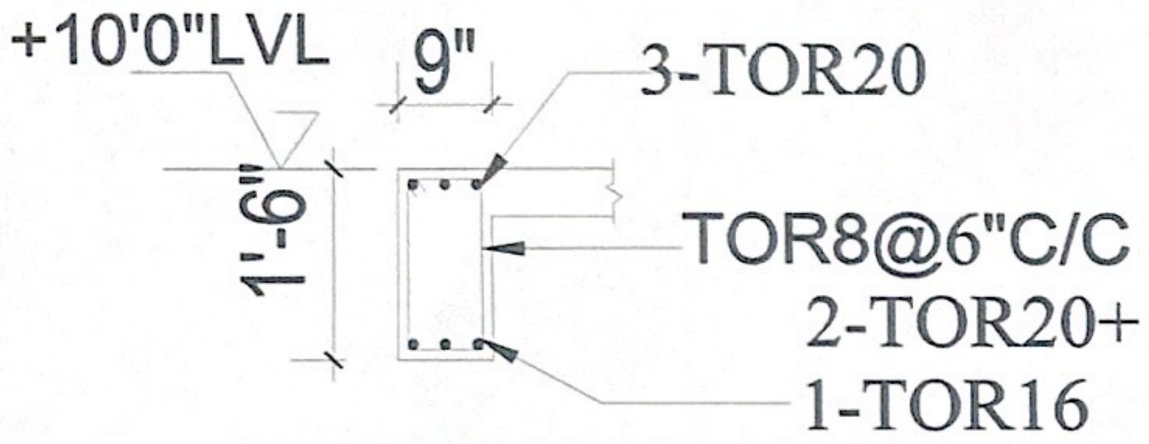
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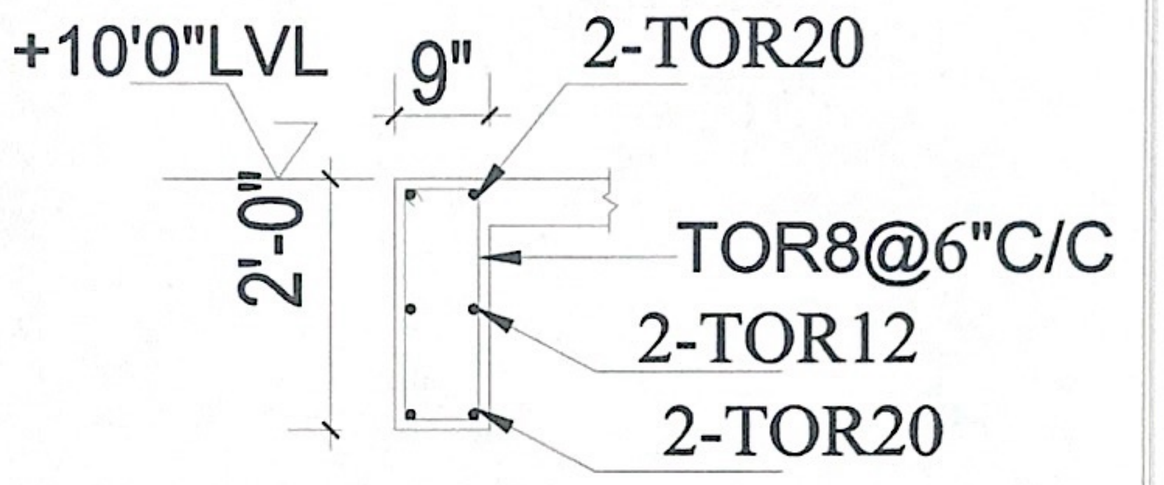
SECTION THROUGH
BEAM 9"X1'3"



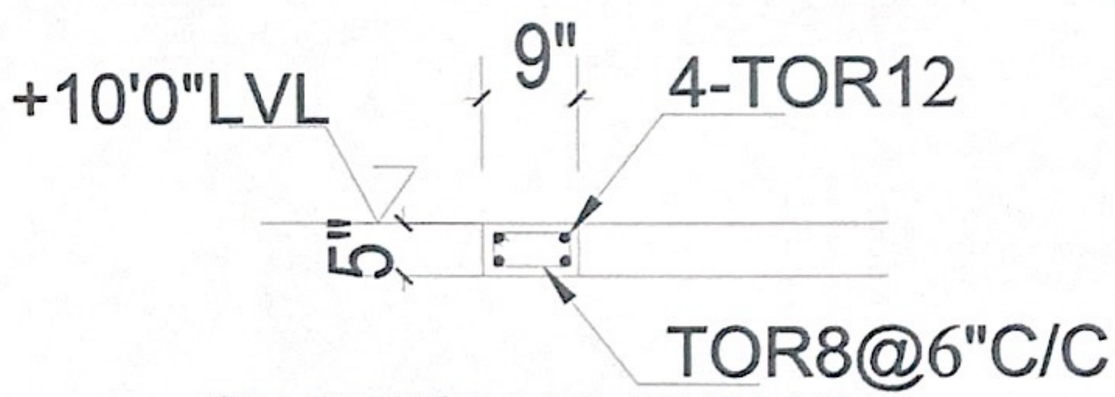
SECTION THROUGH
BEAM 9"X1'6"(H)



