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SHRI BALAJI GEOTECH

Soil Investigations, Rock Core Drilling, Grouting works, Foundation & Structural Design
N0:40, Thiyagapramma Street, Subramania Nagar,Suramangalam, Salem-636005.
ISO-9001:2015 Certified Company
Email: balajigeotech@gmail.com Website: www.shribalajigeotech.com
Cell: 9894713236, 9150603434

SHRI BALAJI
GEOTECH

SBGT/CIV/2023-2024/62

SOIL INVESTIGATION REPORT

Name of Work: CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.

CLIENT:

Ms.CHOLA CHONA BUILDERS PVT LTD.,
Er.S.K.SENTHILKUMAR,
Er.P.R.GANESAN

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG
Registered Geo-Technical Engineer (GTE.
Regn. No: Coimbatore LPA/GTE/004/202
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

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Er. K.PRAKASH, M.E., (Geo-technical Engg)., MI
Registered Geo-Technical Engineer (GTE
Regn. No: Coimbatore LPA/GTE/004/20
prakash.civil157@gmail.com
Contact: 9894713236, 86376 2

1 Introduction

Geotechnical Investigation for the **"CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT."** was carried out by SHRI BALAJI GEOTECH, SALEM.

2 Scope of Work

- Four boreholes are drilled through manually operated auger bore. Location and depth of borehole represented by client.
- Proposed construction of **Residential Apartment Building** up to hard strata for preliminary identification of type and extent of soil layers.
- The Safe Bearing Capacity of layers at different depth is based on Standard Penetration test values which are conducted in the bore holes at regular intervals.
- Submitting geotechnical investigation report for the above project based on field and laboratory test results and recommendation of suitable foundation systems based on as per IS-1892 and IS -2720.

3 Field work

Field investigations were carried out through mechanically operated rotary drilling machine in mention location.

3.1 Drilling through soil medium

3.1.1 ROTARY BORING

Rotary drilling technique was adapted using Rotary drilling machine in the proposed project. In this method, boring is effected by the cutting action of a rotating bit that is kept in firm contact with the bottom of the hole. The bit is attached to the lower end of a hollow drill rod that is rotated by a suitable chuck. Drilling mud (usually Bentonite) is continuously forced down the hollow drill rods. The mud returning upwards though the annular space between the drill rods and the side of the hold bring the cutting to the surface.

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG.
Registered Geo-Technical Engineer (GTE)
Regn. No: Coimbatore LPA/GTE/004/202
prakash.civil157@gmail.com
Contact: 9894713236, 96376 27705

3.1.2. STANDARD PENETRATION TEST

It is now most commonly used in site test. The test measures the penetration resistance of the split spoon sampler, when it is driven into the soil, at the bottom of a borehole in a standard manner. The N-value, which is the number of blow required to achieve 300mm penetration of the soil, indicates the relative density of sand or gravel, the consistency of other soil such as silts or clays and the strength of weak rocks. The test is described in IS 2131 - 1981. The split spoon sampler is attached to stiff drill rod and lowered to the bottom of the bore hold. A standard blow consists of dropping a mass of 63.5kg free fall through 750 mm on to an anvil at the top of the rods and ensuing that this amount of dynamic energy is transferred to the sampler as much as possible.

The number of blows required to achieve each 150mm penetration is recorded for a fall penetration of 450mm. The initial 150mm penetration is referred to as seating drive and the blows required for this penetration are not considered as this zone is in disturbed soil. The next 300mm of penetration is referred to as the test drive and the number of blows required to achieve this fully is termed the penetration resistance or N-value. The SPT results are given in the annexure

4. SAMPLING:

The disturbed samples were collected through SPT sampler and undisturbed samples were collected through brass tube, properly waxed on both sides then sent to laboratory for analysis.

