



संख्या : 54(166)/सी.ई.डी.-1/सि.नि.ए./2024/522(फे.सी)

दिनांक : 05/09/2024

**CORRIGENDUM NO. 1**

**Name of work:** - Development of Botanical Garden of India Republic (BGIR), at NOIDA, Uttarpradesh on EPC Mode.

**NIT No.:** - 8/2023-24/CE/CCU/CED1/NOIDA (2<sup>nd</sup> call)

In reference to pre-bid meeting for the above-mentioned work which was held in office of CE, CCU, 7th floor, CGO Complex, Lodhi Road, New Delhi -110003 on 30.08.2024 at 11:00 A.M., Corrigendum no. '1' is issued as under –

S. N.	Reference to tender document	Existing Provision	Modified Provision
1.	Page No. 3, 48 & 650	NIT No.: 8/2023-24/CE/CCU/CED1/NOIDA	NIT No.: 8/2023-24/CE/CCU/CED1/NOIDA (2 <sup>nd</sup> call)
2.	Page No. '3'	Earnest Money Rs. 3.10 Crore	Earnest Money Rs. 310.09 Lakhs
3.	Para '1' at Page no. '3' of NIT	Contractors who fulfill the following criteria shall be eligible to apply [1(a)(i), 1(b), 1(c) & 1(d) are not applicable for CPWD enlisted contractors of appropriate class. 1(e) is applicable for CPWD enlisted contractors also]:	Contractors who fulfill the following criteria shall be eligible to apply [1(b), 1(c) & 1(d) are not applicable for CPWD enlisted contractors of appropriate class. <b>1(a)(i), and 1(e) is applicable for CPWD enlisted contractors also]</b> :
4.	Para '19' at page no. 8' of NIT	For CPWD enlisted Contractors: xii) Any other document as specified in NIT	For CPWD enlisted Contractors: xii) Any other document as specified in NIT  xiii) <b>List of eligible similar nature of works in Form -'C'</b> .  xiv) <b>Performance report of works (mentioned in Form-C and C-1) in Form - 'D'</b> .
5.	Para no. 1.2 at page no. '10'	[1.2.1, 1.2.2, 1.2.3 & 1.2.4 are not applicable for CPWD enlisted contractors of appropriate class. 1.2.5 is applicable for CPWD enlisted contractors also]	1.2.2, 1.2.3 & 1.2.4 are not applicable for CPWD enlisted contractors of appropriate class. <b>1.2.1, and 1.2.5 is applicable for CPWD enlisted contractors also]</b>

6.	Sr.no. (iv) at page no. '8' and Sr. no. 'm' at page '9' of NIT	GST registration Certificate of the state where the site is located, if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents.  "If work is awarded to me, I/we shall obtain GST registration certificate as applicable within one month from the date of receipt of award letter or before release of any payment by CCU, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CCU or GST department in this regard".	GST Registration Certificate if already obtained by the bidder. If the bidder has not obtained GST registration as applicable, then he shall scan and upload following undertaking along with bid documents.  "If work is awarded to me, I/we shall obtain GST registration certificate, as applicable, within one month from the date of receipt of award letter or before release of any payment by CCU, whichever is earlier, failing which I/we shall be responsible for any delay in payments which will be due towards me/us on account of the work executed and/or for any action taken by CCU or GST department in this regard".
7.	Para '9' at page no. '20'	The planning, designing and engineering of all the works ..... as applicable. Reference to standard/ code shall mean to their latest version/ edition.	The planning, designing and engineering of all the works ..... as applicable. Reference to standard/ code shall mean to their latest version/ edition. <b>The responsibility of investigation, designing, planning, and risk of engineering lies with the contractor.</b>
8.	Para no. '7.0' at page no. '30'	Contractors who fulfil the following criteria shall also be eligible to apply [7.1, 7.2, 7.3 & 7.4 are not applicable for CPWD enlisted contractors of appropriate class. 7.5 is applicable for CPWD enlisted contractors also]:	Contractors who fulfil the following criteria shall also be eligible to apply [7.2, 7.3 & 7.4 are not applicable for CPWD enlisted contractors of appropriate class. <b>7.1, and 7.5 is applicable for CPWD enlisted contractors also</b> ]:
9.	Page No. 48 of NIT	Amount of Earnest Money Deposit	Amount of Earnest Money Deposit
		Rs. 3.10 Crore	<b>Rs. 310.09 Lakhs</b>
10.	CPWD-7 at page no. '54' of NIT	i) To be uploaded by 3:00 PM on 19/09/2024 to/upload at  ii) To be opened in presence of tenderers who may be present at 3:30 PM hours on 19/09/2024 in the office of in the office of the Executive Engineer, CED-I, CCU, New Delhi.	i) To be uploaded by 3:00 PM on 19/09/2024.  ii) To be opened in presence of tenderers who may be present at 3:30 PM on 19/09/2024 in the office of the Executive Engineer, CED-I, CCU, New Delhi.
11.	Schedule 'E' at page '65' of NIT	Earnest Money: Rs. 3.10Crores (To be returned after receiving performance guarantee)	Earnest Money: <b>Rs. 310.09 Lakhs</b> (To be returned after receiving performance guarantee)
12.	Schedule 'E' at page '65' of NIT	Reference to General conditions of contract: CPWD General Conditions of Contract, 2022 for EPC Projects as amended / modified upto last date of submission of bid.	Reference to General conditions of contract: CPWD General Conditions of Contract, <b>2024</b> for EPC Projects as amended / modified upto last date of submission of bid.
13.	Schedule 'F' at page no. '66' of NIT	Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2 & 12.3: See Below	<b>Deleted</b>
14.	Schedule 'F' at page no. '66' of NIT	2(v) Engineer-in-Charge	<b>2(vi)</b> Engineer-in-Charge
15.	Schedule 'F' at page no. '66' of NIT	2(xi) Standard Schedule of Rates	<b>2(x)(b)</b> Standard Schedule of Rates

16.	Schedule 'F' at page no. '66' of NIT	2(xii) Department	2(xi) Department																					
17.	Clause '5' of Schedule 'F'  Authority to Decide:  at page no. 69 of NIT	(i) Extension of Time  (ii) Rescheduling of milestones	(i) <b>Authority to convey the decision of shifting of milestone and extension of time</b>  (ii) <b>Authority to decide</b> rescheduling of milestones <b>and extension of time</b>																					
18.	Schedule 'F'  Clause '11'  at page no. '71' of NIT	<table border="1"> <tr> <td>Specifications to be followed for execution of work (for civil work)</td> <td>:</td> <td>.....</td> </tr> <tr> <td>Specifications to be followed for execution of work (for electrical work)</td> <td>:</td> <td>.....</td> </tr> <tr> <td>Specifications to be followed for execution of work (for Horticulture &amp; Landscaping work)</td> <td>:</td> <td>.....</td> </tr> </table>	Specifications to be followed for execution of work (for civil work)	:	.....	Specifications to be followed for execution of work (for electrical work)	:	.....	Specifications to be followed for execution of work (for Horticulture & Landscaping work)	:	.....	<table border="1"> <tr> <td>Specifications to be followed for execution of work (for civil work)</td> <td>:</td> <td>.....</td> </tr> <tr> <td>Specifications to be followed for execution of work (for Electrical work)</td> <td>:</td> <td>.....</td> </tr> <tr> <td>Specifications to be followed for execution of work (for Horticulture &amp; Landscaping work)</td> <td>:</td> <td>.....</td> </tr> <tr> <td><b>Building Information Model (BIM) is applicable and BIM professional to be deployed by contractor</b></td> <td>:</td> <td><b>Yes</b></td> </tr> </table>	Specifications to be followed for execution of work (for civil work)	:	.....	Specifications to be followed for execution of work (for Electrical work)	:	.....	Specifications to be followed for execution of work (for Horticulture & Landscaping work)	:	.....	<b>Building Information Model (BIM) is applicable and BIM professional to be deployed by contractor</b>	:	<b>Yes</b>
Specifications to be followed for execution of work (for civil work)	:	.....																						
Specifications to be followed for execution of work (for electrical work)	:	.....																						
Specifications to be followed for execution of work (for Horticulture & Landscaping work)	:	.....																						
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Specifications to be followed for execution of work (for Horticulture & Landscaping work)	:	.....																						
<b>Building Information Model (BIM) is applicable and BIM professional to be deployed by contractor</b>	:	<b>Yes</b>																						
19.	Page no. '73-74' of NIT	Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50 % of requirement of degree engineers.	Assistant Engineers retired from Government services that are holding Diploma will be treated at par with Graduate Engineers. Diploma holder with minimum 10-year relevant experience with a reputed construction co. can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50 % of requirement of degree engineers.  <b>One no. professional having experience of working (minimum 5 years) on BIM shall be deployed by the contractor. Minimum recovery for not deploying Building information Model (BIM) professional shall be Rs. three lac per month.</b>																					
20.	Para '8.4' at Page no. '188' of NIT	Reinforcement TMT bars, to be used for the work, shall be corrosion resistance TMT bars of grade Fe 500D or more.	Reinforcement TMT bars, to be used for the work, shall preferably be corrosion resistance TMT bars of grade Fe 500D or more. Non-corrosion resistant TMT bars may be allowed for use in work (due to non-availability in small quantities) subject to cost adjustment (difference in cost between using CRS and non-CRS TMT bars).																					
21.	Page no. '29' of NIT	1.4 The bidder may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete envisaged work. He is, however advised not to furnish superfluous information.	1.4 The bidder may furnish any additional information, which he thinks is necessary to establish his capabilities to successfully complete envisaged work. He is, however advised not to furnish superfluous information.																					

		No information shall be entertained after submission of eligibility criteria document unless it is called for by the Employer.	1.5 No information/documents shall be entertained after submission of bid unless it is required to clarify the query raised by Employer. No fresh/revised mandatory document is permitted at this stage.
22.	Drawings at page no. 651 to 730 (except page no. 658)	Note '6': +98.5 is the benchmark level for project taken at main entry.	Note '6': +99.0 is the benchmark level for project taken at main entry.
23.	Page No. 650	FI SCHEDULE	FINANCIAL SCHEDULE

These amendments shall form the part of NIT/Agreement. All other parts of NIT document or other terms & conditions shall remain unchanged.

  
4/9/2024  
Executive Engineer, CED-1,  
CCU, MoEF&CC, New Delhi.

Copy to:

1. The Chief Engineer, CCU, MoEF&CC, New Delhi for information please.
2. The Superintending Engineer, CCU, MoEF&CC, New Delhi for information please.
3. NIT No. 8/2023-24/CE/CCU/CED1/NOIDA.
4. For website: <https://etender.cpwd.gov.in>, <https://moef.gov.in>, <https://bsi.gov.in>
5. Notice Board.

  
4/9/2024  
Executive Engineer, CED-1,  
CCU, MoEF&CC, New Delhi





संख्या : 54(166)/सी.ई.डी.-1/सि.नि.ए./2024/ 523 (रिड)

दिनांक : 05 / 09 / 2024

### MINUTES OF PREBID MEETING

**NAME OF WORK:** -Development of Botanical Garden of India Republic (BGIR) at NOIDA, Uttarpradesh on EPC mode.

**NIT No. :** 8/2023-24/CE/CCU/CED1/NOIDA (2<sup>nd</sup> call)

The pre-bid meeting for the above-mentioned work was held in the office of CE, CCU, 7th floor, Pt. Deendayal Antyodaya Bhawan, CGO Complex, Lodhi Road, New Delhi -110003 at 11:00 Hrs. on 30.08.2024. Following officers and bidders attended the pre-bid meeting –

1. Shri Mukesh Kumar, Superintending Engineer, CCU
2. Shri Daulat Ram, Executive Engineer (P), CCU
3. Shri Sandeep Chauhan, Scientist-E & In-charge, BGIR
4. Shri Jaswinder Pal, Executive Engineer, CED-I, CCU
5. Shri Aman Gulia, Assistant Executive Engineer(P)-I, CCU
6. Shri B. K. Biswas, Assistant Engineer (E)(P)-II, CCU
7. Shri Rakesh Kumar, Assistant Engineer(P)-II, CCU
8. Shri Bhim Singh Chauhan, Assistant Engineer(E), CED-I, CCU
9. Shri Subhash Tomar, Assistant Engineer(P), CED-I, CCU
10. Shri Vaibhav Bhangale, Consultant, M/s Vyom
11. Shri Arun Dayal, Consultant, M/s Vyom
12. Shri Akash Kumar, Project Engineer, M/s Vyom
13. Shri Ankit Tyagi, DGM (E), SAM(India) Infra
14. Shri Akhilesh Kumar, Executive Director, SAM(India) Infra
15. Shri Nitesh Yadav, Assistant Manager, SAM(India) Infra

The queries were raised by representatives of M/s Sam India Infrastructure LLP. The queries of **M/s Inderjit Mehta Construction Pvt. Ltd.** were received through email dated 29.08.2024. These were explained to bidders present in the meeting. After discussions, SE, CCU requested all the bidders present in the meeting to examine the tender documents properly and submit their queries, if any, by 31.08.2024 upto 5 PM. The clarification to pre-bid queries is issued as under:

S. No.	Reference to NIT page No.	Clause	Queries/ Observations	Clarification/reply
	<b>M/s Inderjit Mehta Construction Pvt. Ltd. vide e-mail dated 30.08.2024 (Letter no. IJM/Tender/CPWD/Noida/02 dated 29.08.2024)</b>			
1	Tree Cutting Approval Page 20, Para 5	Cutting/ transplantation of existing trees after obtaining approval	a. Please clarify if the placing of buildings and other infrastructure works	a. No

		of tree cutting from concerned authority e.g. local body/ forest department.	are planned as per existing location of trees. b. Please provide the no. of trees that need to be transplanted / terminated.	b. The site is being handed over to the contractor on as-is, where-is basis. The bidder can visit the site to access the no. of tree to be transplanted / felled. The contractor shall carry out the compensatory plantation (including maintenance of planted trees) in lieu of felled/cut trees as per stipulation of NOC/permission granted by concerned competent authority for cutting of trees. Contractor shall be responsible to adhere the terms of NOCs/Approvals granted by various statutory authorities. Tendered rates/amount of contractor is deemed to be inclusive of these conditions.
			c. Please also provide the transplanting location of those trees	c. The trees will be transplanted within the campus of BGIR as per zoning of plants.
2	STP Page 548	Scope of this sub head covers planning, designing, supply, installation, testing and commissioning of MBBR based STP for the complex based on the norms	Please clarify the scope of sewerage network of the complex.  As the location of public toilets are given in different parts of the complex and location of STP is given in Zone 8C (Forest Area). Please	The contractor shall carry out the detailed engineering and corresponding execution of sewerage network in such a manner that all the buildings and public toilets coming within 100-meter distance

			clarify the piping and infrastructure scopes.	from these buildings are connected to STP.  The public toilets beyond 100-meter distance, may be provided with the septic tank with soak pit.
3	Site Office Page 145	The site office accommodation shall be provided with all necessary furniture, fitted with all electrical items	List of Furniture items for the site office building is not given, please clarify. Please also clarify, if this building is going to be dismantled by the contractor and at what stage dismantling will be done.	All furniture such as Executive Tables, Conference Table for 20 persons, Executive Chairs, Visitor Chairs, Storages etc. as per requirement and drawing approved by Engineer in-charge site office is not to be dismantled.
4	3D views		Please provide 3D views of building for understanding of elevation requirement.	All the conceptual drawings are available on link provided in NIT at page No. 13.
5	UGT storage Page 243	Terrace Tank- RCC water storage tank for Service tank, Fire Fighting, Treated/domestic Water shall be provided of adequate capacity	Please provide the daily water demand for the complex.	The capacity of RCC water tanks shall be designed by the bidder during the detailed engineering phase as per NBC 2016 and considering the brief particulars of work mentioned in the NIT.
6	UGT storage Page 243	UGT Storage: Underground water tank storage of minimum 2 days of daily water demand shall be provided.	Please provide the daily water demand for the complex.	The capacity of underground water tanks shall be designed by the bidder during the detailed engineering phase as per NBC 2016 and considering the brief particulars of work mentioned in the NIT.
7	RO water Page 243	R.O. Water- Localised RO units shall be provided in	Please clarify location and numbers of installing the RO units.	For minimum quantity of RO Units, please refer to para 15 & 16 at page 414 of

		order to meet the project requirement.		tender. The location shall be decided during detailed design of the buildings and campus and considering the brief particulars of work mentioned in the NIT.
8	Soil report		Please provide the soil report of the project.	The soil investigations report is appended in the NIT for indicative purpose only. Contractor shall also under take soil investigation. In case of variation in the reports, safer parameters will be adopted for design purpose.
9	Cable Page 436	d. Cable size calculations shall be done for voltage drop of not more than 4% at peak designed current rating of cable. whereas as per page no 452  m. The cable sizing shall be done on the basis of maximum demand and voltage drop to be kept within 5%.	Please clarify for cable size calculation purpose voltage drop factor to consider is 4% or within 5%.	The cable sizes shall be designed on the basis of maximum demand and considering voltage drop within 5%.
10	Cable Page 450	6. HT panel and transformers shall be connected through 3 core 11 KV HT XLPE(E) Cable of minimum size 240 sq.mm. whereas at page 451  b. HT Panel and transformers will be connected through three core 11 KV HT	Please clarify which one to follow for HT panel and transformer 3x240 sqmm or 3x300 sqmm.	HT Panel and transformers will be connected through three core 11 KV HT XLPE(E) of minimum size 3X240 sq.mm.



		<p>XLPE(E) of minimum size 3X300 sq.mm. and on page no 454</p> <p>(1) The incoming and outgoing power connections shall be through 11 KV 3core x 300 Sq.mm aluminum armoured XLPE(E) cable.</p>		
11	Sandwich type bus duct Page 450	<p>7. Transformer and main LT panel will be connected with sandwich type bus duct of minimum 1600 amps 50ka. whereas at page 458</p> <p>Bus trunking and rising mains</p> <p>c. Major bus trunkings shall be as follows:</p> <p>(i) Between each Transformer and main MV panel (normal supply) 3200 A</p>	Please clarify which one to follow for Transformer and main LT panel 1600A or 3200A.	The rating of Bus duct shall be selected in line with the Transformer rating, after detailed engineering by contractor.
12	Connection Page 450	2. Two sources of electric connection will be taken from UPPCL/ local electric supply agency.	Please share the distance between the tapping point of UPPCL and BGIR HT panel Room / complex.	The UPPCL connection will be provided at service gate near UPPCL sub-station and the BGIR HT panel Room /sub-station is proposed behind toilets near conservatories (Please see drawing no. VYM-BGIR-ARC-STE-001-site master plan). The contractor will verify the distance between the tapping point of UPPCL and BGIR HT panel Room/complex at his own.

13	FRLS Copper wiring in Heavy duty PVC/ Medium class steel conduit Page 406	<p>2. FRLS Copper wiring in Heavy duty PVC/ Medium class steel conduit i/c light/fan/call bell/exhaust fan points of all categories, power points, circuit wiring and sub main wiring with modular switches &amp; sockets i/c modular plates and suitable GI boxes in all areas as required.</p> <p>whereas at page 435</p> <p>2. Conduit/switches: a. All internal electrical works shall be carried out with steel conduits and accessories. shall be provided. in places where conduiting is not possible suitable size XLPE armoured cable may be laid maintaining the aesthetic of the building</p>	Please clarify which one to use, Heavy duty PVC/ Medium class steel conduit as per description or steel conduits only for all internal electrical work.	Shall remain as per NIT.
14	APFC Panel Page 450	<p>10. 3 no APFC Panel each of minimum 250 KVAR with 7% detuned filters</p> <p>whereas at page 452</p> <p>1. The two number APFC panel shall be provided on two sections of main LT panel and having tripping arrangement in case of DG supply in the main panel.</p>	Please clarify whether to consider 3 nos. APFC panels or 2 nos. APFC panel.	Minimum 3 nos. of the APFC panels shall be considered. However, same shall be finalised during the detailed engineering stage.

15	Pump House Page 471	D. Pump House	Electric pump for sprinkler system is not given whereas Electric Jockey Pump (180LPM) for sprinkler system is given. Need to add the electric pump for the system. Please review.	The same shall be provided as per detailed engineering phase and statutory norms considering the minimum project requirements
16	ROOP TOP SOLAR PV POWER PLANT Page 559	1. 1500 KWp grid interactive Ground mount (on vehicle parking shed at scattered places) photo voltaic solar plant. Whereas at page 560  6. a. Minimum capacity of Roof Top Solar System: 1800 KWp	Please clarify whether to consider Minimum capacity of Roof Top Solar System 1500 KWp or 1800 Kwp.	Photo Voltic power generation shall be 1800KWp including roof top solar system.

<b>M/s SAM INDIA INFRASTRUCTURE</b>				
1.			Whether there is any change in tender documents from the previous tender called for this work.	Tender is recalled compiling the original NIT, Corrigendum / Addendum. However, the bidder shall read the entire bid document before quoting the rates.
2	Page 450 of NIT, para D2.1, sub-para 13		Clarification is required for actual size of UG cable required for power supply from main LT panel to different outdoor feeder pillars.	The UG cable size given in tender document is minimum. The bidder shall design for the requirements with detailed calculation as per specifications mentioned in tender document. Actual size of cable shall be based on the detailed design.
3.	Page No. 345 of NIT, Schedule of Horticulture		Many plants given in schedule of Horticulture are not viable	The plant species given in the NIT have been meticulously worked out by the Botanical Garden of India Republic botanists. The growing conditions of

			the various zones of the garden are to be conditioned such that the plant/tree species become viable in project. However, if any changes are required, the same shall be dealt with as per contract conditions.
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All other terms and conditions (except as detailed above) of the NIT shall remain unchanged. Minutes of Pre-bid meeting shall form part of the bid documents.

Enclosed : Soil Investigation Report (283 pages)

  
5/19/2024  
Executive Engineer, CED-I,  
CCU, MoEF&CC, New Delhi.

Copy to:

1. The Chief Engineer, CCU, MoEF&CC, New Delhi for information please.
2. The Superintending Engineer, CCU, MoEF&CC, New Delhi for information please.
3. NIT No. 8/2023-24/CE/CCU/CED1/NOIDA.
4. For website: <https://etender.cpwd.gov.in>, <https://moef.gov.in>, <https://bsi.gov.in>
5. Notice Board.

  
5/19/2024  
Executive Engineer, CED-I,  
CCU, MoEF&CC, New Delhi

**GEOTECHNICAL INVESTIGATION REPORT FOR  
REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN  
REPUBLIC, NOIDA  
(GT-1997)**

**CLIENT:**

**EXECUTIVE ENGINEER (P)  
NOIDA CENTRAL DIVISION, CPWD  
NEW DELHI**

**SUBMITTED BY:**



**SOIGNÉ ENGINEERING CONSULTANTS**

**R.O: S.C.F. 23, M.M, Manimajra, Chandigarh**

**Contact No. 0172-4007236**

**Email: info@soigneconsult.com**



**SOIGNÉ ENGINEERING CONSULTANTS****\*\*SOIL INVESTIGATION TEST REPORT\*\*****Job No.****Page No.**

GT-1997

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GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.

**1. INTRODUCTION**

The present report deals with the Geotechnical field and lab investigations conducted for **REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA**. The work was taken in hand on Behest of Executive Engineer (P) Noida Central Division, CPWD, New Delhi. The work was carried out in Month of February - March 2019.

The objective of the report is restricted to the factual information to be collected during the investigation period along with laboratory tests results and so as to obtain sequence & extent of soil so as to arrive at design parameters for the foundations from the recommended safe bearing capacity of foundation soil.

**2. SCOPE OF WORK**

- 2.1. Reconnaissance / field trip for studying the general topography and geology of the area/ terrain
- 2.2. The field Geotech investigations consisted of determination of sub soil profile by conducting 46 nos. bore holes up to maximum depth of 40.0 m below N.S.L or hard stratum/refusal, whichever is earlier, as per IS code.
- 2.3. Conducting SPT/DCPT in the bore-hole/trial pits at regular intervals and collecting disturbed/undisturbed soil samples from the bores hole at regular intervals as per Indian code of practice.
- 2.4. Recording of water table level in the bore holes at the time of boring (if encountered).
- 2.5. Conducting laboratory tests on the samples collected and thereby determining various index and engineering properties and summarizing the detail of soil classification.
- 2.6. Conducting 18 nos. Plate load test for determination of Modulus of Subgrade Reaction (K-Value) using 30cm x 30 cm plate at varying depths at 6 locations.
- 2.7. A comprehensive Geotechnical investigation report embodying all the above information along with tables of Field / Lab tests results and bearing capacity computations.



a) Correction due to effect of overburden pressure,

$$N_N = C_N \times N$$

$C_N$  is overburden pressure correction and is calculated as  $C_N = 0.77 \log_{10}(200/\sigma_0)$ .

b) Correction due to submerge effect (in case of fine sand and silt),

$$N_c = 15 + (N_N - 15)/2, \text{ provided } N_N > 15. \text{ Else } N_c = N_N$$

Where ' $N_c$ ' is the final corrected value

### 3.5. DETERMINATION OF MODULUS OF SUBGRADE (K-VALUE) OF SOIL IN FIELD

Modulus of Sub grade Reaction is Ratio of load per unit area (applied through a centrally loaded rigid body) of horizontal surface of a mass of soil to corresponding settlement of the surface. It is determined as the slope of the secant drawn between the point corresponding to zero settlement and the point of 1.25 mm settlement, of a load-settlement curve obtained from a plate load test on a soil using a 75 cm diameter or smaller loading plate with corrections for size of plate used.

#### 3.5.1. LOADING PROCEDURE

The loading system and bearing plate should be seated by applying a load of 3.1 kN (310 kgf) (0.007 MPa) for a plate size of 30cm x 30 cm. The seating load will be allowed to remain until practically complete deformation has taken place, at this time a reading should be taken on the dial gauges and adjusted to 'zero' reading. Then without releasing the seating load an additional 31 kN (3100 kgf) should be applied to the plates and held until practically complete settlement has taken place.

#### 3.5.2. EVALUATION OF SUBGRADE TEST RESULTS

Modulus of Sub grade Reaction (k) is required for foundation & Calculated by Westergads method and is estimated from Plate Load Test data.

Standard plate size for finding 'k' value is 75 cm size, the standard 'k' value corresponding to 30 cm plate is found by applying a suitable correction for plate size.

By equation,

$$K = 10p/1.25 \text{ Kg/cm}^2 / \text{cm}$$



Where,

'K' = Modulus of Sub grade Reaction

'p' = load intensity required for settlement of 1.25mm from load-settlement curve

Correction for plate size:

$$\Delta = 1.18 \text{ pa/E} \quad (\text{Elastic theory})$$

Where,

$\Delta$  = Deflection

E = Elasticity constant of soil

Now,

$$\frac{p}{\Delta} = k = E/1.18A$$

$$k A = E/1.18 = \text{Constant}$$

Therefore,  $k_1 A_1 = k_2 A_2$

$$k_{75} = k_{30} \times A_{30}/A_{75}$$

$$k_{75} = 0.16 k_{30}$$

#### 4. GROUND WATER TABLE

Determination of Ground water Table and water depth from Existing Ground level was done using Steel tape with weigh. The depth of Ground water table was determined as per procedure laid in IS 6935-1973. Depth of water tables was measured in the month of February 2019. Depth of Ground Water Table encountered in each boreholes was as follows:

S.No	BHL No	Depth of water Table, m	S.No	BHL No	Depth of water Table, m
1	BHL - 1	16.5 m	24	BHL - 24	13.5 m
2	BHL - 2	15.0 m	25	BHL - 25	13.3 m
3	BHL - 3	13.7 m	26	BHL - 26	13.8 m
4	BHL - 4	17.5 m	27	BHL - 27	13.5 m
5	BHL - 5	18.0 m	28	BHL - 28	13.2 m
6	BHL - 6	15.0 m	29	BHL - 29	13.8 m
7	BHL - 7	14.5 m	30	BHL - 30	14.5 m
8	BHL - 8	15.0 m	31	BHL - 31	11.2 m
9	BHL - 9	14.7 m	32	BHL - 32	10.9 m
10	BHL - 10	13.7 m	33	BHL - 33	14.2 m



S.No	BHL No	Depth of water Table, m	S.No	BHL No	Depth of water Table, m
11	BHL - 11	13.5 m	34	BHL - 34	12.6 m
12	BHL - 12	11.7 m	35	BHL - 35	11.4 m
13	BHL - 13	11.4 m	36	BHL - 36	12.7 m
14	BHL - 14	12.5 m	37	BHL - 37	14.7 m
15	BHL - 15	12.9 m	38	BHL - 38	11.5 m
16	BHL - 16	13.2 m	39	BHL - 39	14.6 m
17	BHL - 17	12.5 m	40	BHL - 40	14.8 m
18	BHL - 18	12.7 m	41	BHL - 41	14.7 m
19	BHL - 19	13.4 m	42	BHL - 42	14.7 m
20	BHL - 20	13.2 m	43	BHL - 43	13.5 m
21	BHL - 21	13.3 m	44	BHL - 44	12.5 m
22	BHL - 22	13.2 m	45	BHL - 45	13.4 m
23	BHL - 23	13.7 m	46	BHL - 46	14.0 m

## 5. OBSERVATION AND DISCUSSIONS

From the field borehole logs, the laboratory test result and the visual examination of soil samples indicates the following type of strata in the bore holes.

### 5.1. SOIL CLASSIFICATION & GENERAL NATURE OF THE SOIL STRATA:

Classification and identification is the pre-requisite of any site investigation report. The sub soil strata are classified on the basis of lab tests as per IS: 1498 -1978. The classification on the soil samples were obtained from the % age of grain size distribution of gravel sand silt and clay in different layers of deposit met at site. The classification soil groups are given in the data sheets attached.

## 6. LABORATORY TESTS

### 6.1. Index Properties [As per SP 36 (Part-I)-1987] :

All the relevant classification on the samples obtained from the bore holes were carried out in the laboratory. The index properties obtained from such classification tests at different depths in the bore holes are reported in the bore hole log sheets.



**6.2. UNDISTURBED SOIL SAMPLES:**

Undisturbed soil sample collected in field have been tested in laboratory and preparation of sample for the under mentioned tests have been done in accordance with I.S.2720.

1. Sieve analysis test as per I.S. Specification No. 2720 --(Part-IV).
2. Atterberg limit test (L.L., P.I. & S.L.) as per I.S. Specification No. 2720 --(Part-II,VI).
3. Natural moisture content as per I.S. Specification No.2720 - (Part-IV).
4. Particle size analysis test as per I.S. Specification No. 2720-(Part-VI).
5. Wet density test as per I.S. Specification No 2720- (Part-VI).
6. Dry density test as per I.S. Specification No. 2720- (Part-VI)
7. Free soil Index as per I.S. Specification No. 2720- (Part-XL).
8. Specific Gravity test as per I.S. Specification No-2720-(Part-III)-Sec.2.
9. Triaxial compression test and determination of shear parameter (C &  $\phi$  as per I.S. XII & I.S. 2720 - (part - XIII).
10. Consolidation test conducted as per I.S Specification No. 2720- (Part-XV).

**6.3. DISTURBED SOIL SAMPLES:**

Disturbed Soil samples have been prepared in accordance with I.S. Specification No. 2720- (Part-I)- 1983 and tested as follows:-

1. Sieve analysis test as per I.S. Specification No. 2720- (Part- IV).
2. Atterberg limit test (L.L., P.I. & S.L.) as per I.S. Specification No. 2720 --(Part-II,VI).
3. Particle size analysis test as per I.S. Specification No. 2720-(Part-VI).

Calculation of bearing capacity is governed generally by I.S. Specification No. 8009- (Part-I)- 1976, I.S.No.2720- (Part - II)- 1980, I.S. No 6403-1981, I.S. 1904-1978 and I.S. 1080-1985 and other relevant I.S. Codes as well as based on assessment and latest developments.

Test results are shown in the respective borehole data sheets.



7. FOUNDATION PARAMETERS

Allowable Bearing capacity values are based on the following parameters:

Table 1: Foundation Parameters

TYPE OF FOUNDATION	BORE HOLE NO.	FOUNDATION SIZE	FOUNDATION DEPTH
ISOLATED FOOTING	BHL - 1 to 46	3.00 m x 2.00 m 3.00 m x 3.00 m	1.5m, 3.0m & 4.50 m

8. ESTIMATION OF ALLOWABLE BEARING CAPACITY

A foundation can fail by two modes i.e.

- i) Shear failure.
- ii) Excessive settlement.

Shear failure being catastrophic, an adequate factor of safety is applied to ultimate bearing capacity that can initiate this type of failure. BIS recommends a value of FOS = 2.5 to obtain the net safe bearing capacity q<sub>ns</sub> by using the physical characteristics of the foundation and relevant shear strength parameters of soil.

Settlement analysis a net loading intensity q<sub>n</sub> is obtained by using the physical characteristics of the foundation and the relevant compressibility characteristics of the Underlying soil. The value so obtained ensures that the foundation shall not settle more than that which is permissible as per BIS recommendations. The permissible settlement depends upon the type of superstructure and the nature of supporting strata.

The lesser of these computed values i.e. q<sub>ns</sub> or q<sub>n</sub> is adopted as the allowable bearing capacity for proportioning the foundation of superstructures.

9. COMPUTATION OF ALLOWABLE BEARING CAPACITY

SHEAR FAILURE ANALYSIS

Net Ultimate bearing capacity for general shear failure,

$$q_{nu} = c N_c S_c D_c + q (N_q - 1) S_q D_q + \frac{1}{2} B \gamma N_y S_y D_y W' \quad \text{-----(1)}$$

Net Ultimate bearing capacity for local shear failure,

$$q_{nu} = \frac{2}{3} c N_c S_c D_c + q (N'_q - 1) S_q D_q + \frac{1}{2} B \gamma N'_y S_y D_y W' \quad \text{-----(2)}$$

**Shape factors,****For Strip Footing**

$$S_c = 1 \quad ; \quad S_q = 1 \quad ; \quad S_y = 1$$

**For Rectangle Footing**

$$S_c = 1 + 0.2 B/L \quad ; \quad S_q = 1 + 0.2 B/L \quad ; \quad S_y = 1 - 0.4 B/L$$

**For Square Footing**

$$S_c = 1.3 \quad ; \quad S_q = 1.2 \quad ; \quad S_y = 0.8$$

**For Circular Footing**

$$S_c = 1.3 \quad ; \quad S_q = 1.2 \quad ; \quad S_y = 0.6$$

**Depth factors,**

$$d_c = 1 + 0.2 \times D/B \tan(45 + \Phi/2) \quad ; \quad d_q = d_y = 1 + 0.1 \times D/B \tan(45 + \Phi/2)$$

(For Cohesive soil,  $\Phi = 0$ )

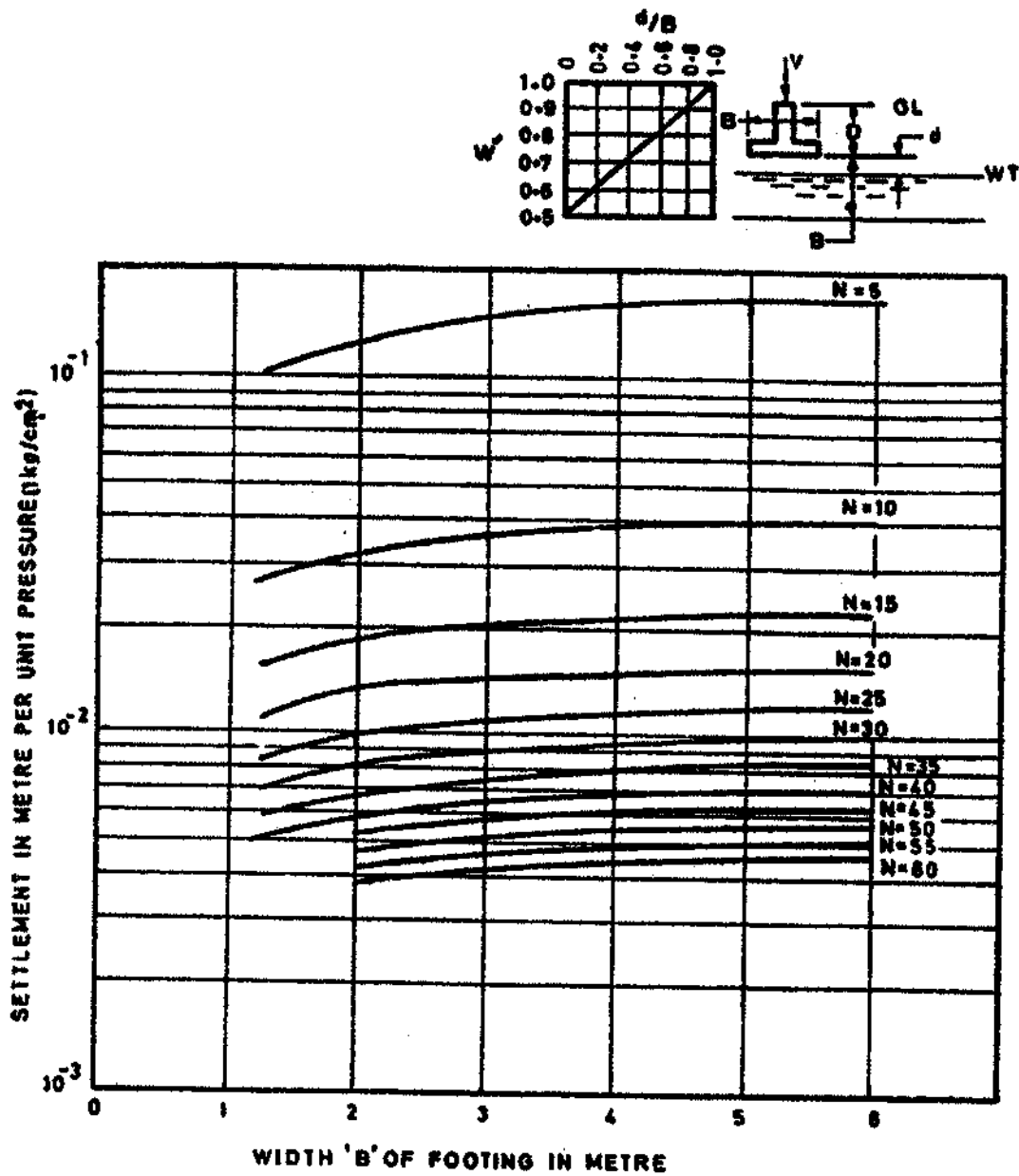
**Inclination Factors,**

$$i_c = 1.0 \quad ; \quad i_q = 1.0 \quad ; \quad i_y = 1.0$$

**SETTLEMENT ANALYSIS**

As per BIS recommendation permissible settlement for isolated column footing for RC structures on Cohesion less is 50 mm. Because of the erratic and pronounced variations of the compressibility characteristics of supporting strata, even slight differential settlement can cause distress to superstructure. As such differential settlement should be kept as low as possible. Depending upon the ability of the strata to absorb settlements, maximum permissible settlement is conservatively chosen so that resultant differential settlements do not cause distress to the superstructure. However to be on conservative side and based upon field observations, maximum permissible settlement of 40 mm has been adopted for present analysis.

Settlement for cohesion less strata is done as per figure no 9 IS code 8009 (part-1) -1976



GL = Ground level.

WT = Water table.

FIG. 9 SETTLEMENT PER UNIT PRESSURE FROM STANDARD PENETRATION RESISTANCE



**ISOLATED FOOTING (3.0 M X 2.0 M) - FOR BHL 40**

Depth of Footing, D = 1.50 m, 3.00 m & 4.50 m

Width of Footing, B = 2.0 m

Density,  $\gamma$  = 1.63 t/m<sup>2</sup>

Cohesion, C = 0.6 t/m<sup>2</sup>

Angle of shearing resistance,  $\Phi$  = 20.0°

Mobilizing angle of shearing resistance,  $\Phi'$  = 13.64°

**Bearing Capacity Factor:**

$N'_c$  = 10.26       $N'_q$  = 3.54       $N'_\gamma$  = 2.26

**Table 2: Shape & Depth Factor**

Depth of Footing	Shape Factors			Depth Factors			Surcharge (YxD), q (t/m <sup>2</sup> )	Water table correction factor, W'
	$S_c$	$S_q$	$S_\gamma$	$D_c$	$D_q$	$D_\gamma$		
1.50 m	1.13	1.13	0.73	1.214	1.107	1.107	2.45	1.00
3.00 m	1.13	1.13	0.73	1.428	1.214	1.214	4.89	1.00
4.50 m	1.13	1.13	0.73	1.642	1.321	1.321	7.34	1.00

Calculation of bearing capacity from local shear failure

Substituting values in equation,

$$q_{nu} = \frac{2}{3} c N_c S_c D_c + q (N'_q - 1) S_q D_q + \frac{1}{2} B \gamma N'_\gamma S_\gamma D_\gamma W'$$

$$q_{ns} = q_{nu} / \text{FOS} = q_{nu} / 2.5$$

**Table 3: Safe bearing capacity in Shear Criteria**

Foundation Size	Depth of Foundation	Net Ultimate Bearing Capacity, $q_{nu}$	Net Safe Bearing Capacity, $q_{ns}$
ISOLATED FOOTING 3.0m X 2.0m	1.50 m	16.40 t/m <sup>2</sup>	6.6 t/m <sup>2</sup>
	3.00 m	26.98 t/m <sup>2</sup>	10.8 t/m <sup>2</sup>
	4.50 m	39.07 t/m <sup>2</sup>	15.6 t/m <sup>2</sup>

**SETTLEMENT ANALYSIS**

Net Settlement from safe bearing capacity from Settlement criteria may be calculated from separately for foundation in cohesion less soil.

