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DIGITALLY VERIFIED RECORD

THE PROPOSED CONSTRUCTION OF STILT FLOOR + 10 FLOORS RESIDENTIAL BUILDING WITH 10 DWELLING UNITS AT PLOT NO.24, NEW DOOR NO.16 AND OLD DOOR NO.92, POES GARDEN, CHENNAI – 600 086 AND COMPRISED IN R.S.NO.1567 AND AS PER PATTA R.S.NO.1567/30, BLOCK NO.31 OF MYLAPORE VILLAGE (AS PER PATTA MYLAPORE (PART 1) TOWN) (AS PER REGISTRATION DEPARTMENT TEYNAMPET VILLAGE), MYLAPORE TALUK AND WITHIN THE LIMITS OF GREATER CHENNAI CORPORATION.

ZONE:- IX, DIVISION :-118.

M/s. UNITED CONSULTANTS

41/A, Beach road, Sea point apartments

Kalashetra colony, Besant nagar,

Chennai-90

1. PROJECT BRIEF

This report sets out the basic parameters used for The Proposed Construction of (S+10) Residential building for Vishranthi homes, Poes Garden, Chennai. The design of this building is carried out based on frame analysis using ETABS Nonlinear 20.3.0

The Building is designed for Stilt+10 Floors

2. CODES AND STANDARDS

All structural design is carried out conforming to the provisions in National Building Code of India and other relevant Indian Codes and Standards.

1. I.S. 456
2. I.S. 875 - Part I to V
3. I.S.1893
4. I.S.13920
5. I.S.800

3.CONCRETE:

All the concrete items for the construction have the following characteristics

1. Grade of Concrete = M40 for Column,
2. M25 for Beams, and Slabs.
3. M25 for Foundations.
4. Aggregate = 20mm and down size, mechanically crushed Aggregate.

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REG No. RSE100392019

4 LOAD DATA

(I) DEAD LOAD

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

* **Unit** weight of concrete	25 KN/m^3
* **Unit** weight of solid blocks	20 KN/m^3
Self-weight of Slab	3.75 kN/m^2
Floor finish	1.5 kN/m^2

(II) LIVE LOAD

On the basis of intended occupancy and uses, the loading shall be based on **IS: 875 (PART II)**

Imposed Floor Load for Hospital Building

Rooms & kitchen – 3KN/m^2

Balconies – 3KN/m^2

Toilets – 2KN/m^2

(III) WIND LOAD

Wind loads for design of structures shall be based on the design wind speeds arrived from **IS: 875 (PART III)**

The parameters for calculation of design wind speed as per **IS: 875(PART III)** are as follows.

Basic wind speed (V_b) : 50 m/sec.

Importance factor: 1.00

Risk coefficient, K_1 : 1.00

Terrain, Height, Structure size factor, K2 : To suit of the structure

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	For terrain category-2
Topography factor, K_3	: 1
Design wind speed (V_z)	: $Vb \times k_1 \times k_2 \times k_3 \times k_4$
Design wind pressure (P_z)	: $0.6Vz^2$

(IV) SEISMIC LOAD

Seismic loads for design of structure shall be considered as per **IS 1893-2016.**

Zone	: III
Zone factor	: 0.16
Importance factor	: 1.2
Response Reduction factor	: 4.0

5 SOIL DETAILS

Based on Soil Test Report Pile foundation is adopted.

6 DESIGN LOAD COMBINATION

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

Load Combination	Ultimate Limit Load	Serviceability Limit State
DL+LL+WL OR DL+LL+EL	1.2DL+1.2LL+1.2WL OR 1.2DL+1.2LL+1.2EL	DL+LL+WL OR DL+LL+EL

On behalf of CMDA MSB Panel, the structural design, Calculations are Generally reviewed.

Superintending Engineer, P.W.D.,
Planning and Designs Circle,
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7 ADDITIONAL CRITERIA

1) The structure is idealized as 3d frame and analyzed using software package (ETABS) for both vertical and lateral loads.
2) The lateral loads include wind loads and earthquake loads, seismic loads of medium and moderate intensity of Zone III is considered for analysis and design purpose.
3) The foundation is designed for critical un-factored load combinations.
4) The super structure members are designed for actual flexure, shear and forces.
5) The structure is analyzed for specific loads (Dead and live loads) and for the load combinations given in relevant codes.

8. COVER:

The clear cover to main reinforcement shall be as follows.

1. Foundations = Bottom: 50mm, Sides: 50mm
2. Slab = 20mm
3. Columns = 40mm
4. Plinth Beams = 25mm
5. Floor Beams = 25mm or diameter of largest bar, whichever is greater.

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DESIGN OF COLUMN
AS PER IS:456-2000

Column Dimension

Breadth 'b' = 230 mm

Depth 'D' = 600 mm

Grade of Concrete = 40 N/mm^2

Grade of Steel 'f_y' = 500 N/mm^2

Unsupported Length "l" = 3.2 m

Effective cover d' = 40 mm

Check for long/short column

l/D = 3200/600

= 5.333 < 12

l/b = 3200/230

= 13.91 > 12

Therefore it is a short column in both direction

Moment due to minimum eccentricity

Ultimate Axial load P_u = 4200 kN **From STAAD**

Ultimate Moment M_u = 30 kNm

Eccentricity about x axis = l/500+ D/30 **IS 456 Cl 25.4**

$e_{x\,min}$ = 26.4 >20mm

Moment due to e_x = Pu x $e_{x\,min}$

= 110.9 >Mu

Eccentricity about y axis = l/500+ b/30

$e_{y\,min}$ = 14.07 <20mm

Moment due to e_y = Pu x $e_{y\,min}$

= 59.08 >Mu

Calculation of various ratios

Ratio of percentage of steel to f_{ck}

$\frac{M_{u\,x\,lim}}{f_{ck}\,b\,D^2}$ = 0.009

$\frac{M_{u\,x\,lim}}{f_{ck}\,D\,b^2}$ = 0.023

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$\frac{P_u}{f_{ck}\, b\, D}$ = 4200x 1000/ (40 x 230 x 600)
= 0.76

$\frac{d'}{D}$ = 50 / 600
= 0.067
Take it as 0.1

$\frac{d'}{b}$ = 50 / 230
= 0.173
Take it as 0.2

p/f_{ck} = 0.06 **From SP 16**

p = 2.4 %

CROSS SECTIONAL AREA OS STEEL REINFORCEMENT

Percentage of steel = 2.4 %

A_{st} = 0.024 x 230 x 600
= 3312 mm^2

Lets provide **20** mm dia bar

A_s = 314.2 mm^2

Therefore Number of bars = 10.54
PROVIDE 12 no: of bars

Therefore, Ast provided = 3770 mm^2

LATERAL TIES

Provide 8 mm ties @ 200 mm c/c

Spacing is minimum of

1 300 mm
2 Least lateral dimension 230 mm
3 16 times the smallest dimeter of the longitudinal reinforcemnet bar 320 mm

Note:

All other columns are designed in the same way

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DESIGN OF BEAM FB5 (TYPICAL FLOOR ROOF DETAIL) AS PER IS:456-2000

DESIGN CONSTANTS

Grade of Concrete = 25 N/mm^2

Grade of Steel 'f_y' = 500 N/mm^2

$\frac{x_{u\,max}}{d}$ = 0.46

Width of the support at each end = 230 mm

Clear span of beam = 6.8 m

Effective cover = 25 mm

Overall depth D = 750 mm

Width of beam b = 230 mm

SPAN

ES= 6.8 + 0.23/2 + 0.23/2 = 7.03 m

TOTAL LOAD

DL

Self Weight = 2 kN/m

= 0.75 x 0.23 x 1 x 25

Total DL = 4.3125 kN/m

= 6.3125 kN/m

LL = 3 kN/m

Factored Load = 1.5*(6.3125 + 3)

= 13.9688 kN/m

DESIGN MOMENT

M_{Fd} = 473 kNm **From STAAD**

DEPTH CALCULATION

$0.36\, f_{ck} \left(\frac{x_u}{d}\right) \left(1 - 0.42\, \frac{x_u}{d}\right) bd^2 = M_{FD}$

0.36 x 25 x 0.46 (1 - 0.42 x 0.46) 230 x d^2 = 473x 10^6 Nmm

therefore d = 784.663655 mm

Overall depth D = 809.663655 mm

Therefore D = 850 mm

d = 825 mm

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Steel Reinforcement in tension

$\frac{M_u}{bd^2}$ = 3.656

Therefore Reinforcement Percentage pt = 1.035 from IS SP 16.

