

CORRIGENDUM 2**MINUTES OF PRE-BID MEETING**

Tender ID: 2026_IITS_902795_1, Dt. 17 March 2026

Tender Reference No.: IIITS_NIT_2026_039

Name of the Work: Construction of Composite Structure including Civil, PEB, Plumbing, Fire Fighting, Electrical and HVAC works for the Multi-Purpose Sports Block at IIIT Sri City Campus.

Pre-bid Meeting Schedule: 30.03.2026 at 11:00 Hrs (Hybrid Mode)

The queries received / discussed from bidder(s) during Prebid meeting:

S. No.	Name of the Prospective Bidder	Bidder's Representative
1	M/s N Sakthivel & Co, Chennai	Mr. S Sabarish
2	M/s Sachin Hitech Industries Pvt Ltd, Chennai	Mr. Saravanan
3	M/s Deccan Engineering Construction Pvt Ltd, Chennai	Mr. VVD Murali
4	M/s DLC Infrastructure Pvt. Ltd., Bangalore	Mr. Venugopal S H
5	M/s Casa Grande Civil Engineering Pvt. Ltd., Chennai	Mr. Palani Barath

Architects & Project Management Consultants were present in the pre-bid meeting to provide clarification to the queries.

In order to bring the uniformity and clarity among the prospective bidders on various terms and conditions as mentioned in the NIT document, the queries received from bidder(s) during pre-bid meeting were discussed and clarified.

The clarifications arrived thereof are indicated as under:

Enclosure:

1. ANNEXURE 1: Clarifications on bidder's queries
2. ANNEXURE 2: Soil Investigation Report with Bore log details



Note:

- a. These minutes of pre-bid meeting shall form the part of bid document/Agreement.
- b. Rest of the terms and conditions and specifications of the bid document shall continue to remain same.
- c. The above amendments/ clarifications are issued for the information for all the intending bidders.
- d. The submission of bid by the firm shall be construed to be in conformity to the bid document and amendments/ clarifications given above.

ANNEXURE 1: PRE-BID MEETING CLARIFICATIONS

Tender ID: 2026_IITS_902795_1, Dt. 17 March 2026

Name of the Work:

Construction of Composite Structure including Civil, PEB, Plumbing, Fire Fighting, Electrical and HVAC works for the Multi-Purpose Sports Block at IIIT Sri City Campus

Pre-bid Meeting Schedule: 30.03.2026 at 11:00 Hrs (Hybrid Mode)

Sl No	Bidder Query	Response / Clarification
1	IIITS and EPMCR informed that, as per the tender documents, all bidders shall visit the project site before submission of their bids.	
2	Whether waterproofing materials shall be used as per relevant specifications?	Waterproofing materials shall be used as per the approved makes and specified in the tender documents.
3	Please clarify whether cost escalation is applicable under this contract.	It was informed that no cost escalation shall be applicable, and quantity deviations are as specified in the tender documents.
4	As per the tender, the approach road formed by the existing contractor shall be utilized on a rental basis. Kindly provide the applicable cost, as the same is required for bidding purposes.	The details shall be issued through a separate corrigendum.
5	Please provide the escalation matrix / communication matrix for the project.	All communications shall be routed through PMC only, as per the pre-approved communication / escalation matrix.
6	Please clarify the material approval process.	All material approvals shall be submitted through PMC, and only after approval, the materials shall be used for execution.
7	Clarification on scope of works	IIITS informed that the building is a combined structure comprising RCC and PEB. Milestone 1 includes part of the design and preliminary works. The design of the PEB structure is within the contractor's scope. Upon submission of the contractor's design, approval shall be obtained from the Architect, following which GFC drawings will be released for execution. The Architect informed that the vetting process with IITM will commence after all PEB structural details are received & coordinated with the RCC structure. Bidders are instructed to follow only IS codes and not American or any other international codes for the PEB Structure. Based on the contractor's design inputs, the overall foundation and other RCC structural elements will be evaluated and designed accordingly. For additional scope of works related to the PEB, refer point no. 28.