**Table 4: Settlement in Cohesion less soil**

Depth of Footing	AVG. N-VALUE	Net Safe bearing capacity, $q_{ns}$	Settlement in Cohesion less Soil, $\Delta_2$ (mm)	Total Settlement $\Delta$ (mm)
1.5 m	6.0	6.6 t/m <sup>2</sup>	45 x 6.6/10 = 29.70	29.7
3.0 m	8.0	10.8 t/m <sup>2</sup>	28 x 10.8/10 = 30.24	30.2
4.5 m	13.0	15.6 t/m <sup>2</sup>	18 x 15.6/10 = 28.08	28.1

Net Settlement,  $\Delta < 40$  mm, Hence safe





**ISOLATED FOOTING (2.0 M X 2.0 M) - FOR BHL 40**

Depth of Footing, D = 1.50 m, 3.00 m & 4.50 m

Width of Footing, B = 2.0 m

Density,  $\gamma$  = 1.63 t/m<sup>3</sup>

Cohesion, C = 0.6 t/m<sup>2</sup>

Angle of shearing resistance,  $\Phi$  = 20.0°

Mobilizing angle of shearing resistance,  $\Phi'$  = 13.64°

**Bearing Capacity Factor:**

N'<sub>c</sub> = 10.26      N'<sub>q</sub> = 3.54      N'<sub>y</sub> = 2.26

**Table 5: Shape & Depth Factor**

Depth of Footing	Shape Factors			Depth Factors			Surcharge (YxD), q (t/m <sup>2</sup> )	Water table correction factor, W'
	S <sub>c</sub>	S <sub>q</sub>	S <sub>y</sub>	D <sub>c</sub>	D <sub>q</sub>	D <sub>y</sub>		
1.50 m	1.30	1.20	0.80	1.214	1.107	1.107	2.45	1.00
3.00 m	1.30	1.20	0.80	1.428	1.214	1.214	4.89	1.00
4.50 m	1.30	1.20	0.80	1.642	1.321	1.321	7.34	1.00

Calculation of bearing capacity from local shear failure

Substituting values in equation,

$$q_{nu} = \frac{2}{3} c N_c S_c D_c + q (N'_q - 1) S_q D_q + \frac{1}{2} B \gamma N'_y S_y D_y W'$$

$$q_{ns} = q_{nu} / FOS = q_{nu} / 2.5$$

**Table 6: Safe bearing capacity in Shear Criteria**

Foundation Size	Depth of Foundation	Net Ultimate Bearing Capacity, q <sub>nu</sub>	Net Safe Bearing Capacity, q <sub>ns</sub>
ISOLATED FOOTING 2.0m X 2.0m	1.50 m	17.99 t/m <sup>2</sup>	7.2 t/m <sup>2</sup>
	3.00 m	29.30 t/m <sup>2</sup>	11.7 t/m <sup>2</sup>
	4.50 m	42.20 t/m <sup>2</sup>	17.0 t/m <sup>2</sup>

**SETTLEMENT ANALYSIS**

Net Settlement from safe bearing capacity from Settlement criteria may be calculated from separately for foundation in cohesion less soil.

**Table 7: Settlement In Cohesion less soil**

Depth of Footing	AVG. N-VALUE	Net Safe bearing capacity, q <sub>ns</sub>	Settlement in Cohesion less Soil, Δ <sub>s</sub> (mm)	Total Settlement Δ (mm)
1.5 m	6.0	7.2 t/m <sup>2</sup>	45 x 7.2/10 = 32.40	32.4
3.0 m	8.0	11.7 t/m <sup>2</sup>	28 x 11.7/10 = 32.76	32.8
4.5 m	13.0	17.0 t/m <sup>2</sup>	18 x 17/10 = 30.60	30.6

**Net Settlement, Δ < 40 mm, Hence safe**

**10. ESTIMATION OF MODULUS OF SUBGRADE REACTION (K-VALUE)**

Modulus of Sub grade Reaction (k) is required for foundation & Calculated by Westergads method and is estimated from Plate Load Test data.

Standard plate size for finding 'k' value is 75 cm size, the standard 'k' value corresponding to 30 cm plate is found by applying a suitable correction for plate size.

By equation,

$$K = 10p/1.25 \text{ Kg/cm}^2 / \text{cm}$$

Where,

'K' = Modulus of Sub grade Reaction

'p' = load intensity required for settlement of 1.25mm from load-settlement curve

Correction for plate size:

$$\Delta = 1.18 p_a/E \quad (\text{Elastic theory})$$

Where,

$\Delta$  = Deflection

E = Elasticity constant of soil

Now,

$$\frac{p}{\Delta} = k = E/1.18A$$

$$k A = E/1.18 = \text{Constant}$$

Therefore,  $k_1 A_1 = k_2 A_2$

$$k_{75} = k_{30} \times A_{30}/A_{75}$$

$$k_{75} = 0.16 k_{30}$$

Calculation of Modulus of Sub grade Reaction from field results

For PLT 1/1

$$\text{load intensity, } p \text{ (from 1.25mm settlement)} = 1.96 \text{ kg}$$

$$k_{30} = 10 p/1.25 = 1.96 \times 10/1.25 = 15.68 \text{ kg/cm}^2 / \text{cm}$$

$$k_{75} = 0.16 k_{30} = 2.509 \text{ kg/cm}^2 / \text{cm}$$

Calculation for other PLT tests have been conducted in tabular form in Annexure -1



**11. RECOMMENDATIONS**

Recommended bearing capacity for different types of foundation may be assumed as follow:

**Table 8: Recommendations**

S.No	BHL No.	Type of foundation	At 1.5 m depth		At 3.0 m depth		At 4.5 m depth	
			( $q_a$ ) <sub>net</sub> (t/m <sup>2</sup> )	( $q_a$ ) <sub>gross</sub> (t/m <sup>2</sup> )	( $q_a$ ) <sub>net</sub> (t/m <sup>2</sup> )	( $q_a$ ) <sub>gross</sub> (t/m <sup>2</sup> )	( $q_a$ ) <sub>net</sub> (t/m <sup>2</sup> )	( $q_a$ ) <sub>gross</sub> (t/m <sup>2</sup> )
1.	BHL NO-1	Isolated Footing	8.1	10.6	13.4	18.5	19.4	27.0
2.	BHL NO-2	Isolated Footing	11.5	14.0	16.8	21.8	22.6	30.1
3.	BHL NO-3	Isolated Footing	10.5	13.0	16.1	21.2	22.2	29.8
4.	BHL NO-4	Isolated Footing	8.4	11.0	12.7	17.7	17.6	25.1
5.	BHL NO-5	Isolated Footing	9.6	12.0	14.3	19.2	19.6	26.8
6.	BHL NO-6	Isolated Footing	9.0	11.5	14.3	19.4	20.5	28.1
7.	BHL NO-7	Isolated Footing	7.0	9.5	11.3	16.2	16.2	23.6
8.	BHL NO-8	Isolated Footing	8.8	11.3	14.6	19.6	21.2	28.6
9.	BHL NO-9	Isolated Footing	9.4	12.0	15.8	20.9	23.2	30.8
10.	BHL NO-10	Isolated Footing	9.4	12.0	15.3	20.3	22.1	29.7
11.	BHL NO-11	Isolated Footing	8.5	11.0	16.1	21.0	25.0	32.4
12.	BHL NO-12	Isolated Footing	9.2	11.7	17.5	22.4	27.1	34.5
13.	BHL NO-13	Isolated Footing	8.5	11.0	16.0	20.9	25.0	32.3
14.	BHL NO-14	Isolated Footing	9.0	11.5	14.2	19.2	20.2	27.7
15.	BHL NO-15	Isolated Footing	6.5	9.0	12.3	17.5	19.0	26.4
16.	BHL NO-16	Isolated Footing	7.4	9.8	12.0	16.8	17.3	24.5
17.	BHL NO-17	Isolated Footing	9.6	12.0	15.8	20.7	23.0	30.3
18.	BHL NO-18	Isolated Footing	8.8	11.3	15.0	20.0	22.2	29.7
19.	BHL NO-19	Isolated Footing	8.5	11.0	14.3	19.3	21.0	28.6
20.	BHL NO-20	Isolated Footing	7.4	10.0	12.0	17.0	17.0	24.5
21.	BHL NO-21	Isolated Footing	6.5	9.0	12.4	17.4	19.1	26.7
22.	BHL NO-22	Isolated Footing	7.5	10.0	13.0	17.9	19.4	26.8
23.	BHL NO-23	Isolated Footing	7.8	10.3	14.8	19.7	23.0	30.4
24.	BHL NO-24	Isolated Footing	6.6	9.1	12.5	17.5	19.4	27.0
25.	BHL NO-25	Isolated Footing	7.5	10.0	12.5	17.4	18.3	25.6
26.	BHL NO-26	Isolated Footing	8.0	10.5	12.7	17.6	18.1	25.5
27.	BHL NO-27	Isolated Footing	7.1	9.6	11.8	16.8	17.1	24.6
28.	BHL NO-28	Isolated Footing	7.5	10.0	12.0	17.1	17.1	24.7
29.	BHL NO-29	Isolated Footing	7.0	9.5	11.4	16.4	16.5	24.0

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S.No	BHL NO	Type of Foundation	At 1.5 m depth		At 3.0 m depth		At 4.5 m depth	
			$(q_a)_{net}$ (t/m <sup>2</sup> )	$(q_a)_{gross}$ (t/m <sup>2</sup> )	$(q_a)_{net}$ (t/m <sup>2</sup> )	$(q_a)_{gross}$ (t/m <sup>2</sup> )	$(q_a)_{net}$ (t/m <sup>2</sup> )	$(q_a)_{gross}$ (t/m <sup>2</sup> )
30.	BHL NO-30	Isolated Footing	9.0	11.5	14.2	19.2	20.2	27.7
31.	BHL NO-31	Isolated Footing	8.1	10.6	13.2	18.2	19.2	26.7
32.	BHL NO-32	Isolated Footing	8.7	11.2	15.0	19.9	22.0	29.4
33.	BHL NO-33	Isolated Footing	7.7	10.2	12.8	17.8	18.6	26.1
34.	BHL NO-34	Isolated Footing	8.6	11.0	13.5	18.4	19.0	26.3
35.	BHL NO-35	Isolated Footing	7.4	9.9	11.8	16.8	17.0	24.5
36.	BHL NO-36	Isolated Footing	7.3	9.8	13.7	18.7	21.3	28.8
37.	BHL NO-37	Isolated Footing	8.1	10.6	13.2	18.2	19.2	26.7
38.	BHL NO-38	Isolated Footing	9.5	12.0	15.5	20.5	22.7	30.1
39.	BHL NO-39	Isolated Footing	8.8	11.3	14.0	18.9	20.0	27.4
40.	BHL NO-40	Isolated Footing	6.6	9.0	10.8	15.7	15.6	22.9
41.	BHL NO-41	Isolated Footing	7.8	10.3	11.8	16.8	16.2	23.7
42.	BHL NO-42	Isolated Footing	8.1	10.5	13.8	18.8	20.3	27.9
43.	BHL NO-43	Isolated Footing	8.5	11.0	13.8	18.8	19.8	27.4
44.	BHL NO-44	Isolated Footing	8.0	10.5	15.0	20.0	23.2	30.7
45.	BHL NO-45	Isolated Footing	7.2	9.7	13.6	18.6	21.0	28.4
46.	BHL NO-46	Isolated Footing	9.3	11.8	15.6	20.6	23.0	30.5

**NOTE:**

1. The area under investigation falls under seismic zone- IV as per India seismic code.
2. It is also suggested that the backfilling of the foundation soil should be well compacted inlayer at optimum moisture content to achieve at least 95% of proctor density, followed by suitable plinth protection & effective drainage system.
3. For any other size and depth of footing bearing capacity of soil can be calculated from the data provided.



  
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**LIST OF I.S. CODES****FIELD INVESTIGATION:**

1.	IS : 1498 - 1970	:	Classification and Identification of soils for general engineering purpose (First Revision).
2.	IS : 1892 - 1979	:	Code of practice for sub surface investigation for foundations (First Revision).
3.	IS : 2131 - 1981	:	Method of Standard Penetration Tests for soils.
4.	IS : 2132 - 1986	:	Code of practice for thin walled tube sampling of soils (Second Revision).
5.	IS : 4968 - 1976 (Part - 3)	:	Method of sub surface sounding for soils : Static cone penetration test.

**LABORATORY TESTS:**

1.	IS 2720 - 1983 (Part - 1)	:	Methods of test for soils : Preparation of dry soil sample for various tests (Second Revision).
2.	IS : 2720 - 1980 (Part - 2)	:	Method of test for soils : Determination of water content (Second Revision).
3.	IS : 2720 - 1980 (Part - 3) (Section - 1)	:	Method of test for soils : Determination of Specific Gravity : Fine Grained Soils.
4.	IS : 2720 - 1980 (Part - 3) (Section - 2)	:	Method of test for soils : Determination of Specific Gravity : Fine, Medium, Coarse Grained Soils (First Edition).
5.	IS : 2720 - 1985 (Part - 4)	:	Method of test for soils : Grain Size Analysis.
6.	IS : 2720 - 1985 (Part - 5)	:	Method of test for soils : Determination of liquid & plastic limit (Second Revision).
7.	IS : 2720 - 1986 (Part - 15)	:	Method of test for soils : Determination of consolidation properties (First Revision).
8.	IS : 2809 - 1972	:	Method of test for soils : Glossary of terms & symbols relating to soil engineering.



**FOUNDATION CONSTRUCTION:**

1.	IS : 1080 - 1986	:	Code of practice for design and construction of shallow foundations on soils (other than raft, ring and shell) (Second Revision).
2.	IS : 1904 - 1986	:	Code of practice for design and construction of foundation in soils : General requirements.
3.	IS : 1080 - 1986	:	Code of practice for design and construction of shallow foundations on soils (other than raft, ring and shell) (Second Revision).
4.	IS 6403 - 1981	:	Code of practice for determination of bearing capacity of shallow foundations.
5.	IS 8009 - 1976 (Part - 1)	:	Code of practice for calculations of settlements of foundations : shallow foundations subject to symmetrical static vertical loads.

**NOTATIONS USED**

N	=	Observed SPT value
$C_N$	=	Correction factor
$N_N$	=	Corrected SPT values
$\gamma$	=	Bulk unit weight
$\gamma'$	=	Submerged unit weight
$\gamma_d$	=	Dry unit weight
$\gamma_{sat}$	=	Saturated unit weight
G	=	Specific gravity of soil
$W_L$	=	Liquid limit
$W_p$	=	Plastic limit
$I_p$	=	Plasticity index
$Q_u$	=	Unconfined compressive strength
$C_u$	=	Undrained shear strength
C	=	Effective cohesion parameter
$\phi$	=	Effective angle of shearing resistance
$\phi_m$	=	Mobilized angle of shearing resistance
$N \phi$	=	Flow value $\tan^2 (45 + \phi / 2)$
GSF	=	General shear failure
LSF	=	Local shear failure
$C_c$	=	Compression index
B	=	Width of foundation
L	=	Length of foundation
D	=	Depth of foundation
q	=	Effective surcharge
$N_\gamma, N_q, \& N_c$	=	Bearing capacity factors
$S_\gamma, S_q, \& S_c$	=	Shape factors
$d_\gamma, d_q, \& d_c$	=	Depth factors

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S.S.W.L.	=	Sub soil water level
W'	=	W.T. correction factor
H	=	Thickness of clayey layer
$\sigma'_o$	=	Original effective overburden pressure
$\Delta \sigma$	=	Vertical stress increment
$e_o$	=	Original void ratio
w	=	Water content
$H_t$	=	Thickness of sandy layer
$B_t$	=	Top width of sandy layer
$\Delta \sigma_t$	=	Stress increment at the top of a sandy layer
$D_r$	=	Depth factor
$L_{yf}$	=	Lateral yield factor
$R_r$	=	Rigidity factor
$q_{nr}$	=	Net ultimate bearing capacity
$q_{ns}$	=	Net safe bearing capacity against shear failure
$q_n$	=	Net foundation loading intensity for a given settlement
$q_a$	=	Allowable bearing capacity
$S_o$	=	Settlement due to a net unit foundation loading intensity
$S_{ob}$	=	Settlement due to a net unit foundation loading intensity under submerged conditions (1Kg / cm <sup>2</sup> )
WT	=	Water table
$S_t$	=	Total settlement
$S_a$	=	Maximum allowable settlement
GW	=	Well graded gravels
GP	=	Poorly graded gravels
GM	=	Silty gravels
GC	=	Clayey gravels
SW	=	Well graded sands

GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.



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## \*\*SOIL INVESTIGATION TEST REPORT\*\*

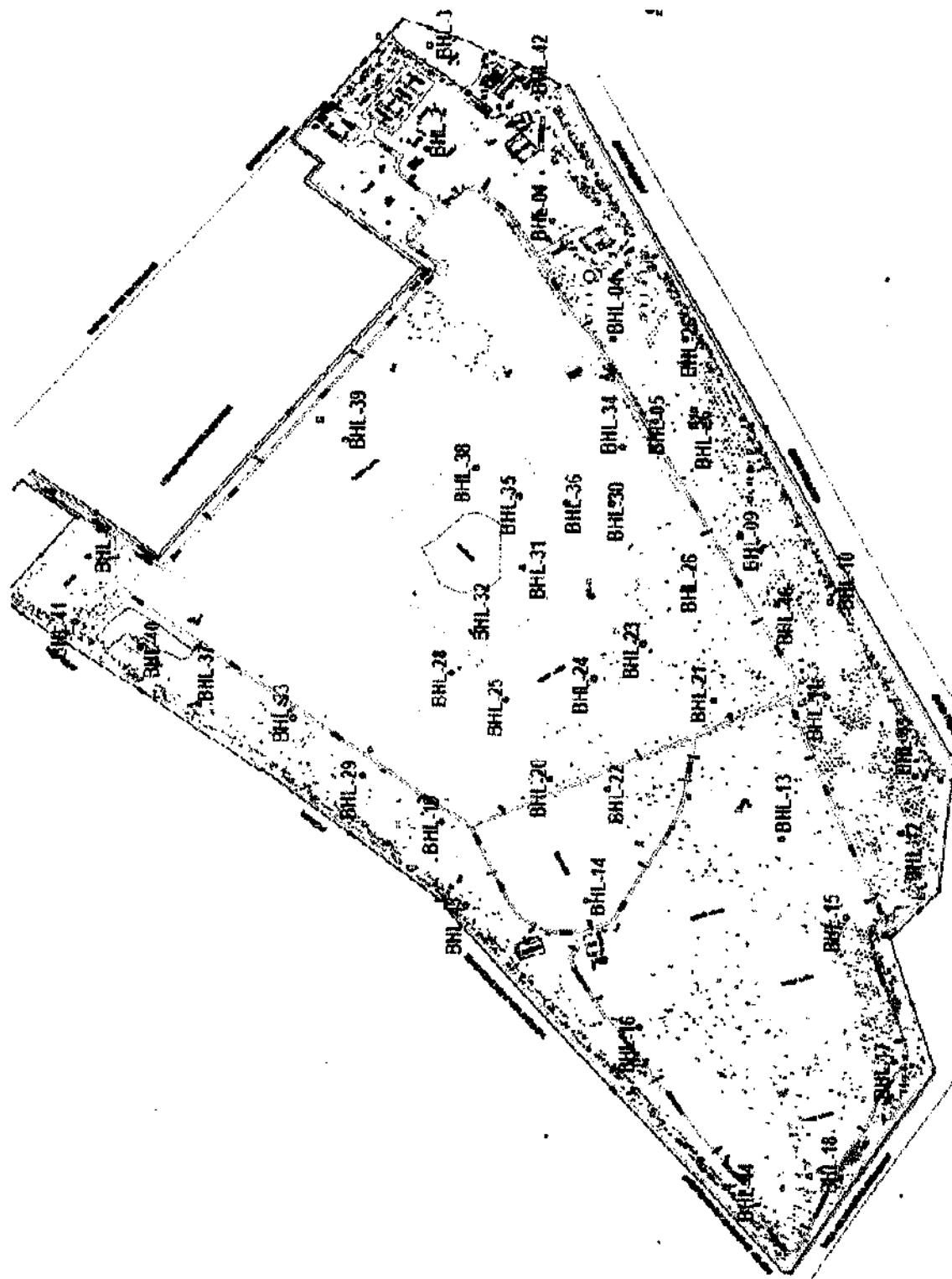
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SP	=	Poorly graded sands
SM	=	Silty sands
SC	=	Clayey sands
ML	=	Silt of low compressibility
CL	=	Clay of low plasticity
MI	=	Silt of medium compressibility
CI	=	Clay of medium plasticity
MH	=	Silt of high compressibility
CH	=	Clay of high plasticity
M(NP)	=	Non plastic silt
ML-CL	=	Mixture of ML and CL



BOREHOLE LOCATION



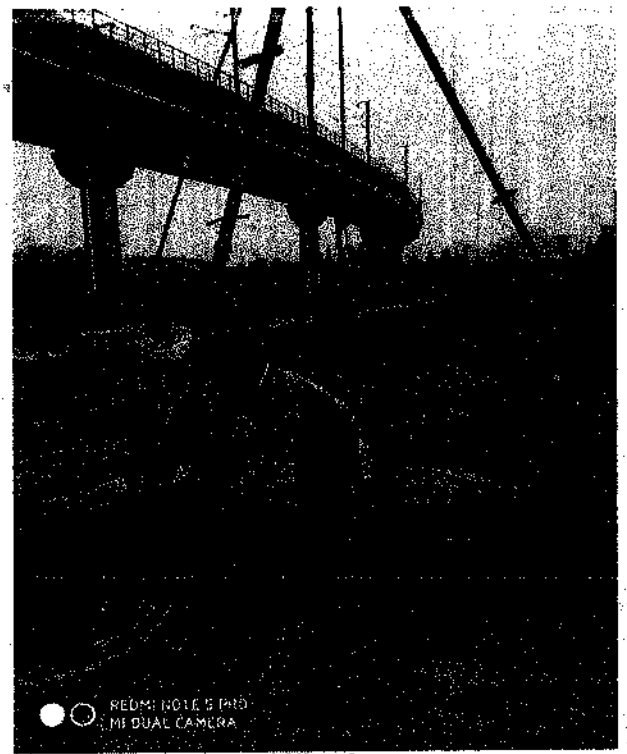
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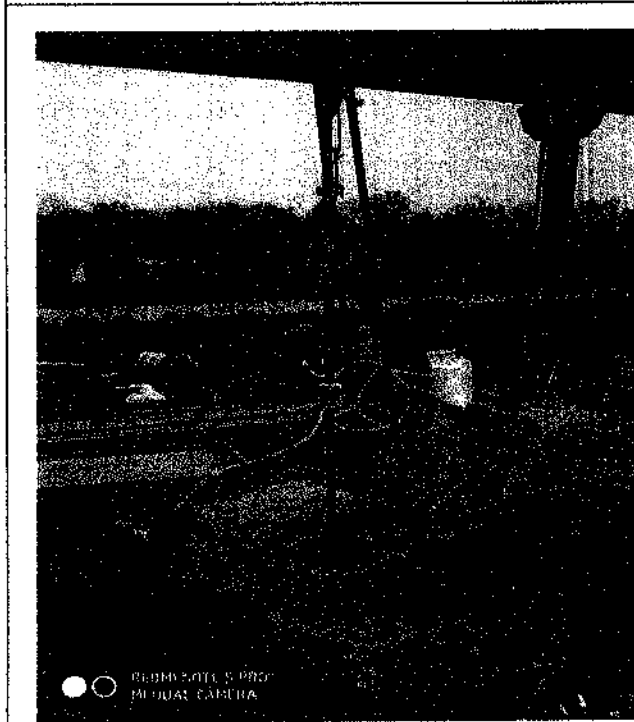
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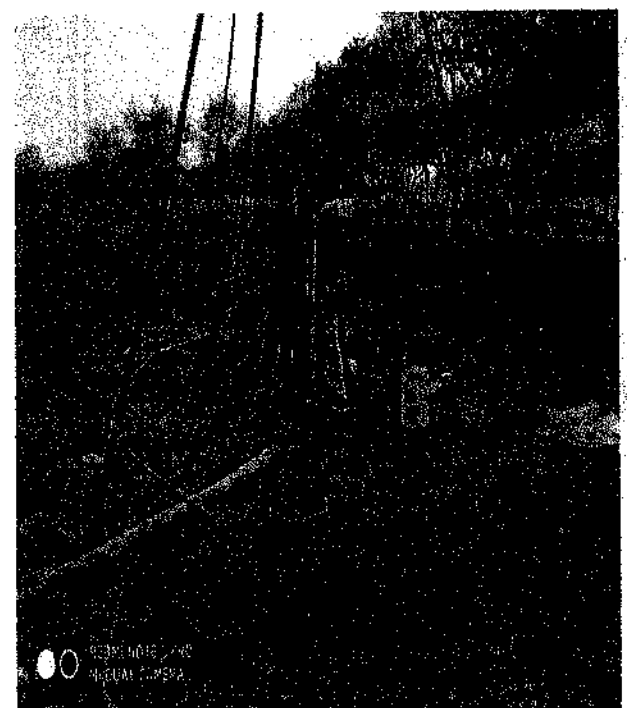
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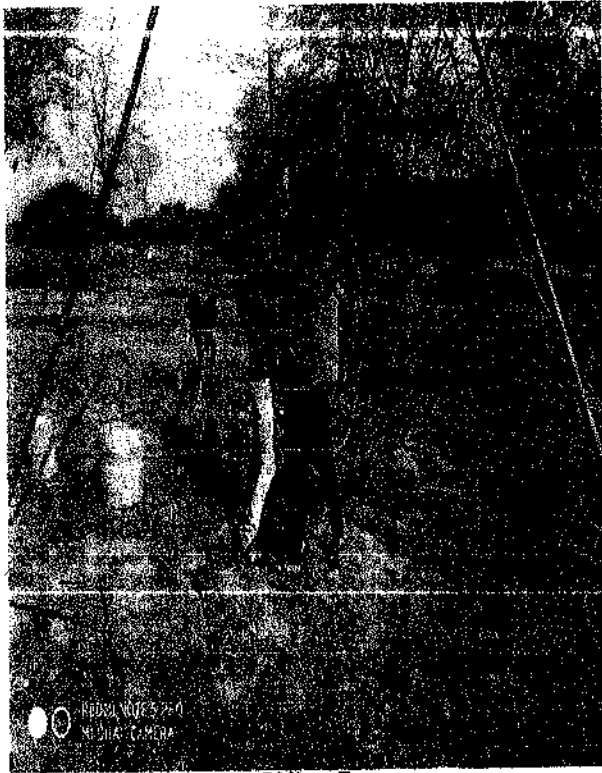
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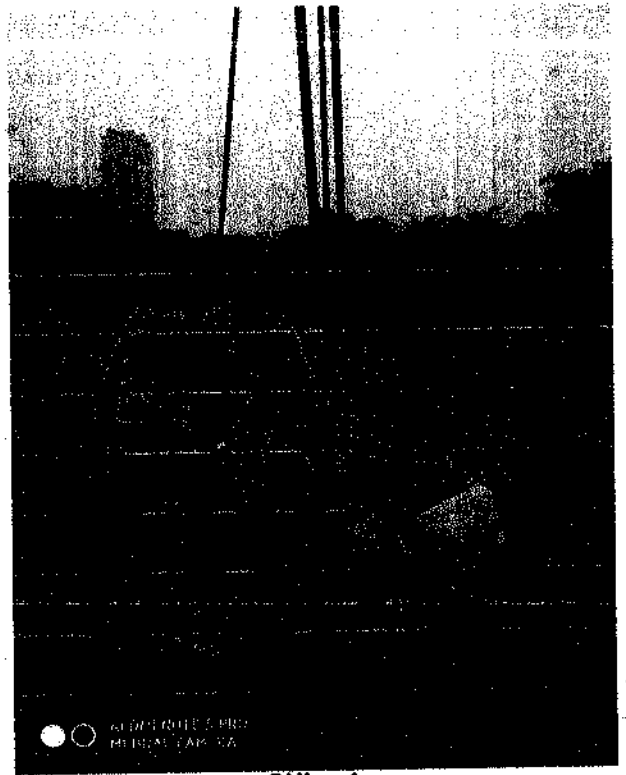
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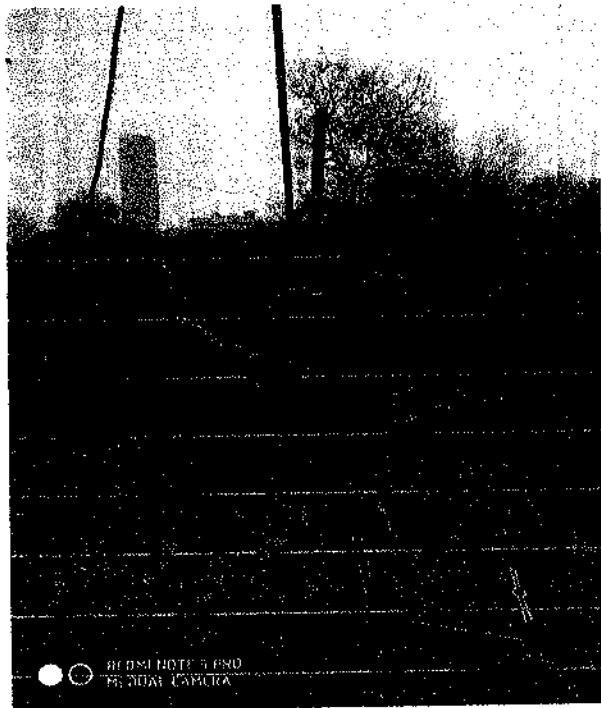
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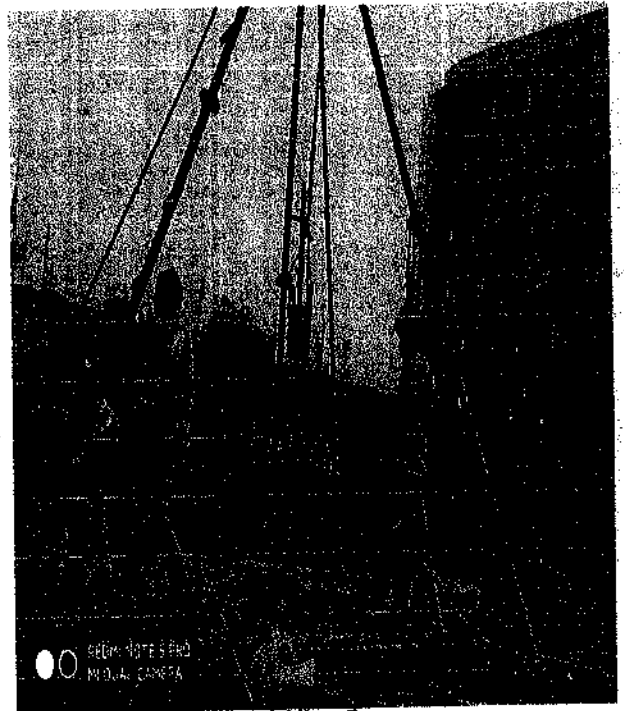
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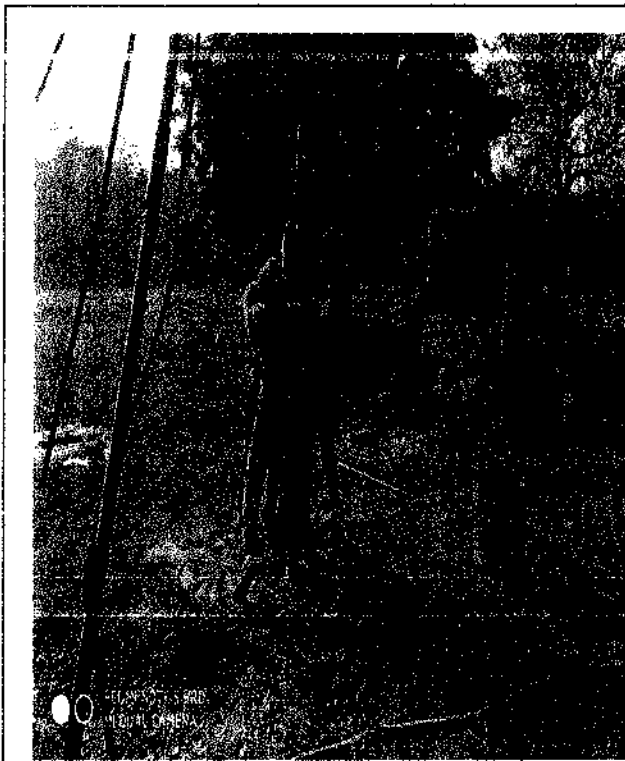
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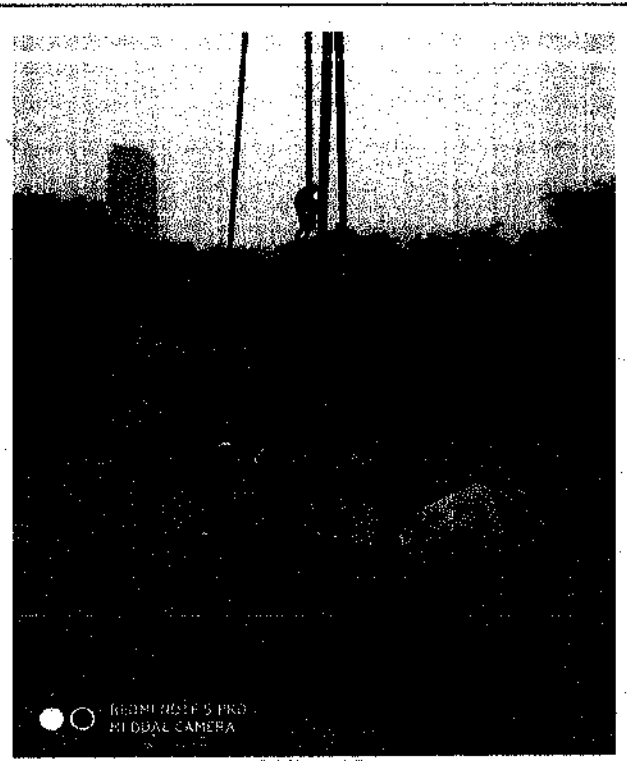
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**BHL - 8**



**BHL - 9**



**BHL - 10**



**BHL - 11**



**BHL - 12**





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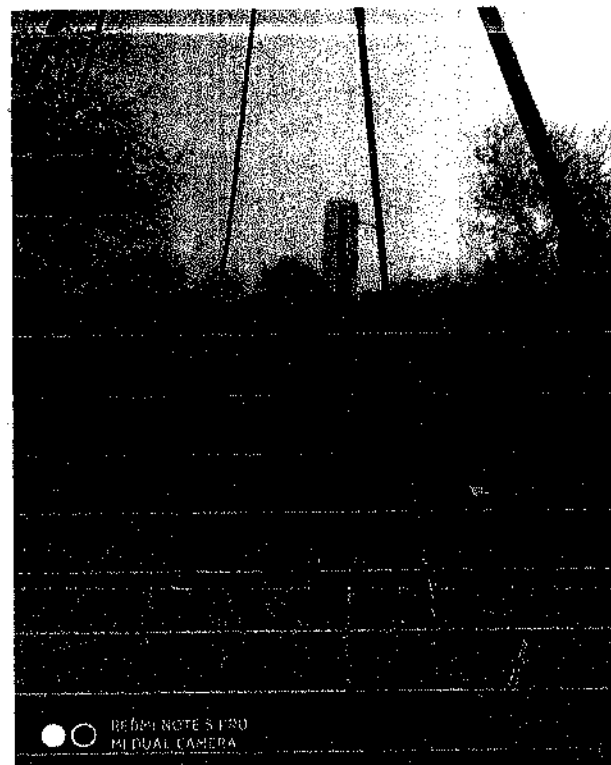
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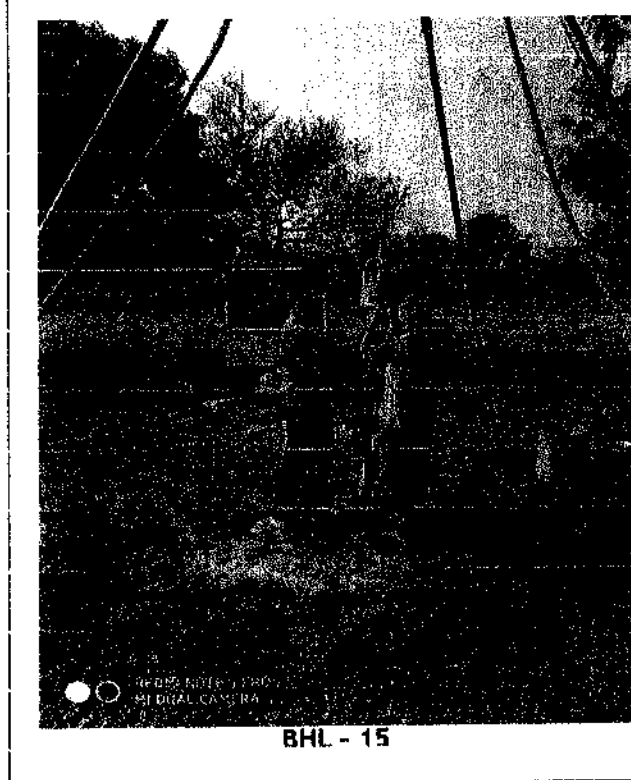
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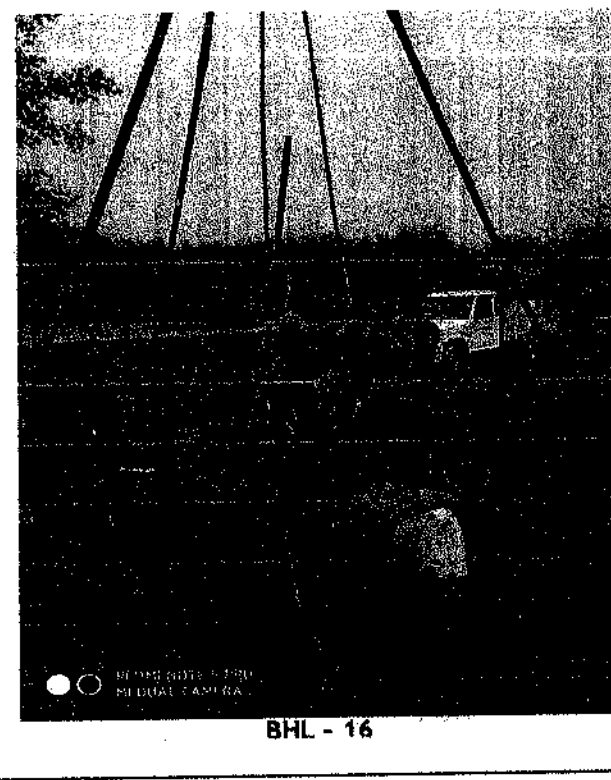
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BHL - 14



BHL - 15



BHL - 16

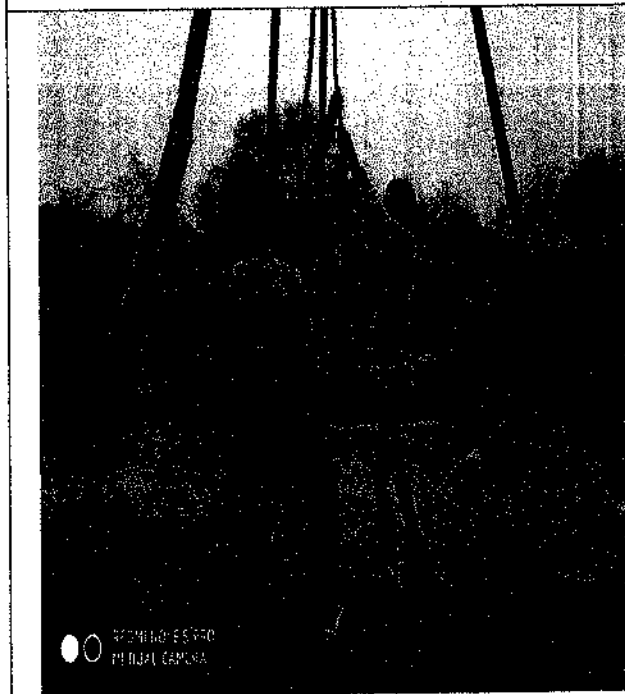
GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.