Now $P_t = \frac{A_{st}}{BD} \times 100$

A_{st} = 1.035 x 230 x 750/100

Therefore A_{st} = 2023.425 mm^2

Check

for HTSD steel

Min A_{st} = 0.85 x 230 x 825/ 50(= 322.575 mm^2

Max A_{st} = 0.04 x 230 x 850 = 7820 mm^2

Provide 5 bars of 25 mm dia

Actual Size A_{st} = 5 x 3.14/4 x 25^2

= 2454.37 mm^2

Vertical Deflection

Span/Effective depth = 20

$P_t = \frac{A_{st}}{BD} \times 100$

= 2023.425 x 100 / (230 x 850)

= 1.035

Actual ratio

Span/Effective depth = 7.03x 1000/825

= 8.521

Actual ratio < allowable, hence satisfies

stirrups

provide 10 mm stirrups

spacing $0.87 f_y * A_{sv}/(0.4b)$

= 371.356 mm say= 300 mm

Note:

All other beams are designed in the same way

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DESIGN OF SLAB (TYPICAL ROOF DETAIL)
AS PER IS:456-2000

Given Data:

Shorter span	=	5.5	m	
Longer Span	=	7.9	m	
Live Load (w)	=	3	kN/m^2	
Width of Support	=	230	mm	
Grade of Concrete	=	25	N/mm^2	
Grade of Steel	=	500	N/mm^2	
Mu limit / bd^2 (Qu)	=	3.33		
Ly/Lx	=	1.44	<	2

The Slab is to be designed as Two way

Thickness of Slab:

Assume % of steel is 0.2%,

Modification Factor = 1.2

Span/Depth	=	26	Refer Fig.4 (IS 456-2000)	
Span/Depth	=	31.2	~	32
Effective Depth (d)	=	171.875	~	196.875 mm

Adopt Thickness of Slab is **200 mm**

Effective Span:

c/c of support	=	5730	mm
Clear Span + d	=	5675	mm
For shorter span (lx)	=	5675	mm

Load Calculation:

Self weight of Slab	=	5	kN/m^2
Floor finish	=	2	kN/m^2
Live Load	=	3	kN/m^2
Total Load	=	10	kN/m^2
Factored Load(W)/m	=	15.000	kN/m

Bending Moments coefficents:

Refer IS 456-2000 Table No. 26

Support condition = 9

For shorter span

αx -ve	=	0
αx +ve	=	0.089

For Longer span 3

αx -ve	=	0
αx +ve	=	0.056

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Design Moments:

Sl.No	Design Moments	For shorter span	For Long span
1	Negative Moment at continuous edge	0.000	0.000
2	Positive Moment at mid span	42.995	27.053
3	d required $= \sqrt{Mu/Quxb}$	113.628	90.133

113.628 < 175.00 mm **OK**

The Slab depth is enough

Reinforcements:

Ast_{min} = 0.12 %

= **210.00 mm²**

$$Ast = \frac{0.5fck}{fy}\left(1 - \sqrt{1 - 4.6 * Mu/fck * 1000 * d^2}\right.$$

Sl.No	Reinforcements	For shorter span					
		Ast in mm^2	Dia	Spacing			
1	Bottom (+ve)	607.21	12	186.16	150	**12 mmØ 150.00 mm c/c at Bottom**	
		For longer span					
2	Bottom (+ve)	383.29	10	204.81	180	**10 mmØ 180.00 mm c/c at Bottom**	

8.Check for Deflection:

% of Steel at Mid span	=	**0.431**	%
fs	=	**233.67**	
Modification Factor	=	1.50	(Ref Fig 4 Pg 38 - IS 456-2000)
d required	=	145.51	mm
d provide	=	175.00	mm

9. Results:

Size of Slab is	=	**5.5**	**x**	**8**	**m**	
Depth of Slab is	=	**200**	**mm**			
For shorter span		**Provide**	**12**	**mmØ @**	**150**	**mm c/c at Bottom**
For longer span		**Provide**	**10**	**mmØ @**	**180**	**mm c/c at Bottom**

Note:

All other slab are designed in the same way

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Bridging vision with reality

SOIL INVESTIGATION REPORT

CLIENT

M/s. VISHRANTHI HOMES PVT LTD

TEYNAMPET, CHENNAI



PROJECT LOCATION

POES GARDEN, CHENNAI

REPORT NO.: SI/CHN/24/1765/01

JULY 2024

GEO FOUNDATIONS & STRUCTURES PVT LTD

GEO TECHNICAL DIVISION CHENNAI

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NAME OF PROJECT

SOIL INVESTIGATION FOR THE PROPOSED (STILT+10 FLOORS) STRUCTURE AT OLD No. 92, NEW No.16, POES GARDEN, TEYNAMPET, CHENNAI.

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PROJECT No.: 1765					
Rev. No.	Date	Description	Created by	Verified by	Approved by
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SOIL INVESTIGATION REPORT

1.0 INTRODUCTION

1.1 The work of "Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Old No. 92, New No.16, Poes Garden, Teynampet, Chennai." was entrusted to **M/s. Geo Foundations & Structures (P) Ltd.**, Adyar, Chennai – 600 020, by **M/s. Vishranthi Homes Pvt. Ltd,** Teynampet, Chennai – 600 018.

1.2 The soil investigation (field investigation) works were carried out on **11th to 15th July 2024.** This report summarizes the bore logs of the soil investigation, and presents recommendations for suitable type of foundations for the proposed **(Stilt+10 Floors) structure.**

2.0 OBJECTIVE OF INVESTIGATION

2.1 The objective of soil investigation is to determine the nature and characteristics of sub-soil below the ground level for the proposed **(Stilt+10 Floors) structure**. The study includes identification of suitable type of foundations and assessment of safe bearing capacities for the proposed **(Stilt+10 Floors) structure**.

3.0 SCOPE OF WORK

The scope of work at this site comprises of the following:

3.1 Mobilization of Calyx drilling machine with all necessary equipments and personnel.

3.2 Boring of **2** bore holes of 150 mm diameter with Calyx drilling equipments through sand, silt, clay & weathered rock (SPT>100).

3.3 Conducting Standard Penetration Tests in the bore holes and collecting the disturbed but representative soil samples, including packing and transportation to laboratory.

3.4 To conduct the following laboratory tests on soil samples:

(a) Grain size analysis

(b) Index properties:

(i) Liquid limit

(ii) Plastic limit

(iii) Shrinkage limit

(c) Moisture content

(d) Dry and bulk density

(e) Specific Gravity

(f) Free Swell Index

(g) Triaxial / Direct Shear Test

(h) Unconfined Compressive Strength

(i) Chemical Analysis of Ground Water

3.5 Preparation and submission of detailed report of field and laboratory results with recommendations for suitable type of foundations.

4.0 FIELD INVESTIGATIONS-GEO-TECHNICAL STUDIES

4.1 Boring rig, with all requisite equipments and accessories, were mobilized at the worksite. A team of technical personnel with skilled laborers were also deputed.

4.2 **Two** bore holes of 150 mm diameter were bored to a maximum depth up to **20 m** below the existing ground level. The bore holes were made as per relevant Indian Standard IS: 1892: 2021. The borehole locations are shown in Fig. nos. 1 & 2 **(Appendix I).**

4.3 Representative soil samples were collected at every change of strata or at about 1 m depth interval, up to 5 m, from the existing ground level, 1.5 m depth interval, up to termination depth. The samples so collected were sealed and numbered with full particulars for identification and sent to the laboratory for conducting the required tests.

4.4 Standard Penetration tests were conducted in the bore holes at 1 m depth interval, up to 5 m, from the existing ground level, 1.5 m depth interval, up to termination depth, as per the relevant Indian Standard, IS: 2131-1981(Reaffirmed 2021). In this test, a standard split spoon sampler is driven into the ground at the required depth by means of standard hammer of 63.5 kgs weight, falling from a height of 75 cm. Number of blows for the first

15 cm is not taken into consideration because of possible disturbances or presence of settled, suspended matters at the bottom of the bore- holes. The total number of blows for the next 30 cm depth of penetration is considered as SPT 'N' value as shown in Figure nos.3 & 4 **(Appendix II).**

5.0 LABORATORY INVESTIGATION

The following laboratory tests were conducted on the selected soil samples collected from the bore holes:

(a) Grain size analysis

(b) Natural Moisture content

(c) Index properties on clayey and silty soil samples

(I) Liquid limit

(II) Plastic limit

(d) Dry & Bulk Density

(e) Specific Gravity

(f) Direct Shear Test

All the above laboratory tests were carried out as per relevant Indian Standards.