Sl No	Bidder Query	Response / Clarification
8	It was requested that Milestone 1, which represents the design period, may be split into three components: design submission, approval, and preliminary works.	Milestone 1 activities remains same, but the duration is distributed as follows: 1. 0 - 30 days - PEB design inputs from the contractor, including Loads, Reactions, Anchor Bolt Drawings & Design Calculations, Staad files, SAFE/ ETab models and all GA Drawings in AutoCAD files required for review & approval. This would be also used to evaluate the Sub-structure & superstructure. 2. 31 - 60 days - Site Mobilization & establishment works, re-submission of corrected GA drawings, if required. 3. 61 - 90 days - Sub structures works (foundation & backfilling works).
9	Please extend the submission of the bid due to the financial year closing.	The extension request will be considered, and the revised tender submission details will be issued through a separate corrigendum.
10	Labour camps can be accommodated within the project site.	Area for labour camp has been identified near the campus (but outside the boundary) and as per Sri City norms, the same can be utilized on a chargeable basis.
11	Please clarify whether power and water supply are within the scope of IIITS.	A power supply tapping point will be provided. Electricity charges, as per applicable government tariffs, shall be deducted from the contractor's RA bills. Water connections may be obtained from Sri City or from the Client source on a chargeable basis. Sub-meters shall be installed for both power and water, and consumption shall be recorded accordingly.
12	NIT – Vol. III (Tender Drawings) is not downloadable. Kindly do the needful.	The same has been uploaded on the portal, and it will be reviewed and updated accordingly.
13	As per the tender, the validity period of the tender is 180 days from the date of opening of bids. Kindly clarify whether this is fixed or subject to change upon request.	Tender condition remains same.
14	Kindly provide the soil investigation report.	The soil investigation report has been attached along with this MoM for reference.
15	Is the list of approved makes for PEB is available in the tender documents.	Yes, the approved makes for PEB have been provided in the tender documents.
16	Please clarify the scope of O&M (Operation and Maintenance).	The scope of O&M shall be as per the tender documents.
17	Kindly provide the MEP drawings.	All MEP tender drawings have been provided on the portal.
18	Approval from the Fire Department is within the contractor's scope.	Fire department approval is not the scope of contractor. Necessary coordination shall be made with architects / agency for obtaining all statutory approvals. Kindly refer to Clause 43 of the tender documents for clarification on this item.
19	Fire alarm system requirements are included in this project.	The same shall be in accordance with the tender documents, BOQ, specifications, and drawings provided in the NIT.

Sl No	Bidder Query	Response / Clarification
20	PEB material stacking shall be carried out within the project site/camp area.	The same shall be provided based on approval of your logistics plan.
21	It is mentioned that 60% of the ad-hoc amount shall be provided. Kindly clarify whether this is applicable to all RA bills.	Yes, the same shall be provided for all RA bills except final bill, subject to the conditions specified in the tender documents.
22	The 5% retention money deduction shall be released against submission of a Bank Guarantee (BG).	Bank Guarantee (BG) is not accepted towards release of the retention amount. The release of the retention amount shall be processed as per the provisions of the NIT.
23	Kindly clarify whether PEB fabrication is allowed at the project site.	It was informed that PEB structures shall be fabricated in the factory only and not at the project site.
24	Kindly clarify the site laboratory requirements mentioned in the tender, including the required equipment.	As per the tender documents, the list of required equipment is already specified.
25	Kindly clarify whether prior approval is required for carrying out work during holidays.	Work can be carried out on all days except national holidays. If work is carried out on national holidays, it shall comply with applicable labour laws and prior approval shall be obtained.
26	Kindly provide the format for the Integrity Form.	It was informed that the same has already been provided in the tender documents. Kindly refer to Annexure II.
27	Kindly clarify the insurance policies applicable for this project.	It was informed that the policy details are included in the tender documents. Kindly refer to Clause 10 for details.
28	Additional Information for the Contractors regarding PEB scope of works:	
a	The Contractor must submit the building stability certificate for the PEB structure.	
b	The PEB vendor must be a publicly listed company having in-house design & execution team.	
c	The Contractor must submit the credentials of their associated PEB vendor information, in their technical bid. No change in vendor will be allowed after submitting the bid.	
d	Preference would be given to the PEB Vendor with manufacturing capabilities for PEB & Rockwool products. This would ensure seamless integration of design & execution.	
e	PEB Vendor should have executed projects not less than 10 cr as a single job in the last 5 years.	