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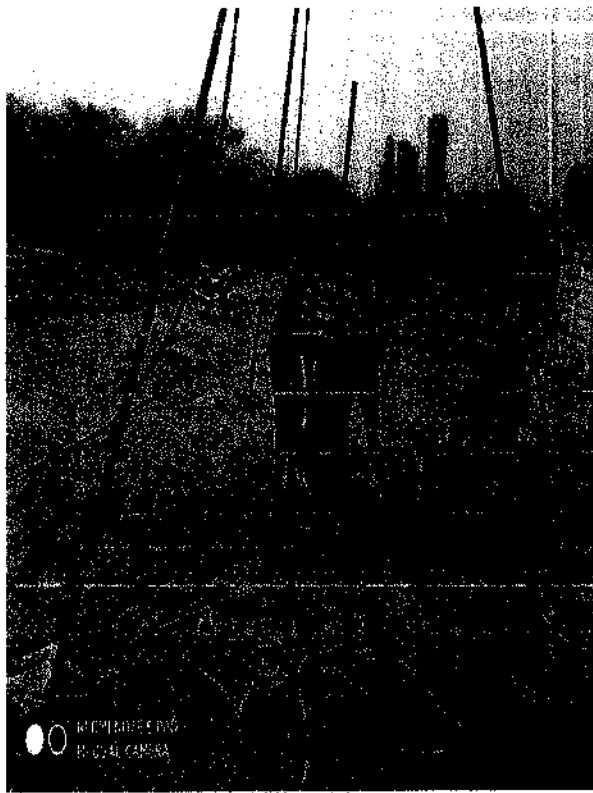
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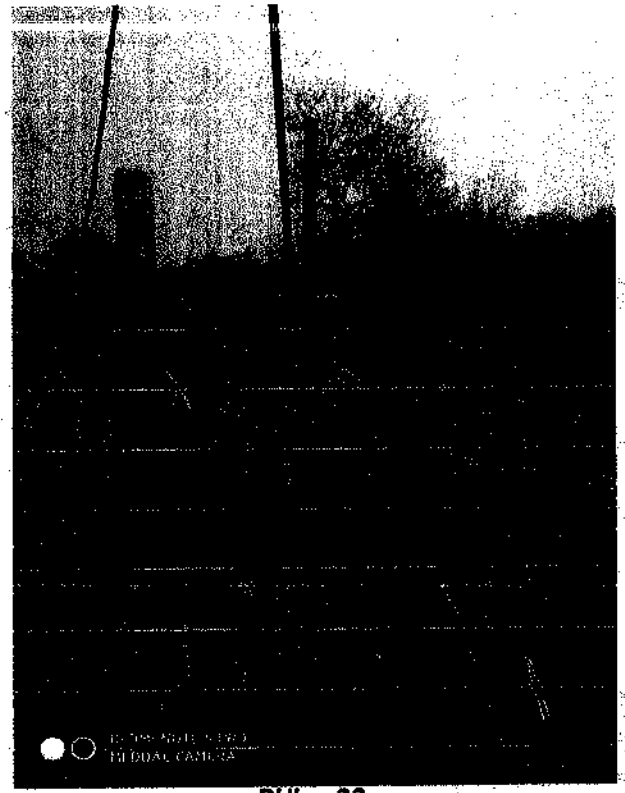
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**BHL - 20**



**BHL - 21**



**BHL - 22**



**BHL - 23**



**BHL - 24**



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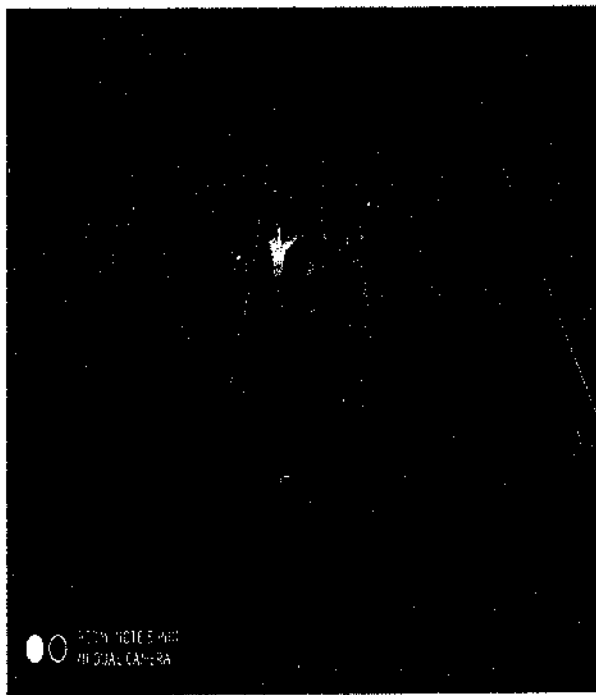
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**BHL - 26**



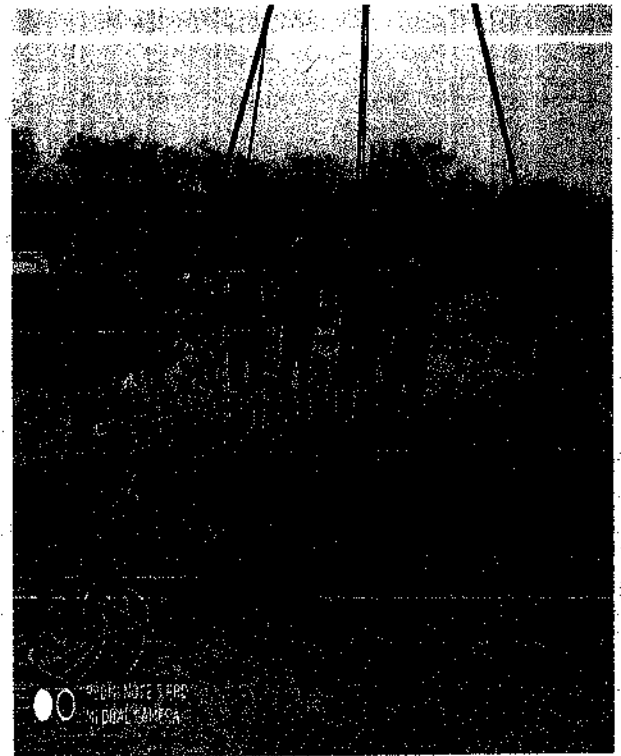
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**BHL - 28**



**BHL - 29**



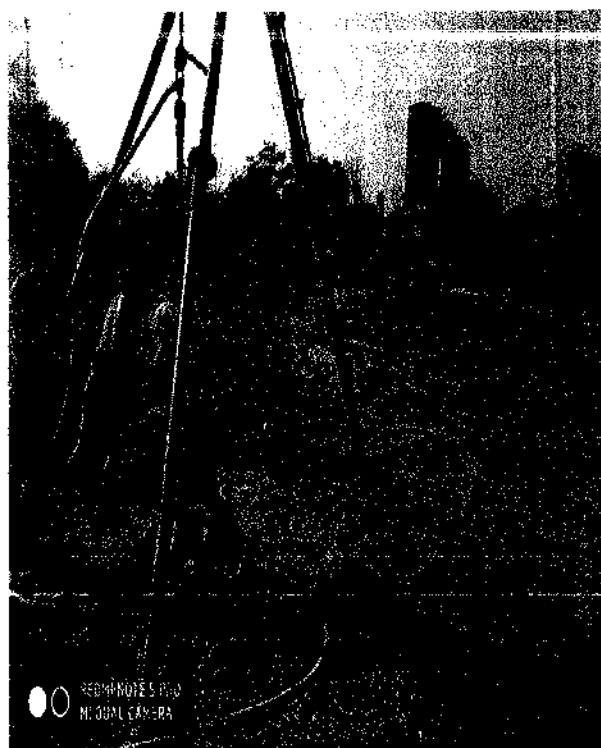
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**BHL - 32**



**BHL - 33**



**BHL - 34**



**BHL - 35**



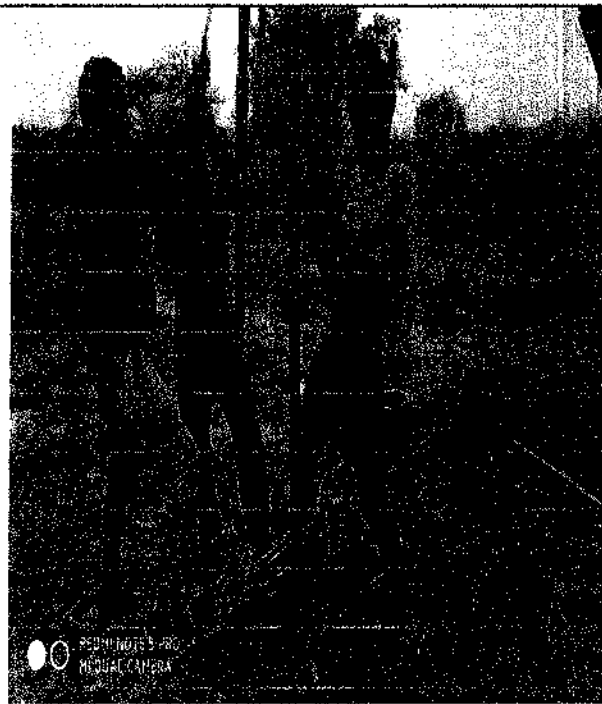
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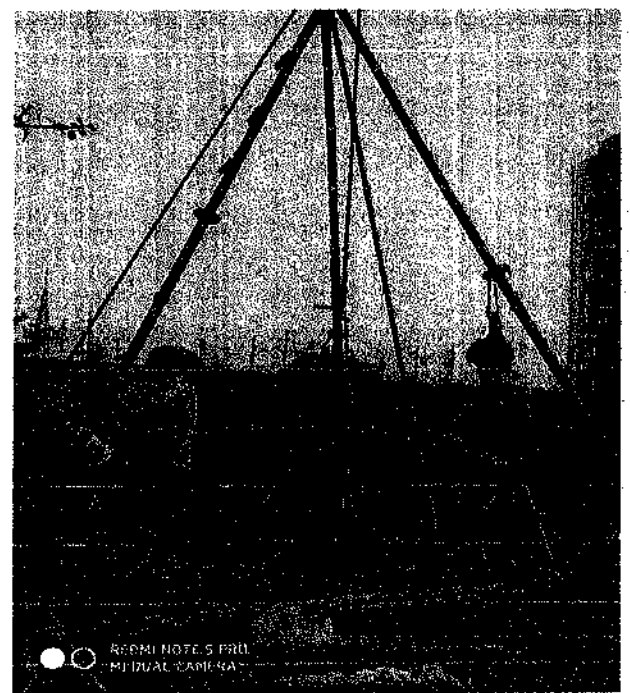
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**BHL - 38**



**BHL - 39**

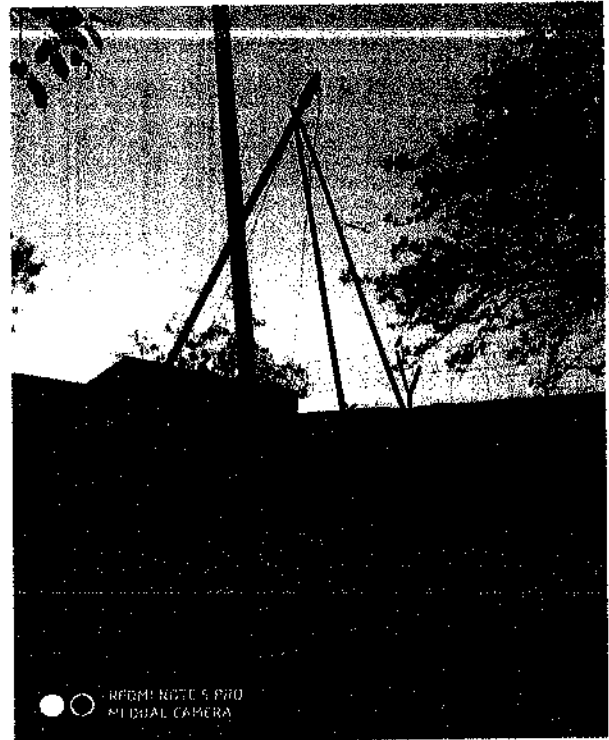


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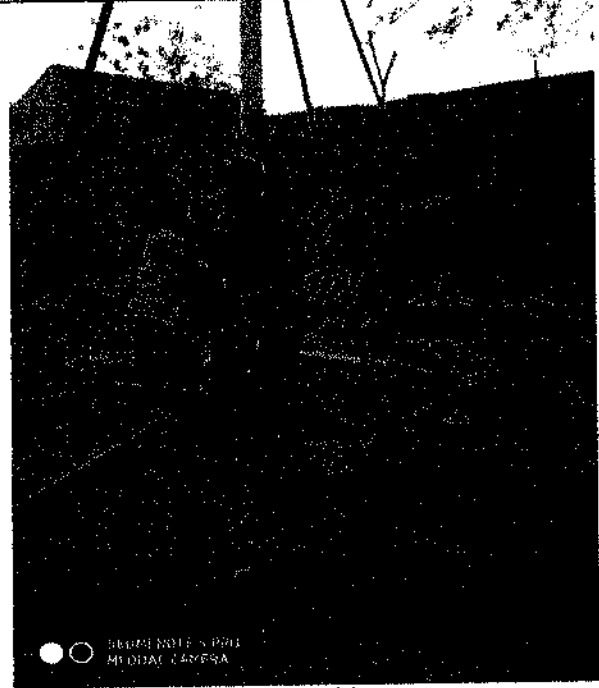
**BHL - 41**



**BHL - 42**



**BHL - 43**



**BHL - 44**





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**Job No.**

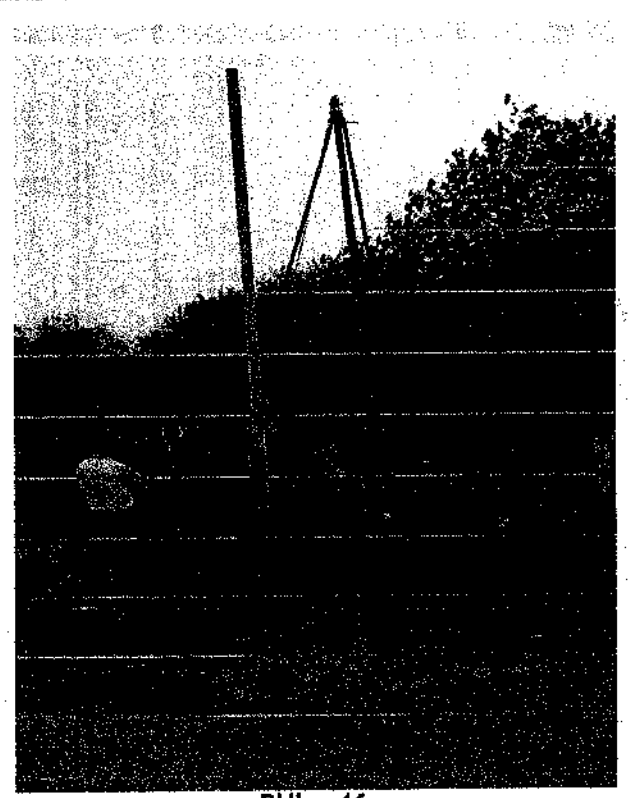
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**BHL - 45**



**BHL - 46**

**ANNEXURE 1  
PLATE LOAD TEST RESULTS**

S.No	Test Location	Depth	Load Intensity, p (tn)	K <sub>30</sub> , Kg/cm <sup>2</sup> /cm	K <sub>75</sub> , Kg/cm <sup>2</sup> /cm
1.	PLT-1/1	1.5 m	1.96	15.68	2.50
2.	PLT-1/2	2.5 m	2.36	18.88	3.02
3.	PLT-1/3	3.5 m	2.69	21.52	3.44
4.	PLT-2/1	1.5 m	2.07	16.56	2.64
5.	PLT-2/2	2.5 m	3.42	27.40	4.38
6.	PLT-2/3	3.5 m	4.13	33.10	5.28
7.	PLT-3/1	1.5 m	1.61	12.90	2.06
8.	PLT-3/2	2.5 m	1.97	15.8	2.52
9.	PLT-3/3	3.5 m	3.87	31.0	4.95
10.	PLT-4/1	1.5 m	2.28	18.3	2.92
11.	PLT-4/2	2.5 m	2.18	17.5	2.80
12.	PLT-4/3	3.5 m	3.79	30.4	4.85
13.	PLT-5/1	1.5 m	2.23	17.9	2.85
14.	PLT-5/2	2.5 m	3.22	25.8	4.13
15.	PLT-5/3	3.5 m	2.74	21.9	3.50
16.	PLT-6/1	1.5 m	2.32	18.6	2.97
17.	PLT-6/2	2.5 m	2.63	21.1	3.37
18.	PLT-6/3	3.5 m	2.77	22.2	3.55



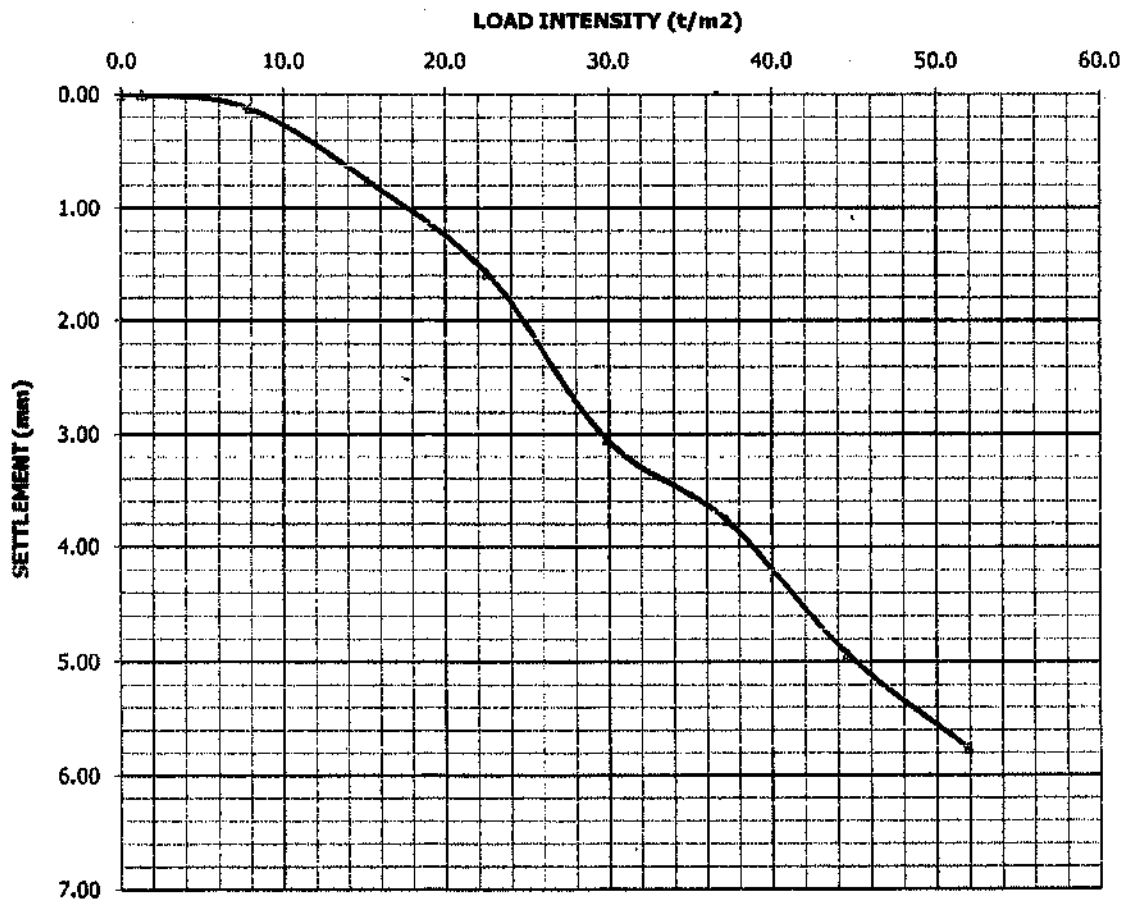
PIT NO-1

TEST NO-1/1

DEPTH-1.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	10	13	12
1320	15.22	67	85	76
1980	22.56	152	163	158
2640	29.89	300	310	305
3300	37.22	380	374	377
3960	44.56	437	548	493
4620	51.89	538	614	576

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





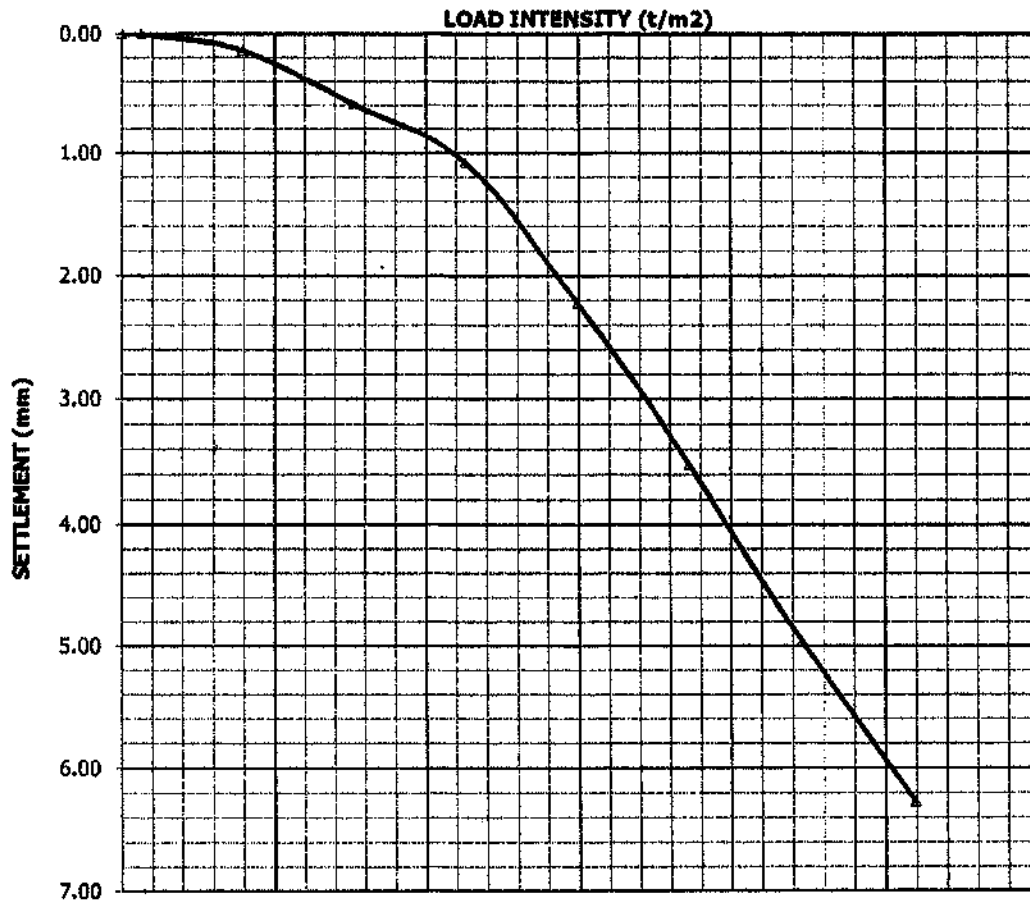
PIT NO-1

TEST NO-1/2

DEPTH-2.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	11	16	14
1320	15.22	56	62	59
1980	22.56	103	112	108
2640	29.89	210	234	222
3300	37.22	346	358	352
3960	44.56	477	514	496
4620	51.89	590	663	627

LOAD INTENSTIY v/s SETTLEMENT PLOT





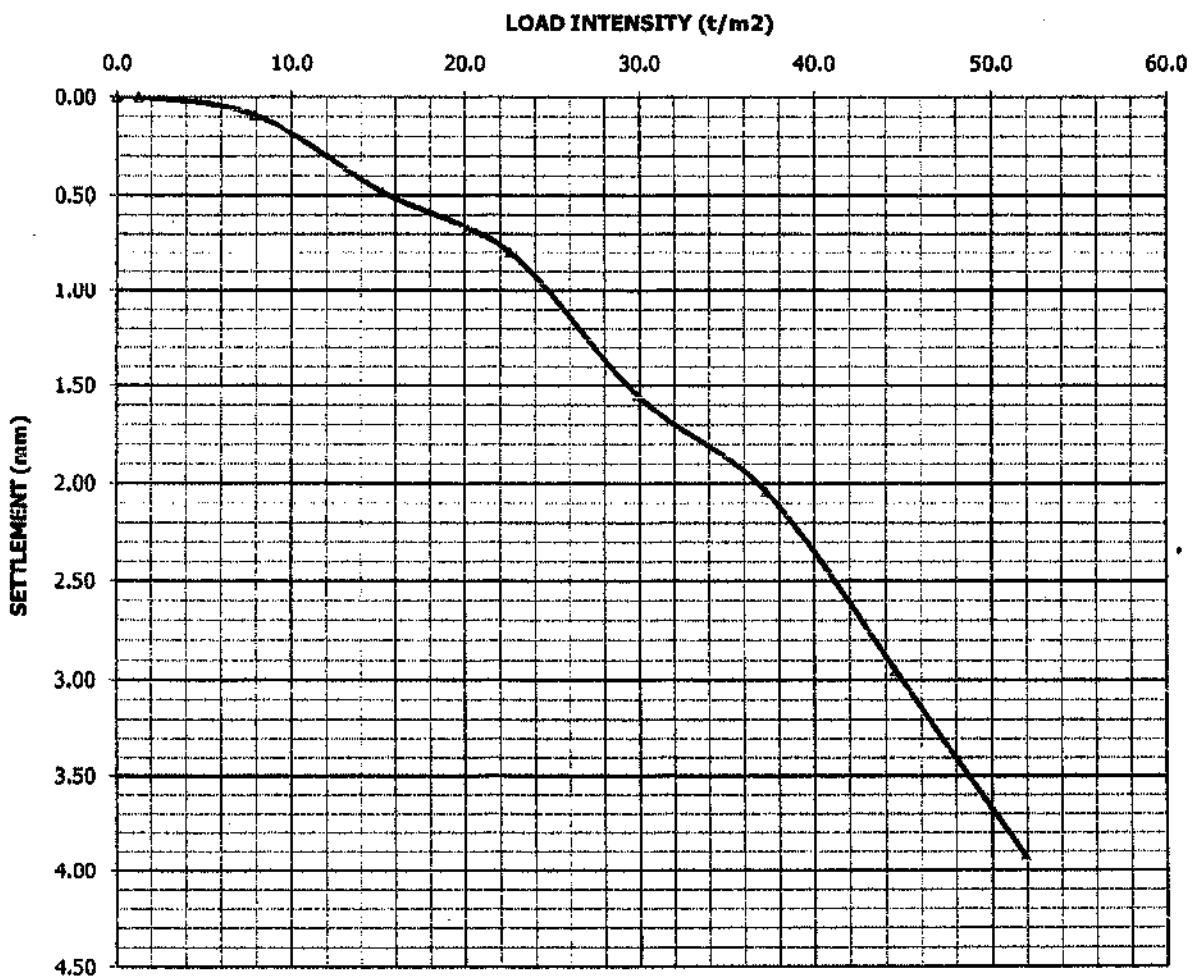
PIT NO-1

TEST NO-1/3

DEPTH-3.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	7	10	9
1320	15.22	43	52	48
1980	22.56	78	82	80
2640	29.89	146	163	155
3300	37.22	199	208	204
3960	44.56	278	312	295
4620	51.89	398	388	393

LOAD INTENSITY v/s SETTLEMENT PLOT





**PIT NO-2**

**TEST NO-2/1**

**DEPTH-1.5**

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	14	22	18
1320	15.22	77	89	83
1980	22.56	147	130	139
2640	29.89	235	280	258
3300	37.22	310	340	325
3960	44.56	457	531	494
4620	51.89	614	712	663

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





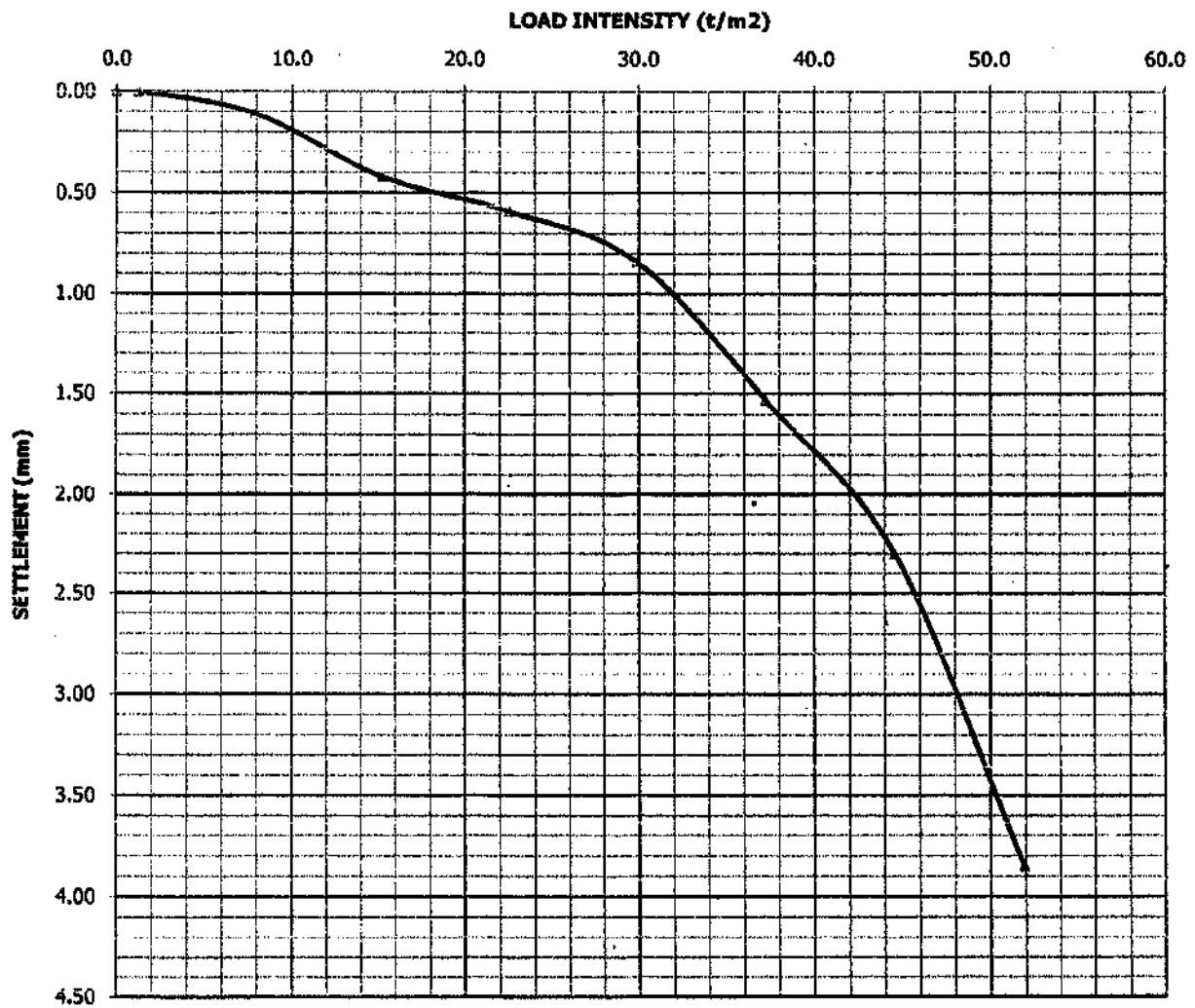
**PIT NO-2**

**TEST NO-2/2**

**DEPTH-2.5**

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	9	12	11
1320	15.22	37	46	42
1980	22.56	56	62	59
2640	29.89	77	91	84
3300	37.22	143	162	153
3960	44.56	212	248	230
4620	51.89	356	413	385

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





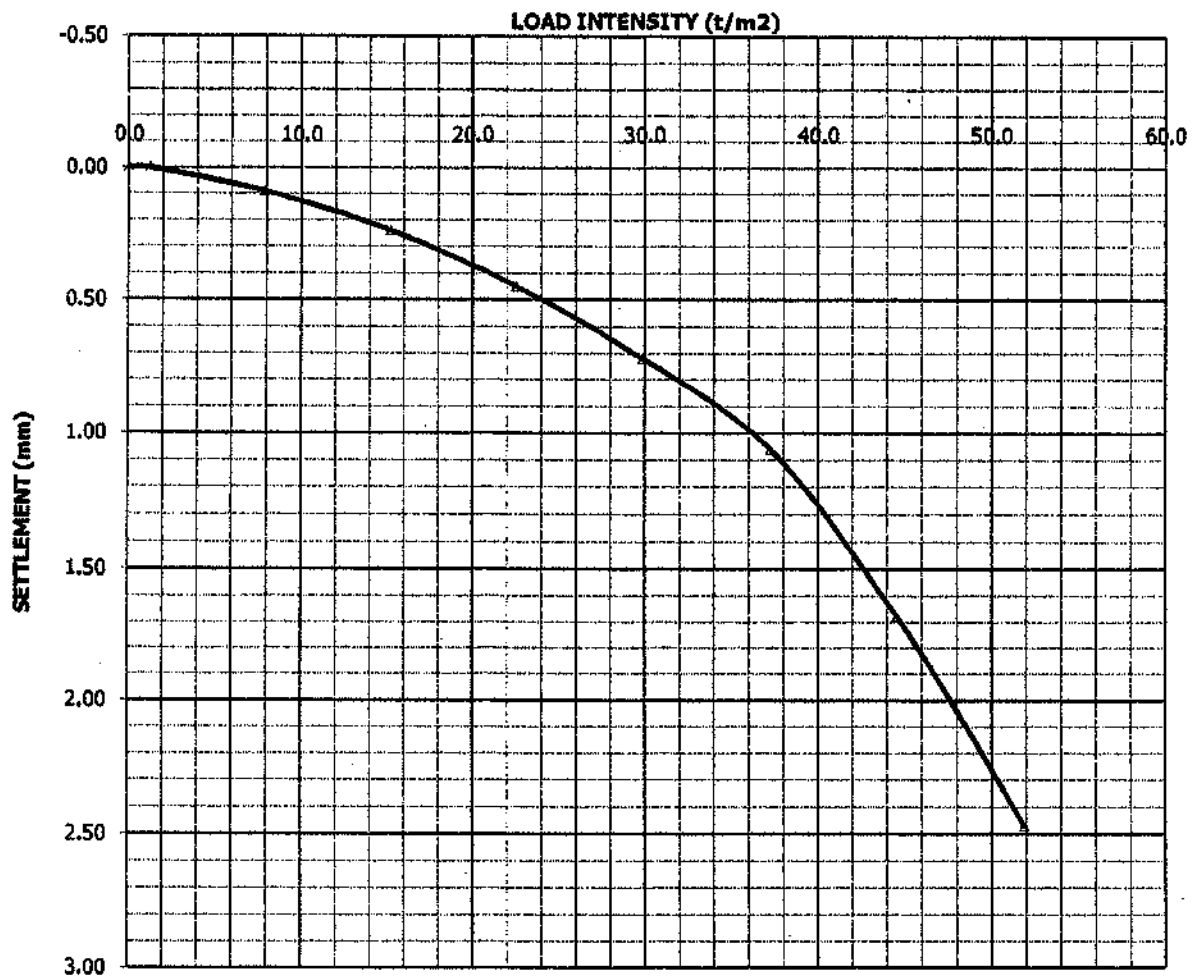
PIT NO-2

TEST NO-2/3

DEPTH-3.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	7	10	9
1320	15.22	22	26	24
1980	22.56	42	47	45
2640	29.89	69	75	72
3300	37.22	99	113	106
3960	44.56	152	183	168
4620	51.89	240	253	247

**LOAD INTENSTIY v/s SETTLEMENT PLOT**







**PIT NO-3**

**TEST NO-3/2**

**DEPTH-2.5**

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	22	33	28
1320	15.22	68	79	74
1980	22.56	143	171	157
2640	29.89	271	322	297
3300	37.22	362	403	383
3960	44.56	512	575	544
4620	51.89	621	702	662

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





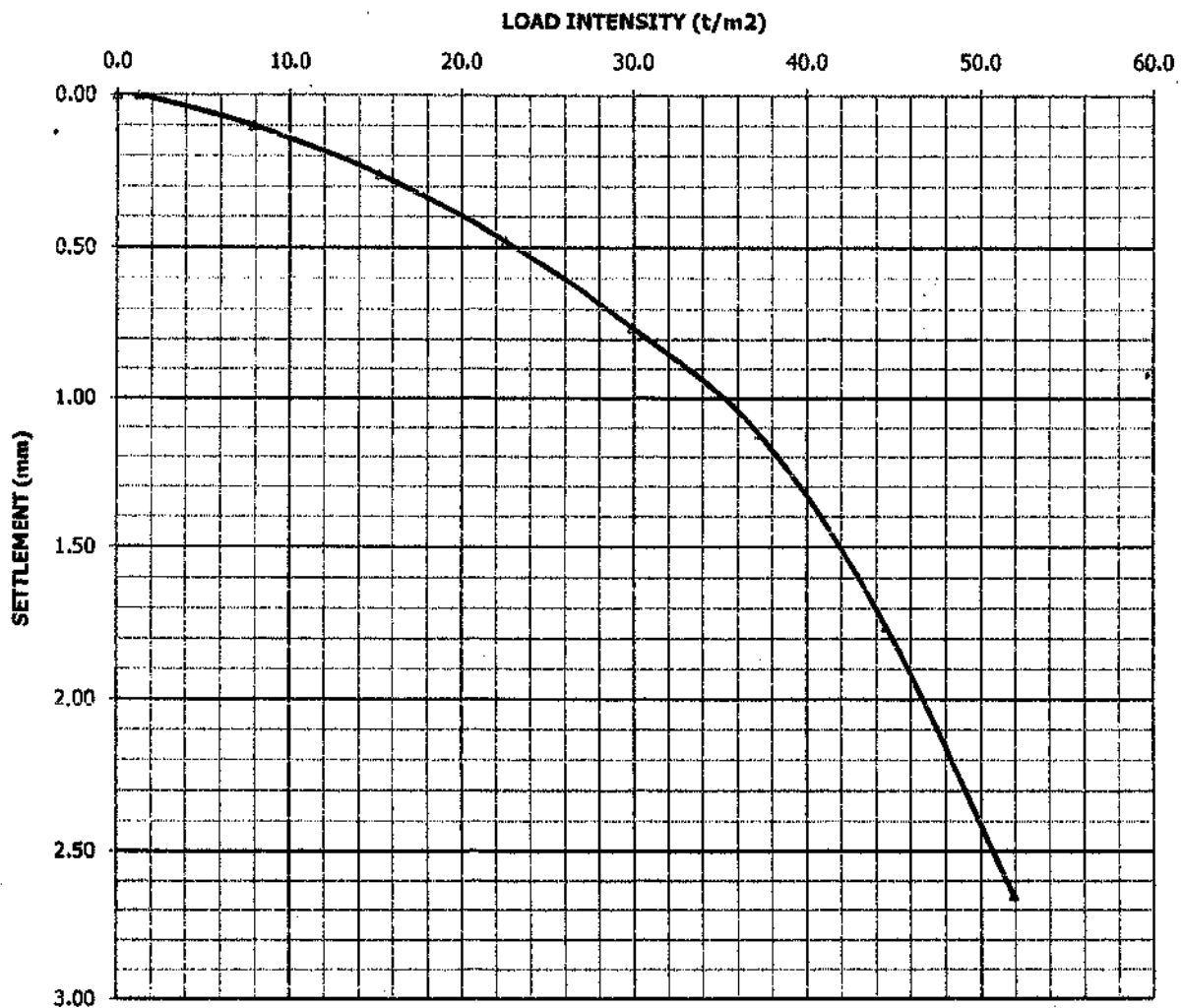
**PIT NO-3**

**TEST NO-3/3**

**DEPTH-3.5**

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	9	11	10
1320	15.22	23	29	74
1980	22.56	44	51	48
2640	29.89	72	79	76
3300	37.22	105	119	112
3960	44.56	160	191	176
4620	51.89	259	270	265