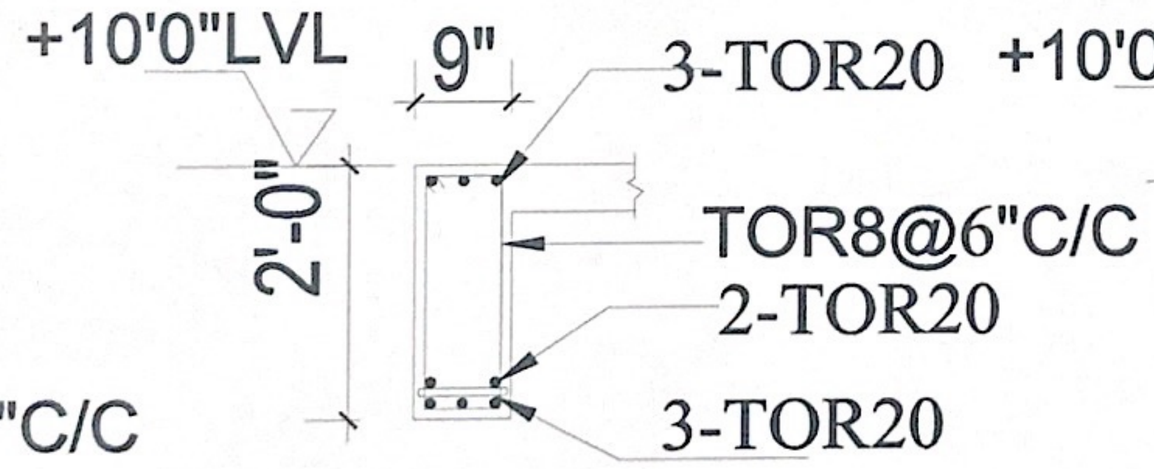
SECTION THROUGH
BEAM 9"X1'6"(C)



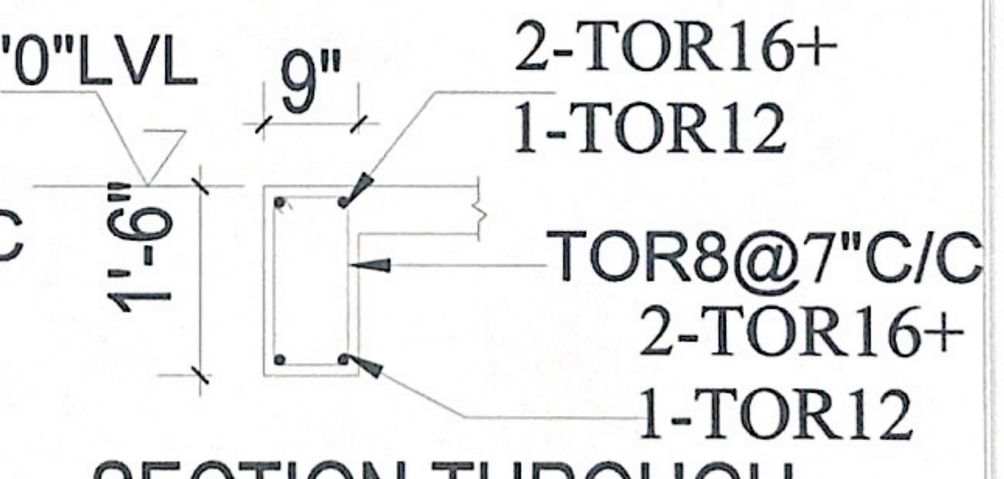
SECTION THROUGH
BEAM 9"X2'0"



SECTION THROUGH
CONCEALED BEAM 9"X5"



SECTION THROUGH
BEAM 9"X2'0" (HH)



SECTION THROUGH
BEAM 9"X1'6"(L)

NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB & BEAM 1"
3. GROUND LEVEL IS TAKEN AS +/-0.0 LVL
4. LAP LENGTH 50xDIA OF BAR

PROJECT:

TITLE: BEAM DETAILS AT +10'0"LVL (TOP OF BEAM)