All the soil samples were identified and classified as per relevant Indian Standard, IS: 1498-1970(Reaffirmed 2021). The results are shown in Table Nos.1 & 2 **(Appendix III).**

The results of the chemical analysis of ground water are presented in Table No.3 **(Appendix IV).**

6.0 SOIL PROFILE

In borehole BH 1, medium dense clayey sand occurs from ground level up to 3 m, followed by stiff sandy clay of low plasticity up to 4 m, very stiff sandy clay of low plasticity up to 5 m, medium dense silty sand up to 8 m, soft sandy clay of medium plasticity up to 9.5 m, loose clayey sand up to 12.5 m, medium stiff sandy clay of low plasticity up to 14 m, very loose

clayey sand up to 15.5 m, medium dense clayey sand up to 17 m, followed by weathered rock up to **20 m**, at which depth the bore hole was terminated.

In borehole BH 2, medium dense clayey sand occurs from ground level up to 2 m, followed by medium dense sand up to 3 m, stiff sandy clay of medium plasticity up to 5 m, medium dense silty sand up to 8 m, soft sandy clay of medium plasticity up to 11 m, soft sandy clay of high plasticity up to 14 m, very loose clayey sand up to 15.5 m, medium dense silty sand up to 17 m, followed by weathered rock up to **20 m**, at which depth the bore hole was terminated.

7.0 GROUND WATER TABLE

Ground water level was met at a depth of **2 m** from the existing ground level at the time of soil investigation in the 2 boreholes, during continuous boring from **11.07.2024 to 15.07.2024.**

8.0 RECOMMENDATIONS FOR SUITABLE TYPE OF FOUNDATIONS:

Bore holes were made for soil investigation to assess the nature and strength of the subsoil strata for sustainability of the loads. This report gives the details of the visual soil strata, suitable type of foundations and safe bearing capacity. Based on the subsoil conditions described in Sl. No. 6, the following recommendations are made for suitable type of foundations for the proposed **(Stilt+10 Floors) structure**.

8.1 Pile Foundations

8.1.1 Bored cast in situ concrete pile foundations are recommended.

8.1.2 The recommended safe load carrying capacity of bored cast in situ concrete piles are considered as per IS 2911 (Part 1/Sec2): 2010 (Reaffirmed 2020)

8.1.3 The pile bore may be terminated at a depth of minimum five times diameter of the pile in to hard strata (where six consecutive SPT 'N' values of more than 100 are obtained in each test at depth intervals of one pile diameter).

8.1.4 To satisfy the above criterion, the pile length may be of the order of **20 m** from the existing ground level.

8.1.5 In terms of concrete used for the piles, to provide the required factor of safety of **2.5** for stress in the pile concrete, we recommend minimum M 30 Grade Concrete.

8.1.6 According to the structural strength of concrete determined for different pile diameters, assuming 5 grades less to allow for underwater concreting, consider M 25 grade concrete instead of M 30 grade concrete.

8.1.7 The recommended safe load carrying capacity of bored cast in situ concrete piles as per IS 2911 (Part 1/Sec2): 2010 (Reaffirmed 2020) for different pile diameters are presented in **Table A.**

8.1.8 **R.C.C. BORED CAST IN SITU PILES**

Safe capacity of RCC Bored cast-in-situ pile can be computed by using the formula given in IS: 2911 (Part-1/Sec-2):2010 (Reaffirmed 2020)

Ultimate bearing capacity Qu of piles in Cohesionless soil:

$$Q_U = A_P(0.5.D.\gamma.N\gamma + P_D.N_q) + \sum_{I=1}^{I=n} K .P_{Di}.\tan \delta.A_{si}$$

Where, A_P = Cross sectional area of pile toe in cm^2

D= Stem dia. in cm

γ= Effective unit weight of soil at pile toe in kg/cm^3

P_D = Effective overburden pressure in kg/cm^2

$N\gamma$ and Nq = Bearing capacity factors depending upon the angle of internal friction Ø at toe

$\sum_{i=1}^{i=n}$ = Summation of N layers in which pile is installed

K = Coefficient of earth pressure

P_{Di} = Effective overburden pressure in kg /cm² for the i^{th} layer where i varies from 1 to n.

δ= Angle of wall friction between pile and soil in degrees (may be taken equal to Ø)

A_{si} =Surface area of pile stem in cm² in the i^{th} layer where i varies from 1 to n.

For cohesive soil:-

Safe capacity of pile = $(A_P. Nc. Cp+\alpha. C.A_S)/f$

Where,

A_P- c/s area of pile toe in cm²

Nc- bearing capacity factor

Cp- average cohesion at pile tip in kg/cm²

α - Reduction factor

C – Average cohesion throughout the length of pile in kg/cm²

A_S- Surface area of pile shaft in cm²

f - factor of safety.

Table A

Approximate Length of pile from G.L (m)	Pile Diameter (mm)	Recommended Safe Vertical Load Capacity (T)
20	500	95
	600	130
	750	200

9.0 CHEMICAL COMPOSITION OF GROUND WATER

The results of chemical analysis of the ground water sample collected from the borehole, presented in **Appendix – IV** show that:

9.1 Since the pH value is more than 6, the ground water, in terms of pH value, is suitable for mixing concrete as per Clause 5.4.2 of Indian Standard: 456-2000, (Reaffirmed 2021), plain and reinforced concrete – code of practice (Fourth Revision).

9.2 The chloride content is less than the permissible upper limit of 500 mg/l. for use of ground water for mixing in concrete for RCC, as per IS: 456-2000, (Reaffirmed 2021). Therefore, in terms of chloride content in the ground water, the ground water is suitable for mixing concrete for RCC, and also for PCC.

9.3 The sulphate content (expressed as SO_3) is less than the permissible upper limit of 400 mg/l for use of ground water for mixing in concrete, as per IS: 456-2000 (Reaffirmed 2021). Therefore, in terms of sulphate content, the ground water is suitable for mixing concrete for RCC. The sulphate content (expressed as SO_3) is less than 300 mg/l which comes under Class 1 of "Requirements for concrete exposed to sulphate attack", as per IS:456-2000 (Reaffirmed 2021), Table 4. For this Class, the requirements are: Ordinary Portland cement or Portland slag cement or Portland pozzolana cement can be used with a minimum cement content of 280 kg/ m^3 of concrete and with a maximum water: cement ratio of 0.55"

9.4 Hence, the ground water is suitable for mixing concrete for Construction purpose.

10.0 The results given in this report are based on the results of the soil investigation carried out. In actual execution, if any variation is found, the consultants may also be referred to.

APPROVED BY,

for, Sryana

Dr. K. Muthukrishnaiah BE (Hons), M.Tech., Ph.D.,
(Professor & Head, Ocean Engineering Dept. IIT Madras)(Rtd),
(Chief Consultant)

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On behalf of CMDA MSB Panel, the Geotechnical investigation report is generally reviewed.

Superintending Engineer, P.W.D.,
Planning and Designs Circle,
Chepauk, Chennai-5.

APPENDIX-I

BOREHOLE LOCATIONS DRAWING

GEO FOUNDATIONS & STRUCTURES PVT LTD
No.89, 1st Main Road, Gandhi Nagar, Adyar, Chennai – 600 020.