**LOAD INTENSITY v/s SETTLEMENT PLOT**





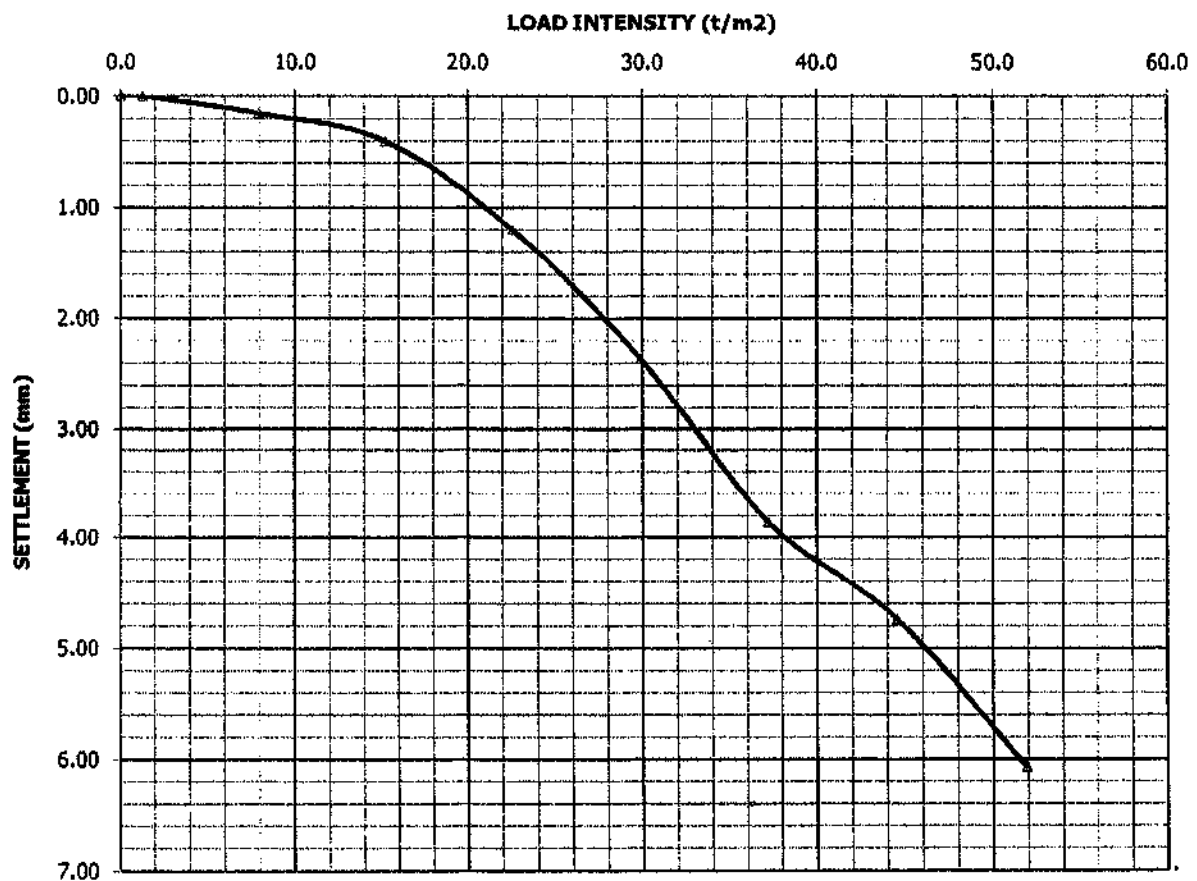
**PIT NO-4**

**TEST NO-4/1**

**DEPTH-1.5**

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	12	17	15
1320	15.22	28	52	40
1980	22.56	101	138	120
2640	29.89	214	258	236
3300	37.22	358	413	386
3960	44.56	436	511	474
4620	51.89	567	647	607

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





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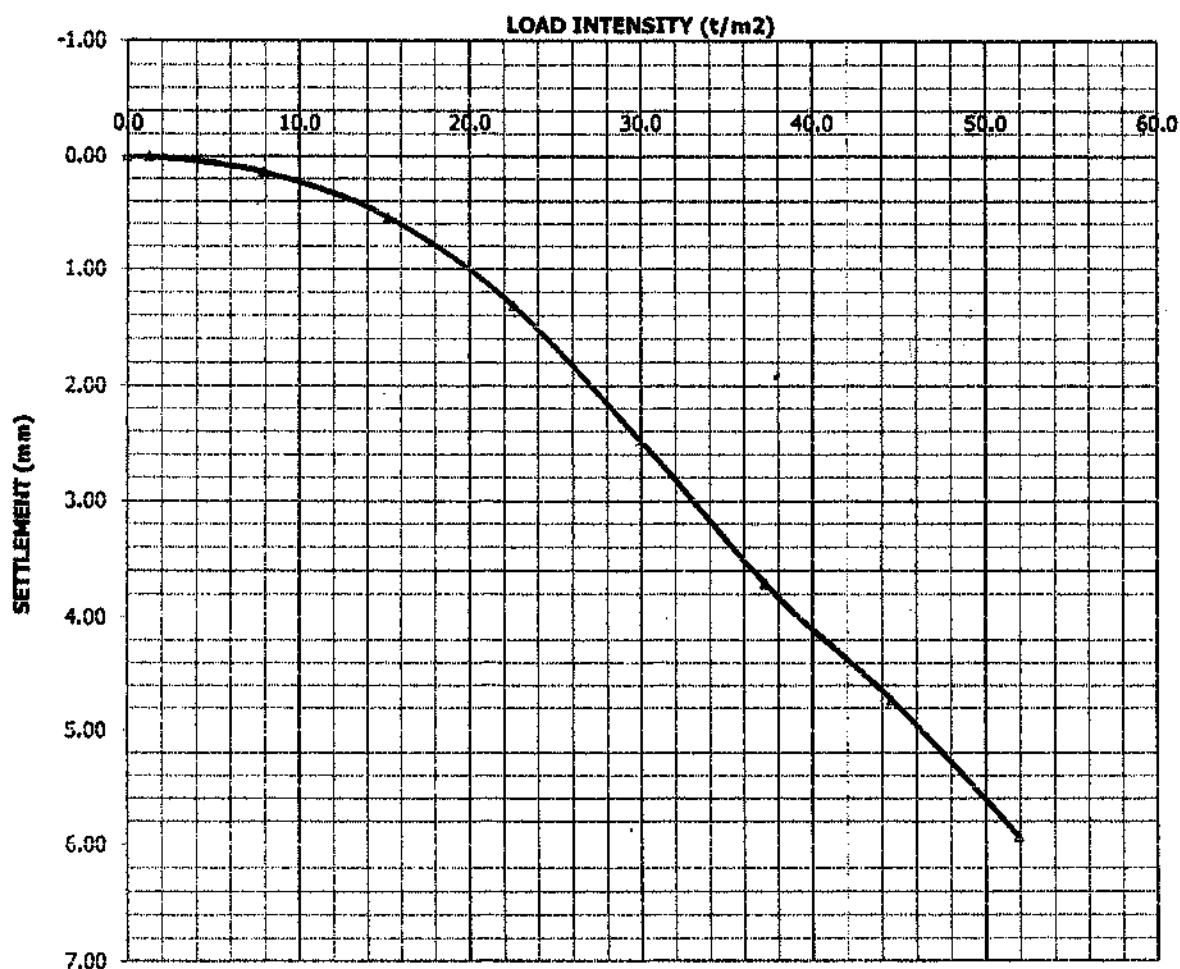
PIT NO-4

TEST NO-4/2

DEPTH-2.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	12	16	14
1320	15.22	48	59	54
1980	22.56	113	150	132
2640	29.89	215	279	247
3300	37.22	338	403	371
3960	44.56	432	513	473
4620	51.89	516	670	593

LOAD INTENSTIY v/s SETTLEMENT PLOT



GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.



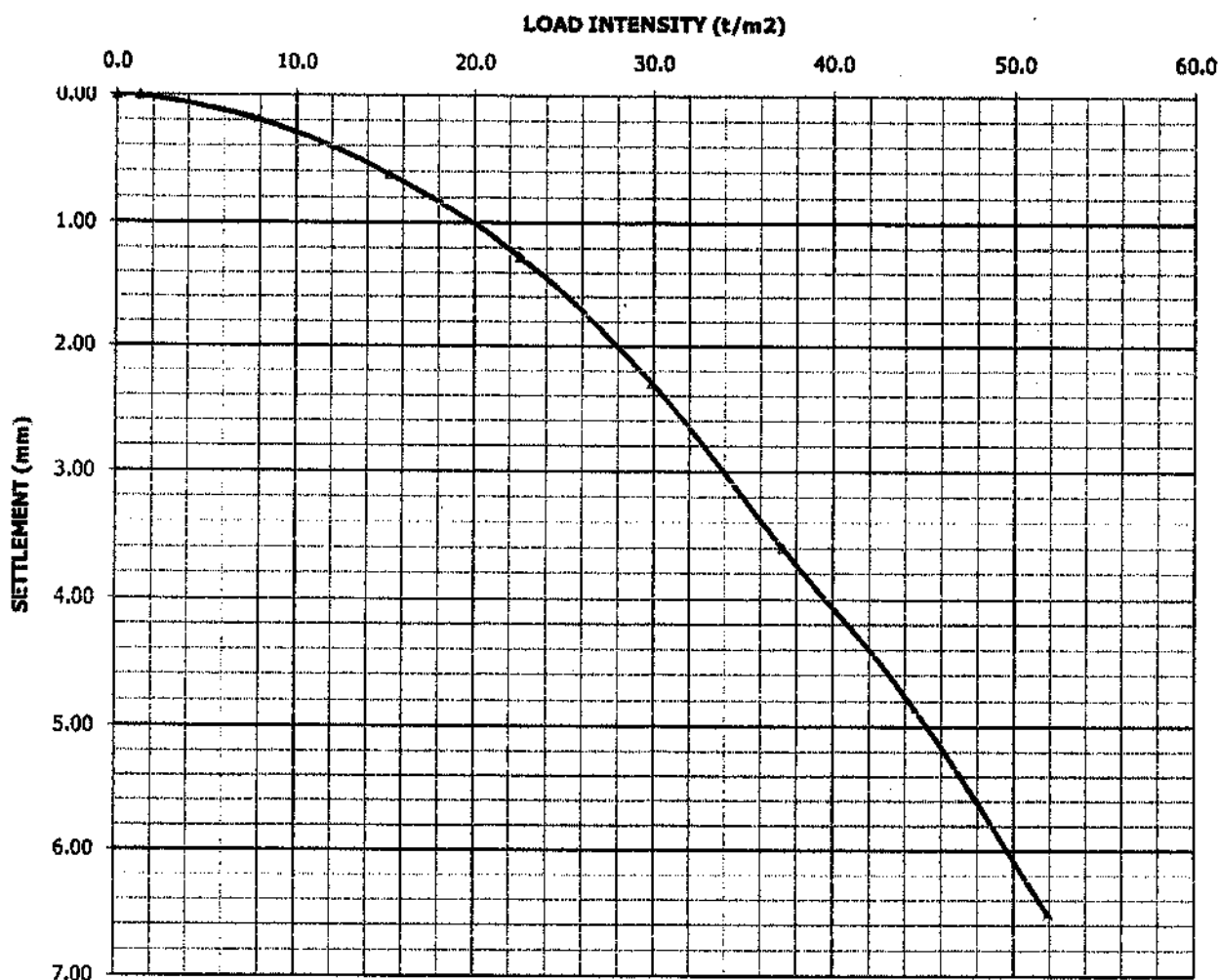
PIT NO-5

TEST NO-5/1

DEPTH-1.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	16	21	19
1320	15.22	54	69	62
1980	22.56	112	141	127
2640	29.89	210	249	230
3300	37.22	338	381	360
3960	44.56	463	510	487
4620	51.89	606	698	652

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





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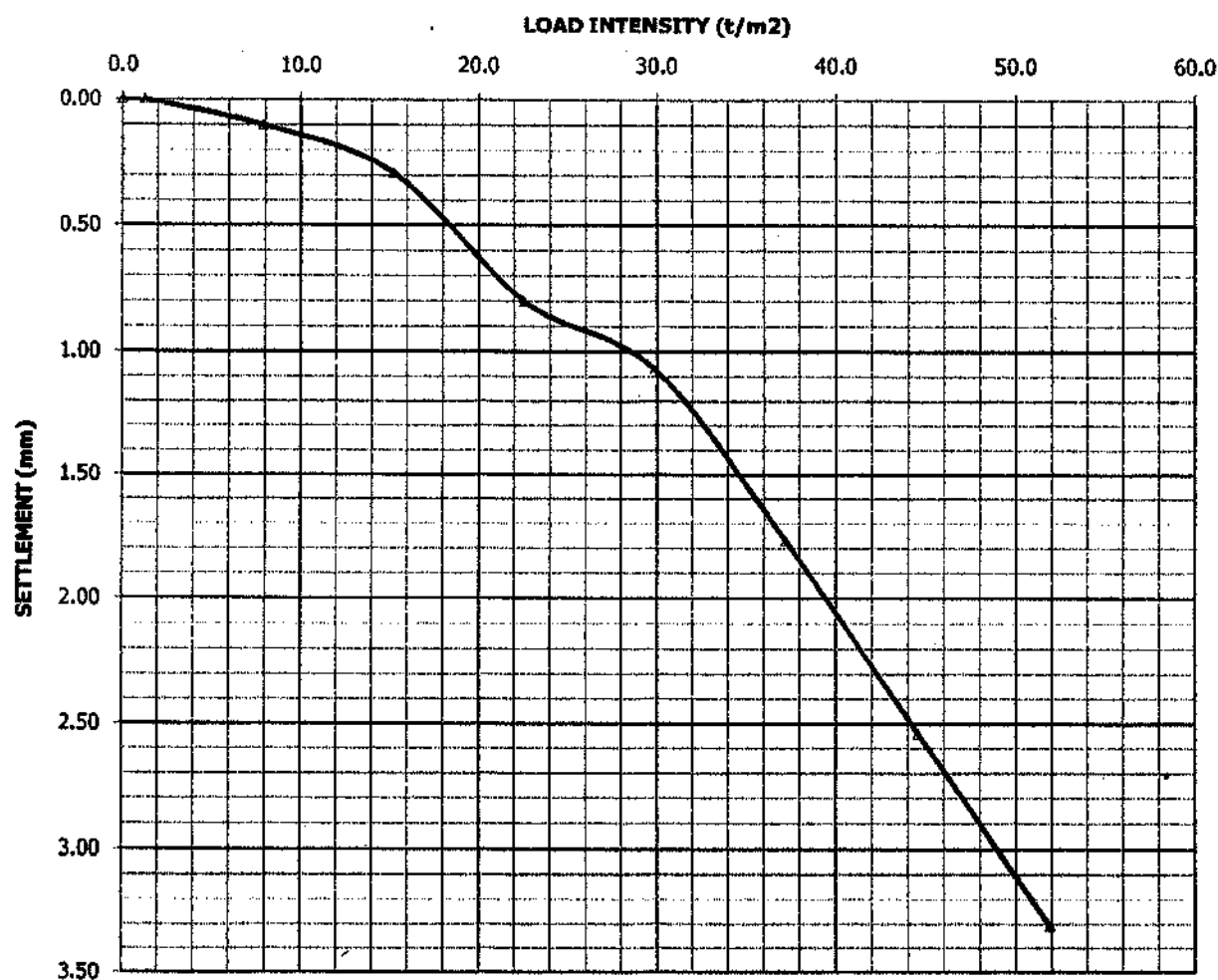
PIT NO-5

TEST NO-5/2

DEPTH-2.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	9	11	10
1320	15.22	21	36	29
1980	22.56	76	84	80
2640	29.89	102	112	107
3300	37.22	170	183	177
3960	44.56	248	259	254
4620	51.89	319	342	331

### LOAD INTENSITY v/s SETTLEMENT PLOT





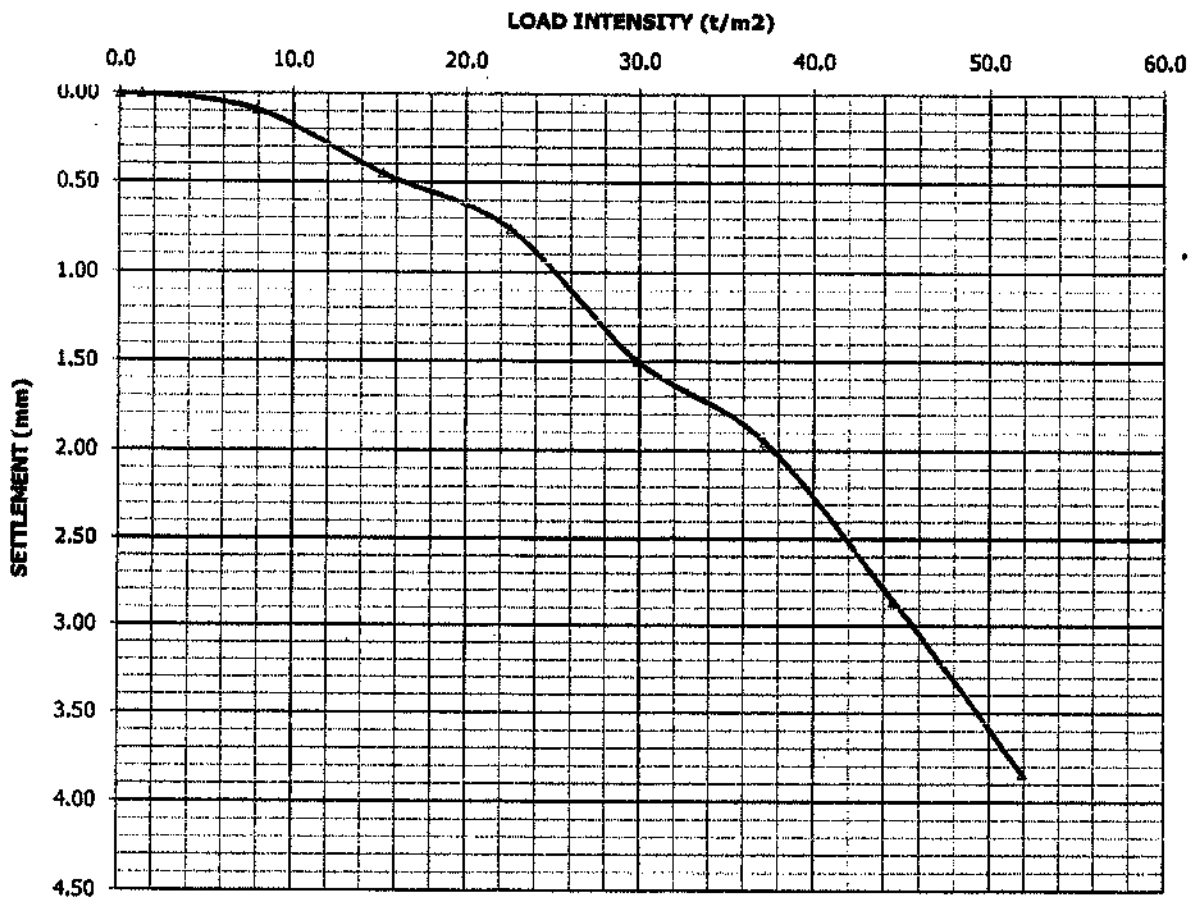
PIT NO-5

TEST NO-5/3

DEPTH-3.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	8	9	9
1320	15.22	41	48	45
1980	22.56	74	77	76
2640	29.89	141	159	150
3300	37.22	190	200	195
3960	44.56	271	301	286
4620	51.89	389	379	384

**LOAD INTENSTIY v/s SETTLEMENT PLOT**





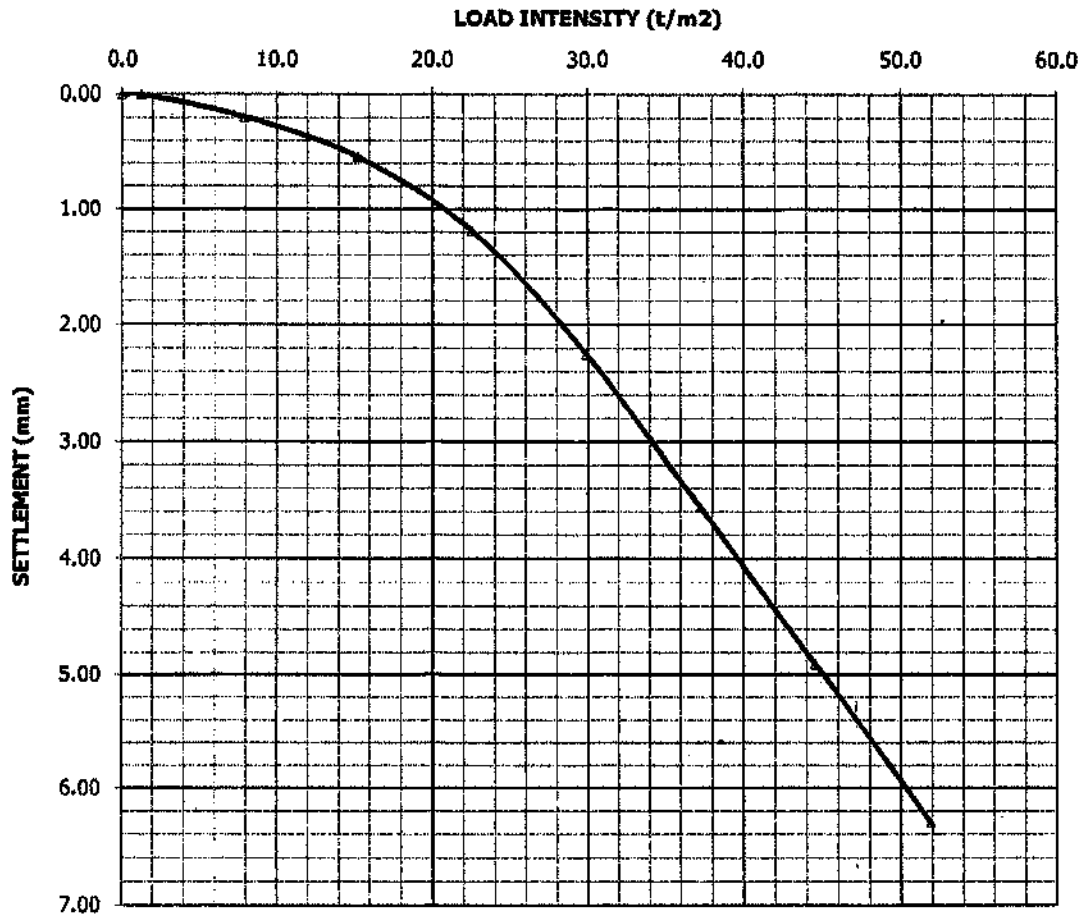
PIT NO-6

TEST NO-6/1

DEPTH-1.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	17	21	19
1320	15.22	48	59	54
1980	22.56	106	132	119
2640	29.89	210	239	225
3300	37.22	340	371	356
3960	44.56	470	512	491

**LOAD INTENSTIY v/s SETTLEMENT PLOT**







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## \*\*SOIL INVESTIGATION TEST REPORT\*\*

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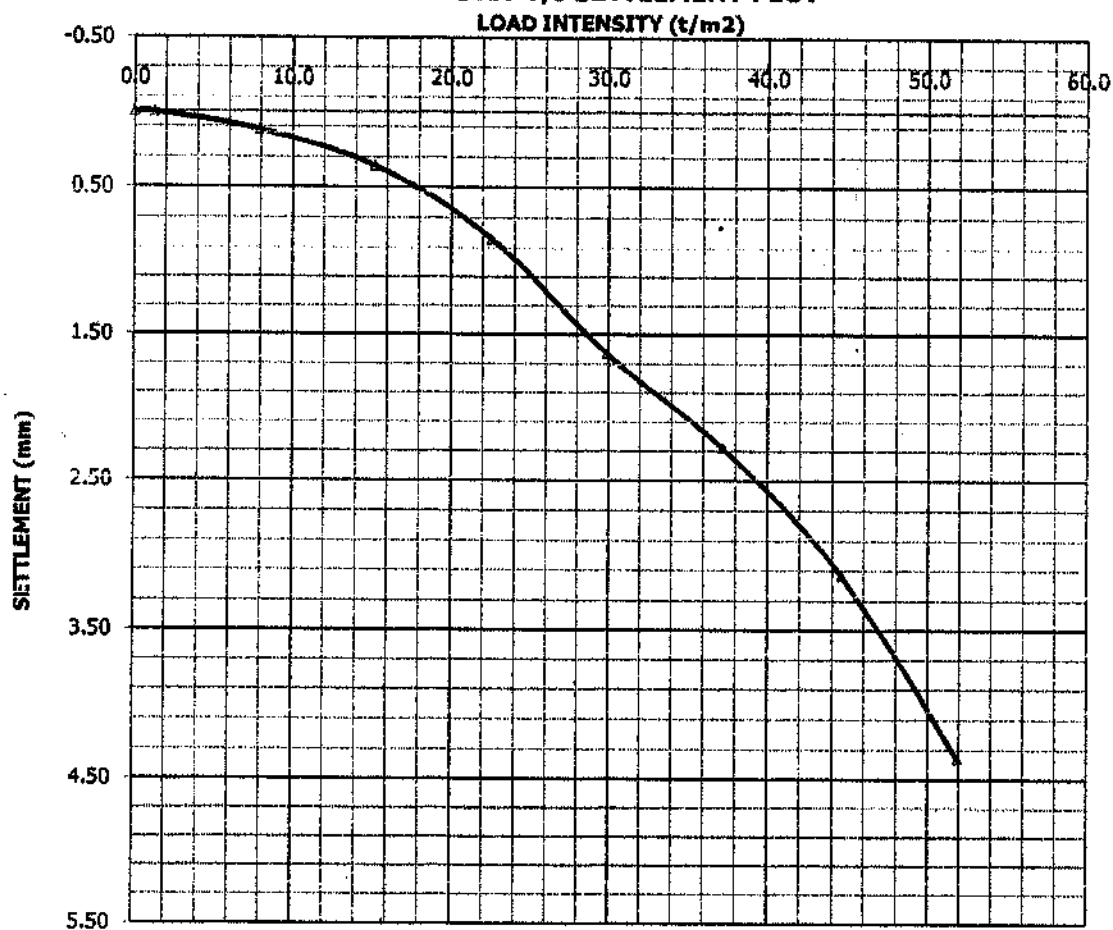
PIT NO-6

TEST NO-6/2

DEPTH-2.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	10	14	12
1320	15.22	32	40	36
1980	22.56	78	89	84
2640	29.89	143	182	163
3300	37.22	212	243	228
3960	44.56	306	319	313
4620	51.89	413	459	436

LOAD INTENSITY v/s SETTLEMENT PLOT



GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.



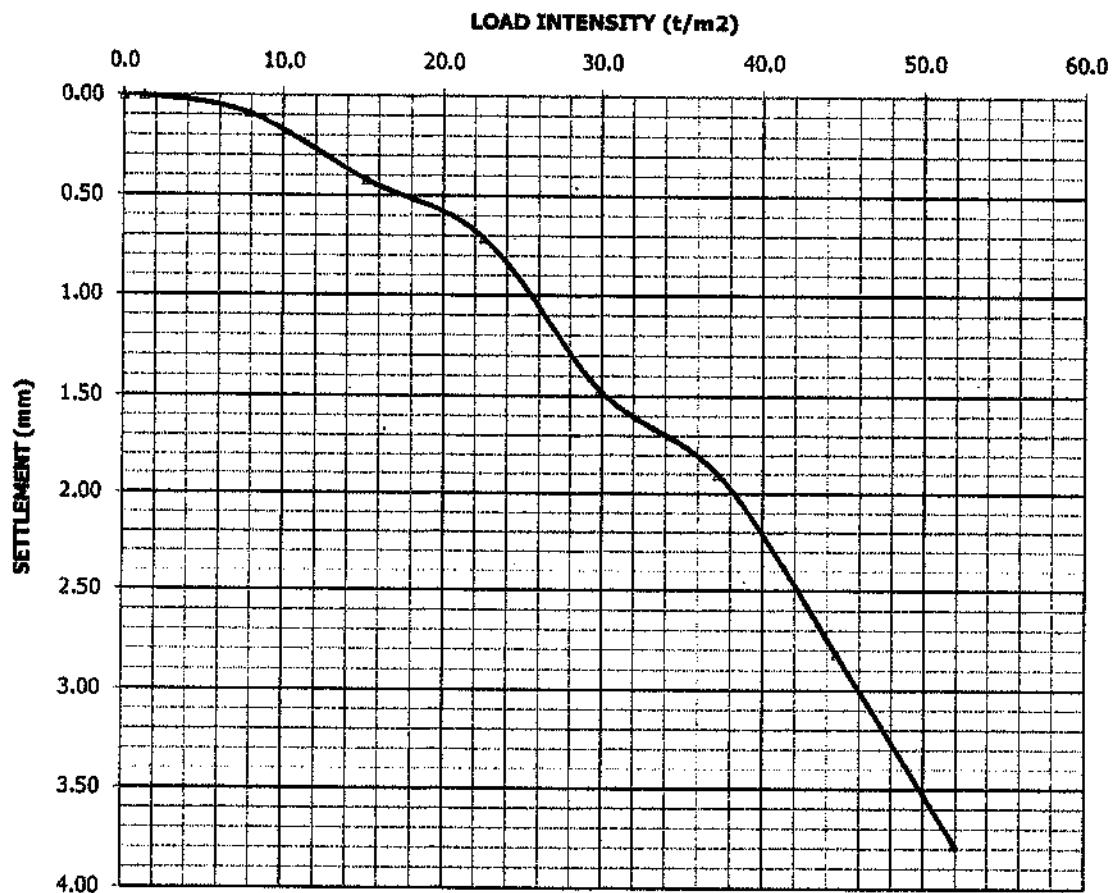
PIT NO-6

TEST NO-6/3

DEPTH-3.5

Load (Kg)	Load Intensity (t/m <sup>2</sup> )	Maximum Settlement of Plate (0.01mm)		
		Dial Gauge - 1	Dial Gauge - 2	Average
0	0	0	0	0
63	1.26	0	0	0
660	7.89	7	11	9
1320	15.22	39	45	42
1980	22.56	70	72	71
2640	29.89	139	155	147
3300	37.22	185	195	190
3960	44.56	265	298	282
4620	51.89	381	374	378

**LOAD INTENSITY v/s SETTLEMENT PLOT**



**ANNEXURE 2****CHEMICAL ANALYSIS OF SOIL SAMPLE**

S.No.	Sample Description	Parameters		
		pH	Sulphates (as SO <sub>4</sub> ), ppm	Chloride (as Cl), ppm
1	BHL-1	7.89	<1.0	<1.0
2	BHL-2	7.77	<1.0	<1.0
3	BHL-3	7.57	<1.0	<1.0
4	BHL-4	8.1	<1.0	<1.0
5	BHL-5	7.48	<1.0	<1.0
6	BHL-6	7.52	<1.0	<1.0
7	BHL-7	7.44	<1.0	<1.0
8	BHL-8	8.15	<1.0	<1.0
9	BHL-9	7.14	<1.0	<1.0
10	BHL-10	7.09	<1.0	<1.0
11	BHL-11	7.19	<1.0	<1.0
12	BHL-12	7.11	<1.0	<1.0
13	BHL-13	7.45	<1.0	<1.0
14	BHL-14	8.12	<1.0	<1.0
15	BHL-15	7.13	<1.0	<1.0
16	BHL-16	6.79	<1.0	<1.0
17	BHL-17	7.1	<1.0	<1.0
18	BHL-18	6.75	<1.0	<1.0
19	BHL-19	8.42	<1.0	<1.0
20	BHL-20	8.1	<1.0	<1.0
21	BHL-21	7.21	<1.0	<1.0
22	BHL-22	7.25	<1.0	<1.0
23	BHL-23	7.12	<1.0	<1.0
24	BHL-24	7.09	<1.0	<1.0
25	BHL-25	8.39	<1.0	<1.0
26	BHL-26	7.17	<1.0	<1.0
27	BHL-27	7.27	<1.0	<1.0
28	BHL-28	7.89	<1.0	<1.0
29	BHL-29	8.09	<1.0	<1.0
30	BHL-30	7.33	<1.0	<1.0
31	BHL-31	7.29	<1.0	<1.0
32	BHL-32	7.22	<1.0	<1.0
33	BHL-33	7.81	<1.0	<1.0

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S.No.	Sample Description	Parameters		
		pH	Sulphates (as SO <sub>4</sub> ), ppm	Chloride (as Cl), ppm
34	BHL-34	7.51	<1.0	<1.0
35	BHL-35	7.19	<1.0	<1.0
36	BHL-36	7.15	<1.0	<1.0
37	BHL-37	8.48	<1.0	<1.0
38	BHL-38	7.21	<1.0	<1.0
39	BHL-39	8.62	<1.0	<1.0
40	BHL-40	8.55	<1.0	<1.0
41	BHL-41	8.77	<1.0	<1.0
42	BHL-42	8.11	<1.0	<1.0
43	BHL-43	8.70	<1.0	<1.0
44	BHL-44	6.72	<1.0	<1.0
45	BHL-45	7.12	<1.0	<1.0
46	BHL-46	7.08	<1.0	<1.0

GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.

**ANNEXURE 3****CHEMICAL ANALYSIS OF WATER SAMPLE**

S.No.	Sample Description/Location	Parameters		
		pH	Sulphates (as SO <sub>4</sub> )	Chloride (as Cl)
1	BHL-1	7.13	249 mg/l	85.4 mg/l
2	BHL-2	7.09	253 mg/l	83.8 mg/l
3	BHL-3	7.15	259 mg/l	80.1 mg/l
4	BHL-4	7.11	263 mg/l	78.7 mg/l
5	BHL-5	7.03	248 mg/l	79.2 mg/l
6	BHL-6	7.21	255 mg/l	75.2 mg/l
7	BHL-7	7.19	250 mg/l	74.1 mg/l
8	BHL-8	7.05	252 mg/l	81.2 mg/l
9	BHL-9	7.13	298 mg/l	72.2 mg/l
10	BHL-10	7.18	312 mg/l	73.9 mg/l
11	BHL-11	7.2	338 mg/l	78.0 mg/l
12	BHL-12	7.13	345 mg/l	62.9 mg/l
13	BHL-13	7.1	320 mg/l	68.1 mg/l
14	BHL-14	7.19	311 mg/l	64.2 mg/l
15	BHL-15	7.21	328 mg/l	65.1 mg/l
16	BHL-16	7.15	307 mg/l	64.3 mg/l
17	BHL-17	7.22	299 mg/l	63.9 mg/l
18	BHL-18	7.19	301 mg/l	69.8 mg/l
19	BHL-19	7.11	288 mg/l	73.2 mg/l
20	BHL-20	7.13	321 mg/l	74.1 mg/l
21	BHL-21	7.08	333 mg/l	69.1 mg/l
22	BHL-22	7.14	319 mg/l	71.5 mg/l
23	BHL-23	7.18	322 mg/l	65.2 mg/l
24	BHL-24	7.1	325 mg/l	68.4 mg/l
25	BHL-25	7.2	311 mg/l	69.3 mg/l
26	BHL-26	7.22	309 mg/l	64.2 mg/l
27	BHL-27	7.19	299 mg/l	68.7 mg/l
28	BHL-28	7.27	292 mg/l	74.1 mg/l
29	BHL-29	7.3	285 mg/l	79.2 mg/l
30	BHL-30	7.15	299 mg/l	71.2 mg/l
31	BHL-31	7.11	303 mg/l	68.8 mg/l
32	BHL-32	7.09	288 mg/l	74.3 mg/l
32	BHL-32	7.09	288 mg/l	74.3 mg/l
33	BHL-33	7.12	283 mg/l	70.0 mg/l
34	BHL-34	7.16	281 mg/l	71.2mg/l

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S.No.	Sample Description/Location	Parameters		
		pH	Sulphates (as SO <sub>4</sub> )	Chloride (as Cl)
35	BHL-35	7.1	279 mg/l	72.9 mg/l
36	BHL-36	7.19	282 mg/l	78.2 mg/l
37	BHL-37	7.15	250 mg/l	81.1 mg/l
38	BHL-38	7.11	255 mg/l	82.0 mg/l
39	BHL-39	7.2	252 mg/l	79.8 mg/l
40	BHL-40	7.25	251 mg/l	80.1 mg/l
41	BHL-41	7.30	246 mg/l	85.4 mg/l
42	BHL-42	7.22	254 mg/l	77.4 mg/l
43	BHL-43	7.18	288 mg/l	73.9 mg/l
44	BHL-44	7.27	270 mg/l	72.2 mg/l
45	BHL-45	7.21	310 mg/l	68.9 mg/l
46	BHL-46	7.17	305 mg/l	77.1 mg/l

GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 16.50 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE									
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph							
											0.0	25.0	50.0	75.0	100.0				
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.75 M	SPT	S-1/1	2	2	2	4.0								
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 2.80 M	SP		2.05 M	SPT	S-1/2	2	3	4	7.0								
3	3.00					SPT	S-1/3	3	3	5	8.0								
4	4.50					SPT	S-1/4	4	5	7	12.0								
5	6.00	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 14.8 M	SP		12.0 M	SPT	S-1/5	9	9	10	19.0								
6	7.50					SPT	S-1/6	9	10	11	21.0								
7	9.00					SPT	S-1/7	12	12	13	25.0								
8	10.5					SPT	S-1/8	13	15	19	34.0								
9	12.0					SPT	S-1/9	15	22	30	52.0								
10	13.5					SPT	S-1/10	17	27	34	61.0								
11	15.0	VERY STIFF - HARD CONSISTENCY CLAY OF MEDIUM PLASTICITY 14.8 M - 21.7 M	CL		4.70 M	SPT	S-1/11	17	32	40	72.0								
12	16.5					SPT	S-1/12	29.2	35	44	79.0								
13	18.0					SPT	S-1/13	34	40	44	84.0								
14	19.0					SPT	S-1/14	39	42	49	91.0								
15	21.0					SPT	S-1/15	44	48	50	98.0								
16	22.5	HARD CLAY SILT AND SAND MIXTURE 21.7 M - 24.30 M	ML		2.60 M	SPT	S-1/16	47	50	R	R								
17	24.0					SPT	S-1/17	R	R	R	R								



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 16.50 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph							
											0.0	25.0	50.0	75.0	100.0			
18	25.5	VERY DENSE FINE SAND 24.30 M - 40.0 M	SP		15.7 M	SPT	S-1/18	R	R	R	R							
19	27.0					SPT	S-1/19	R	R	R	R							
20	28.5					SPT	S-1/20	R	R	R	R							
21	30.0					SPT	S-1/21	R	R	R	R							
22	31.5					SPT	S-1/22	R	R	R	R							
23	33.0					SPT	S-1/23	R	R	R	R							
24	34.5					SPT	S-1/24	R	R	R	R							
25	36.0					SPT	S-1/25	R	R	R	R							
26	37.5					SPT	S-1/26	R	R	R	R							
27	39.0					SPT	S-1/27	R	R	R	R							
28	40.0					SPT	S-1/28	R	R	R	R							





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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 15.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from ECL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.65 M	CL	[Symbolic Representation]	0.65 M	SPT	S-2/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.65 M - 2.30 M			1.65 M	SPT	S-2/2	3	5	7	12.0					
3	3.00					SPT	S-2/3	4	6	7	13.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.30 M - 14.0 M	SP		11.7 M	SPT	S-2/4	4	6	6	12.0					
5	6.00					SPT	S-2/5	5	7	6	13.0					
6	7.50					SPT	S-2/6	5	7	9	16.0					
7	9.00					SPT	S-2/7	7	9	12	21.0					
8	10.5					SPT	S-2/8	6	10	13	23.0					
9	12.0					SPT	S-2/9	8	13	16	29.0					
10	13.5					SPT	S-2/10	8	17	15	27.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY 14.0 M - 23.2 M	CL		9.2 M	SPT	S-2/11	11	14	17	31.0					
12	16.5					SPT	S-2/12	14	24	29	53.0					
13	18.0					SPT	S-2/13	17	30	32	62.0					
14	19.0					SPT	S-2/14	19	31	34	65.0					
15	21.0					SPT	S-2/15	20	33	36	69.0					
16	22.5					SPT	S-2/16	21	29	39	68.0					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 15.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from ECL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE								
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
											0.0	25.0	50.0	75.0	100.0			
17	24.0	HARD CLAY SILT AND SAND MIXTURE	ML		1.80 M	SPT	S-2/17	20	37	42	79.0							
18	25.5	VERY DENSE FINE SAND 25.0 M - 40.0 M	SP		15.0 M	SPT	S-2/18	20	38	44	82.0							
19	27.0					SPT	S-2/19	21	39	46	R							
20	28.5					SPT	S-2/20	22	41	46	R							
21	30.0					SPT	S-2/21	22	42	48	R							
22	31.5					SPT	S-2/22	29	48	50	R							
23	33.0					SPT	S-2/23	35	R	R	R							
24	34.5					SPT	S-2/24	42	R	R	R							
25	36.0					SPT	S-2/25	45	R	R	R							
26	37.5					SPT	S-2/26	45	R	R	R							
27	39.0					SPT	S-2/27	R	R	R	R							
28	40.0					SPT	S-2/28	R	R	R	R							