Scale : N.T.S | Date : 14/08/2025

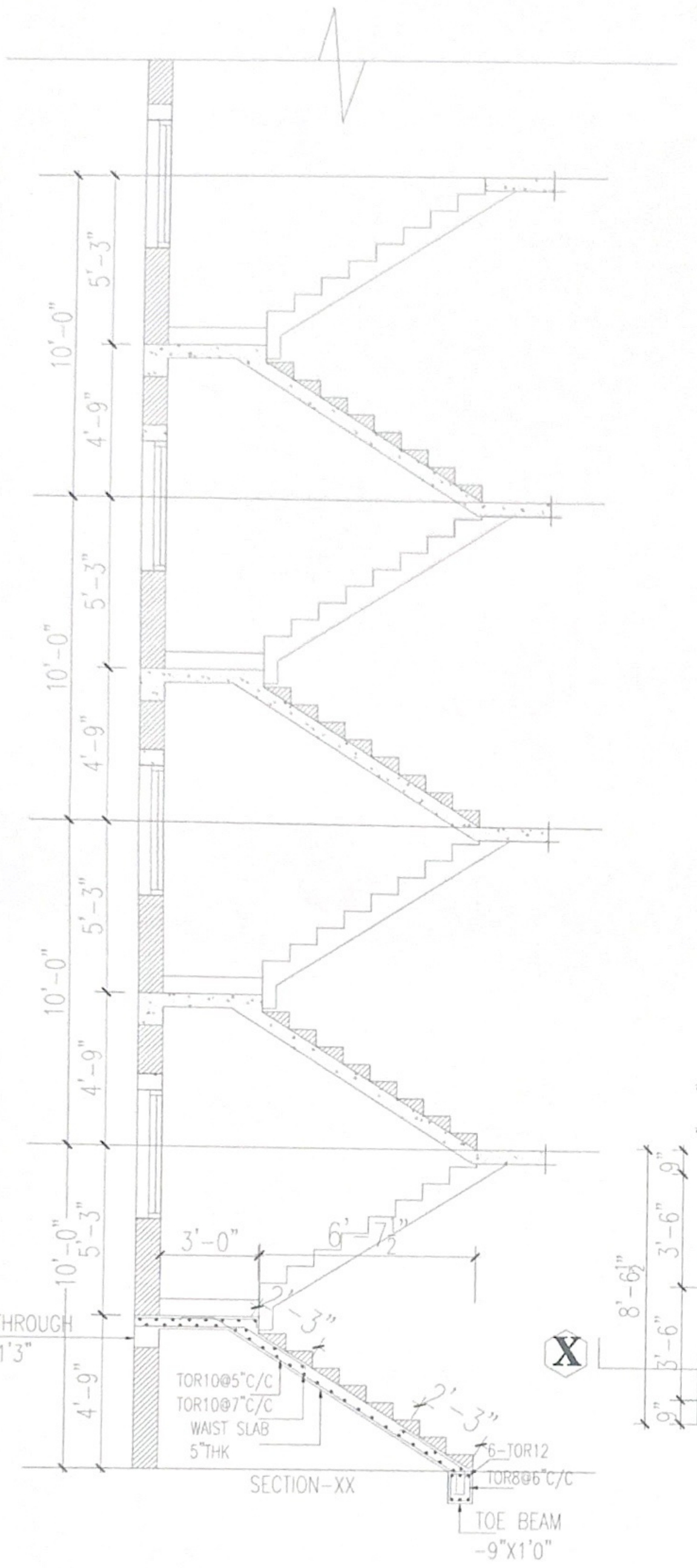
DRAWN BY : K.VIGNESH | CHECKED BY : C.ARUL

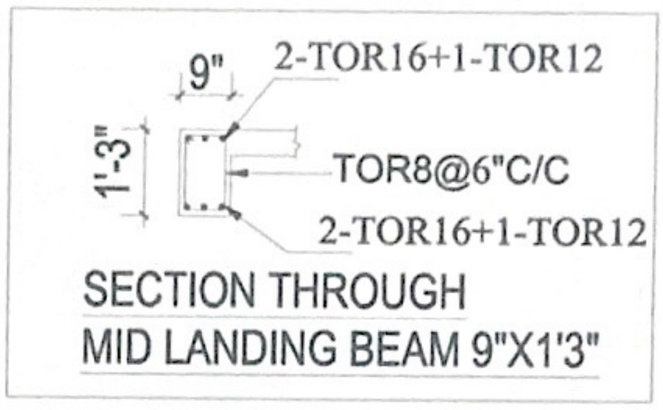
Vivek Designs
STRUCTURAL / ARCHITECTURAL/ INTERIOR CONSULTANT
2/3,RAILWAY COLONY
1st STREET, 1st FLOOR,
[illegible] ROAD,
[illegible]