4. 1 LABORATORY TESTS

Following laboratory tests are conducted as per IS codes.

a. Sieve analysis- IS 2720 Part 4
b. Specific gravity –IS 2720-Part 3/Sec 1
c. Unconfined compressive strength-IS 2720-Part 10
d. Direct Shear test-IS 2720 Part 13 & Part 39 Sec 1
e. Natural Moisture Content-IS 2720 Part 2
f. Soil classification as per IS 1498-1970

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG
Registered Geo-Technical Engineer (GTE
Regn. No: Coimbatore LPA/GTE/004/20
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27704

5. Subsoil Conditions

The soil conditions at this site found through Standard Penetration Test samples N Values are obtained. The Four boreholes are terminated at a maximum depth of 7.00m from Natural Ground level which are shown in bore logs.

6. Engineering Appraisal

Based on Laboratory results on the samples collected from investigation locations, the shear strength parameters such as C (Cohesive Strength) and Φ (angle of internal friction) can be correlated with SPT values.

7. Design Methodology

The Safe Bearing Capacity of the soil can be calculated on Shear failure Criteria and Settlement Criteria and any foundation system has to satisfy the above said criteria. The former one depends on shear strength and the bearing capacity equation suggested by IS 6403 as follows.

Net ultimate Bearing Capacity is given by

$$C\ Nc\ Sc\ dc\ ic + \gamma\ D\ (Nq - 1)\ Sq\ dq\ iq + 0.5\ \gamma\ B\ N\gamma\ S\gamma\ d\gamma\ i\gamma\ W'$$

The Safe Bearing Capacity is the maximum gross intensity of loading that the soil can carry safely without failing in shear which is obtained by the Net ultimate Bearing Capacity divided by factor of safety (2.5 to 3.0)

The later one follows Settlement Criteria, that the intensity of the loading will cause within the permissible settlement is termed as allowable bearing pressure given by

Safe bearing capacity (SBC) = $1.4\ (N-3)\ \{(B+0.3)/2B\}^2$ X RW X S+P Where,

N = Corrected N value N2

B = Width of Foundation = constant 1

RW = Water Correction, If water table at

founding level is 0.5 and 1.0 for not occur.

FD = Depth of Factor = constant 1

P = Over Burden Pressure

S = Permissible settlement

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG.
Registered Geo-Technical Engineer (GTE)
Regn. No: Coimbatore LPA/GTE/004/202
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

8. Safe Bearing Capacity

The recommended safe bearing capacity at various depth based on SPT results are tabulated in the annexure.

9. Depth of Foundation

Minimum depth of foundations is governed by the following factors:

- Avoid Top loose zone.
- Adequate depth of soil above founding level, to ensure mobilization of full safe bearing Capacity.
- Adequate depth of soil strata below founding level of requisite strength to mobilize the safe bearing capacity and at the same time restricts the total and differential settlements within the allowable limits.

10. FOUNDATION RECOMMENDATIONS:

The site for **CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.** The borehole investigation was conducted and SBC was determined.

Bore Hole	Type of Footing	Size of Footing in m	Depth in m below NGL	SBC of soil Based on Shear criteria in t/m^2
1	Isolated Footing	1.50 X 1.50	3.00 M	35.00
2		1.50 X 1.50	3.00 M	35.00
3		1.50 X 1.50	3.00 M	35.00
4		1.50 X 1.50	3.00 M	35.00

NOTE: **Recommended SBC of soil is 35.00T/m² at 3.00m depth.**

GEOTECHNICAL ENGINEER

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG
Registered Geo-Technical Engineer (GTE)
Regn. No: Coimbatore LPA/GTE/004/202•
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

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COMPUTATION OF BEARING CAPACITY AS PER IS: 6403:1981
MODEL CALCULATION:

1 Geometrical Data :

Shape considered for bearing capacity design	SQUARE	
Length of footing	1.50	m
Size of Footing (B)	1.50	m
Breadth to Length Ratio of Foundation (B/L)	1.00	
Depth of Foundation below E.G.L. (D_f):	3.00	m
Inclination of Vertical Load with the Vertical (a)	0.00	Deg.