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE	
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.72 M	CL	0.72 M	SPT	S-3/1	2	2	3	5.0	
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.72 M - 2.80 M	SP	2.08 M	SPT	S-2/2	3	4	6	10.0	
3	3.00				SPT	S-2/3	4	5	7	12.0	
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 14.5 M	SP	11.7 M	SPT	S-2/4	4	5	8	13.0	
5	6.00				SPT	S-2/5	5	6	7	13.0	
6	7.50				SPT	S-2/6	6	8	9	17.0	
7	9.00				SPT	S-2/7	8	9	11	20.0	
8	10.5				SPT	S-2/8	10	12	15	27.0	
9	12.0				SPT	S-2/9	10	14	18	32.0	
10	13.5				SPT	S-2/10	12	16	20	36.0	
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY SOIL WITH MEDIUM PLASTICITY 14.5 M - 24.5 M	CL	10.0 M	SPT	S-2/11	14	18	25	43.0	
12	16.5				SPT	S-2/12	15	21	29	50.0	
13	18.0				SPT	S-2/13	18	25	31	56.0	
14	19.0				SPT	S-2/14	20	30	34	64.0	
15	21.0				SPT	S-2/15	21	34	38	72.0	
16	22.5				SPT	S-2/16	23	37	41	78.0	



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE										
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph									
											00	25.0	50.0	75.0	100.0						
17	24.0	VERY DENSE FINE SAND 24.5 M - 40.0 M	SP	[Symbolic Representation]	15.5 M	SPT	S-2/17	26	39	43	82.0										
18	25.5					SPT	S-2/18	32	42	47	89.0										
19	27.0					SPT	S-2/19	35	46	49	R										
20	28.5					SPT	S-2/20	39	49	R	R										
21	30.0					SPT	S-2/21	45	R	R	R										
22	31.5					SPT	S-2/22	R	R	R	R										
23	33.0					SPT	S-2/23	R	R	R	R										
24	34.5					SPT	S-2/24	R	R	R	R										
25	36.0					SPT	S-2/25	R	R	R	R										
26	37.5					SPT	S-2/26	R	R	R	R										
27	39.0					SPT	S-2/27	R	R	R	R										
28	40.0	SPT	S-2/28	R	R	R	R														



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 17.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph			
											0.0	25.0	50.0	75.0	100.0
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.77 M	CL		0.77 M	SPT	S-4/1	2	2	3	5.0				
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.77 M - 2.20 M	SP		1.43 M	SPT	S-4/2	3	3	4	7.0				
3	3.00	MEDIUM DENSE-DENSE FINE SAND 2.20 M - 13.60 M	SP		11.4 M	SPT	S-4/3	4	4	6	10.0				
4	4.50					SPT	S-4/4	4	7	10	17.0				
5	6.00					SPT	S-4/5	5	12	13	25.0				
6	7.50					SPT	S-4/6	6	13	18	31.0				
7	9.00					SPT	S-4/7	7	12	20	32.0				
8	10.5					SPT	S-4/8	7	14	22	36.0				
9	12.0					SPT	S-4/9	10	17	24	41.0				
10	13.5	HARD CLAY SILT AND SAND MIXTURE 13.60 M -16.0 M	ML		2.50 M	SPT	S-4/10	11	18	30	48.0				
11	15.0					SPT	S-4/11	15	21	34	55.0				
12	16.5	HARD CLAY OF MEDIUM PLASTICITY 16.0 M - 23.0 M	CL		7.0 M	SPT	S-4/12	19	29	39	68.0				
13	18.0					SPT	S-4/13	24	33	44	77.0				
14	19.0					SPT	S-4/14	30	39	46	85.0				
15	21.0					SPT	S-4/15	35	45	45	90.0				



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 17.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from E.G.L. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE										
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph									
											0.0	25.0	50.0	75.0	100.0						
16	22.5	VERY DENSE FINE SAND 23.0 M - 25.2 M	SM		2.2 M	SPT	S-4/16	40	47	47	94.0										
17	24.0					SPT	S-4/17	43	47	50	97.0										
18	25.5	VERY DENSE FINE SAND 25.2 M - 40.0 M			14.8 M	SPT	S-4/18	47	R	R	R										
19	27.0					SPT	S-4/19	R	R	R	R										
20	28.5					SPT	S-4/20	R	R	R	R										
21	30.0					SPT	S-4/21	R	R	R	R										
22	31.5					SPT	S-4/22	R	R	R	R										
23	33.0					SPT	S-4/23	R	R	R	R										
24	34.5					SPT	S-4/24	R	R	R	R										
25	36.0					SPT	S-4/25	R	R	R	R										
26	37.5					SPT	S-4/26	R	R	R	R										
27	39.0					SPT	S-4/27	R	R	R	R										
28	40.0					SPT	S-4/28	R	R	R	R										



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 18.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.75 M	SPT	S-5/1	3	3	4	7.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 2.00 M	SP		1.25 M	SPT	S-5/2	3	4	6	10.0					
3	3.00					SPT	S-5/3	5	6	7	13.0					
4	4.50					SPT	S-5/4	4	7	9	16.0					
5	6.00	MEDIUM DENSE-DENSE FINE SAND 2.00 M - 13.8 M	SP		11.8 M	SPT	S-5/5	5	10	12	22.0					
6	7.50					SPT	S-5/6	7	12	15	27.0					
7	9.00					SPT	S-5/7	7	13	18	31.0					
8	10.5					SPT	S-5/8	7	15	20	35.0					
9	12.0					SPT	S-5/9	9	12	29	41.0					
10	13.5					SPT	S-5/10	11	18	30	48.0					
11	15.0					HARD CLAY SILT AND SAND MIXTURE 13.8 M - 17.30 M	ML		3.50 M	SPT	S-5/11					
12	16.5	SPT	S-5/12	17	24					35	59.0					
13	18.0	HARD CLAY WITH MEDIUM PLASTICITY 17.30 M - 22.8 M	CL		5.50 M	SPT	S-5/13	22	27	39	66.0					
14	19.0					SPT	S-5/14	29	35	44	79.0					
15	21.0					SPT	S-5/15	32	39	52	R					
16	22.5					SPT	S-5/16	39	42	R	R					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 18.0 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
17	24.0	VERY DENSE FINE SAND 22.8 M - 31.2 M	SP		8.4 M	SPT	S-5/17	42	R	R	R	0.0	25.0	50.0	75.0	100.0
18	25.5					SPT	S-5/18	49	R	R	R					
19	27.0					SPT	S-5/19	R	R	R	R					
20	28.5					SPT	S-5/20	R	R	R	R					
21	30.0					SPT	S-5/21	R	R	R	R					
22	31.5	HARD CLAY WITH MEDIUM PLASTICITY 31.2 M - 34.1 M	CL		2.90 M	SPT	S-5/22	R	R	R	R	0.0	25.0	50.0	75.0	100.0
23	33.0					SPT	S-5/23	R	R	R	R					
24	34.5	VERY DENSE FINE SAND 34.1 M - 40.0 M	SP		5.90 M	SPT	S-5/24	R	R	R	R	0.0	25.0	50.0	75.0	100.0
25	36.0					SPT	S-5/25	R	R	R	R					
26	37.5					SPT	S-5/26	R	R	R	R					
27	39.0					SPT	S-5/27	R	R	R	R					
28	40.0					SPT	S-5/28	R	R	R	R					





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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 15.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.80 M	CL		0.80 M	SPT	S-6/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.80 M - 4.70 M	SP		3.90 M	SPT	S-6/2	2	2	4	6.0					
3	3.00					SPT	S-6/3	3	3	6	9.0					
4	4.50					SPT	S-6/4	4	4	5	9.0					
5	6.00	MEDIUM DENSE-DENSE FINE SAND 4.70 M - 14.0 M	SP		9.30 M	SPT	S-6/5	6	7	8	15.0					
6	7.50					SPT	S-6/6	7	9	10	19.0					
7	9.00					SPT	S-6/7	8	10	12	22.0					
8	10.5					SPT	S-6/8	11	12	15	27.0					
9	12.0					SPT	S-6/9	13	17	24	41.0					
10	13.5					SPT	S-6/10	15	23	30	53.0					
11	15.0	HARD CLAY SILT AND SAND MIXTURE 14.0 M - 17.6 M	ML		3.6 M	SPT	S-6/11	17	29	36	65.0					
12	16.5					SPT	S-6/12	24	32	40	72.0					
13	18.0	HARD CLAY WITH MEDIUM PLASTICITY 17.6 M - 23.4 M	CL		5.8 M	SPT	S-6/13	26	35	43	78.0					
14	19.0					SPT	S-6/14	31	37	45	82.0					
15	21.0					SPT	S-6/15	35	40	47	87.0					
16	22.5					SPT	S-6/16	39	43	49	92.0					
17	24.0				1.80 M	SPT	S-6/17	43	47	50	97.0					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 15.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
18	25.5	VERY DENSE FINE SAND 23.4 M - 40.0 M	SP	16.6 M	SPT	S-6/18	46	49	R	R						
19	27.0				SPT	S-6/19	48	R	R	R						
20	28.5				SPT	S-6/20	R	R	R	R						
21	30.0				SPT	S-6/21	R	R	R	R						
22	31.5				SPT	S-6/22	R	R	R	R						
23	33.0				SPT	S-6/23	R	R	R	R						
24	34.5				SPT	S-6/24	R	R	R	R						
25	36.0				SPT	S-6/25	R	R	R	R						
26	37.5				SPT	S-6/26	R	R	R	R						
27	39.0				SPT	S-6/27	R	R	R	R						
28	40.0				SPT	S-6/28	R	R	R	R						



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.72 M	CL		0.72	SPT	S-7/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.72 M - 3.50 M			2.78 M	SPT	S-7/2	2	3	3	6.0					
3	3.00					SPT	S-7/3	3	4	5	9.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 3.50 M - 15.5 M	SP		12.0 M	SPT	S-7/4	4	6	8	14.0					
5	6.00					SPT	S-7/5	5	10	11	21.0					
6	7.50					SPT	S-7/6	8	12	14	26.0					
7	9.00					SPT	S-7/7	10	14	17	31.0					
8	10.5					SPT	S-7/8	12	16	19	35.0					
9	12.0					SPT	S-7/9	13	19	22	41.0					
10	13.5					SPT	S-7/10	14	20	26	46.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 15.5 M - 23.5 M	CL		8.0 M	SPT	S-7/11	15	22	30	52.0					
12	16.5					SPT	S-7/12	15	24	33	57.0					
13	18.0					SPT	S-7/13	17	28	38	66.0					
14	19.0					SPT	S-7/14	18	31	40	71.0					
15	21.0					SPT	S-7/15	18	33	42	75.0					
16	22.5					SPT	S-7/16	20	37	45	82.0					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from E.G.L. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
17	24.0	VERY DENSE FINE SAND 23.5 M - 30.8 M	SP		7.3 M	SPT	S-7/17	22	40	47	87.0					
18	25.5					SPT	S-7/18	25	43	49	92.0					
19	27.0					SPT	S-7/19	28	45	50	R					
20	28.5					SPT	S-7/20	31	R	R	R					
21	30.0	HARD CLAY WITH MEDIUM PLASTICITY 30.8 M - 33.8 M	CL		3.0 M	SPT	S-7/21	R	R	R	R					
22	31.5					SPT	S-7/22	R	R	R	R					
23	33.0					SPT	S-7/23	R	R	R	R					
24	34.5	VERY DENSE FINE SAND 33.8 M - 40.0 M	SP		6.2 M	SPT	S-7/24	R	R	R	R					
25	36.0					SPT	S-7/25	R	R	R	R					
26	37.5					SPT	S-7/26	R	R	R	R					
27	39.0					SPT	S-7/27	R	R	R	R					
28	40.0					SPT	S-7/28	R	R	R	R					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 15.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.70 M	CL		0.70 M	SP1	S-8/1	2	3	4	7.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.70 M - 1.80 M	SP		1.10 M	SPT	S-8/2	3	3	5	8.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 1.80 M - 15.2 M				SPT	S-8/3	3	5	7	12.0					
4	4.50					SPT	S-8/4	4	6	8	14.0					
5	6.00					SPT	S-8/5	6	8	11	19.0					
6	7.50					SPT	S-8/6	8	9	12	21.0					
7	9.00					SPT	S-8/7	8	12	13	25.0					
8	10.5					SPT	S-8/8	7	14	18	32.0					
9	12.0	SPT				S-8/9	10	17	20	37.0						
10	13.5	SPT	S-8/10	11	18	23	41.0									
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY	CL		2.50 M	SPT	S-8/11	13	20	30	50.0					
12	16.5	VERY DENSE FINE SAND 17.70 M - 21.3 M	SP		3.60 M	SPT	S-8/12	10	21	32	53.0					
13	18.0					SPT	S-8/13	15	22	40	62.0					
14	19.0	SPT	S-8/14	15	24	39	63.0									
15	21.0	SPT	S-8/15	15	27	38	65.0									



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 15.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
16	22.5	VERY DENSE FINE SAND AND SILTY CLAY MIXTURE 21.3 M - 30.6 M	SM		9.3 M	SPT	S-8/16	17	29	40	69.0						
17	24.0					SPT	S-8/17	16	28	39	67.0						
18	25.5					SPT	S-8/18	14	29	40	R						
19	27.0					SPT	S-8/19	15	31	41	R						
20	28.5					SPT	S-8/20	17	34	42	R						
21	30.0	VERY DENSE FINE SAND 30.6 M - 40.0 M	SP		9.4 M	SPT	S-8/21	19	38	46	R						
22	31.5					SPT	S-8/22	24	44	R	R						
23	33.0					SPT	S-8/23	27	R	R	R						
24	34.5					SPT	S-8/24	R	R	R	R						
25	36.0					SPT	S-8/25	R	R	R	R						
26	37.5					SPT	S-8/26	R	R	R	R						
27	39.0					SPT	S-8/27	R	R	R	R						
28	40.0					SPT	S-8/28	R	R	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 14.70 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.71 M	CL	[Symbolic Representation]	0.71 M	SPT	S-9/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.71 M - 2.0 M			1.30 M	SPT	S-9/2	2	3	5	8.0					
3	3.00					SPT	S-9/3	3	4	7	11.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.0 M - 15.4 M	SP		13.4 M	SPT	S-9/4	4	4	8	12.0					
5	6.00					SPT	S-9/5	5	5	9	14.0					
6	7.50					SPT	S-9/6	6	8	11	19.0					
7	9.00					SPT	S-9/7	8	8	12	20.0					
8	10.5					SPT	S-9/8	10	11	14	25.0					
9	12.0					SPT	S-9/9	11	13	17	30.0					
10	13.5					SPT	S-9/10	17	15	19	34.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY 15.4 M - 22.8 M	CL		7.8 M	SPT	S-9/11	14	17	22	39.0					
12	16.5					SPT	S-9/12	17	21	25	46.0					
13	18.0					SPT	S-9/13	18	24	29	53.0					
14	19.0					SPT	S-9/14	20	27	32	R					
15	21.0					SPT	S-9/15	22	30	36	R					
16	22.5					SPT	S-9/16	24	33	39	R					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.70 M DEPTH	End Date	-
Type of Boring :	MECHANICAL / AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
												0.0	25.0	50.0	75.0	100.0		
17	24.0	VERY DENSE FINE SAND 22.8 M - 37.60 M	SP		14.8 M	SPT	S-9/17	26	37	43	R							
18	25.5					SPT	S-9/18	29	41	46	R							
19	27.0					SPT	S-9/19	31	R	R	R							
20	28.5					SPT	S-9/20	35	R	R	R							
21	30.0					SPT	S-9/21	R	R	R	R							
22	31.5					SPT	S-9/22	R	R	R	R							
23	33.0					SPT	S-9/23	R	R	R	R							
24	34.5					SPT	S-9/24	R	R	R	R							
25	36.0					SPT	S-9/25	R	R	R	R							
26	37.5	HARD CLAY OF MEDIUM CONSISTENCY 37.60 M - 40.0 M	CL		2.4 M	SPT	S-9/26	R	R	R	R							
27	39.0					SPT	S-9/27	R	R	R	R							
28	40.0					SPT	S-9/28	R	R	R	R							





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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.82 M	CL		0.82 M	SPT	S-10/1	3	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.82 M - 2.80 M			1.98 M	SPT	S-10/2	3	4	5	9.0					
3	3.00					SPT	S-10/3	4	4	5	9.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 15.5 M	SP		12.7 M	SPT	S-10/4	4	5	7	12.0					
5	6.00					SPT	S-10/5	5	6	7	13.0					
6	7.50					SPT	S-10/6	6	7	8	15.0					
7	9.00					SPT	S-10/7	8	9	9	18.0					
8	10.5					SPT	S-10/8	10	11	12	23.0					
9	12.0					SPT	S-10/9	11	12	14	26.0					
10	13.5					SPT	S-10/10	17	15	17	32.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY 15.5 M - 23.0 M	CL		7.5 M	SPT	S-10/11	14	17	23	40.0					
12	16.5					SPT	S-10/12	15	20	27	47.0					
13	18.0					SPT	S-10/13	17	22	30	52.0					
14	19.0					SPT	S-10/14	19	24	32	56.0					
15	21.0					SPT	S-10/15	22	27	35	62.0					
16	22.5					SPT	S-10/16	24	32	40	R					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph 0.0 25.0 50.0 75.0 100.0				
17	24.0	VERY DENSE FINE SAND 23.0 M - 37.8 M	SP	14.8 M	SPT	5-10/17	27	39	43	R					
18	25.5				SPT	5-10/18	30	42	45	R					
19	27.0				SPT	5-10/19	34	45	49	R					
20	28.5				SPT	5-10/20	39	R	R	R					
21	30.0				SPT	5-10/21	R	R	R	R					
22	31.5				SPT	5-10/22	R	R	R	R					
23	33.0				SPT	5-10/23	R	R	R	R					
24	34.5				SPT	5-10/24	R	R	R	R					
25	36.0				SPT	5-10/25	R	R	R	R					
26	37.5				HARD CLAY WITH MEDIUM CONSISTENCY 37.8 M - 40.0 M	CL	2.2 M	SPT	5-10/26	R	R	R	R		
27	39.0	SPT	5-10/27	R				R	R	R					
28	40.0	SPT	5-10/28	R				R	R	R					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.78 M	CL		0.78 M	SPT	S-11/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.78 M - 2.50 M			1.72 M	SPT	S-11/2	3	4	5	9.0					
3	3.00					SPT	S-11/3	4	5	6	11.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.80 M -31.6 M	SP		28.8 M	SPT	S-11/4	4	5	7	12.0					
5	6.00					SPT	S-11/5	5	6	7	13.0					
6	7.50					SPT	S-11/6	6	8	8	16.0					
7	9.00					SPT	S-11/7	8	9	10	19.0					
8	10.5					SPT	S-11/8	10	11	13	24.0					
9	12.0					SPT	S-11/9	11	13	15	28.0					
10	13.5					SPT	S-11/10	17	15	18	33.0					
11	15.0					SPT	S-11/11	14	17	24	41.0					
12	16.5					SPT	S-11/12	15	20	28	48.0					
13	18.0					SPT	S-11/13	17	22	30	52.0					
14	19.0					SPT	S-11/14	19	25	33	58.0					
15	21.0					SPT	S-11/15	21	29	38	67.0					
16	22.5					SPT	S-11/16	22	36	40	76.0					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from E.G.L. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
17	24.0				SPT	S-11/17	26	40	42	R						
18	25.5				SPT	S-11/18	30	42	45	R						
19	27.0				SPT	S-11/19	35	46	49	R						
20	28.5				SPT	S-11/20	40	R	R	R						
21	30.0				SPT	S-11/21	R	R	R	R						
22	31.5				HARD CLAY WITH MEDIUM CONSISTENCY 31.6 - 40.0 M	CL	8.4 M	SPT	S-11/22	R	R	R	R			
23	33.0	SPT	S-11/23	R				R	R	R						
24	34.5	SPT	S-11/24	R				R	R	R						
25	36.0	SPT	S-11/25	R				R	R	R						
26	37.5	SPT	S-11/26	R				R	R	R						
27	39.0	SPT	S-11/27	R				R	R	R						
28	40.0	SPT	S-11/28	R				R	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.70 M	SPT	S-12/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 2.40 M	SP		1.65 M	SPT	S-12/2	3	4	5	9.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 2.40 M - 32.4 M				SPT	S-12/3	3	5	6	11.0					
4	4.50					SPT	S-12/4	4	6	6	12.0					
5	6.00					SPT	S-12/5	5	6	7	13.0					
6	7.50					SPT	S-12/6	5	7	9	16.0					
7	9.00					SPT	S-12/7	7	9	9	18.0					
8	10.5					SPT	S-12/8	7	10	11	21.0					
9	12.0					SPT	S-12/9	9	12	13	25.0					
10	13.5					SPT	S-12/10	9	13	15	28.0					
11	15.0					SPT	S-12/11	11	14	17	31.0					
12	16.5					SPT	S-12/12	12	18	20	38.0					
13	18.0					SPT	S-12/13	15	22	25	47.0					
14	19.0					SPT	S-12/14	18	27	30	57.0					
15	21.0					SPT	S-12/15	22	31	34	65.0					

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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN COUNCIL OF NORTHERN COUNTRIES, NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Water Level :	AT 11.7 M DEPTH	End Date	-
Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

Depth (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE						
	Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
0.5					SPT	S-12/16	25	33	39	72.0						
1.0					SPT	S-12/17	27	36	40	R						
1.5					SPT	S-12/18	28	40	42	R						
2.0					SPT	S-12/19	29	41	44	R						
2.5					SPT	S-12/20	31	45	48	R						
3.0					SPT	S-12/21	35	R	R	R						
3.5					SPT	S-12/22	R	R	R	R						
4.0					SPT	S-12/23	R	R	R	R						
4.5					SPT	S-12/24	R	R	R	R						
5.0	HARD CLAY WITH MEDIUM PLASTICITY 32.4 M - 40.0 M	CL	7.6 M		SPT	S-12/25	R	R	R	R						
5.5					SPT	S-12/26	R	R	R	R						
6.0					SPT	S-12/27	R	R	R	R						
6.5					SPT	S-12/28	R	R	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.4 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.80 M	CL		0.80	SPT	S-13/1	2	2	3	5.0					
2	1.50	MEDIUM DENSE-DENSE FINE SAND 0.80 M - 31.9 M	SP		31.1 M	SPT	S-13/2	3	5	6	11.0					
3	3.00					SPT	S-13/3	4	5	6	11.0					
4	4.50					SPT	S-13/4	4	6	6	12.0					
5	6.00					SPT	S-13/5	5	6	7	13.0					
6	7.50					SPT	S-13/6	5	7	8	15.0					
7	9.00					SPT	S-13/7	7	8	11	19.0					
8	10.5					SPT	S-13/8	7	10	12	22.0					
9	12.0					SPT	S-13/9	9	12	14	26.0					
10	13.5					SPT	S-13/10	9	13	15	28.0					
11	15.0					SPT	S-13/11	10	13	18	31.0					
12	16.5					SPT	S-13/12	12	22	25	47.0					
13	18.0					SPT	S-13/13	16	25	30	55.0					
14	19.0					SPT	S-13/14	19	30	30	60.0					
15	21.0					SPT	S-13/15	20	32	35	67.0					
16	22.5					SPT	S-13/16	22	33	39	R					



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 11.4 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
												0.0	25.0	50.0	75.0	100.0		
17	24.0					SPT 5-13/17	24	37	41	R								
18	25.5					SPT 5-13/18	27	40	42	R								
19	27.0					SPT 5-13/19	27	42	45	R								
20	28.5					SPT 5-13/20	30	45	50	R								
21	30.0					SPT 5-13/21	38	49	R	R								
22	31.5	HARD CLAY WITH MEDIUM PLASTICITY 31.9 M - 40.0 M	CL	8.1 M		SPT 5-13/22	R	R	R	R								
23	33.0					SPT 5-13/23	R	R	R	R								
24	34.5					SPT 5-13/24	R	R	R	R								
25	36.0					SPT 5-13/25	R	R	R	R								
26	37.5					SPT 5-13/26	R	R	R	R								
27	39.0					SPT 5-13/27	R	R	R	R								
28	40.0					SPT 5-13/28	R	R	R	R								





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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.81 M.	CL		0.81 M	SPT	S-14/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.81 M - 3.20 M	SP		2.39 M	SPT	S-14/2	2	3	4	7.0					
3	3.00					SPT	S-14/3	3	5	5	10.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 3.20 M - 21.6 M	SP		18.4 M	SPT	S-14/4	4	5	6	11.0					
5	6.00					SPT	S-14/5	5	6	7	13.0					
6	7.50					SPT	S-14/6	6	8	9	17.0					
7	9.00					SPT	S-14/7	7	8	11	19.0					
8	10.5					SPT	S-14/8	8	10	12	22.0					
9	12.0					SPT	S-14/9	9	12	15	27.0					
10	13.5					SPT	S-14/10	11	14	17	31.0					
11	15.0					SPT	S-14/11	12	16	19	35.0					
12	16.5	SPT	S-14/12	14	19	22	41.0									
13	18.0	SPT	S-14/13	17	24	30	54.0									
14	19.0	SPT	S-14/14	19	29	33	62.0									
15	21.0	SPT	S-14/15	25	34	39	R									
16	22.5	SPT	S-14/16	27	37	41	R									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE												
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph										
											0.0	25.0	50.0	75.0	100.0							
17	24.0	HARD CLAY WITH MEDIUM PLASTICITY 21.6 M - 33.4 M	CL		11.8 M	SPT	5-14/17	29	39	44	R											
18	25.5					SPT	5-14/18	33	41	47	R											
19	27.0					SPT	5-14/19	37	45	49	R											
20	28.5					SPT	5-14/20	41	R	R	R											
21	30.0					SPT	5-14/21	R	R	R	R											
22	31.5					SPT	5-14/22	R	R	R	R											
23	33.0	VERY DENSE FINE SAND 33.4 M - 40.0 M	SP		6.6 M	SPT	5-14/23	R	R	R	R											
24	34.5					SPT	5-14/24	R	R	R	R											
25	36.0					SPT	5-14/25	R	R	R	R											
26	37.5					SPT	5-14/26	R	R	R	R											
27	39.0					SPT	5-14/27	R	R	R	R											
28	40.0					SPT	5-14/28	R	R	R	R											



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.9 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
												0.0	25.0	50.0	75.0	100.0
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.80 M	CL		0.80	SPT	S-15/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.80 M - 4.20 M			3-40 M	SPT	S-15/2	2	3	3	6.0					
3	3.00					SPT	S-15/3	3	4	5	9.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 4.20 M - 32.45 M	SP		28.25 M	SPT	S-15/4	4	5	5	10.0					
5	6.00					SPT	S-15/5	5	6	7	13.0					
6	7.50					SPT	S-15/6	7	9	11	20.0					
7	9.00					SPT	S-15/7	7	9	10	19.0					
8	10.5					SPT	S-15/8	8	11	13	24.0					
9	12.0					SPT	S-15/9	10	12	15	27.0					
10	13.5					SPT	S-15/10	17	16	16	37.0					
11	15.0					SPT	S-15/11	14	19	22	41.0					
12	16.5					SPT	S-15/12	16	21	24	45.0					
13	18.0					SPT	S-15/13	19	25	29	54.0					
14	19.0					SPT	S-15/14	21	30	35	65.0					
15	21.0					SPT	S-15/15	25	36	41	R					
16	22.5					SPT	S-15/16	30	40	45	R					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.9 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
17	24.0				SPT	S-15/17	35	44	49	R						
18	25.5				SPT	S-15/18	39	48	R	R						
19	27.0				SPT	S-15/19	R	R	R	R						
20	28.5				SPT	S-15/20	R	R	R	R						
21	30.0				SPT	S-15/21	R	R	R	R						
22	31.5				SPT	S-15/22	R	R	R	R						
23	33.0				SPT	S-15/23	R	R	R	R						
24	34.5				SPT	S-15/24	R	R	R	R						
25	36.0	HARD CLAY WITH MEDIUM PLASTICITY 32.45 M - 40.0 M	CL	7.55 M	SPT	S-15/25	R	R	R	R						
26	37.5				SPT	S-15/26	R	R	R	R						
27	39.0				SPT	S-15/27	R	R	R	R						
28	40.0				SPT	S-15/28	R	R	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.70 M	CL		0.70 M	SPT	S-16/1	2	2	2	4.0						
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.70 M - 2.0 M			1.30 M	SPT	S-16/2	2	3	4	7.0						
3	3.00	MEDIUM DENSE-DENSE FINE SAND 2.0 M - 19.5 M	SP		17.5 M	SPT	S-16/3	3	4	5	9.0						
4	4.50					SPT	S-16/4	4	5	7	12.0						
5	6.00					SPT	S-16/5	5	6	7	13.0						
6	7.50					SPT	S-16/6	6	8	8	16.0						
7	9.00					SPT	S-16/7	8	8	10	18.0						
8	10.5					SPT	S-16/8	10	11	12	23.0						
9	12.0					SPT	S-16/9	11	12	14	26.0						
10	13.5					SPT	S-16/10	12	15	17	32.0						
11	15.0					SPT	S-16/11	13	17	22	39.0						
12	16.5					SPT	S-16/12	14	21	25	46.0						
13	18.0	SPT	S-16/13	19	27	33	60.0										
14	19.0	SPT	S-16/14	21	32	38	70.0										
15	21.0	SPT	S-16/15	25	37	41	R										



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 13.2 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
												0.0	25.0	50.0	75.0	100.0		
16	22.5	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 19.5 M - 40.0 M	CL		20.5 M	SPT	S-16/16	29	40	48	R							
17	24.0					SPT	S-16/17	38	45	R	R							
18	25.5					SPT	S-16/18	R	R	R	R							
19	27.0					SPT	S-16/19	R	R	R	R							
20	28.5					SPT	S-16/20	R	R	R	R							
21	30.0					SPT	S-16/21	R	R	R	R							
22	31.5					SPT	S-16/22	R	R	R	R							
23	33.0					SPT	S-16/23	R	R	R	R							
24	34.5					SPT	S-16/24	R	R	R	R							
25	36.0					SPT	S-16/25	R	R	R	R							
26	37.5					SPT	S-16/26	R	R	R	R							
27	39.0					SPT	S-16/27	R	R	R	R							
28	40.0	SPT	S-16/28	R	R	R	R											



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.50 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.75 M	SPT	S-17/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 1.80 M	SP		18.0 M	SPT	S-17/2	3	3	4	7.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 1.80 M - 19.8 M				SPT	S-17/3	5	5	7	12.0					
4	4.50					SPT	S-17/4	5	7	9	16.0					
5	6.00					SPT	S-17/5	7	12	15	27.0					
6	7.50					SPT	S-17/6	10	15	19	34.0					
7	9.00					SPT	S-17/7	10	15	20	35.0					
8	10.5					SPT	S-17/8	12	17	21	38.0					
9	12.0					SPT	S-17/9	13	19	24	43.0					
10	13.5					SPT	S-17/10	14	21	31	52.0					
11	15.0					SPT	S-17/11	15	23	33	56.0					
12	16.5					SPT	S-17/12	15	25	35	60.0					
13	18.0					SPT	S-17/13	20	29	40	69.0					
14	19.0					SPT	S-17/14	22	32	43	75.0					
15	21.0					SPT	S-17/15	24	35	46	81.0					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.50 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from ECL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE								
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
											0.0	25.0	50.0	75.0	100.0			
16	22.5	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 19.8 M - 40.0 M	CL		20.2 M	SPT	S-17/16	27	39	48	R							
17	24.0					SPT	S-17/17	35	43	R	R							
18	25.5					SPT	S-17/18	R	R	R	R							
19	27.0					SPT	S-17/19	R	R	R	R							
20	28.5					SPT	S-17/20	R	R	R	R							
21	30.0					SPT	S-17/21	R	R	R	R							
22	31.5					SPT	S-17/22	R	R	R	R							
23	33.0					SPT	S-17/23	R	R	R	R							
24	34.5					SPT	S-17/24	R	R	R	R							
25	36.0					SPT	S-17/25	R	R	R	R							
26	37.5					SPT	S-17/26	R	R	R	R							
27	39.0					SPT	S-17/27	R	R	R	R							
28	40.0	SPT	S-17/28	R	R	R	R											





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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from ECL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.77 M	CL	[Symbolic Representation]	0.77 M	SPT	S-18/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.77 M - 2.30 M	SP	[Symbolic Representation]	1.53 M	SPT	S-18/2	3	3	4	7.0					
3	3.00					SPT	S-18/3	5	5	6	11.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.30 M - 20.0 M	SP	[Symbolic Representation]	17.7 M	SPT	S-18/4	6	6	7	13.0					
5	6.00					SPT	S-18/5	7	8	9	17.0					
6	7.50					SPT	S-18/6	8	9	10	19.0					
7	9.00					SPT	S-18/7	11	12	12	24.0					
8	10.5					SPT	S-18/8	12	13	15	28.0					
9	12.0					SPT	S-18/9	14	15	17	32.0					
10	13.5					SPT	S-18/10	16	17	19	36.0					
11	15.0					SPT	S-18/11	17	19	24	43.0					
12	16.5					SPT	S-18/12	19	22	27	49.0					
13	18.0					SPT	S-18/13	23	25	32	57.0					
14	19.0	SPT	S-18/14	29	29	35	64.0									
15	21.0	SPT	S-18/15	30	33	39	72.0									
16	22.5	SPT	S-18/16	31	36	42	R									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 20.0 M - 40.0 M	CL		SPT	S-18/17	32	39	46	R						
18	25.5				SPT	S-18/18	37	43	49	R						
19	27.0				SPT	S-18/19	45	47	R	R						
20	28.5				SPT	S-18/20	R	R	R	R						
21	30.0				SPT	S-18/21	R	R	R	R						
22	31.5				SPT	S-18/22	R	R	R	R						
23	33.0				SPT	S-18/23	R	R	R	R						
24	34.5				SPT	S-18/24	R	R	R	R						
25	36.0				SPT	S-18/25	R	R	R	R						
26	37.5				SPT	S-18/26	R	R	R	R						
27	39.0	SPT	S-18/27	R	R	R	R									
28	40.0	SPT	S-18/28	R	R	R	R									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.4 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.78 M	CL		0.78 M	SPT	S-19/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.78 M - 3.20 M			2.42 M	SPT	S-19/2	2	3	4	7.0					
3	3.00					SPT	S-19/3	3	4	5	9.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 3.20 M - 21.0 M	SP		17.8 M	SPT	S-19/4	4	5	6	11.0					
5	6.00					SPT	S-19/5	5	6	6	12.0					
6	7.50					SPT	S-19/6	6	7	8	15.0					
7	9.00					SPT	S-19/7	8	9	10	19.0					
8	10.5					SPT	S-19/8	10	10	12	22.0					
9	12.0					SPT	S-19/9	12	12	15	27.0					
10	13.5					SPT	S-19/10	13	15	19	34.0					
11	15.0					SPT	S-19/11	15	17	22	39.0					
12	16.5					SPT	S-19/12	17	20	26	46.0					
13	18.0					SPT	S-19/13	20	23	30	53.0					
14	19.0					SPT	S-19/14	22	27	33	60.0					
15	21.0	SPT	S-19/15	24	30	38	68.0									
16	22.5					SPT	S-19/16	25	33	40	R					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.4 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.0 M - 31.8 M	CL		10.8 M	SPT	S-19/17	26	35	42	R					
18	25.5					SPT	S-19/18	26	37	44	R					
19	27.0					SPT	S-19/19	29	41	48	R					
20	28.5					SPT	S-19/20	32	44	50	R					
21	30.0					SPT	S-19/21	35	47	R	R					
22	31.5	VERY DENSE FINE SAND 31.8 M - 40.0 M	SP		8.2 M	SPT	S-19/22	R	R	R	R					
23	33.0					SPT	S-19/23	R	R	R	R					
24	34.5					SPT	S-19/24	R	R	R	R					
25	36.0					SPT	S-19/25	R	R	R	R					
26	37.5					SPT	S-19/26	R	R	R	R					
27	39.0					SPT	S-19/27	R	R	R	R					
28	40.0					SPT	S-19/28	R	R	R	R					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from ECL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.70 M	CL		0.70 M	SPT	S-20/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.70 M - 3.20 M	SP		2.50 M	SPT	S-20/2	2	3	3	6.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 3.20 M - 22.8 M			SPT	S-20/3	3	4	5	9.0						
4	4.50				SPT	S-20/4	4	5	6	11.0						
5	6.00				SPT	S-20/5	5	6	8	14.0						
6	7.50				SPT	S-20/6	5	7	9	16.0						
7	9.00				SPT	S-20/7	6	9	11	20.0						
8	10.5				SPT	S-20/8	8	11	12	23.0						
9	12.0				SPT	S-20/9	10	13	15	28.0						
10	13.5				SPT	S-20/10	10	15	19	34.0						
11	15.0				SPT	S-20/11	11	17	22	39.0						
12	16.5				SPT	S-20/12	12	19	25	44.0						
13	18.0				SPT	S-20/13	15	22	29	51.0						
14	19.0				SPT	S-20/14	19	26	33	59.0						
15	21.0				SPT	S-20/15	23	29	38	67.0						



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 13.2 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
16	22.5	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 22.8 M - 31.0 M	CL		8.20 M	SPT	5-20/16	25	33	41	R					
17	24.0					SPT	5-20/17	28	37	44	R					
18	25.5					SPT	5-20/18	31	40	47	R					
19	27.0					SPT	5-20/19	34	44	50	R					
20	28.5					SPT	5-20/20	39	48	R	R					
21	30.0					SPT	5-20/21	R	R	R	R					
22	31.5	VERY DENSE FINE SAND 31.0 M - 40.0 M	SP		9.0 M	SPT	5-20/22	R	R	R	R					
23	33.0					SPT	5-20/23	R	R	R	R					
24	34.5					SPT	5-20/24	R	R	R	R					
25	36.0					SPT	5-20/25	R	R	R	R					
26	37.5					SPT	5-20/26	R	R	R	R					
27	39.0					SPT	5-20/27	R	R	R	R					
28	40.0					SPT	5-20/28	R	R	R	R					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.3 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE								
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph							
											0.0	25.0	50.0	75.0	100.0				
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.77 M	CL		0.77 M	SPT	S-21/1	2	2	2	4.0								
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.77 M - 2.90 M			2.13 M	SPT	S-21/2	2	2	3	5.0								
3	3.00					SPT	S-21/3	3	3	4	7.0								
4	4.50					SPT	S-21/4	3	4	4	8.0								
5	6.00	MEDIUM DENSE-DENSE FINE SANDS 2.90 M - 32.3 M	SP		29.4 M	SPT	S-21/5	4	5	8	13.0								
6	7.50					SPT	S-21/6	4	6	8	14.0								
7	9.00					SPT	S-21/7	6	8	10	18.0								
8	10.5					SPT	S-21/8	8	10	12	22.0								
9	12.0					SPT	S-21/9	10	12	14	26.0								
10	13.5					SPT	S-21/10	10	14	18	32.0								
11	15.0					SPT	S-21/11	12	15	20	35.0								
12	16.5					SPT	S-21/12	14	17	23	40.0								
13	18.0					SPT	S-21/13	17	19	25	44.0								
14	19.0					SPT	S-21/14	20	24	29	53.0								
15	21.0					SPT	S-21/15	22	28	34	62.0								
16	22.5	SPT	S-21/16	25	31	37	R												



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.3 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
17	24.0				SPT	S-21/17	28	35	41	R						
18	25.5				SPT	S-21/18	31	39	45	R						
19	27.0				SPT	S-21/19	33	43	48	R						
20	28.5				SPT	S-21/20	35	49	R	R						
21	30.0				SPT	S-21/21	R	R	R	R						
22	31.5				SPT	S-21/22	R	R	R	R						
23	33.0				SPT	S-21/23	R	R	R	R						
24	34.5				SPT	S-21/24	R	R	R	R						
25	36.0	HARD CLAY WITH MEDIUM PLASTICITY 32.3 M - 40.0 M	CL	7.7 M	SPT	S-21/25	R	R	R	R						
26	37.5				SPT	S-21/26	R	R	R	R						
27	39.0				SPT	S-21/27	R	R	R	R						
28	40.0				SPT	S-21/28	R	R	R	R						




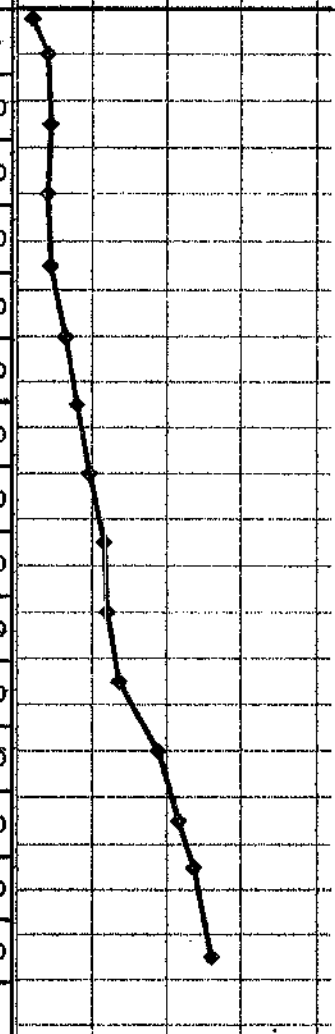


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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE									
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph								
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.65 M	SPT	S-22/1	2	2	3	5.0									
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.65 M - 2.45 M	SP		1.80 M	SPT	S-22/2	2	3	7	10.0									
3	3.00					SPT	S-22/3	3	4	7	11.0									
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 14.8 M	SP		19.15 M	SPT	S-22/4	4	4	6	10.0									
5	6.00					SPT	S-22/5	5	5	6	11.0									
6	7.50					SPT	S-22/6	5	7	9	16.0									
7	9.00					SPT	S-22/7	6	8	12	20.0									
8	10.5					SPT	S-22/8	8	11	13	24.0									
9	12.0					SPT	S-22/9	10	13	16	29.0									
10	13.5					SPT	S-22/10	11	15	15	30.0									
11	15.0					SPT	S-22/11	12	17	17	34.0									
12	16.5					SPT	S-22/12	14	18	29	47.0									
13	18.0					SPT	S-22/13	17	22	32	54.0									
14	19.0	SPT	S-22/14	20	25	34	59.0													
15	21.0	SPT	S-22/15	22	29	36	65.0													
16	22.5	SPT	S-22/16	24	33	39	R													