GEOTECHNICAL INVESTIGATION REPORT

TECH CIVIL MATERIAL TESTING LAB. PVT. LTD.,

PROJECT : Construction of (G+1) Multipurpose Sports Building for IITS, Sricity, Chittoor.

13/01/2024

To

**CLIENT : INDIAN INSTITUTE OF INFORMATION TECHNOLOGY ,
SRI CITY, CHITTOOR.**

**SUBJECT : GEOTECHNICAL INVESTIGATION REPORT FOR
PROPOSED CONSTRUCTION OF G+1 MULTIPURPOSE
SPORTS BUILDING FOR IIIT, SRI CITY, CHITTOOR.**

Dear Sir,

We are glad to submit our final Geotechnical Investigation Report for the above captioned project.

We look forward to hear from you at your earliest convenience regarding this report.

We are pleased to work for you in this project. We assure our continual services to our best.

Yours Truly,

For Tech-Civil Material Testing Laboratory Pvt. Ltd.,

**(M.Ramesh Raja)
Quality Manager**





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PROJECT :Construction of (G+1) Multipurpose Sports Building for IIITS, Sricity, Chittoor.

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PROJECT :Construction of (G+1) Multipurpose Sports Building for IIITS, Sricity, Chittoor.

1.0 INTRODUCTION

M/s Indian Institute of Information Technology (IIITS) ,Sri city, Chittoor has proposed to construct (G+1) multipurpose sports building in its campus,. For the above mentioned purpose, the stability check of soil, the responsibility of carrying out suitable soil investigation has been entrusted to M/s. TMTL. Pvt. Ltd, CHENNAI- 600063. This report contains the field and laboratory test results along with design computations and recommendations for suitable foundation systems / allowable bearing capacity of soil.

2.0 EXPLORATION PROGRAM

The scope of work completed at this site is summarized below:

- Making of two numbers (02) of Standard Soil Investigation boreholes till reaching desired hard bearing strata.
- Conducting SPT at regular depth intervals.
- Collecting disturbed and undisturbed Soil Samples.
- Presented in this report are field investigation details and recommendations of Foundation analysis only and for the structural design, exact load is to be estimated based on a suitable structural analysis.

3.0 FIELD BORING AND SAMPLING

One number of Calyx drilling machine rig was mobilized and drilling operation work was done. 100mm diameter borehole was made at locations specified by Engineer-in-charge. The boreholes BH-03and BH-04were sunk up to a depth of 10.0m and 9.0m respectively below existing ground level. SPT tests were conducting at roughly 1.50m intervals and at all type of soil stratum and disturbed samples were collected.

3.1COLLECTION OF SAMPLES:

3.1.1 STANDARD PENETRATION TEST

SPT split spoon sampler of standard dimensions was driven into the soil from the borehole bottom using 63.5kg hammer with a fall of 75cm height. The SPT weight was lifted to the specified height and allowed to fall freely on the anvil with the use of cat-head winch with one to one and half turn of the drum. Blow counts for the penetration of every 15 cm were recorded and



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the 'N' value is reported as the blow counts for 30 cm penetration of the sampler excluding the first 15 cm penetration as seating drive. When the number of blows exceeded 50 to penetrate the first or second 15 cm length of the sampler, the SPT 'N' is regarded as more than 100 as described in IS 2131-1981. The test is terminated in such case and a record of the penetration of the sampler under 50 blows is made. SPT refusal is recorded when there is no penetration of the sampler at any stage and also when are bound of the sounding system is recorded. These tests were conducted at close intervals of 1.50m so that a continuous SPT 'N' profile is available.

Disturbed soil collected in the SPT sampler was preserved in polythene covers and transported to the laboratory. Additional polythene cover was used to prevent the loss of moisture during the transit period.

3.1.2 Disturbed Soil Samples

The SPT-samples collected were used as disturbed soil samples. These samples were used for visual and physical identification and for conducting laboratory classification tests as per I.S.1498-1970.