2 Soil Data :

Type of Bearing Strata :	SDR	
Design SPT **"N"** value of the Bearing Strata:	50	
Type of Shear Failure:	General	
Design Angle of Shearing Resistance	31.00	Deg.
Cohesive Strength	0.00	kN/m^2

3 Design Parameters:

Saturated Density of Soil above the foundation depth (γ_{bulk})	16.00	kN/m^3
Submerged Density of Soil ($\gamma'=\gamma_{bulk}-\gamma_w$)	6.19	
Effective Overburden pressure at foundation level ($q = \gamma'*D_f$)	18.57	kN/m^2
Water Table Correction Factor (w')	1.00	

Bearing Capacity Factors:

N_c =	33.34
N_q =	21.38
N_r =	27.53

Shape Factors:

S_c =	1.30
S_q =	1.20
S_r =	0.80

Depth Factors :

D_c =	1.62
D_q =	1.31
D_r =	1.31

Inclination Factor:

I_c =	1.00
I_q =	1.00
I_r =	1.00

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG.
Registered Geo-Technical Engineer (GTE)
Regn. No: Coimbatore LPA/GTE/004/202
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

SHRI BALAJI GEOTECH

4 Ultimate Bearing Capacity (Qu) :(General Shear Failure)

Based on N Value:

$Qu = q (Nq - 1) Sq \times dq \times iq + 0.5 \times B \times \gamma \times N\gamma \times S\gamma \times d\gamma \times i\gamma \times W`$	942.82743	kN/m^2

Safe Bearing Capacity (Qsafe) :

Factor of Safety (F.S.) :	2.50	
Qsafe :	377.13	kN/m^2
Qsafe :	**38.46**	t/m^2

GEOTECHNICAL ENGINEER
Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

SBGT/CIV/2023-2024/62 — Annexure –1

FIELD BORE LOG REPORT

Name of Work	CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT						SHRI BALAJI GEOTECH
Name of Contractor	SHRI BALAJI GEOTECH, SALEM						
Name of Client	Ms.CHOLA CHONA BUILDERS PVT.LTD., Er.S.K.SENTHILKUMAR, Er.P.R.GANESAN						
Type of Bore:	Rotary Circular Drilling				CH :-		-
Period:	25/06/2023				RL:-		-
Bore No : 1	LAT: 11.65945		LONG: 78.149171		Water Table in Metre :		NOT MET
LOCATION	NORTH EAST				Weather Condition:		SUNNY

Graphic Log	Depth in Metre	Soil Description	Thickness of each soil Layers in metre	Depth in metre	Standard Penetration Test (SPT) Data IS : 2131 - 1981				Soil Collection		Rock Samples IS : 11315 (Part. 11) -1985		Graphical Representation of Penetration Resistance (SPT in No. of Blows / 30 cm Penetration) Depth Vs Blows	Remarks
					0.0 - 15.0 Cms	15.0 - 30.0 Cms	30.0 - 45.0 Cms	SPT Value in No.of Blows/Cms	UDS/DS	IS CLASSIFICATION	Percentage of Rock Core Recovery	Percentage of Rock Quality Designation (RQD)		
	1.10	CLAYEY SAND	1.10	1.00	3	3	4	7	DS	SC	-	-	0 20 40 60 80 100	ABBREVIATIONS : GL -Ground Level , DS -Disturbed Soil , UDS - Undisturbed Soil , RB -Rebound , WS -Washing Sample
	2.90	SOFT DISINTEGRATED ROCK	1.80	2.00	50/8	RB	-	>50	DS	SDR	-	-		
				3.00	50/12	RB	-	>50	DS		-	-		
	5.00	WEATHERED ROCK	2.10	4.00	SMALL PIECES				DS	WR	-	-		
				5.00	SMALL PIECES-6				DS		-	-		

Bore Terminated at 5.00m from NGL

Note :	1.The bore has been closed as per the field officers instruction.	-	4. Number of Soft Rock Core Bits	-
	2. Number of Disturbed Samples (DS)...	7	5. Number of Hard Rock Core Bits	-
	3. Number of Undisturbed Soil Samples (UDS)	-	6. Soft / Hard Rock Core Dia (Ø)	-