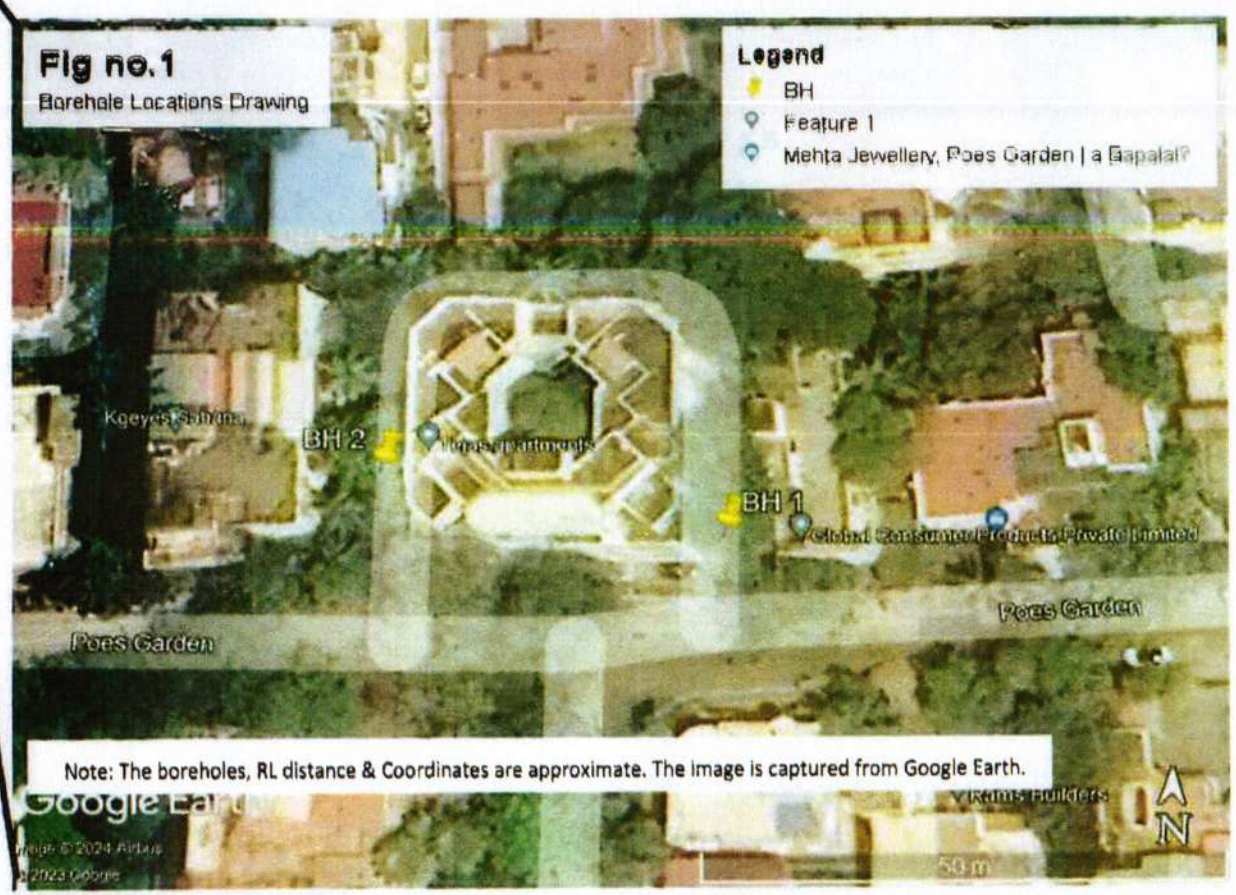


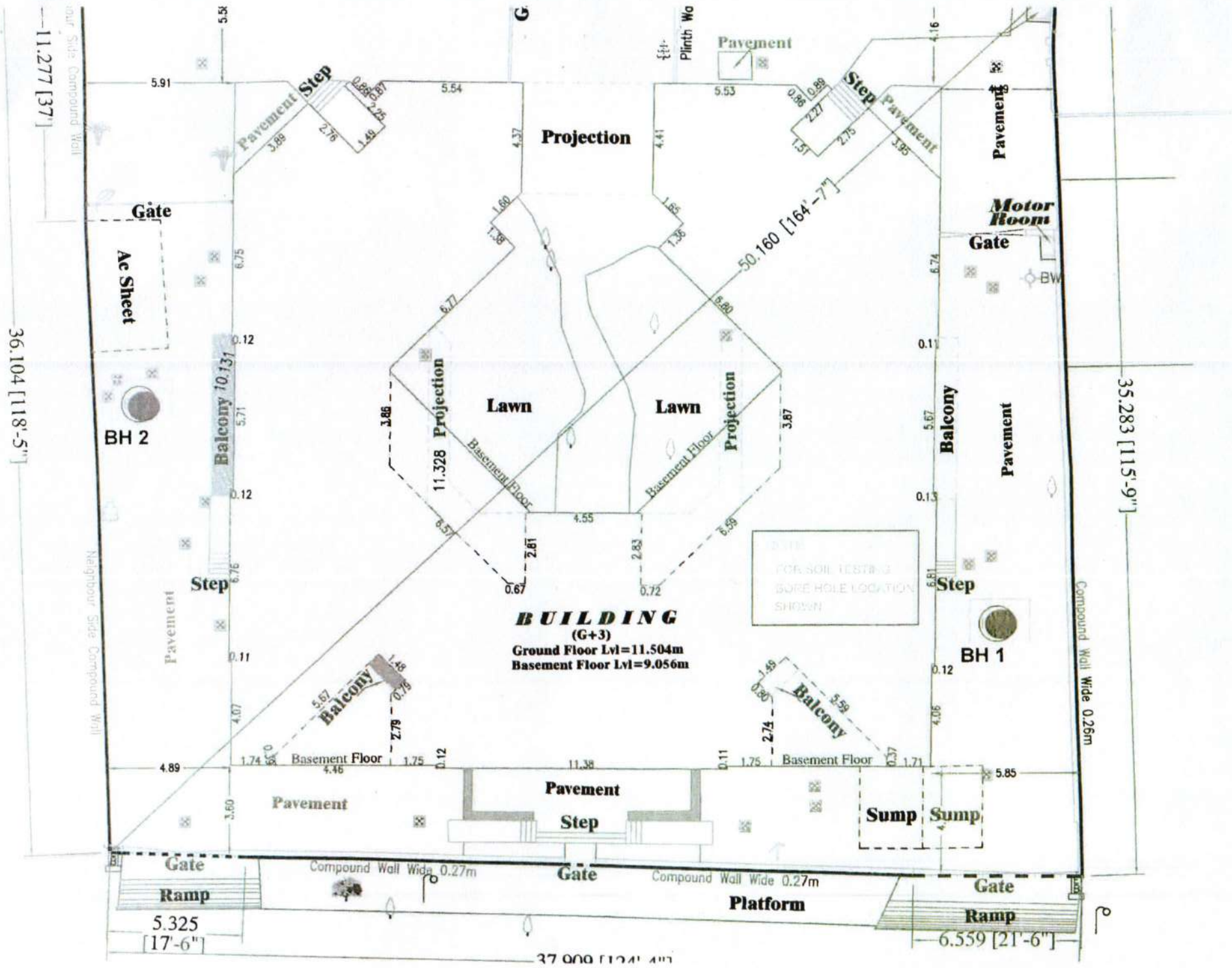
Project Number: 1765

Project Name: Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

COORDINATES:

Borehole No.	UTM Co-ordinates
BH 1	419073 E, 1442067 N
BH 2	419055 E, 1442073 N




Gate
Ac Sheet
BH 2
Balcony 10.131
Step
Pavement
Pavement
Step
Projection
Lawn
Lawn
Projection
Basement Floor
Basement Floor
11.328
BUILDING
(G+3)
Ground Floor Lvl=11.504m
Basement Floor Lvl=9.056m
Balcony
Balcony
Basement Floor
Basement Floor
Pavement
Step
Pavement
Pavement
Step
Pavement
Motor Room
Gate
BW
Balcony
Pavement
Step
BH 1
Sump
Sump
Gate
Ramp
Compound Wall Wide 0.27m
Gate
Compound Wall Wide 0.27m
Platform
Gate
Ramp
Compound Wall Wide 0.26m
50.160 [164'-7"]
36.104 [118'-5"]
11.277 [37']
35.283 [115'-9"]
5.325
[17'-6"]
6.559 [21'-6"]

APPENDIX-II

BORELOGS

Project : Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

GEO FOUNDATIONS & STRUCTURES PVT. LTD

Bore Hole No	: BH 1
Location	: Poes Garden
Type of Boring	: Calyx
Ground Water Level	: 2.0 m from E.G.L on 13.07.2024
UTM Co-ordinate	: 419055 E, 1442073 N
Termination Depth	: 20.0 m