CO-RELATION FOR SATURATED SAND / NON-PLASTIC SILT

Relative Density	Penetration Value (Blows/30cm)
Very loose	0 to 4 Blows
Loose	5 to 10 Blows
Medium	11 to 30 Blows
Dense	31 to 50 Blows
Very Dense	> 50 Blows

CO-RELATION FOR SATURATED CLAY / PLASTIC SILT

Relative Density	Penetration Value (Blows/30cm)
Very Soft	0 to 2 Blows
Soft	3 to 4 Blows
Medium Stiff	5 to 8 Blows
Stiff	9 to 16 Blows
Very Stiff	17 to 32 Blows
Hard	>32 Blows



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3.1.3 LABORATORY TESTING

All the extracted soil samples were brought to our laboratory for further examination in accordance with IS:1498-1970. Selected samples were subjected to the following physical tests.

- 1. Moisture Content (IS: 2720 Part II)**
- 2. Sieve Analysis (IS:2720 Part IV-1985)**
- 3. Liquid limit (IS:2720 Part V- 1985)**
- 4. Plastic Limit and Plasticity Index (IS: 2720 Part VI-1972)**
- 5. Differential Free Swell Test**

The laboratory test results are given in “ANNEXURE - 2”.

4.0 SUB-SURFACE STRATIFICATION

4.1 Preamble

The sub-surface stratification at borehole locations, with respect to foundation/geotechnical engineering application are derived based on the visual identification, laboratory classification test and field in-situ strength tests. Further, the strength parameters are estimated based on the in-situ strength test results as per the following correlation.

- * For Coarse Grained Samples, Ref. Fig.1, IS: 6403 to estimate Angle of Shearing Resistance.**
- * For Fine Grained Samples, Ref. Terzaghi & Peck, 1948, to estimate Unconfined Compressive Strength.**

4.2 Ground Water

Ground water table was met at a depth of 1.50m below existing ground level during the second week of January 2024. It may fluctuate due to seasonal variations.

However, ground water table is considered at existing ground level for safer design considerations.



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4.3Sub-Surface Stratification: Location (as presented in Site Plan)

4.3.1 Soil Profile at BH-01.

Description	Type of Strata	Thickness of Layer	Avg. SPT N for the layer	Relative Density
Layer 1 (0 to 2.9m)	Sand mixed with Clay	2.9m	31	Dense to Very Dense
Layer 2 (2.9 to 8.5m)	Sand mixed with Non-Plastic Silt and traces of clay	5.6m	>80	Very Dense
Layer 3 (8.5 to 10m)	Residual soil or Completely Weathered Rock	1.5m	>100	Very Dense

4.3.2 Soil Profile at BH-02.

Description	Type of Strata	Thickness of Layer	Avg. SPT N for the layer	Relative Density
Layer 1 (0 to 2.9m)	Sand mixed with Clay	2.9m	41	Dense to Very Dense
Layer 2 (2.9 to 4.5m)	Sand mixed with Non-Plastic Silt and traces of clay	1.6m	>80	Very Dense
Layer 3 (8.5 to 9m)	Residual soil or Completely Weathered Rock	0.5m	>100	Very Dense



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5.0 FOUNDATION SYSTEM

5.1 Preamble

The foundation system design is an inter face between super structure and the subsoil bearing strata characteristics. A sound foundation system should be safe against bearing strata shear response under the super structure load intensity. Similarly, the stability of the foundation system is governed by the bearing strata deformation response under the super structure load intensity. In addition, as a combined system of super structure and foundation, the overall stability is also governed by the superstructure arrangement.

Considering the above aspects of foundation design, the suitable type of foundation system with respect to the sub soil conditions encountered at the borehole locations is presented in the sub sequent sections.

5.2 Bearing Strata Characteristics

From geotechnical field investigations, it can be observed that the sub-soil strata encountered at shallow depths are stratified coarse-grained soil which is good in both shear strength characteristics and deformation consideration to act as bearing strata for proposed impending loads form structure.

As the recommended bearing strata are coarse-grained type, the safe bearing capacity of foundation system will be a function of safe and economic considerations. Considering the above, suitable foundation system is presented below.

5.3 FOUNDATION ANALYSIS

5.3.1 DISCUSSION ON FOUNDATION

From subsoil profile and laboratory test data, by considering economic structural and economical requirements, it is proposed to provide **Shallow foundation** type such as **Isolated footing** system based on load requirements (or) suitable foundation has to be designed by the structural consultant based on the soil characteristics.