GEOTECHNICAL ENGINEER

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS.
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

SBGT/CIV/2023-2024/62

FIELD BORE LOG REPORT

Name of Work	CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.						SHRI BALAJI GEOTECH
Name of Contractor	SHRI BALAJI GEOTECH, SALEM						
Name of Client	Ms.CHOLA CHONA BUILDERS PVT.LTD., Er.S.K.SENTHILKUMAR, Er.P.R.GANESAN						
Type of Bore:	Rotary Circular Drilling				CH :-		-
Period:	25/06/2023				RL:-		-
Bore No : 2	LAT: 11.65949		LONG: 78.148944		Water Table in Metre :		NOT MET
LOCATION	SOUTH EAST				Weather Condition:		SUNNY

Graphic Log	Depth in Metre	Soil Description	Thickness of each soil Layers in metre	Depth in metre	Standard Penetration Test (SPT) Data IS : 2131 - 1981				Soil Collection		Rock Samples IS : 11315 (Part. 11) -1985		Graphical Representation of Penetration Resistance (SPT in No. of Blows / 30 cm Penetration) Depth Vs Blows	Remarks
					0.0 - 15.0 Cms	15.0 - 30.0 Cms	30.0 - 45.0 Cms	SPT Value in No.of Blows/Cms	UDS/DS	IS CLASSIFICATION	Percentage of Rock Core Recovery	Percentage of Rock Quality Designation (RQD)		
	0.90	CLAYEY SAND	0.90	1.00	4	4	5	10	DS	SC	-	-		ABBREVIATIONS : GL -Ground Level , DS -Disturbed Soil ,UDS -Undisturbed Soil ,RB - Rebound ,WS -Washing Sample
		SOFT DISINTEGRATED ROCK	2.70	2.00	50/8	RB	-	>50	DS	SDR	-	-		
				3.00	RB	-	-	>50	DS		-	-		
	2.10			4.00	RB	-	-	>50	DS		-	-		
		WEATHERED ROCK	2.30	5.00	SMALL PIECES-3				DS	WR	-	-		
	6.00			6.00	5+7=12CM				DS		12.00	-		

Bore Terminated at 6.00m from NGL

Note :	1.The bore has been closed as per the field officers instruction.	-	4. Number of Soft Rock Core Bits	-
	2. Number of Disturbed Samples (DS)...	6	5. Number of Hard Rock Core Bits	-
	3. Number of Undisturbed Soil Samples (UDS)	-	6. Soft / Hard Rock Core Dia (Ø)	-

GEOTECHNICAL ENGINEER

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236. 86376 27705

SBGT/CIV/2023-2024/62 — Annexure –1

FIELD BORE LOG REPORT

Name of Work	CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.						SHRI BALAJI GEOTECH
Name of Contractor	SHRI BALAJI GEOTECH, SALEM						
Name of Client	Mr.C.NAGARAJAN, S/o CHINNUSAMY, R.CHITRA, W/o.C.NAGARAJAN						
Type of Bore:	Rotary Circular Drilling				CH :-		-
Period:	24/06/2023				RL:-		-
Bore No : 3	LAT: 11.659447		LONG: 78.148451		Water Table in Metre :		NOT MET
LOCATION	SOUTH EAST				Weather Condition:		SUNNY

Graphic Log	Depth in Metre	Soil Description	Thickness of each soil Layers in metre	Depth in metre	Standard Penetration Test (SPT) Data IS : 2131 - 1981				Soil Collection		Rock Samples IS : 11315 (Part. 11) -1985		Graphical Representation of Penetration Resistance (SPT in No. of Blows / 30 cm Penetration) Depth Vs Blows	Remarks
					0.0 - 15.0 Cms	15.0 - 30.0 Cms	30.0 - 45.0 Cms	SPT Value in No.of Blows/Cms	UDS/DS	IS CLASSIFICATION	Percentage of Rock Core Recovery	Percentage of Rock Quality Designation (RQD)		
	1.20	**CLAYEY SAND**	**1.20**	1.00	3	3	4	7	DS	SC	-	-	0 20 40 60 80 100	ABBREVIATIONS : GL -Ground Level . DS -Disturbed Soil .UDS -Undisturbed Soil .RB -Rebound .WS - Washing Sample
		WEATHERED ROCK	**5.80**	2.00	SMALL PIECES-6				DS	WR	-	-		
				3.00	SMALL PIECES-6				DS		-	-		
				4.00	SMALL PIECES-4				DS		-	-		
				5.00	13+3=16CM				DS		16.00	13.00		
				6.00	SMALL PIECES-4				DS		-	-		
	7.00			7.00	6+3+9+5=23CM				DS		23.00	-		