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 13.2 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.6 M - 31.0 M	CL		9.40 M	SPT	S-22/17	27	35	42	R					
18	25.5					SPT	S-22/18	29	39	44	83.0					
19	27.0					SPT	S-22/19	32	42	46	R					
20	28.5					SPT	S-22/20	35	48	46	R					
21	30.0					SPT	S-22/21	R	R	48	R					
22	31.5	VERY DENSE FINE SAND 31.0 M - 40.0 M	SP		9.0 M	SPT	S-22/22	R	R	50	R					
23	33.0					SPT	S-22/23	R	R	R	R					
24	34.5					SPT	S-22/24	R	R	R	R					
25	36.0					SPT	S-22/25	R	R	R	R					
26	37.5					SPT	S-22/26	R	R	R	R					
27	39.0					SPT	S-22/27	R	R	R	R					
28	40.0					SPT	S-22/28	R	R	R	R					



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.76 M	CL		0.76 M	SPT	S-23/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.76 M - 3.40 M			2.64 M	SPT	S-23/2	2	3	4	7.0					
3	3.00					SPT	S-23/3	3	3	4	7.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 3.40 M - 31.7 M	SP		28.3 M	SPT	S-23/4	4	4	5	9.0					
5	6.00					SPT	S-23/5	4	5	6	11.0					
6	7.50					SPT	S-23/6	5	7	8	15.0					
7	9.00					SPT	S-23/7	7	9	10	19.0					
8	10.5					SPT	S-23/8	9	11	12	23.0					
9	12.0					SPT	S-23/9	11	13	14	27.0					
10	13.5					SPT	S-23/10	12	15	17	32.0					
11	15.0					SPT	S-23/11	14	17	20	37.0					
12	16.5					SPT	S-23/12	15	19	22	41.0					
13	18.0					SPT	S-23/13	17	23	26	49.0					
14	19.0	SPT	S-23/14	20	27	31	58.0									
15	21.0	SPT	S-23/15	22	29	33	62.0									
16	22.5	SPT	S-23/16	24	32	35	67.0									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
												0.0	25.0	50.0	75.0	100		
17	24.0					SPT	S-23/17	27	34	39	73.0							
18	25.5					SPT	S-23/18	29	37	42	79.0							
19	27.0					SPT	S-23/19	31	40	45	R							
20	28.5					SPT	S-23/20	33	43	47	R							
21	30.0					SPT	S-23/21	36	45	R	R							
22	31.5	HARD CLAY WITH MEDIUM PLASTICITY 31.7 M - 40.0 M	CL		8.3 M	SPT	S-23/22	R	R	R	R							
23	33.0					SPT	S-23/23	R	R	R	R							
24	34.5					SPT	S-23/24	R	R	R	R							
25	36.0					SPT	S-23/25	R	R	R	R							
26	37.5					SPT	S-23/26	R	R	R	R							
27	39.0					SPT	S-23/27	R	R	R	R							
28	40.0					SPT	S-23/28	R	R	R	R							



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
												0.0	25.0	50.0	75.0	100.	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.69 M	CL		0.69 M	SPT	S-24/1	2	2	2	4.0						
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.69 M - 2.0 M	SP		1.31 M	SPT	S-24/2	2	2	3	5.0						
3	3.00	MEDIUM DENSE-DENSE FINE SAND 2.0 M - 15.2 M			13.2 M	SPT	S-24/3	2	3	3	6.0						
4	4.50					SPT	S-24/4	3	3	4	7.0						
5	6.00					SPT	S-24/5	4	4	5	9.0						
6	7.50					SPT	S-24/6	5	6	7	13.0						
7	9.00					SPT	S-24/7	5	7	7	14.0						
8	10.5					SPT	S-24/8	7	8	10	18.0						
9	12.0					SPT	S-24/9	9	9	11	20.0						
10	13.5		SPT	S-24/10		10	12	14	26.0								
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY 15.2 M - 23.2 M	CL		8.0 M	SPT	S-24/11	11	13	14	27.0						
12	16.5				SPT	S-24/12	13	15	17	32.0							
13	18.0				SPT	S-24/13	15	17	19	36.0							
14	19.0				SPT	S-24/14	17	21	24	45.0							
15	21.0				SPT	S-24/15	19	23	27	50.0							



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.	
16	22.5					SPT	S-24/16	22	25	29	54.0					
17	24.0	VERY DENSE FINE SAND 23.2 M - 37.2 M	SP		14.0 M	SPT	S-24/17	24	29	33	62.0					
18	25.5					SPT	S-24/18	27	32	36	R					
19	27.0					SPT	S-24/19	30	35	39	R					
20	28.5					SPT	S-24/20	33	39	44	R					
21	30.0					SPT	S-24/21	39	43	50	R					
22	31.5					SPT	S-24/22	41	46	R	R					
23	33.0					SPT	S-24/23	R	R	R	R					
24	34.5					SPT	S-24/24	R	R	R	R					
25	36.0	SPT	S-24/25	R	R	R	R									
26	37.5	HARD CLAY WITH MEDIUM PLASTICITY 37.2 M - 40.0 M	CL		2.8 M	SPT	S-24/26	R	R	R	R					
27	39.0					SPT	S-24/27	R	R	R	R					
28	40.0					SPT	S-24/28	R	R	R	R					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.30 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.75 M	SPT	S-25/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 2.80 M			2.05 M	SPT	S-25/2	2	3	3	6.0					
3	3.00					SPT	S-25/3	3	3	4	7.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 21.1 M	SP		18.3 M	SPT	S-25/4	3	3	5	8.0					
5	6.00					SPT	S-25/5	3	4	5	9.0					
6	7.50					SPT	S-25/6	4	5	6	11.0					
7	9.00					SPT	S-25/7	5	6	6	12.0					
8	10.5					SPT	S-25/8	6	7	9	16.0					
9	12.0					SPT	S-25/9	8	9	11	20.0					
10	13.5					SPT	S-25/10	10	11	13	24.0					
11	15.0					SPT	S-25/11	12	13	15	28.0					
12	16.5					SPT	S-25/12	13	15	17	32.0					
13	18.0					SPT	S-25/13	15	16	18	34.0					
14	19.0					SPT	S-25/14	17	19	22	41.0					
15	21.0	SPT	S-25/15	18	22	25	47.0									
16	22.5	SPT	S-25/16	21	25	29	R									



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.30 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.1 M - 31.0 M	CL		9.9 M	SPT	S-25/17	23	27	32	R						
18	25.5					SPT	S-25/18	27	31	34	R						
19	27.0					SPT	S-25/19	29	33	38	R						
20	28.5					SPT	S-25/20	33	38	43	R						
21	30.0					SPT	S-25/21	35	40	45	R						
22	31.5	VERY DENSE FINE SAND 31.0 M - 40.0 M	SP		9.0 M	SPT	S-25/22	38	43	49	R						
23	33.0					SPT	S-25/23	41	45	R	R						
24	34.5					SPT	S-25/24	R	R	R	R						
25	36.0					SPT	S-25/25	R	R	R	R						
26	37.5					SPT	S-25/26	R	R	R	R						
27	39.0					SPT	S-25/27	R	R	R	R						
28	40.0					SPT	S-25/28	R	R	R	R						





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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.8 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.65 M	CL		0.65 M	SPT	S-26/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.65 M - 4.30 M	SP		3.65 M	SPT	S-26/2	2	3	3	6.0					
3	3.00					SPT	S-26/3	3	3	4	7.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 4.30 M - 21.7 M	SP		17.4 M	SPT	S-26/4	3	4	4	8.0					
5	6.00					SPT	S-26/5	4	5	5	10.0					
6	7.50					SPT	S-26/6	4	7	8	15.0					
7	9.00					SPT	S-26/7	6	9	10	19.0					
8	10.5					SPT	S-26/8	7	11	13	24.0					
9	12.0					SPT	S-26/9	10	12	15	27.0					
10	13.5					SPT	S-26/10	12	14	17	31.0					
11	15.0					SPT	S-26/11	14	15	18	33.0					
12	16.5					SPT	S-26/12	15	19	22	41.0					
13	18.0					SPT	S-26/13	17	23	27	50.0					
14	19.0	SPT	S-26/14	19	26	30	56.0									
15	21.0	SPT	S-26/15	22	29	33	62.0									
16	22.5	SPT	S-26/16	25	33	38	71.0									



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CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.8 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.7 M - 31.8 M	CL		10.1 M	SPT	S-26/17	28	38	41	79.0					
18	25.5					SPT	S-26/18	30	40	44	84.0					
19	27.0					SPT	S-26/19	34	43	48	R					
20	28.5					SPT	S-26/20	37	45	R	R					
21	30.0					SPT	S-26/21	R	R	R	R					
22	31.5	VERY DENSE FINE SAND 31.8 M - 40.0 M	SP		8.2 M	SPT	S-26/22	R	R	R	R					
23	33.0					SPT	S-26/23	R	R	R	R					
24	34.5					SPT	S-26/24	R	R	R	R					
25	36.0					SPT	S-26/25	R	R	R	R					
26	37.5					SPT	S-26/26	R	R	R	R					
27	39.0					SPT	S-26/27	R	R	R	R					
28	40.0					SPT	S-26/28	R	R	R	R					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.78 M	CL		0.78 M	SPT	S-27/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.78 M - 2.30 M			1.52 M	SPT	S-27/2	2	2	3	5.0					
3	3.00					SPT	S-27/3	3	3	4	7.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.30 M - 21.7 M	SP		19.4 M	SPT	S-27/4	3	4	5	9.0					
5	6.00					SPT	S-27/5	3	5	5	10.0					
6	7.50					SPT	S-27/6	4	6	8	14.0					
7	9.00					SPT	S-27/7	5	8	10	18.0					
8	10.5					SPT	S-27/8	7	10	12	22.0					
9	12.0					SPT	S-27/9	9	11	14	25.0					
10	13.5					SPT	S-27/10	10	13	16	29.0					
11	15.0					SPT	S-27/11	13	15	17	32.0					
12	16.5					SPT	S-27/12	14	16	19	35.0					
13	18.0					SPT	S-27/13	16	18	22	40.0					
14	19.0	SPT	S-27/14	17	20	24	44.0									
15	21.0	SPT	S-27/15	20	23	27	50.0									
16	22.5	SPT	S-27/16	22	26	29	55.0									



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.7 M - 31.5 M	CL	9.8 M	SPT	S-27/17	24	29	34	63.0					
18	25.5				SPT	S-27/18	27	32	37	69.0					
19	27.0				SPT	S-27/19	30	34	39	R					
20	28.5				SPT	S-27/20	32	38	42	R					
21	30.0				SPT	S-27/21	35	41	45	R					
22	31.5	VERY DENSE FINE SAND 31.5 M - 40.0 M	SP	8.5 M	SPT	S-27/22	38	43	49	R					
23	33.0				SPT	S-27/23	41	45	R	R					
24	34.5				SPT	S-27/24	R	R	R	R					
25	36.0				SPT	S-27/25	R	R	R	R					
26	37.5				SPT	S-27/26	R	R	R	R					
27	39.0				SPT	S-27/27	R	R	R	R					
28	40.0				SPT	S-27/28	R	R	R	R					



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.70 M	CL		0.70 M	SPT	S-28/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.70 M - 2.40 M	SP		1.70 M	SPT	S-28/2	2	3	3	6.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 2.40 M - 21.8 M				SPT	S-28/3	3	4	5	9.0					
4	4.50					SPT	S-28/4	4	4	6	10.0					
5	6.00					SPT	S-28/5	6	6	6	12.0					
6	7.50					SPT	S-28/6	7	7	8	15.0					
7	9.00					SPT	S-28/7	7	9	10	19.0					
8	10.5					SPT	S-28/8	8	10	11	21.0					
9	12.0					SPT	S-28/9	9	11	13	24.0					
10	13.5					SPT	S-28/10	11	13	15	28.0					
11	15.0					SPT	S-28/11	13	15	17	32.0					
12	16.5					SPT	S-28/12	15	17	19	36.0					
13	18.0					SPT	S-28/13	17	19	22	41.0					
14	19.0					SPT	S-28/14	19	22	25	47.0					
15	21.0					SPT	S-28/15	21	24	27	51.0					

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<b>BORE LOG SHEET (as per IS 1892:1979)</b>																
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																
<b>Location :</b>		AS PER LOCATION MAP	<b>Start Date</b>	-												
<b>Ground Water Level :</b>		AT 13.2 M DEPTH	<b>End Date</b>	-												
<b>Type of Boring :</b>		MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.												
<b>Diameter of Boring :</b>		150 mm	<b>Termination Depth</b>	40.0 mtr.												
S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100	
16	22.5	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.8 M - 32.0 M	CL	10.2 M	SPT	S-28/16	23	27	30	57.0						
17	24.0				SPT	S-28/17	25	29	33	62.0						
18	25.5				SPT	S-28/18	27	32	35	R						
19	27.0				SPT	S-28/19	29	35	39	R						
20	28.5				SPT	S-28/20	31	38	42	R						
21	30.0				SPT	S-28/21	32	41	44	R						
22	31.5				SPT	S-28/22	35	43	47	R						
23	33.0	VERY DENSE FINE SAND 32.0 M - 40.0 M	SP	8.0 M	SPT	S-28/23	40	R	R	R						
24	34.5				SPT	S-28/24	R	R	R	R						
25	36.0				SPT	S-28/25	R	R	R	R						
26	37.5				SPT	S-28/26	R	R	R	R						
27	39.0				SPT	S-28/27	R	R	R	R						
28	40.0				SPT	S-28/28	R	R	R	R						





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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 213.8 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph			
											0.0	25.0	50.0	75.0	100.0
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.80 M	CL		0.80 M	SPT	S-29/1	2	2	2	4.0				
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.80 M - 3.80 M			3.0 M	SPT	S-29/2	2	2	3	5.0				
3	3.00					SPT	S-29/3	3	3	4	7.0				
4	4.50					SPT	S-29/4	3	4	5	9.0				
5	6.00	MEDIUM DENSE-DENSE FINE SAND 3.80 M - 20.5 M	SP		16.7 M	SPT	S-29/5	5	5	6	11.0				
6	7.50					SPT	S-29/6	6	7	9	16.0				
7	9.00					SPT	S-29/7	7	8	10	18.0				
8	10.5					SPT	S-29/8	8	10	12	22.0				
9	12.0					SPT	S-29/9	10	12	15	27.0				
10	13.5					SPT	S-29/10	12	14	17	31.0				
11	15.0					SPT	S-29/11	15	16	20	36.0				
12	16.5					SPT	S-29/12	17	19	23	42.0				
13	18.0					SPT	S-29/13	19	22	26	48.0				
14	19.0	VERY DENSE SILTY SAND AND CLAY MIXTURE 20.5 M - 29.3 M	SM		8.8 M	SPT	S-29/14	21	24	29	53.0				
15	21.0					SPT	S-29/15	22	27	32	59.0				
16	22.5					SPT	S-29/16	24	30	34	R				
17	24.0					SPT	S-29/17	25	32	37	R				
18	25.5					SPT	S-29/18	27	35	40	R				
19	27.0					SPT	S-29/19	29	38	43	R				

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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																
<b>Location :</b>		AS PER LOCATION MAP		<b>Start Date</b>		-										
<b>Ground Water Level :</b>		AT 14.5 M DEPTH		<b>End Date</b>		-										
<b>Type of Boring :</b>		MECHANICAL/AUGER DRILLING		<b>Starting Depth</b>		E.G.L.										
<b>Diameter of Boring :</b>		150 mm		<b>Termination Depth</b>		40.0 mtr.										
S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.65 M	CL		0.65 M	SPT	S-30/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.65 M - 2.00 M			1.35 M	SPT	S-30/2	2	3	4	7.0					
3	3.00					SPT	S-30/3	3	3	5	8.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 15.5 M	SP		12.7 M	SPT	S-30/4	3	5	5	10.0					
5	6.00					SPT	S-30/5	4	6	7	13.0					
6	7.50					SPT	S-30/6	6	8	10	18.0					
7	9.00					SPT	S-30/7	8	9	11	20.0					
8	10.5					SPT	S-30/8	10	12	14	26.0					
9	12.0					SPT	S-30/9	11	14	17	31.0					
10	13.5					SPT	S-30/10	12	16	19	35.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY 15.5 M - 23.0 M	CL		7.5 M	SPT	S-30/11	15	20	25	45.0					
12	16.5					SPT	S-30/12	17	22	27	49.0					
13	18.0					SPT	S-30/13	20	25	29	54.0					
14	19.0					SPT	S-30/14	23	29	32	61.0					
15	21.0					SPT	S-30/15	27	31	34	65.0					
16	22.5					SPT	S-30/16	30	33	37	70.0					





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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type				Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.	
17	24.0	VERY DENSE SILTY SAND AND CLAY MIXTURE 23.0 M - 27.85 M	SM		4.85 M	SPT	S-30/17	32	37	40	77.0					
18	25.5					SPT	S-30/18	35	40	43	83.0					
19	27.0	VERY DENSE FINE SAND 27.85 M - 40.0 M	SP		12.15 M	SPT	S-30/19	39	44	50	R					
20	28.5					SPT	S-30/20	42	R	46	R					
21	30.0					SPT	S-30/21	R	R	48	R					
22	31.5					SPT	S-30/22	R	R	50	R					
23	33.0					SPT	S-30/23	R	R	R	R					
24	34.5					SPT	S-30/24	R	R	R	R					
25	36.0					SPT	S-30/25	R	R	R	R					
26	37.5					SPT	S-30/26	R	R	R	R					
27	39.0					SPT	S-30/27	R	R	R	R					
28	40.0					SPT	S-30/28	R	R	R	R					

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<b>BORE LOG SHEET (as per IS 1892:1979)</b>																
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																
<b>Location :</b>		AS PER LOCATION MAP		<b>Start Date</b>	-											
<b>Ground Water Level :</b>		AT 11.2 M DEPTH		<b>End Date</b>	-											
<b>Type of Boring :</b>		MECHANICAL/AUGER DRILLING		<b>Starting Depth</b>	E.G.L.											
<b>Diameter of Boring :</b>		150 mm		<b>Termination Depth</b>	40.0 mtr.											
S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
												0.0	25.0	50.0	75.0	100
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.72 M	CL		0.72 M	SPT	S-31/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.72 M - 4.20 M	SP		17.6 M	SPT	S-31/2	2	3	3	6.0					
3	3.00					SPT	S-31/3	3	4	4	8.0					
4	4.50	SPT				S-31/4	3	4	5	9.0						
5	6.00	SPT				S-31/5	4	5	6	11.0						
6	7.50	SPT				S-31/6	4	6	7	13.0						
7	9.00	SPT				S-31/7	5	6	9	15.0						
8	10.5	SPT				S-31/8	6	8	11	19.0						
9	12.0	MEDIUM DENSE-DENSE FINE SAND 4.20 M - 21.8 M				SPT	S-31/9	9	11	13	24.0					
10	13.5	SPT				S-31/10	11	12	15	27.0						
11	15.0	SPT				S-31/11	13	16	19	35.0						
12	16.5	SPT				S-31/12	15	18	22	40.0						
13	18.0	SPT				S-31/13	18	21	25	46.0						
14	19.0	SPT				S-31/14	20	23	28	51.0						
15	21.0	SPT				S-31/15	22	26	31	57.0						
16	22.5	SPT				S-31/16	25	29	34	63.0						



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.	
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.8 M - 32.5 M	CL		10.7 M	SPT	S-31/17	28	32	38	70.0					
18	25.5					SPT	S-31/18	31	35	41	76.0					
19	27.0					SPT	S-31/19	32	37	43	R					
20	28.5					SPT	S-31/20	34	40	45	R					
21	30.0					SPT	S-31/21	38	43	49	R					
22	31.5					SPT	S-31/22	41	47	R	R					
23	33.0	VERY DENSE FINE SAND 32.5 M - 40.0 M	SP		7.5 M	SPT	S-31/23	R	R	R	R					
24	34.5					SPT	S-31/24	R	R	R	R					
25	36.0					SPT	S-31/25	R	R	R	R					
26	37.5					SPT	S-31/26	R	R	R	R					
27	39.0					SPT	S-31/27	R	R	R	R					
28	40.0					SPT	S-31/28	R	R	R	R					



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 10.9 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.78 M	CL		0.78 M	SPT	S-32/1	2	2	2	4.0							
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.78 M - 3.50 M	SP		2.72 M	SPT	S-32/2	3	4	4	8.0							
3	3.00					SPT	S-32/3	4	4	6	10.0							
4	4.50	MEDIUM DENSE-DENSE FINE SAND 3.50 M - 21.2 M	SP		17.7 M	SPT	S-32/4	4	4	7	11.0							
5	6.00					SPT	S-32/5	5	6	7	13.0							
6	7.50					SPT	S-32/6	5	7	8	15.0							
7	9.00					SPT	S-32/7	7	7	8	15.0							
8	10.5					SPT	S-32/8	7	8	10	18.0							
9	12.0					SPT	S-32/9	10	10	12	22.0							
10	13.5					SPT	S-32/10	11	12	12	24.0							
11	15.0					SPT	S-32/11	13	14	17	31.0							
12	16.5					SPT	S-32/12	15	16	19	35.0							
13	18.0					SPT	S-32/13	16	20	22	42.0							
14	19.0					SPT	S-32/14	16	21	25	48.0							
15	21.0	SPT	S-32/15	20	25	27	52.0											
16	22.5	SPT	S-32/16	23	30	31	61.0											



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

<b>Location :</b>	AS PER LOCATION MAP	<b>Start Date</b>	-
<b>Ground Water Level :</b>	AT 10.9 M DEPTH	<b>End Date</b>	-
<b>Type of Boring :</b>	MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.
<b>Diameter of Boring :</b>	150 mm	<b>Termination Depth</b>	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type				Sample		Penetration Value				SPT 'N' PROFILE								
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph								
												0.0	25.0	50.0	75.0	100.0				
17	24.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.2 M - 32.0 M	CL		10.8 M	SPT	S-32/17	28	31	35	66.0									
18	25.5					SPT	S-32/18	47	R	R	R									
19	27.0					SPT	S-32/19	R	R	R	R									
20	28.5					SPT	S-32/20	R	R	R	R									
21	30.0					SPT	S-32/21	R	R	R	R									
22	31.5					SPT	S-32/22	R	R	R	R									
23	33.0	VERY DENSE FINE SAND 32.0 M - 40.0 M	SP		8.0 M	SPT	S-32/23	R	R	R	R									
24	34.5					SPT	S-32/24	R	R	R	R									
25	36.0					SPT	S-32/25	R	R	R	R									
26	37.5					SPT	S-32/26	R	R	R	R									
27	39.0					SPT	S-32/27	R	R	R	R									
28	40.0					SPT	S-32/28	R	R	R	R									



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.75 M	SPT	S-33/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 4.60 M	SP		3.85 M	SPT	S-33/2	2	3	4	7.0					
3	3.00					SPT	S-33/3	3	4	4	8.0					
4	4.50					SPT	S-33/4	4	5	5	10.0					
5	6.00					SPT	S-33/5	5	6	6	12.0					
6	7.50					SPT	S-33/6	5	6	7	13.0					
7	9.00					SPT	S-33/7	7	8	10	18.0					
8	10.5					SPT	S-33/8	9	11	13	24.0					
9	12.0					SPT	S-33/9	11	14	17	31.0					
10	13.5	SPT	S-33/10	12	16	19	35.0									
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY 15.0 M - 17.7 M	CL		2.70 M	SPT	S-33/11	12	18	21	39.0					
12	16.5					SPT	S-33/12	14	20	25	45.0					
13	18.0	VERY DENSE FINE SAND 17.7 M - 20.0 M	SP		2.30 M	SPT	S-33/13	16	22	29	51.0					
14	19.0					SPT	S-33/14	18	25	33	R					
15	21.0	VERY DENSE SILTY SAND WITH CLAY MIXTURE 20.0 M - 29.2 M	SM		9.2 M	SPT	S-33/15	20	28	37	R					
16	22.5					SPT	S-33/16	20	31	40	R					
17	24.0					SPT	S-33/17	23	33	41	R					
18	25.5					SPT	S-33/18	25	35	43	R					



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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.2 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE								
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph							
											0.0	25.0	50.0	75.0	100.0				
19	27.0					SPT	S-33/19	29	38	47	R								
20	28.5					SPT	S-33/20	35	42	50	R								
21	30.0	VERY DENSE FINE SAND 29.20 M - 40.0 M	SP		10.8 M	SPT	S-33/21	40	18	R	R								
22	31.5					SPT	S-33/22	R	R	R	R								
23	33.0					SPT	S-33/23	R	R	R	R								
24	34.5					SPT	S-33/24	R	R	R	R								
25	36.0					SPT	S-33/25	R	R	R	R								
26	37.5					SPT	S-33/26	R	R	R	R								
27	39.0					SPT	S-33/27	R	R	R	R								
28	40.0					SPT	S-33/28	R	R	R	R								



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.6 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.65 M	CL		0.65 M	SPT S-34/1	2	3	3	6.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE	SP		1.25 M	SPT S-34/2	3	3	5	8.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 1.90 M - 14.0 M				SPT S-34/3	4	5	6	11.0					
4	4.50					SPT S-34/4	6	7	8	15.0					
5	6.00					SPT S-34/5	8	9	12	21.0					
6	7.50					SPT S-34/6	10	12	15	27.0					
7	9.00					SPT S-34/7	11	15	17	32.0					
8	10.5					SPT S-34/8	11	17	17	34.0					
9	12.0					SPT S-34/9	13	19	26	45.0					
10	13.5					SPT S-34/10	16	22	29	51.0					
11	15.0					VERY STIFF-HARD CONSISTENCY CLAY SILT AND SAND MIXTURE	ML		2.8 M	SPT S-34/11		19	26	32	58.0
12	16.5		SPT S-34/12	22	27	33	60.0								
13	18.0	VERY DENSE FINE SAND	SP		0.8 M	SPT S-34/13	27	29	34	63.0					
14	19.0	HARD CLAY WITH MEDIUM CONSISTENCY	CL		4.4 M	SPT S-34/14	31	31	40	R					
15	21.0					SPT S-34/15	35	40	45	R					
16	22.5	VERY DENSE SAND AND SILTY CLAY	SM		2.2 M	SPT S-34/16	41	R	R	R					





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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.6 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE										
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph									
											0.0	25.0	50.0	75.0	100.0						
17	24.0	VERY DENSE FINE SAND 24.2 M - 30.0 M	SP		5.8 M	SPT 5-34/17		20	37	R	R										
18	25.5					SPT 5-34/18		20	38	R	R										
19	27.0					SPT 5-34/19		21	39	R	R										
20	28.5					SPT 5-34/20		22	41	R	R										
21	30.0	HARD CLAY WITH MEDIUM PLASTICITY 30.0 M - 34.0 M	CL		4.0 M	SPT 5-34/21		22	42	48	R										
22	31.5					SPT 5-34/22		29	48	50	R										
23	33.0					SPT 5-34/23		35	R	R	R										
24	34.5	VERY DENSE FINE SAND 34.0 M - 40.0 M	SP		6.0 M	SPT 5-34/24		42	R	R	R										
25	36.0					SPT 5-34/25		45	R	R	R										
26	37.5					SPT 5-34/26		45	R	R	R										
27	39.0					SPT 5-34/27		R	R	R	R										
28	40.0					SPT 5-34/28		R	R	R	R										



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.4 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL		0.75 M	SPT	S-35/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 4.50 M	SP		3.75 M	SPT	S-35/2	3	2	3	5.0					
3	3.00					SPT	S-35/3	4	3	4	7.0					
4	4.50					SPT	S-35/4	4	5	5	10.0					
5	6.00	MEDIUM DENSE-DENSE FINE SAND 4.50 M - 21.9 M	SP		17.4 M	SPT	S-35/5	5	6	7	13.0					
6	7.50					SPT	S-35/6	7	7	9	15.0					
7	9.00					SPT	S-35/7	8	8	9	17.0					
8	10.5					SPT	S-35/8	9	9	10	19.0					
9	12.0					SPT	S-35/9	10	12	12	24.0					
10	13.5					SPT	S-35/10	12	14	15	29.0					
11	15.0					SPT	S-35/11	13	14	18	32.0					
12	16.5					SPT	S-35/12	15	17	21	38.0					
13	18.0					SPT	S-35/13	16	19	24	43.0					
14	19.0					SPT	S-35/14	20	22	30	52.0					
15	21.0					SPT	S-35/15	23	24	31	55.0					
16	22.5					SPT	S-35/16	25	25	37	62.0					



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.4 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from E.G.L. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
										0.0	25.0	50.0	75.0	100.	
17	24.0	HARD CONSISTENCY CLAY SOIL WITH MEDIUM PLASTICITY 21.9 M - 30.8 M	CL	3.9 M	SPT	S-35/17	25	28	41	69.0					
18	25.5				SPT	S-35/18	32	42	R	R					
19	27.0				SPT	S-35/19	35	46	49	R					
20	28.5				SPT	S-35/20	39	49	R	R					
21	30.0				SPT	S-35/21	45	R	R	R					
22	31.5	VERY DENSE FINE SAND 30.8 M - 40.0 M	SP	9.2 M	SPT	S-35/22	R	R	R	R					
23	33.0				SPT	S-35/23	R	R	R	R					
24	34.5				SPT	S-35/24	R	R	R	R					
25	36.0				SPT	S-35/25	R	R	R	R					
26	37.5				SPT	S-35/26	R	R	R	R					
27	39.0				SPT	S-35/27	R	R	R	R					
28	40.0				SPT	S-35/28	R	R	R	R					

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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																	
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																	
Location :		AS PER LOCATION MAP			Start Date		-										
Ground Water Level :		AT 12.7 M DEPTH			End Date		-										
Type of Boring :		MECHANICAL/AUGER DRILLING			Starting Depth		E.G.L.										
Diameter of Boring :		150 mm			Termination Depth		40.0 mtr.										
S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0		
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.85 M	CL		0.85 M	SPT S-36/1	2	2	3	5.0							
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.85 M - 3.80 M	SP		2.95 M	SPT S-36/2	3	3	4	7.0							
3	3.00	MEDIUM DENSE-DENSE FINE SAND 3.80 M - 22.7 M				SPT S-36/3	4	3	5	8.0							
4	4.50					SPT S-36/4	4	5	6	11.0							
5	6.00					SPT S-36/5	6	6	7	13.0							
6	7.50					SPT S-36/6	7	8	8	16.0							
7	9.00					SPT S-36/7	8	9	10	19.0							
8	10.5					SPT S-36/8	7	10	10	20.0							
9	12.0					SPT S-36/9	10	11	15	26.0							
10	13.5					SPT S-36/10	11	12	18	30.0							
11	15.0					SPT S-36/11	13	15	18	33.0							
12	16.5					SPT S-36/12	16	16	22	38.0							
13	18.0					SPT S-36/13	21	20	22	42.0							
14	19.0					SPT S-36/14	23	26	29	55.0							
15	21.0					SPT S-36/15	26	28	33	61.0							
16	22.5		SPT S-36/16	32	32	35	67.0										
17	24.0	SPT S-36/17	43	47	R	R											



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from Ecl. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
18	25.5	HARD CLAY WITH MEDIUM PLASTICITY 22.7 M - 32.5 M	CL	9.80 M	SPT	S-36/18	47	R	R	R						
19	27.0				SPT	S-36/19	R	R	R	81.0						
20	28.5				SPT	S-36/20	R	R	R	89.0						
21	30.0				SPT	S-36/21	R	R	R	92.0						
22	31.5				SPT	S-36/22	R	R	R	R						
23	33.0	VERY DENSE FINE SAND 32.5 M - 40.0 M	SP	7.50 M	SPT	S-36/23	R	R	R	R						
24	34.5				SPT	S-36/24	R	R	R	R						
25	36.0				SPT	S-36/25	R	R	R	R						
26	37.5				SPT	S-36/26	R	R	R	R						
27	39.0				SPT	S-36/27	R	R	R	R						
28	40.0				SPT	S-36/28	R	R	R	R						

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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>															
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>															
<b>Location :</b>		AS PER LOCATION MAP		<b>Start Date</b>		-									
<b>Ground Water Level :</b>		AT 14.70 M DEPTH		<b>End Date</b>		-									
<b>Type of Boring :</b>		MECHANICAL/AUGER DRILLING		<b>Starting Depth</b>		E.G.L.									
<b>Diameter of Boring :</b>		150 mm		<b>Termination Depth</b>		40.0 mtr.									
S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph			
											0.0	25.0	50.0	75.0	100.0
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.78 M	CL		0.78 M	SPT	S-37/1	2	2	3	5.0				
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.78 M - 3.40 M	SP		2.62 M	SPT	S-37/2	2	3	3	6.0				
3	3.00					SPT	S-37/3	3	3	4	7.0				
4	4.50	MEDIUM DENSE-DENSE FINE SAND 3.40 M - 15.8 M	SP		12.4 M	SPT	S-37/4	4	4	5	9.0				
5	6.00					SPT	S-37/5	4	5	6	11.0				
6	7.50					SPT	S-37/6	5	5	8	13.0				
7	9.00					SPT	S-37/7	5	7	9	16.0				
8	10.5					SPT	S-37/8	7	9	11	20.0				
9	12.0					SPT	S-37/9	9	10	12	22.0				
10	13.5					SPT	S-37/10	11	12	15	27.0				
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 15.8 M - 18.20 M	CL		2.40 M	SPT	S-37/11	12	14	17	31.0				
12	16.5					SPT	S-37/12	14	17	20	37.0				
13	18.0	VERY DENSE FINE SAND 18.20 M - 20.6 M	SP		2.40 M	SPT	S-37/13	14	18	21	39.0				
14	19.0					SPT	S-37/14	16	20	23	43.0				
15	21.0	VERY DENSE SILTY SAND WITH CLAY MIXTURE 20.6 M - 29.4 M	SM		8.8 M	SPT	S-37/15	19	22	28	50.0				
16	22.5					SPT	S-37/16	21	23	31	R				
17	24.0					SPT	S-37/17	23	26	34	R				
18	25.5					SPT	S-37/18	25	28	37	R				

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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>															
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>															
<b>Location :</b>		AS PER LOCATION MAP	<b>Start Date</b>	-											
<b>Ground Water Level :</b>		AT 14.70 M DEPTH	<b>End Date</b>	-											
<b>Type of Boring :</b>		MECHANICAL/AUGER DRILLING	<b>Starting Depth</b>	E.G.L.											
<b>Diameter of Boring :</b>		150 mm	<b>Termination Depth</b>	40.0 mtr.											
S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE					
		Description of Strata	IS Classification	Synbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
										0.0	25.0	50.0	75.0	100.0	
19	27.0				SPT	S-37/19	28	33	41	R					
20	28.5				SPT	S-37/20	31	37	45	R					
21	30.0	VERY DENSE FINE SAND 29.4 M - 40.0 M	SP	10.6 M	SPT	S-37/21	32	39	48	R					
22	31.5				SPT	S-37/22	39	45	R	R					
23	33.0				SPT	S-37/23	R	R	R	R					
24	34.5				SPT	S-37/24	R	R	R	R					
25	36.0				SPT	S-37/25	R	R	R	R					
26	37.5				SPT	S-37/26	R	R	R	R					
27	39.0				SPT	S-37/27	R	R	R	R					
28	40.0				SPT	S-37/28	R	R	R	R					



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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.65 M	CL		0.65 M	SPT	S-38/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.65 M - 5.50 M	SP		4.85 M	SPT	S-38/2	2	3	3	6.0					
3	3.00					SPT	S-38/3	3	4	4	8.0					
4	4.50					SPT	S-38/4	4	4	6	10.0					
5	6.00					SPT	S-38/5	5	5	6	11.0					
6	7.50	MEDIUM DENSE-DENSE FINE SAND 5.50 M - 21.8 M	SP		16.3 M	SPT	S-38/6	5	5	8	13.0					
7	9.00					SPT	S-38/7	5	6	9	15.0					
8	10.5					SPT	S-38/8	7	10	11	21.0					
9	12.0					SPT	S-38/9	10	11	12	23.0					
10	13.5					SPT	S-38/10	11	12	16	28.0					
11	15.0					SPT	S-38/11	13	14	17	31.0					
12	16.5					SPT	S-38/12	15	18	19	37.0					
13	18.0					SPT	S-38/13	14	20	22	42.0					
14	19.0					SPT	S-38/14	17	21	23	44.0					
15	21.0					SPT	S-38/15	20	22	29	51.0					
16	22.5	SPT	S-38/16	21	23	31	54.0									





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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 11.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from ECL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
17	24.0	HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 21.8 M - 32.8 M	CL		11.0 M	SPT	5-38/17	24	25	34	59.0		0.0	25.0	50.0	75.0	100.0	
18	25.5					SPT	5-38/18	27	26	37	63.0							
19	27.0					SPT	5-38/19	28	33	41	R							
20	28.5					SPT	5-38/20	31	37	45	R							
21	30.0					SPT	5-38/21	32	39	48	R							
22	31.5					SPT	5-38/22	39	45	R	R							
23	33.0	VERY DENSE FINE SAND 32.8 M - 40.0 M	SP		7.20 M	SPT	5-38/23	R	R	R	R							
24	34.5					SPT	5-38/24	R	R	R	R							
25	36.0					SPT	5-38/25	R	R	R	R							
76	37.5					SPT	5-38/76	R	R	R	R							
27	39.0					SPT	5-38/27	R	R	R	R							
28	40.0					SPT	5-38/28	R	R	R	R							



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.6 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
											00	25.0	50.0	75.0	100.0		
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.78 M	CL	0.78 M	SPT	S-39/1	2	2	3	5.0							
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.78 M - 2.65 M	SM	1.87 M	SPT	S-39/2	2	3	4	7.0							
3	3.00				SPT	S-39/3	3	3	4	7.0							
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.65 M - 14.3 M	SP	11.65 M	SPT	S-39/4	4	5	6	11.0							
5	6.00				SPT	S-39/5	4	6	6	12.0							
6	7.50				SPT	S-39/6	6	8	10	18.0							
7	9.00				SPT	S-39/7	7	9	11	20.0							
8	10.5				SPT	S-39/8	7	11	12	23.0							
9	12.0				SPT	S-39/9	11	13	15	28.0							
10	13.5				SPT	S-39/10	12	14	18	32.0							
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 14.3 M - 16.8 M	CL	2.50 M	SPT	S-39/11	12	17	21	38.0							
12	16.5				SPT	S-39/12	15	20	24	44.0							
13	18.0				SPT	S-39/13	18	23	27	50.0							
14	19.0				SPT	S-39/14	21	26	29	55.0							
15	21.0				SPT	S-39/15	22	28	32	60.0							
16	22.5				SPT	S-39/16	22	31	35	66.0							


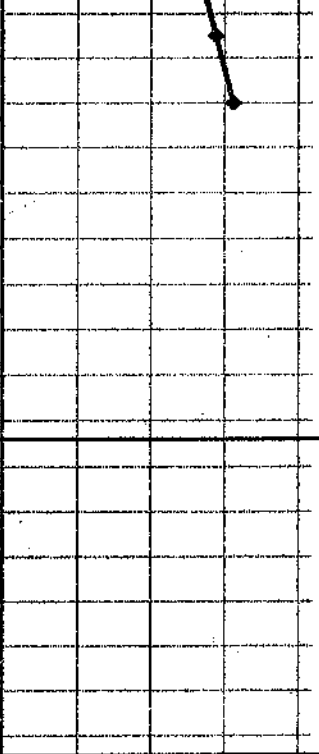
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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.6 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from E.G.L. (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
17	24.0	VERY DENSE FINE SAND 16.6 M - 40.0 M	SP		2:1.2 M	SPT	S-39/17	24	33	39	72.0					
18	25.5					SPT	S-39/18	25	37	41	78.0					
19	27.0					SPT	S-39/19	27	40	43	R					
20	28.5					SPT	S-39/20	30	43	46	R					
21	30.0					SPT	S-39/21	35	47	50	R					
22	31.5					SPT	S-39/22	41	R	R	R					
23	33.0					SPT	S-39/23	R	R	R	R					
24	34.5					SPT	S-39/24	R	R	R	R					
25	36.0					SPT	S-39/25	R	R	R	R					
26	37.5					SPT	S-39/26	R	R	R	R					
27	39.0	SPT	S-39/27	R	R	R	R									
28	40.0	SPT	S-39/28	R	R	R	R									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.8 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											00	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.70 M	CL		0.70 M	SPT	S-40/1	2	2	2	4.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.70 M - 2.40 M	SM		1.70 M	SPT	S-40/2	2	2	3	5.0					
3	3.00					SPT	S-40/3	3	3	3	6.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.40 M - 14.8 M	SP		12.40 M	SPT	S-40/4	3	4	5	9.0					
5	6.00					SPT	S-40/5	3	5	6	11.0					
6	7.50					SPT	S-40/6	4	6	7	13.0					
7	9.00					SPT	S-40/7	5	7	10	17.0					
8	10.5					SPT	S-40/8	7	9	11	20.0					
9	12.0					SPT	S-40/9	9	11	13	24.0					
10	13.5					SPT	S-40/10	10	12	15	27.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY	CL		2.50 M	SPT	S-40/11	11	14	16	30.0					
12	16.5					SPT	S-40/12	12	17	21	38.0					
13	18.0					SPT	S-40/13	12	15	20	35.0					
14	19.0					SPT	S-40/14	14	18	23	41.0					
15	21.0					SPT	S-40/15	18	23	29	52.0					
16	22.5					SPT	S-40/16	22	26	32	58.0					