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6.0 SHALLOW FOUNDATION SYSTEM:

6.1 ULTIMATE BEARING CAPACITY (Q_u) (as per IS:6403)

$$Q_u = C_u N_c S_c D_c I_c + q_o (N_q - 1) S_q D_q I_q + 0.5 B \gamma_1 N_\gamma S_\gamma D_\gamma I_\gamma w'$$

Where,

B = width of foundation, **C** = undrained cohesion of soil, **q_o** = effective over burden pressure at foundation level, **γ_o** = effective unit weight of soil above foundation level, **γ_1** = effective unit weight of soil below foundation level, **N_c** , **N_q** and **N_γ** are the bearing capacity factors, **S_c** , **S_q** and **S_γ** are shape factors, **d_c** , **d_q** and **d_γ** are depth factors, **i_c** , **i_q** and **i_γ** are inclination factors which depend on inclination **α** of the load to the vertical, **w'** is a factor for effect of water table, which is 1 if water table is at a depth **B** below the foundation level and linearly varies to 4.0 if it is at the base of foundation.

6.1.1 Open Foundation System

Considering the good bearing strata encountered at shallow depth and its shear strength characteristic, at depth of **2.0m** from existing ground level and its compressible character following foundation system for shallow depth so below existing ground level can be adopted as per IS:6403-1981.

Type of Foundation	Depth of Foundation (m)	Net Ultimate Bearing capacity (T/m^2)	Net Safe Bearing capacity (T/m^2)	Approx. Elastic Settlements estimated (mm)
Open Foundation	1.00	23	9	106
	1.50	46	18	72
	2.00	95	38	38
	2.50	159	*50	21
	3.00	202	*50	18

A safety factor of 2.5 has been adopted to arrive at the safe bearing capacity. The computations of above are annexed to this report.

* The allowable SBC of soil is restricted to $50T/m^2$ for conservative design purpose.



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6.3 CONCLUSIONS

1. Foundation system presented in Cl.6.1.1 can be adopted for foundation design purposes.
2. The safe bearing capacity of open foundation system is computed considering any rise in the groundwater table up to or above the level of footing.
3. **In case, the ground water table is encountered within recommended depth of foundation system, provision shall be made to continuously bail the water out of the foundation pits to keep the surfaces of pit consolidated dry.**
4. **Excavation of soil at site not suitable for back filling purposes.** Strictly Clay Soil shall be in no case used for back filling purposes.
5. No Structural units shall be in direct contact of highly plastic clayey soil (**more than plastic index value of 20**) Strata encountered at shallow depths. Incase, the excavated soil is not sufficient for backfilling, borrow material (sand or gravel may be used to make good for the balance requirements).
6. A PCC (Plain Cement Concrete) layer of 100mm thickness is recommended below the foundation. Any over excavation in the foundation trenches should be re-filled by plain concrete and any disturbed and loose materials found in the foundation trenches should be removed before placement of P.C.C.
7. **As per general practice the back fill material should not contain more than 15% fines passing 0.075mm sieve, retain 40% on 4.75mm size sieve while the maximum size of gravel allowed is 50mm.**

6.4 GENERAL

1. As the chlorides and sulphates present in the water sample are within the permissible limits, no special steel or cement is recommended to be used for foundation construction purposes.
2. It is recommended to connect the grade beams so that the entire structure can act as a single unit against any differential settlements. We have to use the submerged unit weight of soil in the calculations. Proper dewatering to be done while constructing the foundation.



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7.0 RECOMMENDATIONS

1. Open foundation system shall be adopted at a minimum depth of 2.0m below the existing ground level for the proposed Structures.
2. Size of Foundation has to be designed by the structural consultant based on the soil characteristics.
3. The size of the foundation should be kept sufficiently large enough to keep the pressure within limits.
4. Backfilling of the foundation excavation should be done with granular Soil and it should be compacted properly to achieve proper densification to avoid settlements in flooring. Exposed bottom surface of the foundation excavation must be properly compacted with the heavy duty mechanical vibrator to compact the exposed surface that gets loosened by mechanical excavation activities This is to minimize the settlements that can arise if the loosened soil in foundation excavation is not removed or compacted. Excavated sand soil from the site can be not used for backfilling and site filling purposes. Foundations should be placed on natural soil and not on old foundations or filled up Soils.