Bore Terminated at 7.00m from NGL

Note :	1.The bore has been closed as per the field officers instruction.	-	4. Number of Soft Rock Core Bits	-
	2. Number of Disturbed Samples (DS)...	7	5. Number of Hard Rock Core Bits	-
	3. Number of Undisturbed Soil Samples (UDS)	-	6. Soft / Hard Rock Core Dia (Ø)	-

GEOTECHNICAL ENGINEER

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

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FIELD BORE LOG REPORT

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Name of Contractor	SHRI BALAJI GEOTECH, SALEM						
Name of Client	Ms.CHOLA CHONA BUILDERS PVT.LTD., Er.S.K.SENTHILKUMAR, Er.P.R.GANESAN						
Type of Bore:	Rotary Circular Drilling				CH :-		-
Period:	24/06/2023				RL:-		-
Bore No : 4	LAT: 11.659391		LONG: 78.148643		Water Table in Metre :		NOT MET
LOCATION	NORTH EAST				Weather Condition:		SUNNY

Graphic Log	Depth in Metre	Soil Description	Thickness of each soil Layers in metre	Depth in metre	Standard Penetration Test (SPT) Data IS : 2131 - 1981				Soil Collection		Rock Samples IS : 11315 (Part. 11) -1985		Graphical Representation of Penetration Resistance (SPT in No. of Blows / 30 cm Penetration) Depth Vs Blows	Remarks
					0.0 - 15.0 Cms	15.0 - 30.0 Cms	30.0 - 45.0 Cms	SPT Value in No.of Blows/Cms	UDS/DS	IS CLASSIFICATION	Percentage of Rock Core Recovery	Percentage of Rock Quality Designation (RQD)		
	1.10	CLAYEY SAND	1.10	1.00	4	8	11	19	DS	SC	-	-	0 20 40 60 80 100	ABBREVIATIONS : GL -Ground Level , DS -Disturbed Soil , UDS -Undisturbed Soil , RB - Rebound , WS -Washing Sample
	2.10	SOFT DISINTEGRATED ROCK	1.00	2.00	50/11	RB	-	>50	DS	SDR	-	-		
		WEATHERED ROCK	3.90	3.00	SMALL PIECES				DS	WR	-	-		
				4.00	SMALL PIECES				DS		-	-		
				5.00	7+8=15CM				DS		15.00	-		
	6.00			6.00	4+4+10=18CM				DS		18.00	10.00		