Drilling Hole Record-BH 1

Fig No. 3

Reduced Level	:	
Start Date	:	11.07.2024
End Date	:	12.07.2024

SOIL DESCRIPTION	COLOUR	STRUCTURE	DEPTH BELOW GROUND LEVEL (m)	REDUCED LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH BELOW GROUND LEVEL (m)	TEST DEPTH	PENETRATION VALUES 15cm	30cm	45cm	SPT 'N' Blows/300mm	SPT 'N' PROFILE 20 40 60 80 100	C.R (%)	R.Q.D(%)	REMARKS
Clayey SAND (SC)	Brown	Loose, Granular	2.00			SPT-1	SS	1.00	1.00-1.45	5	6	4	10				
						SPT-2	SS	2.00	2.00-2.45	7	8	7	15				G.W.L
Sandy CLAY (CL)	Brown	Stiff, Layered	4.00			SPT-3	SS	3.00	3.00-3.45	7	6	8	14				
		Very Stiff, Layered	5.00			SPT-4	SS	4.00	4.00-4.45	8	7	9	16				
Silty SAND (SM)	Dark Grey	Medium Dense, Granular	8.00			SPT-5	SS	5.00	5.00-5.45	2	6	8	14				
						SPT-6	SS	6.50	6.50-6.95	3	7	9	16				
Sandy CLAY (CI)	Dark Grey	Soft, Layered	9.50			SPT-7	SS	8.00	8.00-8.45	1	1	2	3				
Clayey SAND (SC)	Dark Grey	Very Loose, Granular				SPT-8	SS	9.50	9.50-9.95	1	2	2	4				
						SPT-9	SS	11.00	11.00-11.45	1	1	2	3				

G.W.L: 2.0 m from E.G.L on 13.07.2024 | No of SPT: 15 Nos. | No of UDS : Nil. | No of CR : Nil. | Remarks

Note: SPT-Standard Penetration Test
SS-Split Spoon Sample
OT- Open Tube

UDS-Un Disturbed Sample
CS-Core Sample

CR-Core Recovery
RQD-Rock Quality Designation

Project : Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

GEO FOUNDATIONS & STRUCTURES PVT. LTD

Bore Hole No	: BH 1
Location	: Poes Garden
Type of Boring	: Calyx
Ground Water Level	: 2.0 m from E.G.L on 13.07.2024
UTM Co-ordinate	: 419055 E, 1442073 N
Termination Depth	: 20.0 m

Drilling Hole Record-BH 1

Fig No. 3

Reduced Level	:	
Start Date	:	11.07.2024
End Date	:	12.07.2024

SOIL DESCRIPTION	COLOUR	STRUCTURE	DEPTH BELOW GROUND LEVEL (m)	REDUCED LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH BELOW GROUND LEVEL (m)	TEST DEPTH	PENETRATION VALUES 15cm	30cm	45cm	SPT'N' Blows/300mm	SPT 'N' PROFILE 20 40 60 80 100	C.R (%)	R.Q.D(%)	REMARKS
Dark Greyish, Very Loose, Clayey **SAND** (SC)			12.50			SPT-10	SS	12.50	12.50-12.95	2	2	3	5				
Sandy **CLAY** (CL)	Dark Grey	Medium stiff, Layered	14.00			SPT-11	SS	14.00	14.00-14.45	1	1	2	3				
Clayey **SAND** (SC)	Dark Gry	Very Loose, Granular	15.50			SPT-12	SS	15.50	15.50-15.95	11	18	20	38				
	Grey	Dense, Granular	17.00			SPT-13	SS	17.00	17.00-17.13	>50	-	-	>100				50/13 cm Penetration
Weathered Rock						SPT-14	SS	18.50	18.50-18.61	>50	-	-	>100				50/11 cm Penetration
			20.00			SPT-15	SS	20.00	20.00-20.10	>50	-	-	>100				50/10 cm Penetration

G.W.L: 2.0 m from E.G.L on 13.07.2024 | No of SPT: 15 Nos. | No of UDS : Nil. | No of CR : Nil. | Remarks

Note: SPT-Standard Peneration Test
SS-Split Spoon Sample
OT- Open Tube

UDS-Un Disturbed Sample
CS-Core Sample

CR-Core Recovery
RQD-Rock Quality Designation

Project : Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

GEO FOUNDATIONS & STRUCTURES PVT. LTD

Bore Hole No	: BH 2
Location	: Poes Garden
Type of Boring	: Calyx
Ground Water Level	: 2.0 m from E.G.L on 16.07.2024
UTM Co-ordinate	: 419020 E, 1442075 N
Termination Depth	: 20.0 m

Drilling Hole Record-BH 2

Fig No. 4

Reduced Level	:	
Start Date	:	12.07.2024
End Date	:	15.07.2024

SOIL DESCRIPTION	COLOUR	STRUCTURE	DEPTH BELOW GROUND LEVEL (m)	REDUCED LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH BELOW GROUND LEVEL (m)	TEST DEPTH	PENETRATION VALUES 15cm	30cm	45cm	SPT 'N' Blows/300mm	SPT 'N' PROFILE	C.R (%)	R.Q.D(%)	REMARKS
Clayey **SAND** (SC)	Brown	Medium Dense, Granular	2.00			SPT-1	SS	1.00	1.00-1.45	4	5	7	12				G.W.L
Brownish, Medium Dense, **SAND** (SP)			3.00			SPT-2	SS	2.00	2.00-2.45	6	9	8	17				
Sandy **CLAY** (CI)	Brown	Stiff, Layered	5.00			SPT-3	SS	3.00	3.00-3.45	6	7	5	12				
						SPT-4	SS	4.00	4.00-4.45	7	6	5	11				
						SPT-5	SS	5.00	5.00-5.45	4	6	7	13				
Silty **SAND** (SM)	Dark Grey	Medium Dense, Granular	8.00			SPT-6	SS	6.50	6.50-6.95	4	6	8	14				
						SPT-7	SS	8.00	8.00-8.45	1	1	1	2				
Sandy **CLAY** (CI)	Dark Grey	Soft, Layered				SPT-8	SS	9.50	9.50-9.95	1	1	2	3				
Sandy **CLAY** (CH)						SPT-9	SS	11.00	11.00-11.45	1	2	2	4				

G.W.L: 2.0 m from E.G.L on 16.07.2024 | No of SPT: 15 Nos. | No of UDS : Nil. | No of CR : Nil. | Remarks

Note: SPT-Standard Peneration Test
SS-Split Spoon Sample
OT- Open Tube

UDS-Un Disturbed Sample
CS-Core Sample

CR-Core Recovery
RQD-Rock Quality Designation

Project : Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

GEO FOUNDATIONS & STRUCTURES PVT. LTD

Bore Hole No	: BH 2
Location	: Poes Garden
Type of Boring	: Calyx
Ground Water Level	: 2.0 m from E.G.L on 16.07.2024
UTM Co-ordinate	: 419020 E, 1442075 N
Termination Depth	: 20.0 m

Drilling Hole Record-BH 2

Fig No. 4

Reduced Level	:	
Start Date	:	12.07.2024
End Date	:	15.07.2024

SOIL DESCRIPTION	COLOUR	STRUCTURE	DEPTH BELOW GROUND LEVEL (m)	REDUCED LEVEL (m)	LEGEND	TEST NO	SAMPLE TYPE	DEPTH BELOW GROUND LEVEL (m)	TEST DEPTH	PENETRATION VALUES 15cm	30cm	45cm	SPT 'N' Blows/300mm	SPT 'N' PROFILE 20 40 60 80 100	C.R (%)	R.Q.D(%)	REMARKS
Sandy **CLAY** (CH)	Dark Grey	Soft, Layered	14.00			SPT-10	SS	12.50	12.50-12.95	2	1	2	3				
Clayey **SAND** (SC)	Dark Grey	Very Loose, Granular	15.50			SPT-11	SS	14.00	14.00-14.45	1	2	2	4				
Silty **SAND** (SM)	Grey	Dense, Granular	17.00			SPT-12	SS	15.50	15.50-15.95	13	19	21	40				
Weathered Rock			20.00			SPT-13	SS	17.00	17.00-17.12	>50	-	-	>100				50/12 cm Penetration
						SPT-14	SS	18.50	18.50-18.61	>50	-	-	>100				50/11 cm Penetration
						SPT-15	SS	20.00	20.00-20.09	>50	-	-	>100				50/9 cm Penetration

G.W.L: 2.0 m from E.G.L on 16.07.2024	No of SPT: 15 Nos.	No of UDS : Nil.	No of CR : Nil.	Remarks

APPENDIX-III

LABORATORY TEST RESULTS

GEO FOUNDATIONS & STRUCTURES PVT LTD

TEST RESULTS

Project : Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

Boring Start: 11.07.2024	Termination Depth(m)	Table No.
Boring End : 12.07.2024	20.00	1
Location	**G.W.T (m)**	**Bore-Hole No.**
Poes Garden, Teynampet	2.00	1