For **Tech-Civil Material Testing Laboratory Pvt.Ltd.,**

(M.Ramesh Raja)
Quality Manager





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7.1 PRECAUTIONS

Entire report should be studied before implementing the recommendations. If the loose pockets of the soil encountered shall be removed and back filled with a leveling course of concrete shall be laid accordingly, then as usual the construction of foundations can start with structural engineer choice as per IS recommendations subsequently.

7.2 LIMITATIONS

The soil investigations have been carried out at one location at the site chosen by the client/Architect so as to represent the entire site. The recommendations provided in this report are valid only for these test locations. However, if there is any change in sub soil conditions and properties at places between or beyond chosen test locations, kindly contact us, within the passage of time, the recommendations may vary due to manmade and natural environmental changes.

7.3 REPORT

The soil samples are cleaned, pulverized, air dried up to 24hrs. Also oven dried for here necessary tests. The major laboratory soil tests are conducted as per Indian Standards.

The record shall be prepared with due regards to above given requirements, there ports hall submitted includes everything but not be limited to the following:

1. Plot plan showing all the test locations as per site plan.
2. General Geological information of the site, Characteristics of soil; Procedure of investigation and methods of various testing is adopted. The soil profiles along borehole no etc. depth wise in-situ tests like SPT and other lab results etc.
3. This Soil Investigation Report shall be considered only as the Guidance/Information for the StructuralEngineerabouttheSoilProfileandItsSafeBearingCapacityatVariousdepthofsoil.



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7.4 BOREHOLE DETAIL

Maximum Borehole Depth	10.00m (BH-01)
Type of Foundation	Our suggestion shall be open foundation (or) suitable type of foundation as per design criteria
Size & Depth of Foundation	As per Structural Design



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REFERENCES

1. IS :1498–1970: ClassificationandIdentificationofsoilsforgeneralEngineeringpurpose (First Revision)(Amendment2)
2. IS :1892–1979: Codeofpracticeforsub-surfaceinvestigationsforFoundations(First revision)
3. IS :2131–1981: Methodof StandardPenetrationTestsforsoils(Firstrevision)
4. IS:1904–1986: Code of practice for design and construction of foundation In soils: General requirements(Third revision)
5. IS :6403–1981: Code of practice for determination of bearing capacity of Shallow foundations: First revision (Amendment1)
6. Bowels J.E, Foundation Analysis and design, 3rd edition, McGraw HillInternationalBookco.
7. Dr.K.R.Arora, SoilMechanicsandFoundationEngineering.
8. ChengLiuandJackB.Evett,SoilsandFoundations.
9. IS 8009-1 (1976): Code of practice for calculation of settlements of foundations, Part 1: Shallow foundations subjected to symmetrical static vertical loads
10. Design of Foundation and Detailing TN-PWD Association of Engineers
11. IS:2132–1986Code of Practice for thin-walled tube sampling
12. IS:6953-1973Determination of water levels in a bore hole
13. IS:2720–PartI –1983Preparation of dry samples
14. IS:2720–Part2–1973Determination of water content
15. IS:2720–Part4–1985Grain size analysis
16. IS:2720–Part5–1985Determination of Liquid and Plastic limits



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Annexure-1

FIELD BORELOGS



GEOTECHNICAL INVESTIGATION REPORT

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SOIL PROFILE AT BH-01 LOCATION										
Started on : 09/01/2024					Dia of Boring : 100mm					
Ended on : 09/01/2024					Total Depth : 10.0m					
Ground Water Level : 1.50m					Type of Drilling : Rotary					
DEPTH BELOW E.G.L	SOIL PROFILES	* STRATA DESCRIPTION	Relative Density / Consistency	Type of sample	SPT - N Value - Depth of Penetration					GRAPHICAL REPRESENTATION
					DEPTH (m)	15	30	45	SPT - N	
2.90		Clayey Sand	Dense	SPT	1.0	7	9	13	22	
			Very Dense	SPT	2.0	10	17	24	41	
8.50		Silty Sand	Very Dense	SPT	3.0	30	38	49	87	
			Very Dense	SPT	4.5	37	47	50	97	
			Very Dense	SPT	6.0	34	50 blows for 11cm penetration		>80	
			Very Dense	SPT	7.5	34	50 blows for 12cm penetration		>80	
			Very Dense	SPT	9.0	50 blows for 10cm penetration			>100	
10.00		SDR	Very Dense	SPT	10.0	50 blows for 8cm penetration			>100	
- Borehole terminated at depth of 10m from EGL										
* Strata description is based on visual identification only.										
#NOTE SPT Split spoon sample DS Disturbed soil sample										
UD Undisturbed soil sample WS Washing Soil sample										
NS Sample Slipped RC Rock core Sample										