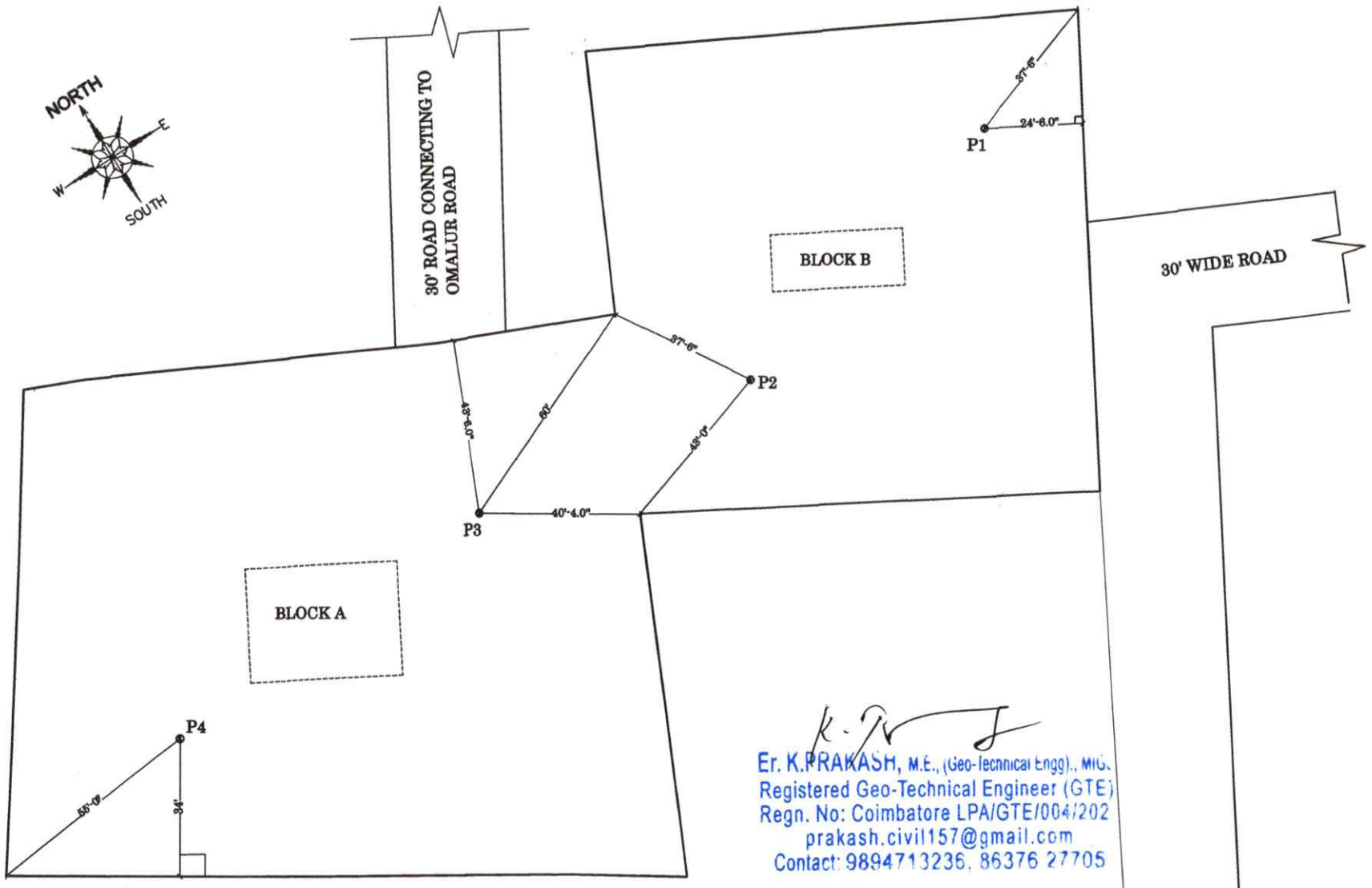
Bore Terminated at 6.00m from NGL

Note :	1.The bore has been closed as per the field officers instruction.		4. Number of Soft Rock Core Bits	-
	2. Number of Disturbed Samples (DS)...	6	5. Number of Hard Rock Core Bits	-
	3. Number of Undisturbed Soil Samples (UDS)	-	6. Soft / Hard Rock Core Dia (Ø)	-

GEOTECHNICAL ENGINEER

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236. 86376 27705

CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD -AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.



Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIG.
Registered Geo-Technical Engineer (GTE)
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SOIL TEST RESULTS

Name of work: CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.