SITE RECORDED N VALUE	CORRECTED N VALUE	DEPTH FROM E.G.L (m)	SAMPLE	SOIL DESCRIPTION	IS. CLASSIFICATION	GRAIN SIZE ANALYSIS			ATTERBERG LIMITS			DRY DENSITY, gm/cc	WET DENSITY, gm/cc.	WATER CONTENT, %	SPECIFIC GRAVITY	FREE SWELL INDEX, %	SHEAR PARAMETERS		
						GRAVEL %	SAND, %	SILT & CLAY %	LIQUID LIMIT,%	PLASTIC LIMIT,%	PLASTICITY INDEX						TEST METHOD	C in Kg/cm²	Φ in degrees
10	15	1.00	SPT-1	Clayey **SAND**	SC	2	49	49						20					
15	20	2.00	SPT-2		SC	0	71	29				1.62	1.97	22	2.64		DS		30
14	14	3.00	SPT-3	Sandy **CLAY**	CL	0	21	79						22					
16	16	4.00	SPT-4		CL	2	29	69	28	18	10			27					
14	16	5.00	SPT-5	Silty **SAND**	SM	0	73	27						25	2.62				
16	17	6.50	SPT-6		SM	0	71	29						26					
3	3	8.00	SPT-7	Sandy **CLAY**	CI	1	44	55	44	20	24			46					
4	4	9.50	SPT-8	Clayey **SAND**	SC	1	54	45						40					
3	3	11.00	SPT-9		SC	2	50	48	33	17	16			39					
5	5	12.50	SPT-10	Sandy **CLAY**	CL	1	44	55	34	12	22			38					
3	3	14.00	SPT-11	Clayey **SAND**	SC	2	49	49	34	17	17			37					
38	25	15.50	SPT-12		SC	2	63	35						15					
>100	>100	17.00-17.13	SPT-13	**Weathered Rock**	GP	47	42	11						14					
>100	>100	18.50-18.61	SPT-14		SM	14	65	21						12					
>100	>100	20.00-20.10	SPT-15			1	40	59						16					

NOTE: Type of Sample
SPT- Standard Penetration Test
UDS- Un Disturbed Sample

Test Method:
UCS- UnConfined Compressive Strength
DS-Direct Shear
TA - Tri Axial test

GEO FOUNDATIONS & STRUCTURES PVT LTD

TEST RESULTS

Project : Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.

Boring Start: 12.07.2024	Termination Depth(m)	Table No.
Boring End : 15.07.2024	20.00	2
Location	**G.W.T (m)**	**Bore-Hole No.**
Poes Garden, Teynampet	2.00	2

SITE RECORDED N VALUE	CORRECTED N VALUE	DEPTH FROM E.G.L (m)	SAMPLE	SOIL DESCRIPTION	IS. CLASSIFICATION	GRAIN SIZE ANALYSIS			ATTERBERG LIMITS			DRY DENSITY, gm/cc	WET DENSITY, gm/cc.	WATER CONTENT, %	SPECIFIC GRAVITY	FREE SWELL INDEX, %	SHEAR PARAMETERS		
						GRAVEL, %	SAND, %	SILT & CLAY %	LIQUID LIMIT,%	PLASTIC LIMIT,%	PLASTICITY INDEX						TEST METHOD	C in Kg/cm²	Φ in degrees
12	17	1.00	SPT-1	Clayey **SAND**	SC	4	49	47	30	16	14			19					
17	19	2.00	SPT-2	**SAND**	SP	3	90	7				1.62	1.78	10	2.64		DS		30
12	12	3.00	SPT-3	Sandy **CLAY**	CI	3	38	59						28					
11	11	4.00	SPT-4		CI	3	33	64	30	18	12			27					
13	15	5.00	SPT-5	Silty **SAND**	SM	1	84	15						15					
14	15	6.50	SPT-6		SM	1	84	15						13					
2	2	8.00	SPT-7	Sandy **CLAY**	CI	0	34	66	37	19	18			47					
3	3	9.50	SPT-8		CI	0	32	68	44	20	24			58					
4	4	11.00	SPT-9		CH	1	49	50						42					
3	3	12.50	SPT-10		CH	0	48	52	65	30	35			39					
4	4	14.00	SPT-11	Clayey **SAND**	SC	0	56	44						37					
40	26	15.50	SPT-12	Silty **SAND**	SM	3	53	44	Non Plastic					17					
>100	>100	17.00-17.13	SPT-13	**Weathered Rock**	SP	20	64	16						15					
>100	>100	18.50-18.61	SPT-14		SM	18	61	21						14					
>100	>100	20.00-20.10	SPT-15		SM	8	69	23						14					

NOTE: Type of Sample
SPT- Standard Penetration Test
UDS- Un Disturbed Sample

Test Method:
UCS- UnConfined Compressive Strength
DS-Direct Shear
TA - Tri Axial test

APPENDIX-IV

CHEMICAL ANALYSIS OF GROUND WATER

GEO FOUNDATIONS & STRUCTURES PVT LTD

CHEMICAL ANALYSIS OF GROUND WATER

Project. No.	**: 1765**
Name of Project	**: Soil Investigation for the Proposed (Stilt+10 Floors) Structure at Poes Garden, Teynampet, Chennai.**
Ref. No.	**: SI/CHN/24/1765/01**

Table No. 3

Sl. No.	Tests	BH 1	Limits for using the ground water for mixing concrete
1	**Sulphate as SO_3 mg/l**	Nil	400 mg/l
2	**Chloride as Cl mg/l**	460	I.2000 mg/l for Plain concrete II. 500 mg/l for reinforced concrete
3	**pH @ 25° C**	7	6.0 Min



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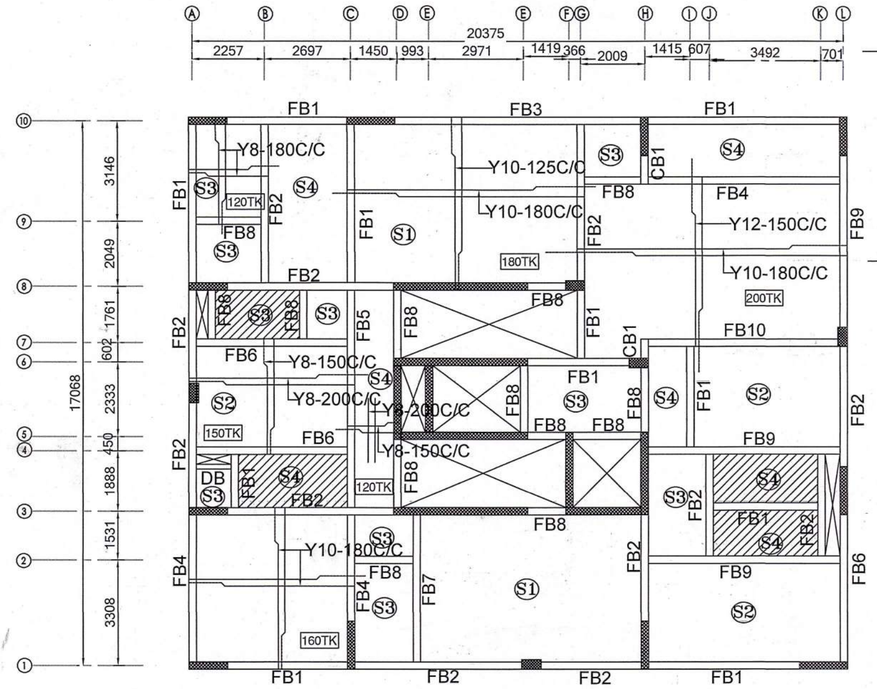
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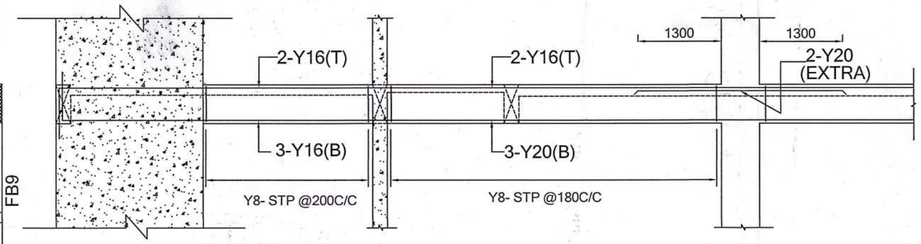
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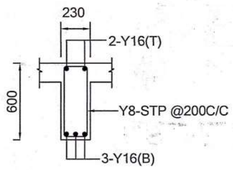
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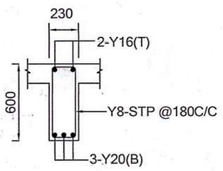