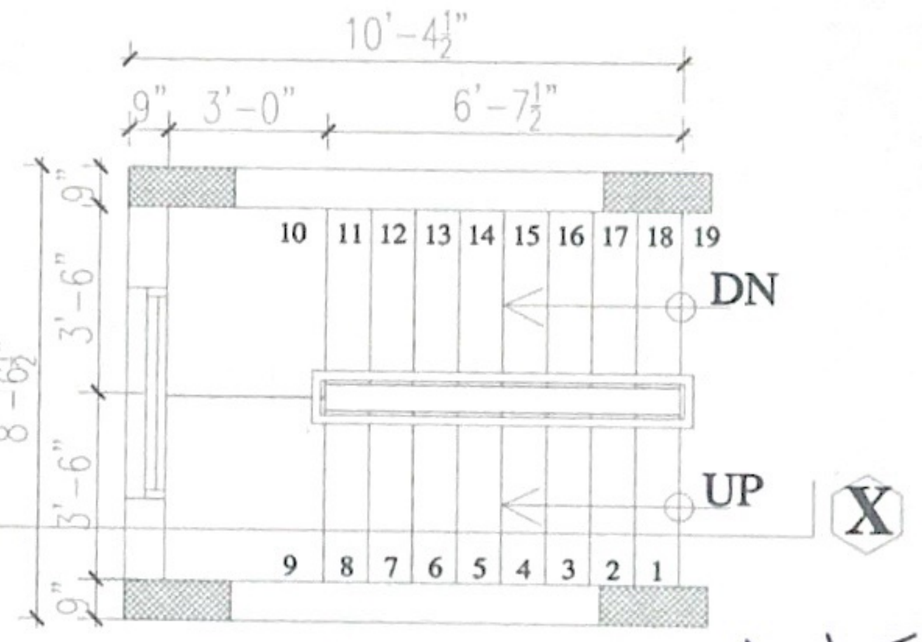
C. ARUL B.Tech
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No.3, Rajaram Metha Nagar Main Road,
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STAIRCASE PLAN

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No.3, Rajaram Metha Nagar Main Road,
Aminjikarai, Chennai - 600 029.

NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB & BEAM 1"
3. GROUND LEVEL IS TAKEN AS +/-0.0LVL
4. LAP LENGTH 56XDIA OF BAR

PROJECT:

SG-PERUMBAKKAM

TITLE: STAIRCASE PLAN

Scale	: N.T.S	Date	: 14/08/2025
DRAWN BY	:K.VIGNESH	CHECKED BY	: C.ARUL
Job No	:	DRG. NO.	- S/12

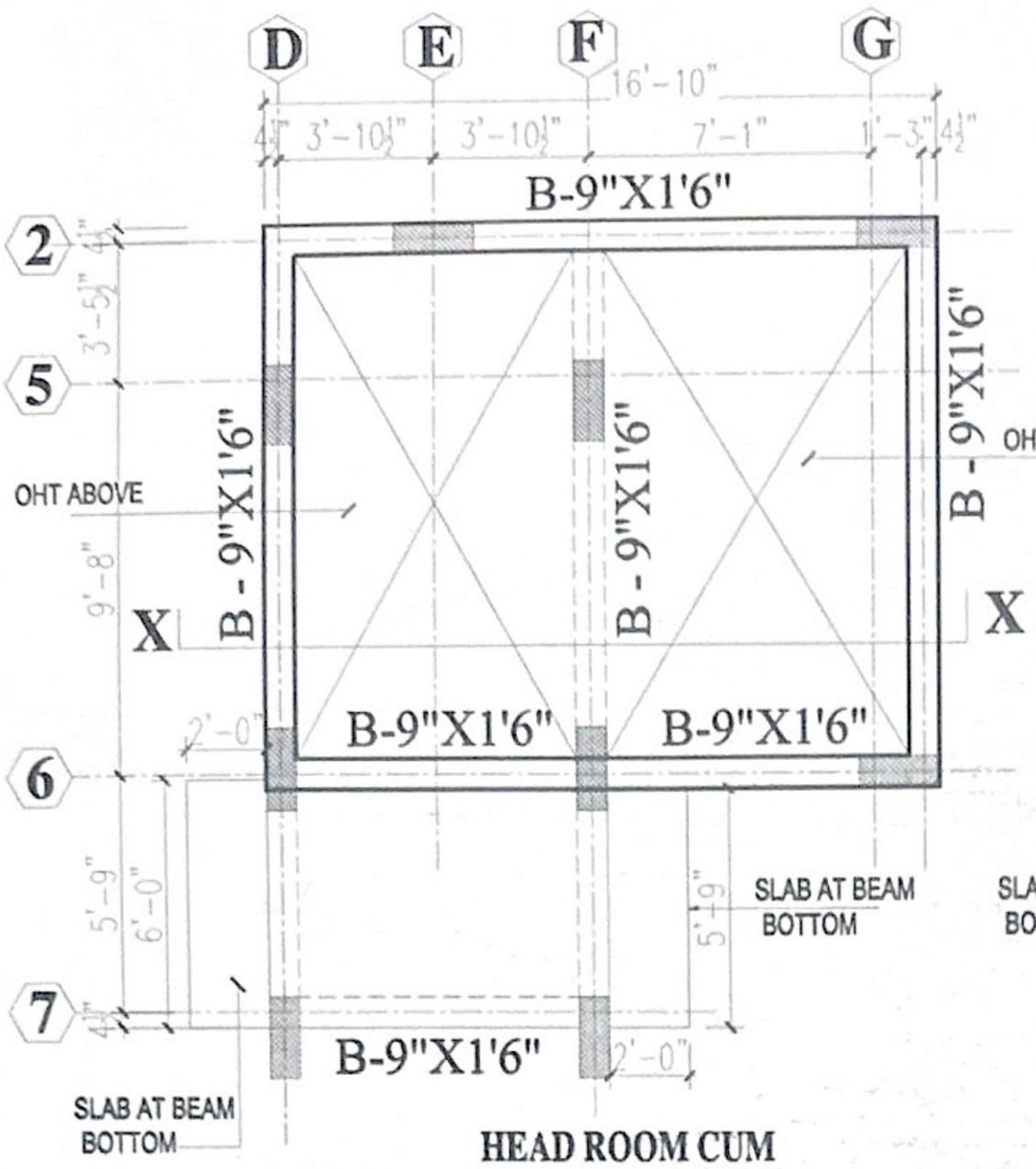
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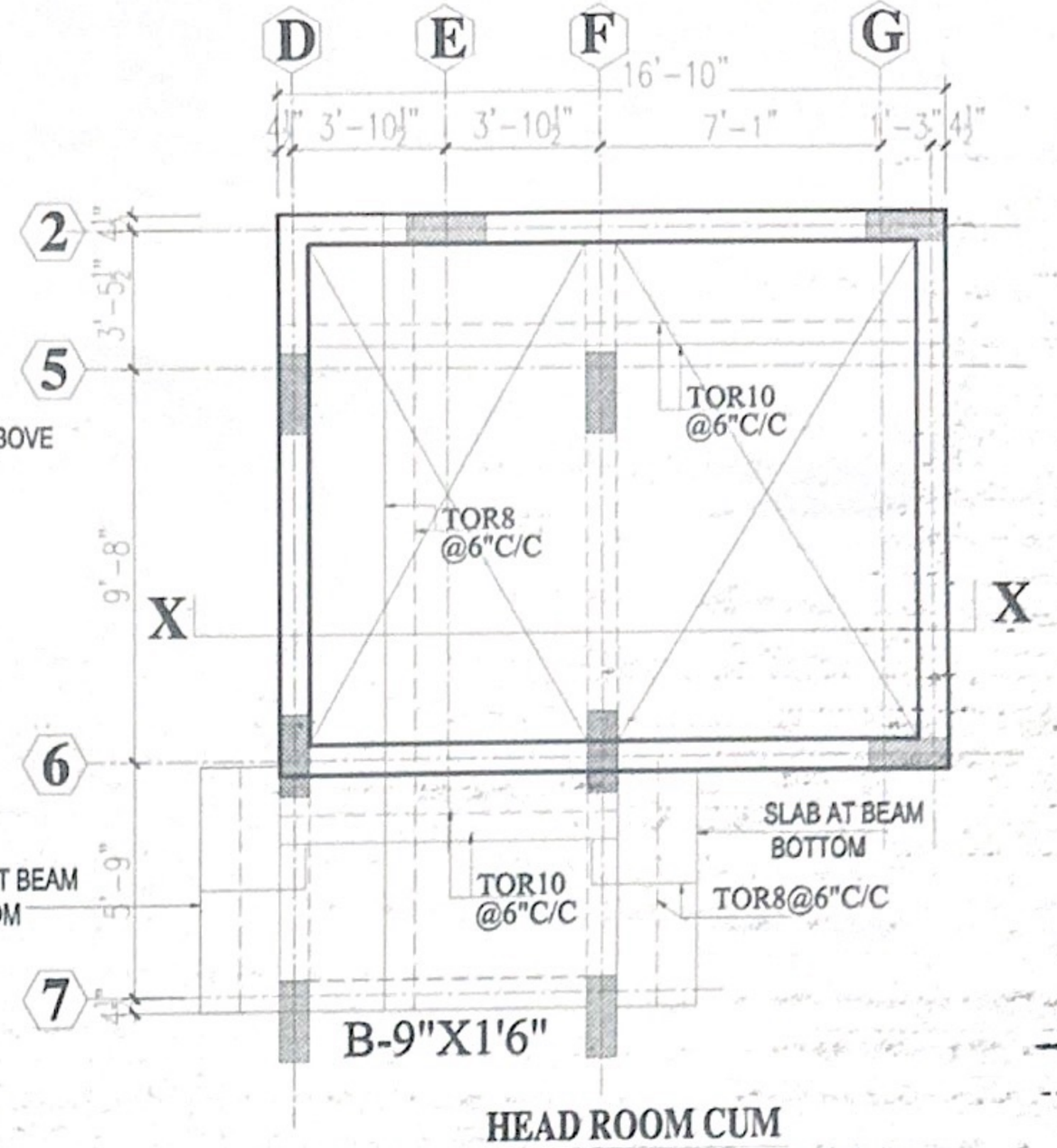
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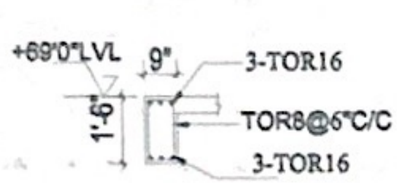
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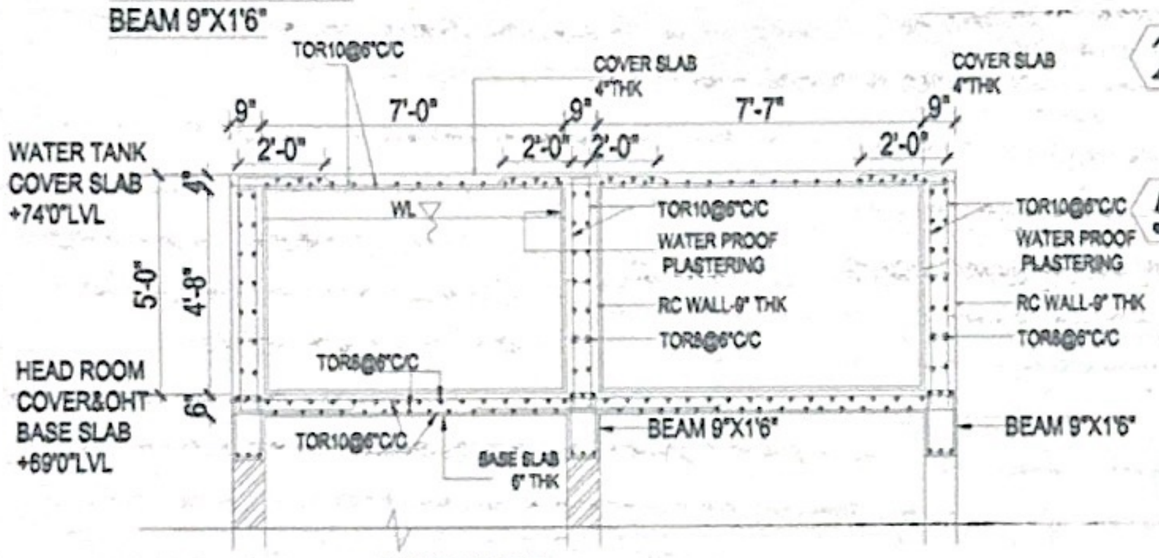
HEAD ROOM CUM
WATER TANK BASE SLAB DETAILS
AT+69'0"LVL (TOP OF SLAB)
6" THK SLAB