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SOIL PROFILE AT BH-02 LOCATION											
Started on : 09/01/2024					Dia of Boring : 100mm						
Ended on : 10/01/2024					Total Depth : 9.0m						
Ground Water Level : 1.50m					Type of Drilling : Rotary						
DEPTH BELOW E.G.L	SOIL PROFILES	* STRATA DESCRIPTION	Relative Density / Consistency	Type of sample	SPT - N Value - Depth of Penetration					GRAPHICAL REPRESENTATION	
					DEPTH (m)	15	30	45	SPT - N		
2.90		Clayey Sand	Dense	SPT	1.0	6	11	18	29		
			Very Dense	SPT	2.0	31	50 blows for 9cm penetration		>60		
8.50		Silty Sand	Very Dense	SPT	3.0	24	31	39	70		
			Very Dense	SPT	4.5	29	41	50	91		
			Very Dense	SPT	6.0	35	47	50	97		
			Very Dense	SPT	7.5	29	43	50	93		
9.00		SDR	Very Dense	SPT	9.0	SPT Rebounds			>100		
- Borehole terminated at depth of 9m from EGL											
* Strata description is based on visual identification only.											
#NOTE SPT Split spoon sample DS Disturbed soil sample UDS Undisturbed soil sample WS Washing Soil sample NS Sample Slipped RC Rock core Sample											



GEOTECHNICAL INVESTIGATION REPORT

TECH CIVIL MATERIAL TESTING LAB. PVT. LTD.,

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Annexure-2

LABORATORY TEST RESULTS



GEOTECHNICAL INVESTIGATION REPORT

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Laboratory Test Results of Soil Samples of BH-01

Layer Depth	Avg. SPT-N value / Core Recovery	IS Classification	Grain Size Analysis					Atterberg Limits			NMC	Specific Gravity
			Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt & Clay	Liquid Limit	Plastic Limit	Plasticity Index		
m	-	-	%	%	%	%	%	%	%	%	%	-
0 to 2.9m	31	SC	-1	12.3	42.9	28.6	16.8	39	20	19	13.8	2.59
2.9 to 8.5m	>60	SP-SM	0.3	19.8	44.8	25.9	9.2	NON - PLASTIC			14.2	2.54
8.5 to 10m	>80	SP	12	35.8	33.9	16.5	2.2	NON - PLASTIC			17.7	2.56
#NOTE:												
*TNP - Testing not performed												
*QNS - Quantity not sufficient for testing												



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Laboratory Test Results of Soil Samples of BH-02

Layer Depth	Avg. SPT-N value / Core Recovery	IS Classification	Grain Size Analysis					Atterberg Limits			NMC	Specific Gravity
			Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt & Clay	Liquid Limit	Plastic Limit	Plasticity Index		
m	-	-	%	%	%	%	%	%	%	%	%	-
0 to 2.9m	41	SC	0	12.4	41.6	29.7	16.2	35	15	20	15.6	2.54
2.9 to 8.5m	>60	SP-SM	0	15.3	46.9	28.4	7.6	NON - PLASTIC			17.7	2.57
8.5 to 9m	>100	SP	0	19.8	39.5	39.6	2.0	NON - PLASTIC			14.3	2.63
#NOTE:												
*TNP - Testing not performed												
*QNS - Quantity not sufficient for testing												