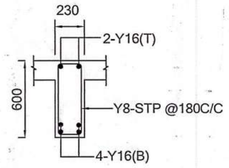
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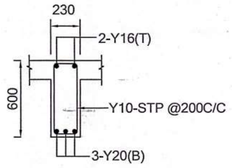
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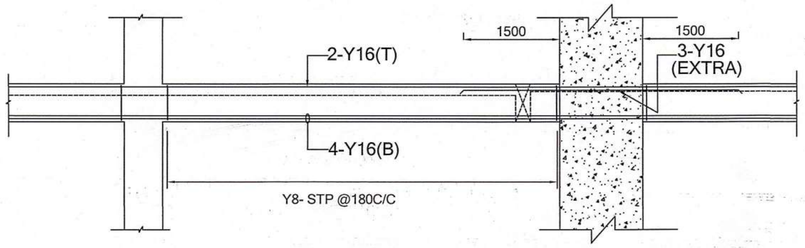
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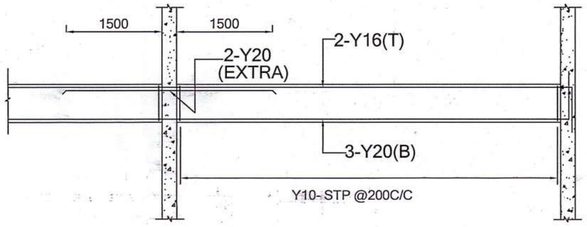
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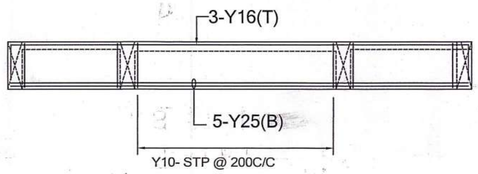
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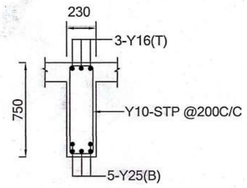
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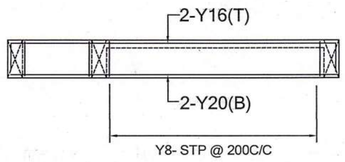
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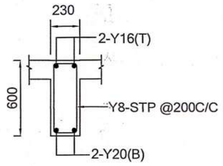
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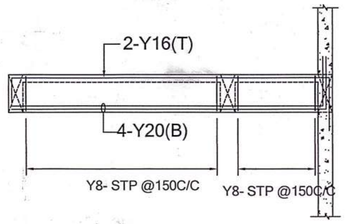
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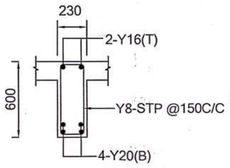
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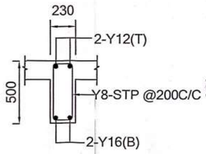
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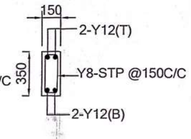
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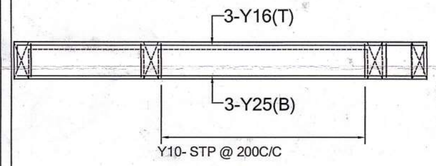
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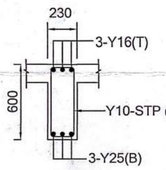
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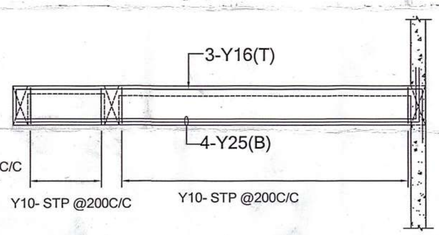
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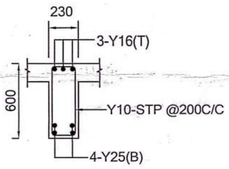
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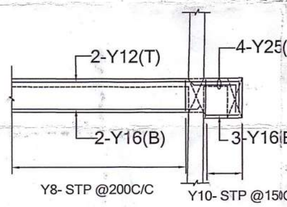
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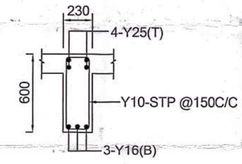
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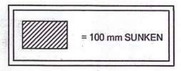
C.S OF FB10



L.S OF FB8 L.S OF CB1



C.S OF CB1



SCHEDULE OF STRUCTURAL DETAILS:

NOTES G+10

- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS.
- CONCRETE MIX SHALL BE M40 FOR COLUMN & M35 FOR ALL OTHER R.C.C WORKS,
- ALL REINFORCEMENTS ARE OF Fe500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE
  - (i) COLUMN 40mm
  - (ii) BEAM 30mm
  - (iii)SLAB 20mm
  - (iv) R.C.C WALL 25mm
- LAP LENGTH SHALL BE 50 x DIA OF THE BAR

R.No	Description of Revision	Date	Revised By

STRUCTURAL CONSULTANT

Dr. ALEX JACOB
CIVIL & STRUCTURAL CONSULTING ENGINEERS
41/A, BEACH ROAD,
KALAKSHETRA COLONY
BESANT NAGAR, CHENNAI - 600 090.
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web site: www.unitedconsultants.in

PROJECT TITLE

THE PROPOSED CONSTRUCTION OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 10 DWELLING UNITS AT PLOT NO.24, NEW DOOR NO.16 AND OLD DOOR NO.92, POES GARDEN, CHENNAI -600 086 AND COMPRISED IN R.S.NO.1567 AND AS PER PATTA R.S.NO.1567/30, BLOCK NO.31 OF MYLAPORE VILLAGE (AS PER PATTA MYLAPORE (PART 1) TOWN) (AS PER REGISTRATION DEPARTMENT TEYNAMPET VILLAGE), MYLAPORE TALUK AND WITHIN THE LIMITS OF GREATER CHENNAI CORPORATION. ZONE :- IX, DIVISION :- 118.

DRAWING TITLE

TYPICAL ROOF DETAIL

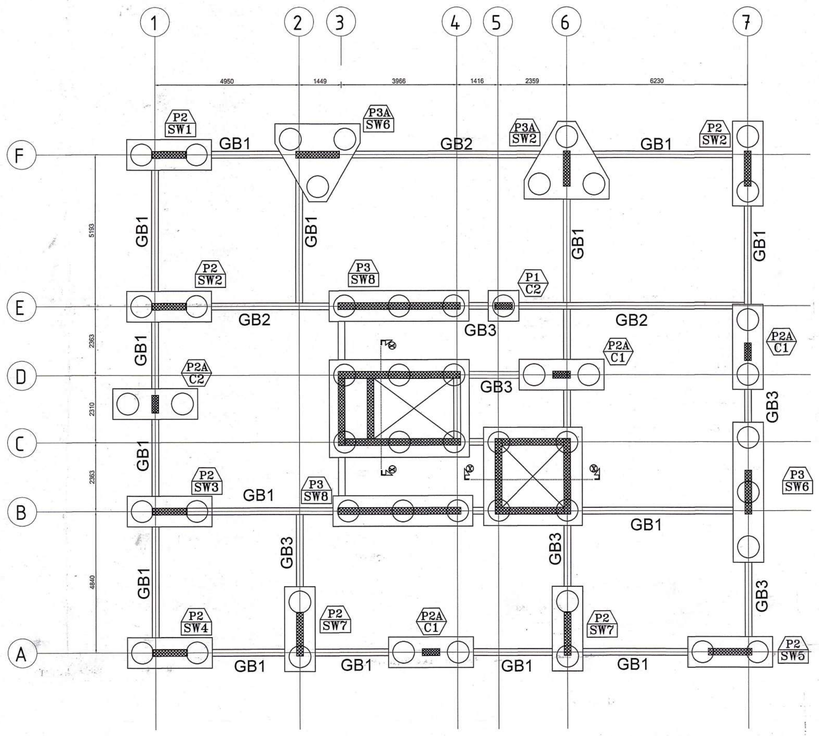
PROJECT NO

UC-1296-CORPORATION-RESIDENTIAL BUILDING-POES GARDEN,CHENNAI

DSND	Dr.ALEX JACOB
DRN	RAJESH
DATE	19.09.24
SCALE	1 : 100

Dr. ALEX JACOB
B.E., M.Tech (Str), Ph.D(Hon),
M.I.E. (Aust), M.I.E. (Ind)
STRUCTURAL ENGINEER,
41/A, BEACH ROAD, KALAKSHETRA COLONY,
CHENNAI - 600 090.
REG No. SE/GR-I/19/02/001
REG No. RSE100392019

FILE NAME E:\RAJESH\UC-1296-CORPORATION-RESIDENTIAL BUILDING-POES GARDEN,CHENNAI



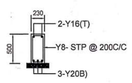
PLAN

on behalf of Chief Hon Board, the structural drawings are reviewed & found generally in order. It is the responsibility of the site/structural Engineers Concerned to scrutinize the details and implement at site as per the detailed drawings and specifications.