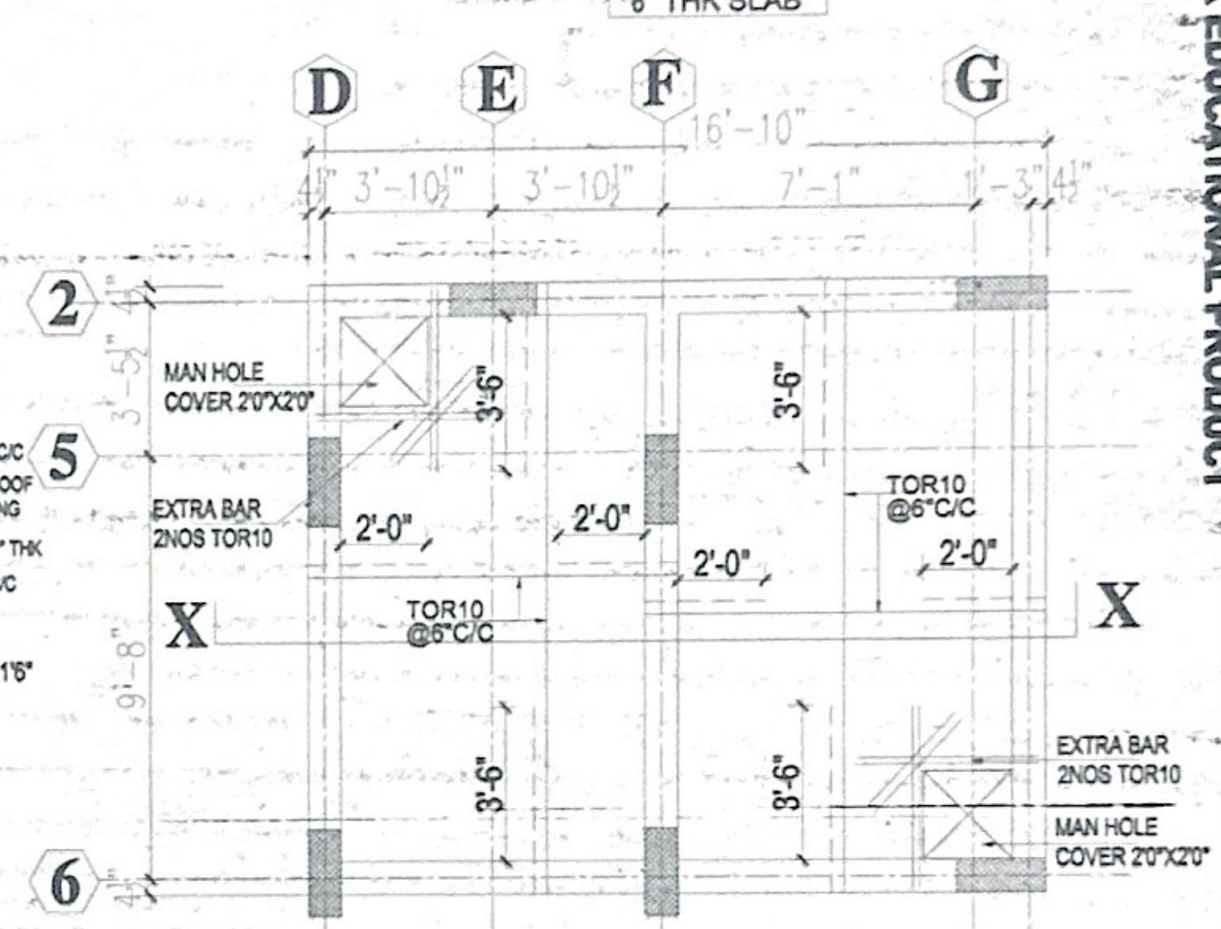
HEAD ROOM CUM
WATER TANK BASE SLAB DETAILS
AT+69'0"LVL (TOP OF SLAB)
6" THK SLAB