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**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.8 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
17	24.0	VERY DENSE FINE SAND 17.3 M - 40.0 M	SP	[Symbolic Representation]	22.70 M	SPT	5-40/17	24	29	35	64.0					
18	25.5					SPT	5-40/18	27	32	39	71.0					
19	27.0					SPT	5-40/19	30	34	42	76.0					
20	28.5					SPT	5-40/20	32	37	45	82.0					
21	30.0					SPT	5-40/21	34	40	48	R					
22	31.5					SPT	5-40/22	38	45	R	R					
23	33.0					SPT	5-40/23	R	R	R	R					
24	34.5					SPT	5-40/24	R	R	R	R					
25	36.0					SPT	5-40/25	R	R	R	R					
26	37.5					SPT	5-40/26	R	R	R	R					
27	39.0	SPT	5-40/27	R	R	R	R									
28	40.0	SPT	5-40/28	R	R	R	R									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.6 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE.					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.75 M	CL	0.75 M	SPT	S-41/1	2	2	3	5.0						
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.75 M - 2.20 M	SM	1.45 M	SPT	S-41/2	3	3	3	6.0						
3	3.00				SPT	S-41/3	3	3	4	7.0						
4	4.50				SPT	S-41/4	4	4	5	9.0						
5	6.00	MEDIUM DENSE-DENSE FINE SAND 2.20 M - 14.5 M	SP	12.3 M	SPT	S-41/5	4	5	5	10.0						
6	7.50				SPT	S-41/6	4	6	6	12.0						
7	9.00				SPT	S-41/7	5	7	8	15.0						
8	10.5				SPT	S-41/8	6	8	10	18.0						
9	12.0				SPT	S-41/9	8	10	12	22.0						
10	13.5				SPT	S-41/10	9	11	14	25.0						
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 14.5 M - 17.65 M	CL	3.15 M	SPT	S-41/11	11	13	16	29.0						
12	16.5				SPT	S-41/12	13	16	19	35.0						
13	18.0				SPT	S-41/13	15	18	22	40.0						
14	19.0				SPT	S-41/14	17	21	25	46.0						
15	21.0				SPT	S-41/15	18	24	29	53.0						
16	22.5				SPT	S-41/16	20	27	32	59.0						
17	24.0				SPT	S-41/17	21	29	35	64.0						

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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.6 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE									
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph							
												0.0	25.0	50.0	75.0	100.0			
18	25.5	VERY DENSE FINE SAND 17.65 M - 40.0 M	SP	[Symbolic Representation]	22.35 M	SPT	S-41/18	23	32	39	R								
19	27.0					SPT	S-41/19	27	35	43	R								
20	28.5					SPT	S-41/20	30	39	R	R								
21	30.0					SPT	S-41/21	R	R	R	R								
22	31.5					SPT	S-41/22	R	R	R	R								
23	33.0					SPT	S-41/23	R	R	R	R								
24	34.5					SPT	S-41/24	R	R	R	R								
25	36.0					SPT	S-41/25	R	R	R	R								
26	37.5					SPT	S-41/26	R	R	R	R								
27	39.0					SPT	S-41/27	R	R	R	R								
28	40.0	SPT	S-41/28	R	R	R	R												





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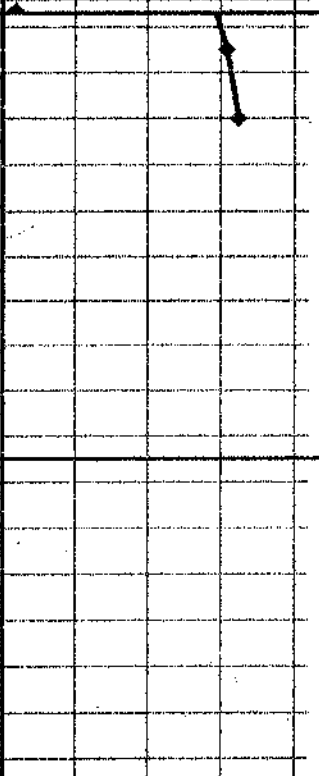

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**




**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.7 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.85 M	CL		0.85 M	SPT	S-42/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.85 M - 4.40 M	SP		3.55 M	SPT	S-42/2	2	3	4	7.0					
3	3.00					SPT	S-42/3	3	4	5	9.0					
4	4.50	MEDIUM DENSE-DENSE FINE SAND 4.40 M - 14.8 M	SP		10.4 M	SPT	S-42/4	4	5	6	11.0					
5	6.00					SPT	S-42/5	5	6	6	12.0					
6	7.50					SPT	S-42/6	6	7	8	15.0					
7	9.00					SPT	S-42/7	8	9	10	19.0					
8	10.5					SPT	S-42/8	10	10	12	22.0					
9	12.0					SPT	S-42/9	12	12	15	27.0					
10	13.5					SPT	S-42/10	13	15	19	34.0					
11	15.0	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 14.8 M - 23.7 M	CL		8.90 M	SPT	S-42/11	15	17	22	39.0					
12	16.5					SPT	S-42/12	17	20	26	46.0					
13	18.0					SPT	S-42/13	20	23	30	53.0					
14	19.0					SPT	S-42/14	22	27	33	60.0					
15	21.0					SPT	S-42/15	24	30	38	68.0					
16	22.5					SPT	S-42/16	25	30	40	70.0					



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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>															
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>															
<b>Location :</b>		AS PER LOCATION MAP		<b>Start Date</b>	-										
<b>Ground Water Level :</b>		AT 14.7 M DEPTH		<b>End Date</b>	-										
<b>Type of Boring :</b>		MECHANICAL/AUGER DRILLING		<b>Starting Depth</b>	E.G.L.										
<b>Diameter of Boring :</b>		150 mm		<b>Termination Depth</b>	40.0 mtr.										
S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value. Graph			
17	24.0	VERY DENSE SILTY SAND AND CLAY MIXTURE	SM		1.5 M	SPT S-42/17	26	35	42	77.0					
18	25.5	VERY DENSE FINE SAND 25.2 M - 40.0 M	SP		14.8 M	SPT S-42/18	26	37	44	81.0					
19	27.0					SPT S-42/19	29	41	48	R					
20	28.5					SPT S-42/20	34	45	50	R					
21	30.0					SPT S-42/21	40	R	R	R					
22	31.5					SPT S-42/22	R	R	R	R					
23	33.0					SPT S-42/23	R	R	R	R					
24	34.5					SPT S-42/24	R	R	R	R					
25	36.0					SPT S-42/25	R	R	R	R					
26	37.5					SPT S-42/26	R	R	R	R					
27	39.0	SPT S-42/27	R	R	R	R									
28	40.0	SPT S-42/28	R	R	R	R									

		SOIGNÉ ENGINEERING CONSULTANTS			Bore Hole No	Job No	Page No.								
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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.															
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI															
Location :		AS PER LOCATION MAP			Start Date		-								
Ground Water Level :		AT 13.5 M DEPTH			End Date		-								
Type of Boring :		MECHANICAL/AUGER DRILLING			Starting Depth		E.G.L.								
Diameter of Boring :		150 mm			Termination Depth		40.0 mtr.								
S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph			
											0.0	25.0	50.0	75.0	100.0
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.72 M	CL		0.72 M	SPT	S-43/1	2	2	3	5.0				
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.72 M - 2.85 M	SP		2.13 M	SPT	S-43/2	3	3	4	7.0				
3	3.00					SPT	S-43/3	4	5	5	10.0				
4	4.50					SPT	S-43/4	5	6	5	11.0				
5	6.00	SPT				S-43/5	6	6	7	13.0					
6	7.50	SPT				S-43/6	7	8	7	15.0					
7	9.00	SPT				S-43/7	8	9	11	20.0					
8	10.5	SPT				S-43/8	10	12	13	25.0					
9	12.0	MEDIUM DENSE-DENSE FINE SAND 2.85 M - 22.8 M				19.95 M	SPT	S-43/9	11	12	14	26.0			
10	13.5						SPT	S-43/10	13	14	16	30.0			
11	15.0						SPT	S-43/11	15	16	17	33.0			
12	16.5						SPT	S-43/12	16	17	19	36.0			
13	18.0						SPT	S-43/13	18	20	21	41.0			
14	19.0						SPT	S-43/14	21	23	24	47.0			
15	21.0						SPT	S-43/15	25	27	26	53.0			
16	22.5						SPT	S-43/16	27	28	29	57.0			

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**BORE LOG SHEET (as per IS 1892:1979)**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
17	24.0	HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 22.8 M - 32.0 M	CI	[Symbolic Representation]	9.2 M	SPT	S-43/17	30	33	35	68.0						
18	25.5					SPT	S-43/18	36	37	39	76.0						
19	27.0					SPT	S-43/19	37	41	43	R						
20	28.5					SPT	S-43/20	43	45	47	R						
21	30.0					SPT	S-43/21	46	48	49	R						
22	31.5					SPT	S-43/22	49	49	50	R						
23	33.0	VERY DENSE FINE SAND 32.0 M - 40.0 M	SP	[Symbolic Representation]	8.0 M	SPT	S-43/23	50	R	R	R						
24	34.5					SPT	S-43/24	R	R	R	R						
25	36.0					SPT	S-43/25	R	R	R	R						
26	37.5					SPT	S-43/26	R	R	R	R						
27	39.0					SPT	S-43/27	R	R	R	R						
28	40.0					SPT	S-43/28	R	R	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE				
		Description of Strata	IS Classification	Symbolic Representation	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph				
											0.0	25.0	50.0	75.0	100
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.70 M	CL		0.70 M	SPT S-44/1	2	2	3	5.0					
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE	SP		1.30 M	SPT S-44/2	2	3	4	7.0					
3	3.00	MEDIUM DENSE-DENSE FINE SAND 2.0 M - 23.0 M				SPT S-44/3	3	3	5	8.0					
4	4.50		SPT S-44/4	4	4	5	9.0								
5	6.00		SPT S-44/5	5	6	6	12.0								
6	7.50		SPT S-44/6	5	7	9	16.0								
7	9.00		SPT S-44/7	6	9	10	19.0								
8	10.5		SPT S-44/8	9	11	12	23.0								
9	12.0		SPT S-44/9	11	13	15	28.0								
10	13.5		SPT S-44/10	12	14	17	31.0								
11	15.0		SPT S-44/11	14	19	25	44.0								
12	16.5		SPT S-44/12	20	24	31	55.0								
13	18.0	SPT S-44/13	24	29	35	64.0									
14	19.0	SPT S-44/14	29	38	44	82.0									
15	21.0	SPT S-44/15	35	41	48	89.0									
16	22.5	SPT S-44/16	40	R	R	R									



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 12.5 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EQL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100	
17	24.0	HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 23.0 M - 33.5 M	CL	10.5 M	SPT	5-44/17	R	R	R	R						
18	25.5				SPT	5-44/18	R	R	R	R						
19	27.0				SPT	5-44/19	R	R	R	R						
20	28.5				SPT	5-44/20	R	R	R	R						
21	30.0				SPT	5-44/21	R	R	R	R						
22	31.5				SPT	5-44/22	R	R	R	R						
23	33.0	VERY DENSE FINE SAND 33.5 M- 40.0 M	SP	6.50 M	SPT	5-44/23	R	R	R	R						
24	34.5				SPT	5-44/24	R	R	R	R						
25	36.0				SPT	5-44/25	R	R	R	R						
26	37.5				SPT	5-44/26	R	R	R	R						
27	39.0				SPT	5-44/27	R	R	R	R						
28	40.0				SPT	5-44/28	R	R	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.40 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.71 M	CL		0.71 M	SPT	S-45/1	2	2	2	4.0		0.0	25.0	50.0	75.0	100
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.71 M - 2.50 M			1.79 M	SPT	S-45/2	3	3	4	7.0						
3	3.00					SPT	S-45/3	4	5	5	10.0						
4	4.50	MEDIUM DENSE-DENSE FINE SAND 2.50 M - 13.0 M			10.5 M	SPT	S-45/4	4	4	7	11.0						
5	6.00					SPT	S-45/5	7	7	8	15.0						
6	7.50					SPT	S-45/6	9	10	11	21.0						
7	9.00					SPT	S-45/7	11	11	12	23.0						
8	10.5					SPT	S-45/8	12	14	13	27.0						
9	12.0					SPT	S-45/9	12	16	15	31.0						
10	13.5	DENSE-VERY DENSE FINE SAND 13.0 M - 31.5 M	SP		18.5 M	SPT	S-45/10	15	17	20	37.0						
11	15.0					SPT	S-45/11	19	20	29	49.0						
12	16.5					SPT	S-45/12	19	24	32	56.0						
13	18.0					SPT	S-45/13	22	27	32	59.0						
14	19.0					SPT	S-45/14	24	28	33	61.0						
15	21.0					SPT	S-45/15	31	36	43	79.0						
16	22.5					SPT	S-45/16	47	50	R	R						



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 13.40 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S. No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE							
		Description of Strata	IS Classification	Symbolic Representation	Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph						
												0.0	25.0	50.0	75.0	100		
17	24.0					SPT 5-45/17	R	R	R	R								
18	25.5					SPT 5-45/18	R	R	R	R								
19	27.0					SPT 5-45/19	R	R	R	R								
20	28.5					SPT 5-45/20	R	R	R	R								
21	30.0					SPT 5-45/21	R	R	R	R								
22	31.5	HARD CONSISTENCY OF CLAY SOIL 31.5 M - 40.0	CL	8.5 M		SPT 5-45/22	R	R	R	R								
23	33.0					SPT 5-45/23	R	R	R	R								
24	34.5					SPT 5-45/24	R	R	R	R								
25	36.0					SPT 5-45/25	R	R	R	R								
26	37.5					SPT 5-45/26	R	R	R	R								
27	39.0					SPT 5-45/27	R	R	R	R								
28	40.0					SPT 5-45/28	R	R	R	R								



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CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value				SPT 'N' PROFILE					
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
											0.0	25.0	50.0	75.0	100.0	
1	0.75	SOFT CONSISTENCY CLAY UPTO 0.82 M	CL	0.82 M	SPT	S-46/1	3	4	4	8.0						
2	1.50	LOOSE SILTY SAND WITH CLAY MIXTURE 0.82 M - 2.80 M		1.98 M	SPT	S-46/2	4	5	4	9.0						
3	3.00				SPT	S-46/3	4	5	6	11.0						
4	4.50				SPT	S-46/4	6	7	6	13.0						
5	6.00	MEDIUM DENSE-DENSE FINE SAND 2.80 M - 14.8 M	SP	12.0 M	SPT	S-46/5	7	8	8	16.0						
6	7.50				SPT	S-46/6	7	8	9	17.0						
7	9.00				SPT	S-46/7	9	10	11	21.0						
8	10.5				SPT	S-46/8	11	12	13	25.0						
9	12.0				SPT	S-46/9	12	14	13	27.0						
10	13.5				SPT	S-46/10	14	16	15	31.0						
11	15.0				VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 14.8 M - 21.7 M	CL	6.9 M	SPT	S-46/11	15	17	16	33.0			
12	16.5	SPT	S-46/12	17				19	21	40.0						
13	18.0	SPT	S-46/13	23				25	27	52.0						
14	19.0	SPT	S-46/14	26				29	31	60.0						
15	21.0	SPT	S-46/15	30				33	35	68.0						
16	22.5	SPT	S-46/16	34				36	37	73.0						





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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Location :	AS PER LOCATION MAP	Start Date	-
Ground Water Level :	AT 14.0 M DEPTH	End Date	-
Type of Boring :	MECHANICAL/AUGER DRILLING	Starting Depth	E.G.L.
Diameter of Boring :	150 mm	Termination Depth	40.0 mtr.

S.No.	Depth from EGL (m)	Soil Type			Sample		Penetration Value			SPT 'N' PROFILE						
		Description of Strata	IS Classification	Symbolic Representation Thickness of Strata	Type	Sample No.	at 15 cm	at 30 cm	at 45 cm	SPT N-VALUE	Depth v/s SPT N-value Graph					
										0.0	25.0	50.0	75.0	100		
17	24.0	VERY DENSE FINE SAND 21.7 M - 37.25 M	SP	15.55 M	SPT	S-46/17	37	40	41	81.0						
18	25.5				SPT	S-46/18	42	44	43	87.0						
19	27.0				SPT	S-46/19	45	46	48	R						
20	28.5				SPT	S-46/20	45	47	49	R						
21	30.0				SPT	S-46/21	48	49	50	R						
22	31.5				SPT	S-46/22	50	R	R	R						
23	33.0				SPT	S-46/23	R	R	R	R						
24	34.5				SPT	S-46/24	R	R	R	R						
25	36.0				SPT	S-46/25	R	R	R	R						
26	37.5	VERY STIFF-HARD CONSISTENCY CLAY WITH MEDIUM PLASTICITY 37.25 M - 40.0 M	CI	2.75 M	SPT	S-46/26	R	R	R	R						
27	39.0				SPT	S-46/27	R	R	R	R						
28	40.0				SPT	S-46/28	R	R	R	R						

SOIGNE ENGINEERING CONSULTANTS SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com		BOREHOLE		LOCATION		JOB NO.		PAGE NO											
1		N-3161611 E-728359		GT-1997		0.0 M		WATER TABLE DEPTH											
		STARTING DEPTH		TERMINATION DEPTH		40.0 M		16.5 M											
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.																			
CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI																			
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit		Density		Shear Parameters				Specific Gravity		
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,		Coefficient of consolidation, Cc	Void Ratio, eo
0.75	S-1/1	SPT	4.0	6.8	CL	0.0	15.0	85.0	.	.	.	2.8	.	.	.	.	.	.	.
1.50	S-1/2	SPT	7.0	10.2	SP	0.0	72.0	28.0	.	.	.	3.5	1.63	1.63	23.0	.	.	.	2.42
3.00	S-1/3	SPT	8.0	9.8	SP	0.0	78.0	22.0	NP	NP	NP	3.9	.	.	.	.	.	.	.
4.50	S-1/4	SPT	12.0	13.1	SP	.	.	.	NP	NP	NP	.	.	.	25.0	.	.	.	.
6.00	S-1/5	SPT	19.0	18.9	SP	0.0	93.0	7.0	NP	NP	NP	5.8	1.73	1.64	.	.	.	.	2.48
7.50	S-1/6	SPT	21.0	19.3	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
9.00	S-1/7	SPT	25.0	21.4	SP	2.0	91.0	7.0	NP	NP	NP	7.2	1.79	1.67	30.0	.	.	.	.
10.50	S-1/8	SPT	34.0	27.4	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
12.00	S-1/9	SPT	52.0	39.6	SP	5.0	89.0	6.0	NP	NP	NP	8.3	.	.	.	.	.	.	.
13.50	S-1/10	SPT	61.0	44.0	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.

		<b>SOGNE ENGINEERING CONSULTANTS</b> SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com		<b>BOREHOLE</b> 1		<b>LOCATION</b> N-3161611 E-728359		<b>JOB NO.</b> GT-1997		<b>PAGE NO.</b>													
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																							
<b>CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																							
<b>BORE LOG SHEET</b>																							
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters				Specific Gravity					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m2)	Angle of Internal Friction,	Coefficient of consolidation, Cc		Void Ratio, eo				
15.00	S-1/11	SPT	72.0	49.4	CL	0.0	35.0	65.0	28.8	17.8	11.0	1.86	1.68	10.4	12.8	.	0.16	0.81	.	.			
16.50	S-1/12	SPT	79.0	51.7	CL	.	.	.	.	.	.	.	.	13.7	.	.	.	.	.	.	.		
18.00	S-1/13	SPT	84.0	52.6	CL	0.0	5.0	95.0	30.2	19.9	10.3	1.92	1.63	17.9	.	0.18	0.88	2.35	.	.			
19.50	S-1/14	SPT	91.0	54.5	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.		
21.00	S-1/15	SPT	98.0	56.3	CL	0.0	4.0	96.0	.	.	.	.	.	18.8	.	.	.	.	.	.	.		
22.50	S-1/16	SPT	REFUSAL	REFUSAL	ML	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.35		
24.00	S-1/17	SPT	REFUSAL	REFUSAL	ML	0.0	48.0	52.0	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
25.50	S-1/18	SPT	REFUSAL	REFUSAL	SP	0.0	94.0	6.0	NP	NP	NP	2.20	1.84	19.6	.	.	.	.	.	.	.	.	
27.00	S-1/19	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.	.	.
28.50	S-1/20	SPT	REFUSAL	REFUSAL	SP	4.0	89.0	7.0	NP	NP	NP	.	.	19.4	.	.	.	.	.	.	.	.	.

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1		N-3161611 E-728359		GT-1997															
		STARTING DEPTH		WATER TABLE DEPTH		0.0 M		16.5 M											
TERMINATION DEPTH		40.0 M																	
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-1/21	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
31.50	S-1/15	SPT	REFUSAL		SP	0.0	4.0	96.0	NP	NP	NP	18.8	-	-	-	-	-	-	2.46
33.00	S-1/16	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
34.50	S-1/17	SPT	REFUSAL		SP	0.0	95.0	5.0	NP	NP	NP	19.8	2.28	1.90	-	-	-	-	-
36.00	S-1/18	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
37.50	S-1/19	SPT	REFUSAL		SP	0.0	93.0	7.0	NP	NP	NP	19.2	2.30	1.93	-	-	-	-	2.48
39.00	S-1/20	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
40.00	S-1/21	SPT	REFUSAL		SP	0.0	88.0	12.0	NP	NP	NP	19.6	-	-	-	-	-	-	-


PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.


CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI



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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		2		N-3161741 E-728475		GT-1997													
		STARTING DEPTH		0.0 M		WATER TABLE DEPTH													
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		TERMINATION DEPTH		40.0 M		15.0 M													
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit			Density		Shear Parameters						
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (Vm <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-2/1	SPT	6.0	10.1	CL	0.0	19.0	81.0	-	-	-	3.8	-	-	-	-	-	-	-
1.50	S-2/2	SPT	12.0	17.5	SP	0.0	70.0	30.0	-	-	-	4.8	1.67	1.59	20.0	-	-	-	2.41
3.00	S-2/3	SPT	13.0	15.9	SP	0.0	89.0	11.0	NP	NP	NP	4.9	-	-	-	-	-	-	-
4.50	S-2/4	SPT	12.0	13.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-2/5	SPT	13.0	12.9	SP	0.0	87.0	13.0	NP	NP	NP	5.1	-	-	26.0	-	-	-	-
7.50	S-2/6	SPT	16.0	14.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-2/7	SPT	21.0	18.0	SP	0.0	92.0	8.0	NP	NP	NP	6.8	1.74	1.63	28.0	-	-	-	2.46
10.50	S-2/8	SPT	23.0	18.5	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-2/9	SPT	29.0	22.1	SP	7.0	84.0	9.0	NP	NP	NP	7.4	-	-	-	-	-	-	-
13.50	S-2/10	SPT	27.0	19.5	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-

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						2	N-3161741 E-728475	GT-1997												
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.			STARTING DEPTH	0.0 M	WATER TABLE DEPTH															
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI			TERMINATION DEPTH	40.0 M	15.0 M															
BORE LOG SHEET																				
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>		
15.00	S-2/11	SPT	31.0	21.3	CL	0.0	36.0	64.0	28.6	17.6	11.0	1.83	1.67	9.8	9.8	0.17	0.83	2.33		
16.50	S-2/12	SPT	53.0	34.7	CL	-	-	-	-	-	-	-	-	-	11.2	-	-	-		
18.00	S-2/13	SPT	62.0	38.8	CL	0.0	7.0	93.0	31.6	19.7	11.9	1.88	1.67	14.4	12.6	0.19	0.92	2.35		
19.50	S-2/14	SPT	65.0	38.9	CL	-	-	-	-	-	-	-	-	-	-	-	-	-		
21.00	S-2/15	SPT	69.0	39.6	CL	-	-	-	-	-	-	-	-	-	-	-	-	-		
22.50	S-2/16	SPT	68.0	37.5	CL	0.0	3.0	97.0	-	-	-	-	-	-	14.6	-	-	2.31		
24.00	S-2/17	SPT	REFUSAL	REFUSAL	ML	0.0	49.0	51.0	-	-	-	-	-	-	14.8	-	-	-		
25.50	S-2/18	SPT	REFUSAL	REFUSAL	SP	0.0	94.0	6.0	NP	NP	NP	-	-	-	15.2	-	-	-		
27.00	S-2/19	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	NP	2.18	-	-	17.6	-	-	-		
28.50	S-2/20	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-		

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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																			
<b>CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																			
<b>BORE LOG SHEET</b>																			
<b>Depth (m)</b>	<b>Sample No</b>	<b>Sample Type</b>	<b>Sample</b>		<b>Grain Size Analysis</b>						<b>Density</b>		<b>Shear Parameters</b>						
			<b>Observed N-Value</b>	<b>Corrected N-Value</b>	<b>Symbolic representation</b>	<b>Gravel (%)</b>	<b>Sand (%)</b>	<b>Silt Clay (%)</b>	<b>Liquid limit (%)</b>	<b>Plastic Limit (%)</b>	<b>Atterberg limit</b>	<b>Bulk Density (gm/cc)</b>	<b>Dry Density (gm/cc)</b>	<b>Moisture Content (%)</b>	<b>Cohesion, c (kN/m<sup>2</sup>)</b>	<b>Angle of internal Friction,</b>	<b>Coefficient of consolidation, Cc</b>	<b>Void Ratio, eo</b>	<b>Specific Gravity</b>
30.00	S-2/21	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	2.44
31.50	S-2/22	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	18.1	.	.	.	.	.	.
33.00	S-2/23	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
34.50	S-2/24	SPT	REFUSAL	REFUSAL	SP	0.0	87.0	13.0	NP	NP	NP	2.34	1.98	18.4	.	.	.	.	.
36.00	S-2/25	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
37.50	S-2/26	SPT	REFUSAL	REFUSAL	SP	0.0	91.0	9.0	NP	NP	NP	.	.	18.6	.	.	.	.	.
39.00	S-2/27	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
40.00	S-2/28	SPT	REFUSAL	REFUSAL	SP	0.0	86.0	14.0	NP	NP	NP	.	.	18.9	.	.	.	.	.

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									3	N-3161730 E-728600	GT-1997								
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																			
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				STARTING DEPTH		WATER TABLE DEPTH													
				TERMINATION DEPTH		13.7 M													
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit			Density			Shear Parameters				Specific Gravity	
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc		Void Ratio, eo
0.75	S-3/1	SPT	5.0	8.4	CL	0.0	32.0	68.0	-	-	-	4.6	-	-	-	-	-	-	-
1.50	S-3/2	SPT	10.0	14.6	SP	0.0	71.0	29.0	-	-	-	5.7	1.60	21.0	-	-	-	-	-
3.00	S-3/3	SPT	12.0	14.7	SP	0.0	83.0	17.0	NP	NP	NP	5.9	-	-	-	-	-	-	-
4.50	S-3/4	SPT	13.0	14.2	SP	-	-	-	NP	NP	NP	-	-	25.0	-	-	-	-	2.43
6.00	S-3/5	SPT	13.0	12.9	SP	0.0	86.0	14.0	NP	NP	NP	10.1	1.75	-	-	-	-	-	-
7.50	S-3/6	SPT	17.0	15.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-3/7	SPT	20.0	17.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
10.50	S-3/8	SPT	27.0	21.8	SP	4.0	89.0	7.0	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-3/9	SPT	32.0	24.4	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	2.42
13.50	S-3/10	SPT	36.0	26.0	SP	0.0	87.0	13.0	NP	NP	NP	12.8	1.79	31.0	-	-	-	-	-





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**BOREHOLE**  
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**LOCATION**  
 N-3161730  
 E-728600

**JOB NO.**  
 GT-1997

**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**STARTING DEPTH** 0.0 M **WATER TABLE DEPTH**

**TERMINATION DEPTH** 40.0 M **13.7 M**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis						Density		Shear Parameters				
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Atterberg limit	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc
15.00	S-3/11	SPT	43.0	29.5	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.33
16.50	S-3/12	SPT	50.0	32.7	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
18.00	S-3/13	SPT	56.0	35.0	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
19.50	S-3/14	SPT	64.0	38.3	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
21.00	S-3/15	SPT	72.0	41.3	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
22.50	S-3/16	SPT	78.0	42.9	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
24.00	S-3/17	SPT	82.0	43.4	CL	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
25.50	S-3/18	SPT	89.0	45.3	SP	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
27.00	S-3/19	SPT	95.0	46.6	SP	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41
28.50	S-3/20	SPT	REFUSAL		SP	0.0	10.0	90.0	29.8	16.3	13.5	1.88	1.64	14.6	14.1	0.18	0.90	2.41



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**BOREHOLE**  
 3

**LOCATION**  
 N-3161730  
 E-728600

**JOB NO.**  
 GT-1997

**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters				Specific Gravity						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo							
30.00	S-3/21	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.				
31.50	S-3/22	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	16.1	.	.	.	.	.	.	.	.	.	.			
33.00	S-3/23	SPT	REFUSAL	REFUSAL	SP	0.0	89.0	11.0	NP	NP	NP	16.7	2.15	1.84	.	.	.	.	.	.	.	.			
34.50	S-3/24	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.	.	.		
36.00	S-3/25	SPT	REFUSAL	REFUSAL	SP	0.0	85.0	15.0	NP	NP	NP	17.9	2.20	1.87	.	.	.	.	.	.	.	.	.		
37.50	S-3/26	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.	.	.	.	
39.00	S-3/27	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.	.	.	.	.
40.00	S-3/28	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.	.	.	.	.

**STARTING DEPTH**  
 0.0 M

**TERMINATION DEPTH**  
 40.0 M

**WATER TABLE DEPTH**  
 13.7 M





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BOREHOLE LOCATION JOB NO. PAGE NO.  
4 N-3161546 GT-1997

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

STARTING DEPTH WATER TABLE DEPTH  
0.0 M


TERMINATION DEPTH  
40.0 M 17.5 M

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
15.00	S-4/11	SPT	55.0	37.8	ML	0.0	39.0	61.0	29.5	16.5	13.0	1.86	1.69	9.9	10.2	.	0.18	0.80	.	
16.50	S-4/12	SPT	68.0	44.5	CL	.	.	.	.	.	.	.	.	12.5	.	.	.	.	.	
18.00	S-4/13	SPT	77.0	48.2	CL	0.0	8.0	92.0	31.2	18.5	12.7	1.93	1.68	15.2	.	0.19	0.91	2.31		
19.50	S-4/14	SPT	85.0	50.9	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
21.00	S-4/15	SPT	90.0	51.7	CL	0.0	9.0	91.0	.	.	.	.	.	17.6	.	.	.	.	.	
22.50	S-4/16	SPT	94.0	51.8	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	2.31	
24.00	S-4/17	SPT	97.0	51.4	SM	0.0	52.0	48.0	.	.	.	.	.	18.6	.	.	.	.	.	
25.50	S-4/18	SPT	REFUSAL	REFUSAL	SP	0.0	91.0	9.0	NP	NP	NP	1.99	1.67	19.2	.	.	.	.	.	
27.00	S-4/19	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	
28.50	S-4/20	SPT	REFUSAL	REFUSAL	SP	6.0	94.0	0.0	NP	NP	NP	.	.	19.4	.	.	.	.	.	





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		<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>			5	N-3161502 E-728139	GT-1997												
		<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>			STARTING DEPTH TERMINATION DEPTH		0.0 M 40.0 M	WATER TABLE DEPTH 18.0 M											
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg Limit		Density		Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>	Specific Gravity
15.00	S-5/11	SPT	52.0	35.7	ML	0.0	32.0	68.0	28.8	16.6	12.2	1.85	1.68	10.2	.	.	.	.	
16.50	S-5/12	SPT	59.0	38.6	ML	.	.	.	.	.	.	.	.	12.9	.	.	.	.	
18.00	S-5/13	SPT	66.0	41.3	CL	0.0	6.0	94.0	30.2	18.9	11.3	1.99	1.72	15.6	13.5	0.18	0.88	2.29	
19.50	S-5/14	SPT	79.0	47.3	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.
21.00	S-5/15	SPT	91.0	52.3	CL	0.0	11.0	89.0	.	.	.	.	.	16.5	.	.	.	.	.
22.50	S-5/16	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	.	.	.	2.33	.
24.00	S-5/17	SPT	REFUSAL	REFUSAL	SP	0.0	66.0	34.0	.	.	.	.	.	17.6	.	.	.	.	.
25.50	S-5/18	SPT	REFUSAL	REFUSAL	SP	0.0	88.0	12.0	NP	NP	NP	2.20	1.86	18.2	.	.	.	.	.
27.00	S-5/19	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
28.50	S-5/20	SPT	REFUSAL	REFUSAL	SP	4.0	92.0	4.0	NP	NP	NP	.	.	18.9	.	.	.	.	.



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<b>BOREHOLE</b>	<b>BOREHOLE</b>	<b>JOB NO.</b>	<b>PAGE NO.</b>
	5	GT-1997	
<b>LOCATION</b>	<b>LOCATION</b>	<b>STARTING DEPTH</b>	<b>WATER TABLE DEPTH</b>
	N-3161502 E-728139	0.0 M	18.0 M
<b>TERMINATION DEPTH</b>	40.0 M		


**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**


**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-5/21	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
31.50	S-5/22	SPT	REFUSAL	REFUSAL	CL	0.0	11.0	89.0	-	-	-	-	-	19.1	-	-	-	-	2.34
33.00	S-5/23	SPT	REFUSAL	REFUSAL	CL	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
34.50	S-5/24	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	2.28	1.91	19.3	-	-	-	-	-
36.00	S-5/25	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
37.50	S-5/26	SPT	REFUSAL	REFUSAL	SP	0.0	97.0	3.0	NP	NP	NP	2.31	1.93	19.6	-	-	-	-	2.46
39.00	S-5/27	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
40.00	S-5/28	SPT	REFUSAL	REFUSAL	SP	0.0	86.0	14.0	NP	NP	NP	-	-	19.9	-	-	-	-	-



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		6		N-3161469 E-728206		GT-1997													
		STARTING DEPTH		TERMINATION DEPTH		0.0 M		WATER TABLE DEPTH											
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.								15.0 M											
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI																			
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Density		Shear Parameters									
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-6/1	SPT	6.0	10.1	CL	0.0	17.0	83.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-6/2	SPT	6.0	8.7	SP	0.0	69.0	31.0	-	-	1.64	1.69	3.2	0.9	22.0	-	-	-	2.42
3.00	S-6/3	SPT	9.0	11.0	SP	0.0	83.0	17.0	NP	NP	-	-	3.9	-	-	-	-	-	-
4.50	S-6/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	-	-	-	-	24.0	-	-	-	-
6.00	S-6/5	SPT	15.0	14.9	SP	0.0	91.0	9.0	NP	NP	1.63	1.73	6.3	-	-	-	-	-	2.45
7.50	S-6/6	SPT	19.0	17.5	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
9.00	S-6/7	SPT	22.0	18.9	SP	6.0	86.0	8.0	NP	NP	1.64	1.75	6.9	-	32.0	-	-	-	-
10.50	S-6/8	SPT	27.0	21.8	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
12.00	S-6/9	SPT	41.0	31.2	SP	9.0	82.0	9.0	NP	NP	-	-	7.6	-	-	-	-	-	-
13.50	S-6/10	SPT	53.0	38.3	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-

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					6		N-3161469 E-728206		GT-1997												
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																					
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																					
BORE LOG SHEET																					
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit		Shear Parameters				Specific Gravity					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Density	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )		Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
15.00	S-6/11	SPT	65.0	44.6	ML	0.0	37.0	63.0	28.9	17.5	11.4	1.82	1.65	10.6	13.8	.	.	.	.		
16.50	S-6/12	SPT	72.0	47.2	ML	.	.	.	.	.	.	.	.	13.2	.	.	.	.	.		
18.00	S-6/13	SPT	78.0	48.8	CL	0.0	9.0	91.0	32.2	18.5	13.7	1.94	1.68	15.3	.	0.20	0.94	2.31	.		
19.50	S-6/14	SPT	82.0	49.1	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
21.00	S-6/15	SPT	87.0	50.0	CL	0.0	13.0	87.0	.	.	.	.	.	16.2	.	.	.	.	.	.	
22.50	S-6/16	SPT	92.0	50.7	CL	.	.	.	.	.	.	.	.	.	.	.	.	2.33	.	.	
24.00	S-6/17	SPT	97.0	51.4	SP	0.0	59.0	41.0	.	.	.	.	.	17.2	.	.	.	.	.	.	
25.50	S-6/18	SPT	REFUSAL	REFUSAL	SP	0.0	83.0	17.0	NP	NP	NP	2.18	1.85	18.1	.	.	.	.	.	.	
27.00	S-6/19	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.
28.50	S-6/20	SPT	REFUSAL	REFUSAL	SP	10.0	82.0	8.0	NP	NP	NP	.	.	18.5	.	.	.	.	.	.	.





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**BOREHOLE**  
7  
**LOCATION**  
M-3161463  
E-728130  
**JOB NO.**  
GT-1997  
**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**  
**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH** 0.0 M **WATER TABLE DEPTH** 14.5 M  
**TERMINATION DEPTH** 40.0 M

BORE LOG SHEET																					
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Shear Parameters								
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Density	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity			
0.75	S-7/1	SPT	4.0	6.8	CL	0.0	20.0	80.0	-	-	-	-	-	-	-	-	-	-	-		
1.50	S-7/2	SPT	6.0	8.7	SP	0.0	70.0	30.0	-	-	-	-	-	-	-	-	-	-	-	2.40	
3.00	S-7/3	SPT	9.0	11.0	SP	0.0	82.0	18.0	NP	NP	NP	-	-	-	-	-	-	-	-	-	
4.50	S-7/4	SPT	14.0	15.3	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
6.00	S-7/5	SPT	21.0	20.9	SP	0.0	88.0	12.0	NP	NP	NP	1.63	1.75	1.63	7.3	-	-	-	-	-	2.43
7.50	S-7/6	SPT	26.0	23.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
9.00	S-7/7	SPT	31.0	26.6	SP	12.0	82.0	6.0	NP	NP	NP	1.76	1.76	1.63	8.2	-	-	-	-	-	-
10.50	S-7/8	SPT	35.0	28.2	SP	14.0	77.0	9.0	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
12.00	S-7/9	SPT	41.0	31.2	SP	-	-	-	NP	NP	NP	-	-	-	8.8	-	-	-	-	-	-
13.50	S-7/10	SPT	46.0	33.2	SP	11.0	83.0	6.0	NP	NP	NP	-	-	-	-	-	-	-	-	-	-

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	PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		BOREHOLE					JOB NO.										
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		BOREHOLE		JOB NO.		PAGE NO												
		7		GT-1997														
		STARTING DEPTH		0.0 M		WATER TABLE DEPTH												
		TERMINATION DEPTH		40.0 M		14.5 M												
BORE LOG SHEET																		
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit		Density			Shear Parameters			Specific Gravity		
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (k/m2)		Angle of internal Friction,	Coefficient of consolidation, Cc
15.00	S-7/11	SPT	52.0	35.7	GS	0.0	0.0	83.0	NP	NP	1.85	1.66	11.2	-	-	-	-	-
16.50	S-7/12	SPT	57.0	37.3	CL	0.0	17.0	83.0	17.9	11.6	-	-	12.3	11.5	-	0.18	0.86	-
18.00	S-7/13	SPT	66.0	41.3	CL	-	-	-	-	-	1.96	1.71	14.5	-	-	-	-	2.32
19.50	S-7/14	SPT	71.0	42.5	CL	-	-	-	-	-	-	-	-	-	-	-	-	-
21.00	S-7/15	SPT	75.0	43.1	CL	0.0	16.0	84.0	17.8	12.7	-	-	15.6	-	-	0.19	0.89	-
22.50	S-7/16	SPT	82.0	45.2	CL	-	-	-	-	-	-	-	-	-	-	-	-	2.34
24.00	S-7/17	SPT	87.0	46.1	SP	0.0	62.0	38.0	-	-	-	-	16.9	-	-	-	-	-
25.50	S-7/18	SPT	92.0	46.9	SP	0.0	89.0	11.0	NP	NP	2.11	1.80	17.5	-	-	-	-	-
27.00	S-7/19	SPT	95.0	46.6	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
28.50	S-7/20	SPT	REFUSAL	REFUSAL	SP	8.0	86.0	6.0	NP	NP	-	-	18.5	-	-	-	-	-

		<b>SOIGNE ENGINEERING CONSULTANTS</b> SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com				BOREHOLE		JOB NO.		PAGE NO										
						7		GT-1997												
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>		<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>				STARTING DEPTH		WATER TABLE DEPTH												
						0.0 M		14.5 M												
		BORE LOG SHEET				TERMINATION DEPTH		40.0 M												
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
30.00	S-7/21	SPT	REFUSAL	REFUSAL	SP	0.0	13.0	87.0	NP	NP	.	.	.	.	.	.	.	.	.	
31.50	S-7/22	SPT	REFUSAL	REFUSAL	CL	0.0	13.0	87.0	.	.	18.9	.	.	.	.	.	.	.	2.34	
33.00	S-7/23	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
34.50	S-7/24	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	19.1	1.84	2.19	1.84	.	.	.	.	.	
36.00	S-7/25	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.	.	
37.50	S-7/26	SPT	REFUSAL	REFUSAL	SP	0.0	98.0	2.0	NP	NP	19.6	1.92	2.30	1.92	.	.	.	.	2.45	
39.00	S-7/27	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.	.	2.48
40.00	S-7/28	SPT	REFUSAL	REFUSAL	SP	0.0	88.0	12.0	NP	NP	19.7	.	.	.	.	.	.	.	.	