SHRI BALAJI GEOTECH, SALEM	BORE NUMBER - 1	LOCATION: NORTH EAST	GROUND WATER LEVEL:NOT MET	WORK COMMENCED ON 24/06/2023	WORK COMPLETED ON 24/06/2023

SOIL PROFILE AND DEPTH IN METRES	DEPTH OF SAMPLING	IS SOIL CLASSIFICATION	NATURAL WET DENSITY	NATURAL MOISTURE CONTENT %	INDEX TEST			SIEVE ANALYSIS % RETAINED IS SIEVE ANALYSIS						SPECIFIC GRAVITY	SHEAR TEST		STANDARD PENETRATION TEST			
					LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY		COHESION C Ton / M^2	ANGLE OF INTERNAL FRICTION ^{0}	DEPTH OF TESTING M	OBSERVED N VALUE	CORRECTED N VALUE	SAFE BEARING CAPACITY T/m^2
		SC	15.9	-	-	-	-	2	4	21	31	22	20	2.64	-	26.8	1.00	7	13.59	8.53
																	2.00	>50	50.00	36.18
	1.10																3.00	>50	50.00	36.88
		SDR															4.00	>50	50.00	37.58
																	5.00	>50	50.00	38.28
	2.90																			
		WR																		
	5.00																			

Depth (m)	Core Recovery (%)	Rock Quality Designation (%)	Ultimate crushing strength (mpa)
3.00 - 4.00	-	-	-
4.00 - 5.00	-	-	-

SC-CLAYEY SAND, WR- WEATHERED ROCK, SBC based on SPT N value. NP – Non plastic.

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

SBGT/CIV/2023-2024/62

SOIL TEST RESULTS

Name of work: CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.

SHRI BALAJI GEOTECH, SALEM	BORE NUMBER - 2	LOCATION: SOUTH EAST	GROUND WATER LEVEL: NOT MET	WORK COMMENCED ON 25/06/2023	WORK COMPLETED ON 25/06/2023

SOIL PROFILE AND DEPTH IN METRES	DEPTH OF SAMPLING	IS SOIL CLASSIFICATION	NATURAL WET DENSITY	NATURAL MOISTURE CONTENT %	INDEX TEST			SIEVE ANALYSIS % RETAINED IS SIEVE ANALYSIS						SPECIFIC GRAVITY	SHEAR TEST		STANDARD PENETRATION TEST			
					LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY		COHESION C Ton / M^2	ANGLE OF INTERNAL FRICTION ^{0}	DEPTH OF TESTING M	OBSERVED N VALUE	CORRECTED N VALUE	SAFE BEARING CAPACITY T/m^2
		SC	16.4	-	-	-	-	2	2	19	36	22	19	2.64	-	27.5	1.00	10	16.20	10.45
	0.90																2.00	>50	50.00	36.18
																	3.00	>50	50.00	36.88
		SDR															4.00	>50	50.00	37.58
																	5.00	>50	50.00	38.28
	2.10																6.00	>50	50.00	38.98
		WR																		
	6.00																			

Depth (m)	Core Recovery (%)	Rock Quality Designation (%)	Ultimate crushing strength (mpa)
4.00 - 5.00	-	-	-
5.00 - 6.00	12.00	-	-

SC-CLAYEY SAND, SDR- SOFT DISINTEGRATED ROCK, WR- WEATHERED ROCK, SBC based on SPT N value. NP – Non plastic.

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894719256, 8637822205

GEOTECHNICAL ENGINEER

SBGT/CIV/2023-2024/62

SOIL TEST RESULTS

Name of work: CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.

SHRI BALAJI GEOTECH, SALEM	BORE NUMBER - 3	LOCATION: SOUTH EAST	GROUND WATER LEVEL:	WORK COMMENCED ON 24/06/2023	WORK COMPLETED ON 24/06/2023

SOIL PROFILE AND DEPTH IN METRES	DEPTH OF SAMPLING	IS SOIL CLASSIFICATION	NATURAL WET DENSITY	NATURAL MOISTURE CONTENT %	INDEX TEST			SIEVE ANALYSIS % RETAINED IS SIEVE ANALYSIS						SPECIFIC GRAVITY	SHEAR TEST		STANDARD PENETRATION TEST			
					LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY		COHESION C Ton / M^2	ANGLE OF INTERNAL FRICTION ^{0}	DEPTH OF TESTING M	OBSERVED N VALUE	CORRECTED N VALUE	SAFE BEARING CAPACITY T/m^2
																	1.00	7	13.59	8.53
		SC	16.9	-	-	-	-	3	4	17	32	24	20	2.64	-	29.6				
	1.20																2.00	>50	50.00	36.18
																	3.00	>50	50.00	36.88
																	4.00	>50	50.00	37.58
																	5.00	>50	50.00	38.28
																	6.00	>50	50.00	38.98
		WR															7.00	>50	50.00	39.68
	7.00																			