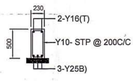
19.10.25

Superintending Engineer, P.W.D.,
Planning and Designs Circle,
Chepauk, Chennai-5.

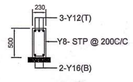
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		MAIN REINF	TIES		
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COL-C2	300 X 600	12-Y16	Y8-TIES @ 200C/C		



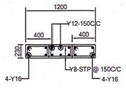
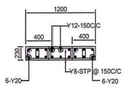
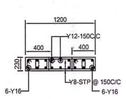
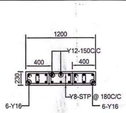
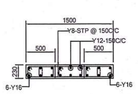
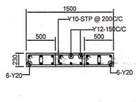
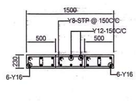
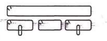
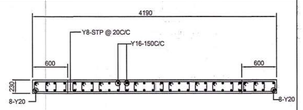
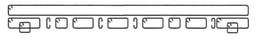
C.S OF GB1



C.S OF GB2



C.S OF GB3

COL-NO	SIZE IN mm	REINFORCEMENT	SHAPE OF TIES
SHEAR WALL SH1	230 X 1200		
SHEAR WALL SH2	230 X 1200		
SHEAR WALL SH3	230 X 1200		
SHEAR WALL SH4	230 X 1200		
SHEAR WALL SH5	230 X 1500		
SHEAR WALL SH6	230 X 1500		
SHEAR WALL SH7	230 X 1500		
SHEAR WALL SH8	230 X 4190		

SCHEDULE OF STRUCTURAL DETAIL

G+10

NOTES

- REFER ARCH. DWG. FOR CENTRE LINE DIMENSIONS.
- CONCRETE MIX SHALL BE
  - (a) COLUMN & SHEAR WALL – M40
  - (b) ALL OTHER R.C.C WORKS – M35
- CONCRETE MIX SHALL BE M35 FOR PILE WITH MINIMUM CEMENT CONTENT OF 400KG/m^3
- ALL REINFORCEMENTS ARE OF Fe 500 GRADE.
- CLEAR COVER TO MAIN REINFORCEMENT SHALL BE

(i) PILE	50mm
(ii) PILE CAP	50mm
(iii) COLUMN	40mm
(iv) SLAB	20mm
(v) BEAM	30mm
(vi) R.C.C WALL	25mm

LAP LENGTH SHALL BE 50 x DIA OF THE BAR

R.NO	DESCRIPTION OF REVISION	DATE	REVISED BY

STRUCTURAL CONSULTANT

UNITED CONSULTANTS
CIVIL & STRUCTURAL CONSULTING ENGINEERS
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BESANT NAGAR, CHENNAI - 600 090.
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web site: www.unitedconsultants.in

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THE PROPOSED CONSTRUCTION OF STILT FLOOR+10 FLOORS RESIDENTIAL BUILDING WITH 10 DWELLING UNITS AT PLOT NO.24, NEW DOOR NO.16 AND OLD DOOR NO.92, POES GARDEN, CHENNAI -600 086 AND COMPRISED IN R.S.NO.1567 AND AS PER PATTA R.S.NO.1567/30, BLOCK NO.31 OF MYLAPORE VILLAGE (AS PER PATTA MYLAPORE (PART 1) TOWN) (AS PER REGISTRATION DEPARTMENT TEYNAMPET VILLAGE), MYLAPORE TALUK AND WITHIN THE LIMITS OF GREATER CHENNAI CORPORATION. ZONE :- IX, DIVISION :- 118.

DRAWING TITLE

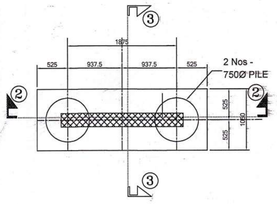
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DWG NO

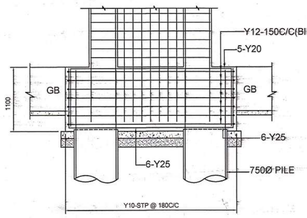
UC-1296-CORPORATION-RESIDENTIAL BUILDING-POES GARDEN,CHENNAI

DSND	Dr.Alex Jacob
DRN	RAJESH
DATE	19.09.24
SCALE	1:100
FILE NAME	E:/RAJESH/ UC-1296-CORPORATION-RESIDENTIAL BUILDING-POES GARDEN,CHENNAI

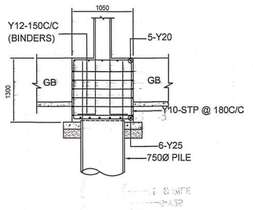
Dr.ALEX JACOB
B.E., M.Tech (Str), Ph.D(Hon),
M.S.E. (Aust), M.I.E. (Ind)
STRUCTURAL ENGINEER,
41/A, BEACH ROAD, KALAKSHETRA COLONY,
CHENNAI - 600 090.
REG No. SE/GR-I/19/02/001
REG No. RSE100392019



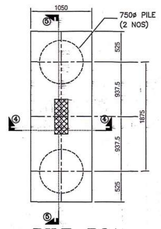
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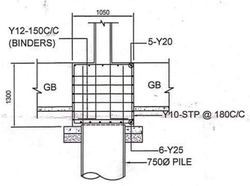
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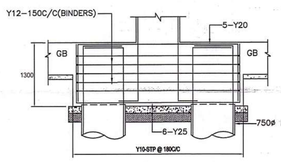
PILE-P2A



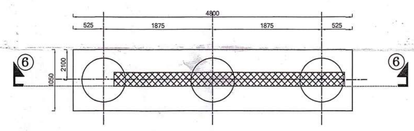
750ø PILE
(SAFE LOAD 200 TONNES)



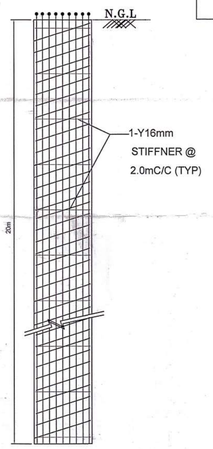
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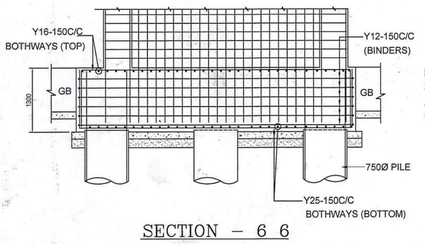


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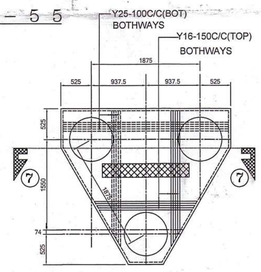


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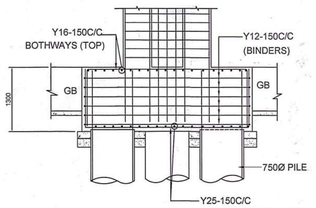




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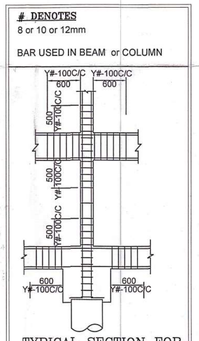
PILE-P3A



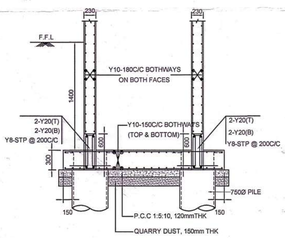
SECTION - 7 7

TYPICAL SECTION OF PILE

(BORED CAST IN-SITU PILE)



TYPICAL SECTION FOR STIRRUPS DETAILS



LIFTWELL SECTION
(SECTION-X-X)

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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Prepared from the registers named on the page each finding sits on. Where a register could not be read, this document says so in its place rather than leaving the gap to be read as a clean result.