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Annexure-3

INPUT DATA & CALCULATIONS



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Bore Hole considered for design - BH-01						
Depth of footing(D)	m	1	1.5	2	2.5	3
Width of footing(B)	m	1.5	1.5	1.5	1.5	1.5
Type of soil	-	Sandy	Sandy	Sandy	Sandy	Sandy
Bulk Density	kN/m ³	17	17	18	18	19
Design GWT	m	0	0	0	0	0
Field SPT N	-	22	*29	36	*50	*60
Corrected SPT N	-	26	41	51	48	43
Angle of Shearing Resistance	(degree)	29	31	34	36	36
Cohesion	kN/m ²	0	0	0	0	0
Relative density of sand	%	68	74	80	89	94
Mode of Shear failure	:	INTERMEDIATE	INTERMEDIATE	GENERAL	GENERAL	GENERAL
* - Interpolated / Restricted SPT - N value considered for computations						
Bearing capacity factors						
N _c =		28.2	33.3	42.9	51.9	51.9
N _q =		16.8	21.3	30.3	39.4	39.4
N _r =		20.0	27.5	42.8	60.2	60.2
S _c =		1.3	1.3	1.3	1.3	1.3
S _q =		1.2	1.2	1.2	1.2	1.2
S _r =		0.8	0.8	0.8	0.8	0.8
D _c =		1.2	1.4	1.5	1.7	1.8
D _q & D _r =		1.1	1.2	1.3	1.3	1.4
i _c & i _q =		1.0	1.0	1.0	1.0	1.0
i _r =		1.0	1.0	1.0	1.0	1.0
W' =		0.5	0.5	0.5	0.5	0.5
Bearing capacity calculations						
Bearing capacity due to cohesive factor	=	0.0	0.0	0.0	0.0	0.0
Bearing capacity due to depth factor	=	151.8	309.2	676.4	1175.7	1576.6
Bearing capacity due to width factor	=	113.5	165.0	281.0	419.4	452.7
UBC (GENERAL)	kN/m ²	265	474	957	1595	2029
UBC (LOCAL)	kN/m ²	81	52	-	-	-
UBC	kN/m ²	234	466	957	1595	2029
FOS	-	2.5	2.5	2.5	2.5	2.5
SBC	kN/m ²	94	186	383	638	812



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Bore Hole considered for design - BH-02						
Depth of footing(D)	m	1	1.5	2	2.5	3
Width of footing(B)	m	1.5	1.5	1.5	1.5	1.5
Type of soil	-	Sandy	Sandy	Sandy	Sandy	Sandy
Bulk Density	kN/m ³	17	17	18	18	19
Design GWT	m	0	0	0	0	0
Field SPT N	-	29	*40	*50	*60	70
Corrected SPT N	-	36	41	46	58	56
Angle of Shearing Resistance	{degree}	30	33	35	36	36
Cohesion	kN/m ²	0	0	0	0	0
Relative density of sand	%	74	84	88	94	97
Mode of Shear failure :		INTERMEDIATE	GENERAL	GENERAL	GENERAL	GENERAL
* - Interpolated / Restricted SPT - N value considered for computations						
Bearing capacity factors						
Nc =		30.1	39.7	46.1	51.9	51.9
Nq =		18.4	27.3	33.3	39.4	39.4
Nr =		22.4	37.7	48.0	60.2	60.2
Sc =		1.3	1.3	1.3	1.3	1.3
Sq =		1.2	1.2	1.2	1.2	1.2
Sr =		0.8	0.8	0.8	0.8	0.8
Dc =		1.2	1.4	1.5	1.7	1.8
Dq & Dr =		1.1	1.2	1.3	1.3	1.4
ic & iq =		1.0	1.0	1.0	1.0	1.0
ir =		1.0	1.0	1.0	1.0	1.0
W' =		0.5	0.5	0.5	0.5	0.5
Bearing capacity calculations						
Bearing capacity due to cohesive factor	=	0.0	0.0	0.0	0.0	0.0
Bearing capacity due to depth factor	=	167.5	431.1	748.8	1252.1	1576.6
Bearing capacity due to width factor	=	127.4	234.4	316.5	431.4	452.7
UBC (GENERAL)	kN/m ²	295	665	1065	1684	2029
UBC (LOCAL)	kN/m ²	95	-	-	-	-
UBC	kN/m ²	298	665	1065	1648	2029
FOS	-	2.5	2.5	2.5	2.5	2.5
SBC	kN/m ²	119	266	426	659	812



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