Depth (m)	Core Recovery (%)	Rock Quality Designation (%)	Ultimate crushing strength (mpa)
1.00-2.00	-	-	-
2.00-3.00	-	-	-
3.00-4.00	-	-	-
4.00-5.00	16.00	13.00	-
5.00-6.00	-	-	-
6.00-7.00	23.00	-	-

SC-CLAYEY SAND, WR- WEATHERED ROCK, SBC based on SPT N value. NP – Non plastic.

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705

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SOIL TEST RESULTS

Name of work: CONDUCTING SOIL EXPLORATION FOR PROPOSED CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING AT OLD WARD-D, BLOCK-19, T.S.NO:4/3,7/1, 7/2 & NEW WARD-AC, BLOCK-28, T.S.NO:27/2, NEW WARD –AC, BLOCK-19, T.S.NO: 42/2, PERIYERI VILLAGE, SALEM TALUK, SALEM DISTRICT.

SHRI BALAJI GEOTECH, SALEM	BORE NUMBER - 4	LOCATION: SOUTH EAST	GROUND WATER LEVEL:	WORK COMMENCED ON 24/06/2023	WORK COMPLETED ON 24/06/2023

SOIL PROFILE AND DEPTH IN METRES	DEPTH OF SAMPLING	IS SOIL CLASSIFICATION	NATURAL WET DENSITY	NATURAL MOISTURE CONTENT %	INDEX TEST			SIEVE ANALYSIS % RETAINED IS SIEVE ANALYSIS						SPECIFIC GRAVITY	SHEAR TEST		STANDARD PENETRATION TEST			
					LIQUID LIMIT %	PLASTIC LIMIT %	PLASTICITY INDEX	GRAVEL	COARSE SAND	MEDIUM SAND	FINE SAND	SILT	CLAY		COHESION C Ton / M^2	ANGLE OF INTERNAL FRICTION ^{0}	DEPTH OF TESTING M	OBSERVED N VALUE	CORRECTED N VALUE	SAFE BEARING CAPACITY T/m^2
		SC	16.5	-	-	-	-	3	8	25	22	23	19	2.64	-	26.7	1.00	19	24.03	16.24
	1.10																2.00	>50	50.00	36.18
		SDR															3.00	>50	50.00	36.88
	2.10																4.00	>50	50.00	37.58
																	5.00	>50	50.00	38.28
																	6.00	>50	50.00	38.98
		WR																		
	6.00																			

Depth (m)	Core Recovery (%)	Rock Quality Designation (%)	Ultimate crushing strength (mpa)
2.00-3.00	-	-	-
3.00-4.00	-	-	-
4.00-5.00	15.00	-	-
5.00-6.00	18.00	10.00	-

SC-CLAYEY SAND, SDR- SOFT DISINTEGRATED ROCK, WR- WEATHERED ROCK, SBC based on SPT N value. NP – Non plastic.

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236. 86376 27705
GEOTECHNICAL ENGINEER

SITE IMAGES

SBGT/CIV/2023-2024/62

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BOREHOLE - 1



SPOON SAMPLE

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705



BOREHOLE - 2



SPOON SAMPLE

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236. 86376 27705



BOREHOLE - 3



ROCK SAMPLE

Er. K.PRAKASH, M.E., (Geo-Technical Engg)., MIGS
Registered Geo-Technical Engineer (GTE),
Regn. No: Coimbatore LPA/GTE/004/2024
prakash.civil157@gmail.com
Contact: 9894713236, 86376 27705



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3/350/2 Mettukuppam,
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Chennai, India

hello@verified.realestate
+91 9996 12 9996
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