SECTION THROUGH
BEAM 9"X1'6"



SECTION-XX



WATER TANK COVER SLAB DETAILS
AT+74'0"LVL (TOP OF SLAB)
4" THK SLAB

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NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB & BEAM 1"
3. GROUND LEVEL IS TAKEN AS +/-0.0LVL
4. LAP LENGTH 56XDIA OF BAR

PROJECT:
SG-PERUMBAKKAM

TITLE: HEAD ROOM OVER HEAD TANK DETAILS

Scale : N.T.S	Date : 14/08/2025
DRAWN BY : K.VIGNESH	CHECKED BY : C.ARUL
Job No :	DRG. NO. : S/29

Vivek Designs

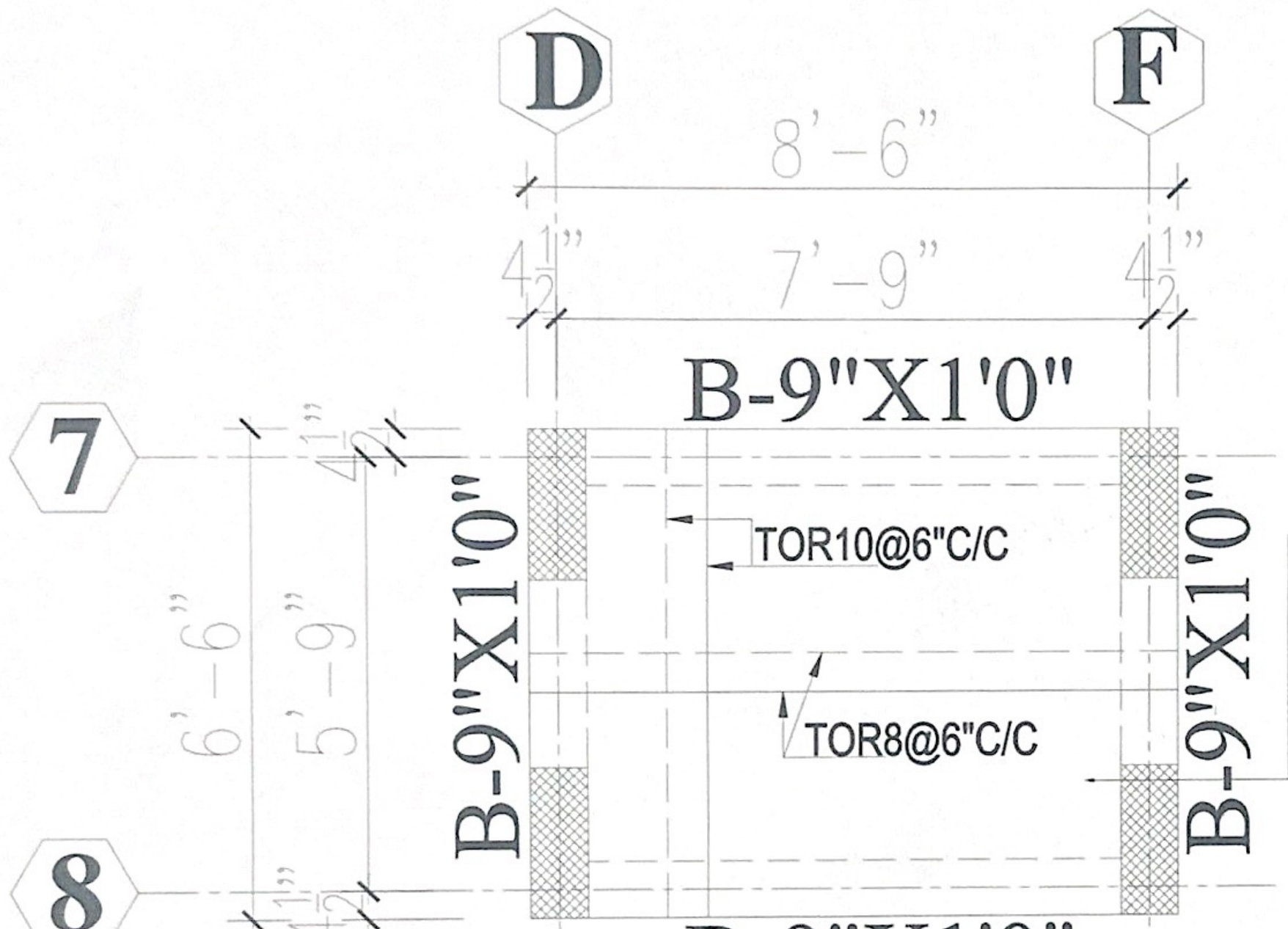
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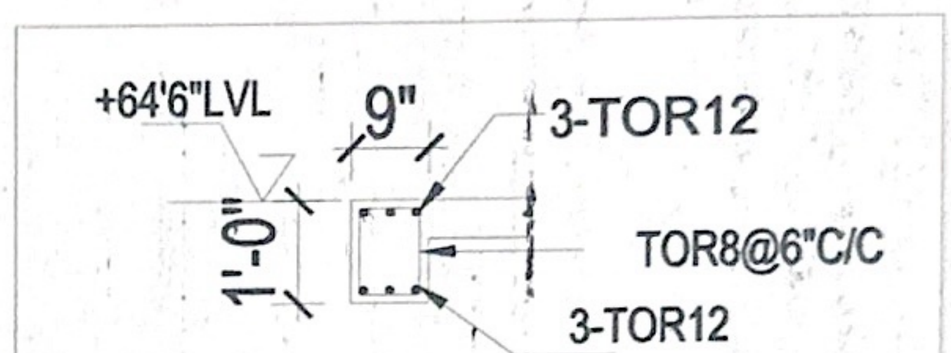
C:\Users\arulc\Downloads\SG-PERUBAKKAM- ISSUED--1-4--26 LAST SLAB oht lift cover

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HOLES OR HOOK
LIFT PERSON
SCOPE

LIFT ---COVER SLAB SLAB DETAILS
AT 64'6"LVL(TOP OF BEAM)

6"THICK SLAB

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Aminjikarai, Chennai - 600 029.

NOTES:
1. CONCRETE MIX FOR R.C WORK SHALL BE 1:1.5:3
2. CLEAR COVER OVER MAIN REINFORCEMENT SHALL BE FOR SLAB & BEAM 1"
3. GROUND LEVEL IS TAKEN AS +/-0.0LVL
4. LAP LENGTH 50XDIA OF BAR

PROJECT:

TITLE: LIFT COVER SLAB SLAB DETAILS

Scale : N.T.S | Date : 14/08/2025

DRAWN BY : K.VIGNESH | CHECKED BY : C.ARUL

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THE LANDLENS SUITE

Eight ways to know a piece of land before you pay for it.

This report covers one part of the picture. These cover the rest, drawn from the same government records, for any property in Tamil Nadu.

LandLens One
Ask anything about a property and get an answer grounded in live government records, with the sources shown.
/landlens/one

Verify My Land
Every record check run on one property and returned as a single report.
/landlens/verify-my-land

Legal Opinion
An advocate's written opinion on the title, built on the records we pull for it.
/landlens

One Map
Every layer on one map: the parcel, its boundary, zoning, water bodies and what sits around it.
/landlens/one/map

PriceMap
What land actually changed hands for around this plot, taken from the registered deeds.
/landlens/pricemap

Build Scope
What you are allowed to build here: floor space, height, coverage and setbacks.
/landlens/build-scope

Property Tracker
Watch a property and hear about it when something new is registered against it.
/landlens/property-tracker

Deal Room
Run the transaction in one place: documents, stamping, signatures and the parties.
/landlens/deal-room

FREE TOOLS · NO ACCOUNT NEEDED

Twenty-four checks you can run yourself, at no cost.

Records and verification

The registers themselves, read for you.

- Encumbrance Certificate
- Patta and Chitta
- Field Measurement Sketch
- EC Analyzer
- Bank charge check
- Court case search
- Seller background check
- Approval check by survey

Value and duty

What it is worth and what it costs to register.

- Guideline value by street
- Guideline value by survey
- Stamp duty and registration fees
- Capital gains
- Floor space index
- Area unit converter

Zoning and land use

What the plan says can happen on this land.

- Land use zone finder
- CMDA land use check
- Coastal regulation zone
- Master plan check
- Water bodies finder
- Airport height clearance

Registers and directories

Who holds it, and which office keeps the record.

- Find your registering office
- Temple property check
- Waqf property check
- RERA register

Every free tool
/tools

Services we run for you
/services

The LandLens suite
/landlens/one

Verified RealEstate™

Every claim in this document traces back to a government record.

- Legal opinions, due diligence and title verification
- Building plan, layout and sub-division approvals
- Completion and occupancy certificates, regularisation
- Escrow, negotiation and NRI property management
- Land survey, soil testing, architecture and construction

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hello@verified.realestate
+91 9996 12 9996

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