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<b>BOREHOLE</b>	<b>LOCATION</b>	<b>JOB NO.</b>	<b>PAGE NO</b>
8	N-3162076 E-727943	GT-1997	


**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

<b>STARTING DEPTH</b>	<b>WATER TABLE DEPTH</b>
0.0 M	
<b>TERMINATION DEPTH</b>	<b>15.0 M</b>


**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters							
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity		
0.75	S-8/1	SPT	7.0	11.8	CL	0.0	11.0	89.0	-	-	-	-	-	-	-	-	-	-	-		
1.50	S-8/2	SPT	8.0	11.7	SP	0.0	75.0	25.0	-	-	-	1.65	1.60	3.1	0.7	23.0	-	-	-	2.43	
3.00	S-8/3	SPT	12.0	14.7	SP	0.0	91.0	9.0	NP	NP	NP	-	-	3.5	-	-	-	-	-	-	
4.50	S-8/4	SPT	14.0	15.3	SP	-	-	-	NP	NP	NP	-	-	-	-	29.0	-	-	-	-	-
6.00	S-8/5	SPT	19.0	18.9	SP	0.0	93.0	7.0	NP	NP	NP	1.70	1.62	5.2	-	-	-	-	-	-	2.47
7.50	S-8/6	SPT	21.0	19.3	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
9.00	S-8/7	SPT	25.0	21.4	SP	0.0	95.0	5.0	NP	NP	NP	1.75	1.64	6.8	-	32.0	-	-	-	-	-
10.50	S-8/8	SPT	32.0	25.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
12.00	S-8/9	SPT	37.0	28.2	SP	0.0	92.0	8.0	NP	NP	NP	-	-	8.7	-	-	-	-	-	-	-
13.50	S-8/10	SPT	41.0	29.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-

		<b>SONGNE ENGINEERING CONSULTANTS</b> SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com				<b>BOREHOLE</b> 8		<b>LOCATION</b> N-3162076 E-727943		<b>JOB NO.</b> GT-1997		<b>PAGE NO</b>								
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																				
<b>CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																				
<b>BORE LOG SHEET</b>																				
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
15.00	S-8/11	SPT	50.0	34.3	SP	0.0	90.0	10.0	28.8	17.8	11.0	1.81	1.59	13.5	-	-	-	-	-	-
16.00	S-8/12	SPT	53.0	34.7	CL	5.0	10.0	85.0	-	-	-	-	-	14.9	-	-	-	-	-	-
18.00	S-8/13	SPT	62.0	38.8	SP	0.0	70.0	30.0	30.2	19.9	10.3	1.89	1.63	16.2	-	-	-	-	-	2.33
19.50	S-8/14	SPT	63.0	37.7	SP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.00	S-8/15	SPT	65.0	37.3	SP	0.0	60.0	40.0	-	-	-	-	-	18.2	-	-	-	-	-	-
22.50	S-8/16	SPT	69.0	38.0	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.00	S-8/17	SPT	67.0	35.5	SM	0.0	52.0	48.0	-	-	-	-	-	18.8	-	-	-	-	-	2.40
25.50	S-8/18	SPT	69.0	35.1	SM	-	-	-	-	-	-	2.15	1.81	19.0	-	-	-	-	-	-
27.00	S-8/19	SPT	72.0	35.3	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-8/20	SPT	76.0	35.9	SM	0.0	58.0	42.0	-	-	-	-	-	19.3	-	-	-	-	-	-



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<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																							
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>						<b>STARTING DEPTH</b> 0.0 M		<b>WATER TABLE DEPTH</b>		<b>TERMINATION DEPTH</b> 40.0 M		<b>15.0 M</b>											
<b>BORE LOG SHEET</b>																							
<b>Depth (m)</b>	<b>Sample No</b>	<b>Sample Type</b>	<b>Sample</b>		<b>Grain Size Analysis</b>				<b>Atterberg limit</b>			<b>Density</b>				<b>Moisture Content (%)</b>				<b>Shear Parameters</b>			
			<b>Observed N-Value</b>	<b>Corrected N-Value</b>	<b>Gravel (%)</b>	<b>Sand (%)</b>	<b>Silt Clay (%)</b>	<b>Liquid limit (%)</b>	<b>Plastic Limit (%)</b>	<b>Plasticity Index</b>	<b>Bulk Density (gm/cc)</b>	<b>Dry Density (gm/cc)</b>	<b>Moisture Content (%)</b>	<b>Cohesion, c (t/m<sup>2</sup>)</b>	<b>Angle of Internal Friction,</b>	<b>Coefficient of consolidation, Cc</b>	<b>Void Ratio, eo</b>	<b>Specific Gravity</b>					
30.00	S-8/21	SPT	84.0	38.2	0.0	78.0	22.0	NP	NP	NP	18.8	2.72	1.89	19.8	19.2	2.45	2.47						
31.00	S-8/22	SPT	REFUSAL	REFUSAL	0.0	97.0	3.0	NP	NP	NP	19.8	2.27	1.89	19.8	19.2	2.45	2.47						
33.00	S-8/23	SPT	REFUSAL	REFUSAL	0.0	97.0	3.0	NP	NP	NP	19.8	2.27	1.89	19.8	19.2	2.45	2.47						
34.50	S-8/24	SPT	REFUSAL	REFUSAL	0.0	97.0	3.0	NP	NP	NP	19.8	2.27	1.89	19.8	19.2	2.45	2.47						
36.00	S-8/25	SPT	REFUSAL	REFUSAL	0.0	97.0	3.0	NP	NP	NP	19.8	2.27	1.89	19.8	19.2	2.45	2.47						
37.50	S-8/26	SPT	REFUSAL	REFUSAL	0.0	94.0	6.0	NP	NP	NP	19.2	2.31	1.94	19.2	19.2	2.45	2.47						
39.00	S-8/27	SPT	REFUSAL	REFUSAL	0.0	94.0	6.0	NP	NP	NP	19.2	2.31	1.94	19.2	19.2	2.45	2.47						
40.00	S-8/28	SPT	REFUSAL	REFUSAL	0.0	90.0	10.0	NP	NP	NP	19.6	2.31	1.94	19.2	19.2	2.45	2.47						



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<b>BOREHOLE</b>	<b>LOCATION</b>	<b>JOB NO.</b>	<b>PAGE NO</b>
9	N-3161416 E-727973	GT-1997	
<b>STARTING DEPTH</b>		<b>0.0 M</b>	<b>WATER TABLE DEPTH</b>
<b>TERMINATION DEPTH</b>		<b>40.0 M</b>	<b>14.7 M</b>

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters				
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-9/1	SPT	5.0	8.4	CL	0.0	10.0	90.0	.	.	.	0.00	.	1.9	.	.	.	.	.
1.50	S-9/2	SPT	8.0	11.7	SP	0.0	79.0	21.0	.	.	.	1.69	1.64	2.9	0.6	24.0	.	.	2.40
3.00	S-9/3	SPT	11.0	13.5	SP	0.0	82.0	18.0	NP	NP	NP	.	.	3.6	.	.	.	.	.
4.50	S-9/4	SPT	12.0	13.1	SP	.	.	.	NP	NP	NP	.	.	.	.	25.0	.	.	.
6.00	S-9/5	SPT	14.0	13.9	SP	0.0	86.0	14.0	NP	NP	NP	1.76	1.69	4.2	.	.	.	.	2.43
7.50	S-9/6	SPT	19.0	17.5	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
9.00	S-9/7	SPT	20.0	17.2	SP	0.0	90.0	10.0	NP	NP	NP	1.82	1.73	5.2	.	.	.	.	.
10.50	S-9/8	SPT	25.0	20.2	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
12.00	S-9/9	SPT	30.0	22.8	SP	0.0	96.0	4.0	NP	NP	NP	.	.	7.3	.	35.0	.	.	.
13.50	S-9/10	SPT	34.0	24.5	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.

		<b>SOIGNE ENGINEERING CONSULTANTS</b> SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com			BOREHOLE	LOCATION		JOB NO.	PAGE NO									
						9	N-3161416 E-727973			GT-1997								
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																		
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>																		
					STARTING DEPTH		WATER TABLE DEPTH											
					TERMINATION DEPTH		40.0 M		14.7 M									
<b>BORE LOG SHEET</b>																		
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit		Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
15.00	S-9/11	SPT	39.0	26.8	SP	0.0	98.0	2.0	-	-	11.3	1.69	-	-	-	-	-	-
16.00	S-9/12	SPT	46.0	30.1	CL	0.0	6.0	94.0	-	-	13.5	-	-	-	-	-	-	-
18.00	S-9/13	SPT	53.0	33.2	CL	-	-	-	31.3	19.7	15.9	1.68	-	-	0.19	0.91	2.29	
19.50	S-9/14	SPT	59.0	35.3	CL	0.0	5.0	95.0	-	-	-	-	-	-	-	-	-	-
21.00	S-9/15	SPT	66.0	37.9	CL	-	-	-	-	-	16.6	-	-	-	-	-	-	-
22.50	S-9/16	SPT	72.0	39.7	CL	0.0	29.0	71.0	-	-	-	-	-	-	-	-	-	-
24.00	S-9/17	SPT	80.0	42.4	SP	0.0	71.0	29.0	NP	NP	17.2	-	-	-	-	-	2.31	
25.50	S-9/18	SPT	87.0	44.3	SP	-	-	-	NP	NP	17.8	2.02	1.71	-	-	-	-	-
27.00	S-9/19	SPT	94.0	46.1	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
28.50	S-9/20	SPT	REFUSAL	REFUSAL	SP	0.0	82.0	18.0	NP	NP	18.3	-	-	-	-	-	-	-




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BOREHOLE		LOCATION	JOB NO.	PAGE NO
9		N-3161416 E-727973	GT-1997	
STARTING DEPTH		0.0 M	WATER TABLE DEPTH	
TERMINATION DEPTH		40.0 M	14.7 M	

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.																			
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI																			
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m2)	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-9/21	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
31.00	S-9/22	SPT	REFUSAL	REFUSAL	SP	0.0	89.0	11.0	NP	NP	NP	2.15	-	-	18.8	-	-	-	2.45
33.00	S-9/23	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
34.50	S-9/24	SPT	REFUSAL	REFUSAL	SP	0.0	91.0	9.0	NP	NP	NP	2.24	1.88	-	19.2	-	-	-	-
36.00	S-9/25	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
37.50	S-9/26	SPT	REFUSAL	REFUSAL	SP	0.0	93.0	7.0	NP	NP	NP	2.33	1.95	-	19.5	-	-	-	2.46
39.00	S-9/27	SPT	REFUSAL	REFUSAL	CL	0.0	21.0	79.0	27.6	18.5	9.1	-	-	-	-	-	-	-	-
40.00	S-9/28	SPT	REFUSAL	REFUSAL	CL	0.0	11.0	89.0	-	-	-	-	-	-	19.9	-	-	-	-



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters							
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity		
0.75	S-10/1	SPT	6.0	10.1	CL	0.0	17.0	83.0	-	-	-	-	-	-	-	-	-	-	-		
1.50	S-10/2	SPT	9.0	13.1	SP	0.0	79.0	21.0	-	-	-	1.68	1.63	3.2	0.8	23.0	-	-	-	2.39	
3.00	S-10/3	SPT	9.0	11.0	SP	0.0	82.0	18.0	NP	NP	NP	-	-	3.9	-	-	-	-	-	-	
4.50	S-10/4	SPT	12.0	13.1	SP	-	-	-	NP	NP	NP	-	-	-	-	26.0	-	-	-	-	-
6.00	S-10/5	SPT	13.0	12.9	SP	0.0	93.0	7.0	NP	NP	NP	1.72	1.64	4.8	-	-	-	-	-	-	2.42
7.50	S-10/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
9.00	S-10/7	SPT	18.0	15.4	SP	0.0	96.0	4.0	NP	NP	NP	1.80	1.70	5.9	-	-	-	-	-	-	-
10.50	S-10/8	SPT	23.0	18.5	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
12.00	S-10/9	SPT	26.0	19.8	SP	0.0	91.0	9.0	NP	NP	NP	-	-	7.9	-	32.0	-	-	-	-	-
13.50	S-10/10	SPT	32.0	23.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-

**BORE LOG SHEET**



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BOREHOLE LOCATION BOREHOLE NO. JOB NO. PAGE NO.  
10 N-3161324 6T-1997

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.  
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI  
STARTING DEPTH 0.0 M WATER TABLE DEPTH  
TERMINATION DEPTH 40.0 M 13.7 M

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of Consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-10/11	SPT	40.0	27.5	SP	0.0	98.0	2.0	.	.	.	1.86	1.68	10.5	.	.	.	.	.
16.00	S-10/12	SPT	47.0	30.8	CL	0.0	3.0	97.0	.	.	.	.	.	12.2	.	.	.	.	.
18.00	S-10/13	SPT	52.0	32.5	CL	.	.	.	31.5	18.9	12.6	1.96	1.71	14.6	.	.	0.19	0.92	2.28
19.50	S-10/14	SPT	56.0	33.5	CL	0.0	9.0	91.0	.	.	.	.	.	.	.	.	.	.	.
21.00	S-10/15	SPT	62.0	35.6	CL	.	.	.	.	.	.	.	.	15.9	.	.	.	.	.
22.50	S-10/16	SPT	72.0	39.7	CL	0.0	21.0	79.0	.	.	.	.	.	.	.	.	.	.	.
24.00	S-10/17	SPT	82.0	43.4	SP	0.0	78.0	22.0	NP	NP	NP	.	.	16.9	.	.	.	.	2.32
25.50	S-10/18	SPT	87.0	44.3	SP	.	.	.	NP	NP	NP	2.05	1.74	17.8	.	.	.	.	.
27.00	S-10/19	SPT	94.0	46.1	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
28.50	S-10/20	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	NP	.	.	18.0	.	.	.	.	.



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BOREHOLE LOCATION JOB NO. PAGE NO  
10 N-3161324 GT-1997

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

STARTING DEPTH 0.0 M WATER TABLE DEPTH  
TERMINATION DEPTH 40.0 M 13.7 M

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity		
30.00	S-10/21	SPT	REFUSAL		SP	0.0	94.0	6.0	NP	NP	NP	NP	2.16								
31.00	S-10/22	SPT	REFUSAL		SP	0.0	94.0	6.0	NP	NP	NP	NP			18.3				2.46		
33.00	S-10/23	SPT	REFUSAL		SP				NP	NP	NP	NP									
34.50	S-10/24	SPT	REFUSAL		SP	0.0	97.0	3.0	NP	NP	NP	NP	2.22	1.86	19.3						
36.00	S-10/25	SPT	REFUSAL		SP				NP	NP	NP	NP									
37.50	S-10/26	SPT	REFUSAL		SP	0.0	90.0	10.0	NP	NP	NP	NP	2.31	1.93	19.5					2.48	
39.00	S-10/27	SPT	REFUSAL		CL	0.0	29.0	71.0	27.9	18.3	9.6										
40.00	S-10/28	SPT	REFUSAL		CL	0.0	6.0	94.0							19.6						



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**BOREHOLE**

11

N-3161327  
E-727790

LOCATION

JOB NO.

GT-1997

WATER TABLE DEPTH

0.0 M

40.0 M

13.5 M

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density			Shear Parameters				
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-11/1	SPT	4.0	6.8	CL	0.0	15.0	85.0	.	.	2.6	.	.	.	.	.	.	.	
1.50	S-11/2	SPT	9.0	13.1	SP	0.0	97.0	3.0	NP	NP	3.3	1.64	1.59	27.0	.	.	2.41		
3.00	S-11/3	SPT	11.0	13.5	SP	.	.	.	NP	NP	3.9	.	.	.	.	.	.		
4.50	S-11/4	SPT	12.0	13.1	SP	.	.	.	NP	NP	.	.	.	.	.	.	.		
6.00	S-11/5	SPT	13.0	12.9	SP	0.0	96.0	4.0	NP	NP	5.5	1.69	1.60	28.0	.	.	2.43		
7.50	S-11/6	SPT	16.0	14.7	SP	.	.	.	NP	NP	.	.	.	.	.	.	.		
9.00	S-11/7	SPT	19.0	16.3	SP	0.0	94.0	6.0	NP	NP	6.2	1.72	1.62	.	.	.	.		
10.50	S-11/8	SPT	24.0	19.3	SP	.	.	.	NP	NP	.	.	.	.	.	.	.		
12.00	S-11/9	SPT	28.0	21.3	SP	0.0	93.0	7.0	NP	NP	7.6	.	.	32.0	.	.	.		
13.50	S-11/10	SPT	33.0	23.8	SP	.	.	.	NP	NP	.	.	.	.	.	.	.		






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BOREHOLE		LOCATION		JOB NO.		PAGE NO.													
11		N-3161327 E-727790		GT-1997															
STARTING DEPTH				0.0 M		WATER TABLE DEPTH													
TERMINATION DEPTH				40.0 M		13.5 M													
<b>BORE LOG SHEET</b>																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit		Density		Shear Parameters							
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-11/11	SPT	41.0	28.2	SP	0.0	92.0	8.0	NP	NP	1.88	1.67	12.5	.	.	.	.	.	.
16.00	S-11/12	SPT	48.0	31.4	SP	.	.	.	NP	NP	.	.	14.2	.	.	.	.	.	.
18.00	S-11/13	SPT	52.0	32.5	SP	.	.	.	NP	NP	1.95	1.69	15.3	.	.	.	.	.	2.45
19.50	S-11/14	SPT	58.0	34.7	SP	0.0	95.0	5.0	NP	NP	.	.	.	.	37.0	.	.	.	.
21.00	S-11/15	SPT	67.0	38.5	SP	.	.	.	NP	NP	.	.	17.5	.	.	.	.	.	.
22.50	S-11/16	SPT	76.0	41.9	SP	9.0	83.0	8.0	NP	NP	.	.	.	.	.	.	.	.	.
24.00	S-11/17	SPT	82.0	43.4	SP	16.0	80.0	4.0	NP	NP	.	.	18.2	.	.	.	.	.	2.32
25.50	S-11/18	SPT	88.0	44.8	SP	.	.	.	NP	NP	2.07	1.75	18.6	.	.	.	.	.	.
27.00	S-11/19	SPT	95.0	46.6	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.	.
28.50	S-11/20	SPT	REFUSAL		SP	0.0	93.0	7.0	NP	NP	.	.	19.0	.	.	.	.	.	.


PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

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				11	N-3161327 E-727790	GT-1997	
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>				<b>STARTING DEPTH</b>	<b>WATER TABLE DEPTH</b>		
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>				0.0 M	40.0 M		
				<b>TERMINATION DEPTH</b>	<b>13.5 M</b>		

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Observed N-Value		Corrected N-Value	Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters								
			Observed N-Value	Corrected N-Value			Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity			
30.00	S-11/21	SPT	REFUSAL			SP					NP	NP	NP	.	.	.	.	.	.	.	.		
31.00	S-11/22	SPT	REFUSAL			SP	0.0	84.0	16.0		NP	NP	NP	2.14	1.80	19.2	.	.	.	.	2.35		
33.00	S-11/23	SPT	REFUSAL			CL	0.0	15.0	85.0	29.9	18.6	11.3	.	.	.	.	.	.	.	.	0.87		
34.50	S-11/24	SPT	REFUSAL			CL							2.25	1.88	19.6	.	.	.	.	.	.	.	
36.00	S-11/25	SPT	REFUSAL			CL							.	.	.	.	.	.	.	.	.	.	
37.50	S-11/26	SPT	REFUSAL			CL	0.0	20.0	80.0				2.32	1.93	19.9	.	.	.	.	.	.	2.33	
39.00	S-11/27	SPT	REFUSAL			CL							.	.	.	.	.	.	.	.	.	.	.
40.00	S-11/28	SPT	REFUSAL			CL	0.0	18.0	82.0				.	.	19.9	.	.	.	.	.	.	.	.

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	PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		12	N-3161238.90 E-727620.68	GT-1997	
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI			STARTING DEPTH	TERMINATION DEPTH	0.0 M	WATER TABLE DEPTH
					40.0 M	11.7 M

BORE LOG SHEET																							
Depth (m)	Sample No	Sample Type	Observed N-Value		Symbolic representation	Grain Size Analysis			Atterberg limit			Density	Shear Parameters										
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index		Bulk Density (g/cc)	Dry Density (g/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity			
0.75	S-13/1	SPT	6.0	10.1	CL	0.0	13.0	87.0	-	-	-	-	-	-	-	-	-	-	-	-	-		
1.50	S-13/2	SPT	9.0	16.0	SP	0.0	96.0	4.0	NP	NP	NP	1.64	1.57	4.3	-	28.0	-	-	-	-	-	2.41	
3.00	S-13/3	SPT	11.0	13.5	SP	-	-	-	NP	NP	NP	-	-	5.2	-	-	-	-	-	-	-	-	-
4.50	S-13/4	SPT	12.0	13.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-
6.00	S-13/5	SPT	13.0	12.9	SP	0.0	92.0	8.0	NP	NP	NP	1.66	1.56	6.3	-	30.0	-	-	-	-	-	-	2.44
7.50	S-13/6	SPT	16.0	13.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-
9.00	S-13/7	SPT	18.0	16.3	SP	0.0	98.0	2.0	NP	NP	NP	1.72	1.61	6.9	-	-	-	-	-	-	-	-	-
10.50	S-13/8	SPT	21.0	17.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-
12.00	S-13/9	SPT	25.0	19.8	SP	0.0	90.0	10.0	NP	NP	NP	-	-	7.9	-	-	-	-	-	-	-	-	-
13.50	S-13/10	SPT	28.0	20.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-



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**BOREHOLE**  
 12

**LOCATION**  
 N-3161238.90  
 E-727620.68

**JOB NO.**  
 GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOKDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
 0.0 M


**WATER TABLE DEPTH**

**TERMINATION DEPTH**  
 40.0 M

**11.7 M**

**BORE LOG SHEET**

Depth (m)	Sample No.	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Plasticity Index	Density		Moisture Content (%)	Shear Parameters				Specific Gravity	
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Bulk Density (gm/cc)		Dry Density (gm/cc)	Cohesion, c (fm2)		Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo			
15.00	S-13/11	SPT	31.0	21.3	SP	0.0	87.0	13.0	NP	NP	NP	1.83	1.64	11.9	.	.	.	.	.	.	.
16.00	S-13/12	SPT	38.0	30.8	SP	.	.	.	NP	NP	NP	.	.	12.9	.	.	.	.	.	.	.
18.00	S-13/13	SPT	47.0	34.4	SP	.	.	.	NP	NP	NP	1.64	1.44	13.9	.	.	.	.	.	.	2.43
19.50	S-13/14	SPT	57.0	35.9	SP	0.0	81.0	19.0	NP	NP	NP	.	.	.	.	.	.	.	.	.	.
21.00	S-13/15	SPT	65.0	38.5	SP	.	.	.	NP	NP	NP	.	.	15.2	.	.	.	.	.	.	.
22.50	S-13/16	SPT	72.0	39.7	SP	9.0	79.0	12.0	NP	NP	NP	.	.	.	.	.	.	.	.	.	.
24.00	S-13/17	SPT	76.0	41.3	SP	13.0	83.0	4.0	NP	NP	NP	.	.	15.9	.	.	.	.	.	.	2.49
25.50	S-13/18	SPT	82.0	41.8	SP	.	.	.	NP	NP	NP	2.06	1.76	16.8	.	.	.	.	.	.	.
27.00	S-13/19	SPT	85.0	42.7	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.
28.50	S-13/20	SPT	93.0	44.9	SP	0.0	86.0	14.0	NP	NP	NP	.	.	17.9	.	.	.	.	.	.	.

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					12	N-3161238.90 E-727620.68	GT-1997	
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NORDA.</b>								
<b>CLIENT :- EXECUTIVE ENGINEER (P) Noida Central Division CPWD, New Delhi</b>								
<b>BORE LOG SHEET</b>								
			<b>STARTING DEPTH</b>	<b>0.0 M</b>		<b>WATER TABLE DEPTH</b>		
			<b>TERMINATION DEPTH</b>	<b>40.0 M</b>		<b>11.7 M</b>		

Depth (m)	Sample No	Sample Type	Observed N-Value		Corrected N-Value	Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value			Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>	Specific Gravity
30.00	S-15/21	SPT	REFUSAL	REFUSAL		SP	0.0	90.0	10.0	NP	NP	NP	2.12	1.80	18.0	-	-	-	-	2.32
31.00	S-15/22	SPT	REFUSAL	REFUSAL		SP	0.0	90.0	10.0	NP	NP	NP	2.12	1.80	18.0	-	-	-	-	2.32
33.00	S-15/23	SPT	REFUSAL	REFUSAL		CL	0.0	6.0	94.0	31.6	19.2	12.4	-	-	-	-	-	-	0.19	0.92
34.50	S-15/24	SPT	REFUSAL	REFUSAL		CL	-	-	-	-	-	-	2.22	1.88	18.3	-	-	-	-	-
36.00	S-15/25	SPT	REFUSAL	REFUSAL		CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37.50	S-15/26	SPT	REFUSAL	REFUSAL		CL	0.0	16.0	84.0	-	-	-	2.31	1.94	18.9	-	-	-	-	2.33
39.00	S-15/27	SPT	REFUSAL	REFUSAL		CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00	S-15/28	SPT	REFUSAL	REFUSAL		CL	0.0	19.0	81.0	-	-	-	-	-	19.1	-	-	-	-	-



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**BOREHOLE** LOCATION JOB NO. PAGE NO.  
 13 N-3161359 GT-1997

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**  
**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters				
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
0.75	S-13/1	SPT	5.0	8.5	CL	0.0	11.0	89.0	.	.	1.9	.	.	.	.	.	.	.
1.50	S-13/2	SPT	11.0	15.5	SP	0.0	91.0	9.0	NP	NP	3.9	1.63	1.57	27.0	.	.	2.40	
3.00	S-13/3	SPT	11.0	13.5	SP	.	.	.	NP	NP	4.9	.	.	.	.	.	.	.
4.50	S-13/4	SPT	12.0	13.1	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.
6.00	S-13/5	SPT	13.0	12.9	SP	0.0	93.0	7.0	NP	NP	5.6	1.67	1.58	28.0	.	.	2.42	
7.50	S-13/6	SPT	15.0	13.8	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.
9.00	S-13/7	SPT	19.0	15.4	SP	0.0	96.0	4.0	NP	NP	6.6	1.77	1.66	.	.	.	.	
10.50	S-13/8	SPT	22.0	16.9	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.
12.00	S-13/9	SPT	26.0	19.0	SP	0.0	92.0	8.0	NP	NP	7.4	.	.	32.0	.	.	.	
13.50	S-13/10	SPT	28.0	20.2	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.

**BORE LOG SHEET**



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**BOREHOLE** 13

**LOCATION** N-3161359  
E-727613

**JOB NO.** GT-1997

**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**STARTING DEPTH** 0.0 M

**WATER TABLE DEPTH** 11.4 M

**TERMINATION DEPTH** 40.0 M

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-13/11	SPT	31.0	21.3	SP	0.0	90.0	10.0	.	.	1.86	1.67	11.6	.	.	.	.	.	
16.00	S-13/12	SPT	47.0	24.9	SP	.	.	.	.	.	.	.	13.9	.	.	.	.	.	
18.00	S-13/13	SPT	55.0	29.4	SP	.	.	.	.	.	1.99	1.73	14.9	.	.	.	.	2.46	
19.50	S-13/14	SPT	60.0	34.1	SP	0.0	88.0	12.0	.	.	.	.	.	.	.	.	.	.	.
21.00	S-13/15	SPT	67.0	37.3	SP	.	.	.	.	.	.	.	16.3	.	.	.	.	.	.
22.50	S-13/16	SPT	72.0	39.7	SP	5.0	89.0	6.0	.	.	.	.	.	.	.	.	.	.	.
24.00	S-13/17	SPT	78.0	40.3	SP	12.0	82.0	6.0	.	.	.	.	16.9	.	.	.	.	2.33	.
25.50	S-13/18	SPT	82.0	41.8	SP	.	.	.	NP	NP	2.10	1.78	17.9	.	.	.	.	.	.
27.00	S-13/19	SPT	87.0	41.7	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.	.
28.50	S-13/20	SPT	95.0	43.9	SP	0.0	89.0	11.0	NP	NP	.	.	18.1	.	.	.	.	.	.



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**BOREHOLE** LOCATION JOB NO. PAGE NO  
 13 N-3161359 GT-1997

**STARTING DEPTH** **WATER TABLE DEPTH**  
 0.0 M 11.4 M

**TERMINATION DEPTH**  
 40.0 M

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>	Specific Gravity	
30.00	S-13/21	SPT	REFUSAL	REFUSAL	SP	0.0	86.0	14.0	NP	NP	NP	2.16	1.83	18.3	.	.	.	.	2.34	
31.00	S-13/22	SPT	REFUSAL	REFUSAL	SP	0.0	86.0	14.0	NP	NP	NP	2.16	1.83	18.3	.	.	.	.	2.34	
33.00	S-13/23	SPT	REFUSAL	REFUSAL	CL	0.0	11.0	89.0	30.2	18.2	12.0	.	.	.	.	.	.	0.88	.	
34.50	S-13/24	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	2.24	1.89	18.6	.	.	.	.	.	.
36.00	S-13/25	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
37.50	S-13/26	SPT	REFUSAL	REFUSAL	CL	0.0	17.0	83.0	.	.	.	2.35	1.97	19.2	.	.	.	.	2.31	
39.00	S-13/27	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
40.00	S-13/28	SPT	REFUSAL	REFUSAL	CL	0.0	16.0	84.0	.	.	.	.	.	.	.	.	.	.	.	.





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BOREHOLE LOCATION JOB NO. PAGE NO.  
14 N-3161567 GT-1997  
E-727547


PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

STARTING DEPTH 0.0 M WATER TABLE DEPTH  
TERMINATION DEPTH 40.0 M 12.5 M

BORE LOG SHEET

Depth (m)	Sample #	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
0.75	S-14/1	SPT	6.0	10.1	CL	0.0	4.0	96.0	-	-	2.3	-	-	-	-	-	-	-
1.50	S-14/2	SPT	7.0	10.2	SP	0.0	73.0	27.0	NP	NP	2.9	1.61	0.9	22.0	-	-	-	2.42
3.00	S-14/3	SPT	10.0	12.3	SP	0.0	94.0	6.0	NP	NP	3.3	-	-	-	-	-	-	-
4.50	S-14/4	SPT	11.0	12.0	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
6.00	S-14/5	SPT	13.0	12.9	SP	0.0	95.0	5.0	NP	NP	4.8	1.64	-	27.0	-	-	-	2.48
7.50	S-14/6	SPT	17.0	15.6	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
9.00	S-14/7	SPT	19.0	16.3	SP	5.0	92.0	3.0	NP	NP	5.7	1.67	-	-	-	-	-	-
10.50	S-14/8	SPT	22.0	17.7	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
12.00	S-14/9	SPT	27.0	20.6	SP	0.0	95.0	5.0	NP	NP	7.5	-	-	33.0	-	-	-	-
13.50	S-14/10	SPT	31.0	22.4	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-

		<b>SONGME ENGINEERING CONSULTANTS</b> SCF 23, AM, Manimajra, Chandigarh email: songmeconsultants@gmail.com			BOREHOLE		JOB NO.		PAGE NO											
					14		GT-1997													
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>																				
<b>CLIENT :- EXECUTIVE ENGINEER (P) NORDA CENTRAL DIVISION CPWD, NEW DELHI</b>					STARTING DEPTH		WATER TABLE DEPTH		TERMINATION DEPTH											
					0.0 M		40.0 M		12.5 M											
<b>BORE LOG SHEET</b>																				
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
15.00	S-14/11	SPT	35.0	24.0	SP	0.0	93.0	7.0	-	-	1.82	1.61	13.2	-	-	-	-	-	-	
16.00	S-14/12	SPT	41.0	26.9	SP	0.0	88.0	12.0	-	-	-	-	14.9	-	-	-	-	-	-	
18.00	S-14/13	SPT	54.0	33.8	SP	-	-	-	-	-	1.90	1.64	15.8	-	37.0	-	-	-	2.32	
19.50	S-14/14	SPT	62.0	37.1	SP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
21.00	S-14/15	SPT	73.0	41.9	SP	0.0	85.0	15.0	-	-	-	-	16.9	-	-	-	-	-	-	
22.00	S-14/16	SPT	78.0	43.0	CL	0.0	14.0	86.0	-	-	-	-	-	-	-	-	-	-	-	
24.00	S-14/17	SPT	83.0	44.0	CL	0.0	9.0	91.0	-	-	-	-	18.0	-	-	-	-	-	2.41	
25.50	S-14/18	SPT	88.0	44.8	CL	-	-	-	31.5	16.8	14.7	2.11	1.77	19.2	-	0.19	0.92	-	-	
27.00	S-14/19	SPT	94.0	46.1	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28.50	S-14/20	SPT	REFUSAL	REFUSAL	CL	0.0	11.0	89.0	-	-	-	-	19.3	-	-	-	-	-	-	



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<b>BOREHOLE</b>	<b>LOCATION</b>	<b>JOB NO.</b>	<b>PAGE NO</b>
	N-3161567 E-727547		
14	<b>STARTING DEPTH</b>	0.0 M	<b>WATER TABLE DEPTH</b>
	E-727547		

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density	Shear Parameters								
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index		Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (Nm <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
30.00	S-14/21	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
31.50	S-14/22	SPT	REFUSAL	REFUSAL	CL	0.0	18.0	82.0	-	-	-	2.19	-	-	19.4	-	-	0.20	0.94	2.47	
32.50	S-14/23	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
34.50	S-14/24	SPT	REFUSAL	REFUSAL	SP	10.0	80.0	10.0	NP	NP	NP	2.25	1.88	19.9	-	-	-	-	-	-	
36.00	S-14/25	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
37.50	S-14/26	SPT	REFUSAL	REFUSAL	SP	11.0	82.0	7.0	NP	NP	NP	2.31	1.93	20.0	-	-	-	-	-	2.47	
39.00	S-14/27	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
40.00	S-14/28	SPT	REFUSAL	REFUSAL	SP	9.0	80.0	11.0	NP	NP	NP	-	-	20.4	-	-	-	-	-	-	-



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**BOREHOLE**  
 15

**LOCATION**  
 N-3161291  
 E-727514

**JOB NO.**  
 GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH** 0.0 M **WATER TABLE DEPTH** 12.9 M

**TERMINATION DEPTH** 40.0 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit			Density		Shear Parameters						
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-15/1	SPT	5.0	8.5	CL	0.0	25.0	75.0	.	.	.	.	2.4	.	.	.	.	.	.
1.50	S-15/2	SPT	6.0	8.8	SP	0.0	84.0	16.0	NP	NP	NP	1.58	4.6	.	24.0	.	.	2.41	
3.00	S-15/3	SPT	9.0	11.0	SP	.	.	.	NP	NP	NP	.	5.8	.	.	.	.	.	
4.50	S-15/4	SPT	10.0	10.9	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	
6.00	S-15/5	SPT	13.0	12.9	SP	0.0	95.0	5.0	NP	NP	NP	1.69	6.5	.	27.0	.	.	2.45	
7.50	S-15/6	SPT	20.0	18.4	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	
9.00	S-15/7	SPT	19.0	16.3	SP	0.0	92.0	8.0	NP	NP	NP	1.76	7.3	.	31.0	.	.	.	
10.50	S-15/8	SPT	24.0	19.4	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	
12.00	S-15/9	SPT	27.0	20.6	SP	0.0	90.0	10.0	NP	NP	NP	.	8.6	.	.	.	.	.	
13.50	S-15/10	SPT	32.0	23.2	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	



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**BOREHOLE** LOCATION **JOB NO.** **PAGE NO.**  
 15 N-3161291 GT-1997

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH** **WATER TABLE DEPTH**  
 0.0 M

**TERMINATION DEPTH**  
 40.0 M

12.9 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-15/11	SPT	41.0	28.2	SP	0.0	96.0	4.0	NP	NP	NP	1.85	1.68	10.2	.	35.0	.	.	.
16.00	S-15/12	SPT	43.0	28.2	SP	.	.	.	NP	NP	NP	.	.	11.3	.	.	.	.	2.47
18.00	S-15/13	SPT	54.0	33.9	SP	.	.	.	NP	NP	NP	1.92	1.70	13.2	.	.	.	.	2.43
19.50	S-15/14	SPT	65.0	39.1	SP	0.0	88.0	12.0	NP	NP	NP	.	.	.	.	.	.	.	.
21.00	S-15/15	SPT	77.0	44.4	SP	.	.	.	NP	NP	NP	.	.	15.6	.	.	.	.	.
22.50	S-15/16	SPT	85.0	47.0	SP	9.0	83.0	8.0	NP	NP	NP	.	.	.	.	.	.	.	.
24.00	S-15/17	SPT	93.0	49.4	SP	6.0	89.0	5.0	NP	NP	NP	.	.	16.6	.	.	.	.	2.50
25.50	S-15/18	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	2.11	1.80	17.5	.	.	.	.	.
27.00	S-15/19	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
28.50	S-15/20	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	NP	.	.	18.5	.	.	.	.	.



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**BOREHOLE** 15  
**LOCATION** N-3161291  
 E-727514  
**JOB NO.** GT-1997  
**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

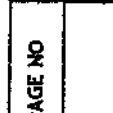
**STARTING DEPTH** 0.0 M  
**WATER TABLE DEPTH**  
**TERMINATION DEPTH** 40.0 M  
 12.9 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
30.00	S-15/21	SPT	REFUSAL	REFUSAL	SP	0.0	89.0	11.0	NP	NP	NP	NP	2.13	1.79	18.9	.	.	.	.	2.31
31.00	S-15/22	SPT	REFUSAL	REFUSAL	SP	0.0	89.0	11.0	NP	NP	NP	NP	2.13	1.79	18.9	.	.	.	.	2.31
33.00	S-15/23	SPT	REFUSAL	REFUSAL	CL	0.0	10.0	90.0	31.2	19.2	12.0	.	2.18	1.82	19.6	.	.	0.19	.	.
34.50	S-15/24	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	2.18	1.82	19.6	.	.	.	.	.
36.00	S-15/25	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
37.50	S-15/26	SPT	REFUSAL	REFUSAL	CL	0.0	19.0	81.0	.	.	.	.	2.32	1.95	19.2	.	.	.	.	2.33
39.00	S-15/27	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	19.9	.	.	.	.	.
40.00	S-15/28	SPT	REFUSAL	REFUSAL	CL	0.0	13.0	87.0	.	.	.	.	.	.	19.6	.	.	.	.	.

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						16	N-3161503 E-727378		
<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>					<b>STARTING DEPTH</b>		<b>WATER TABLE DEPTH</b>		
<b>CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>					<b>TERMINATION DEPTH</b>		<b>13.2 M</b>		

BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis					Density		Shear Parameters							
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of Consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-16/1	SPT	4.0	6.8	CL	0.0	10.0	90.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-16/2	SPT	7.0	10.2	SP	0.0	71.0	29.0	NP	NP	NP	1.61	1.56	3.3	0.7	21.0	-	-	2.42
3.00	S-16/3	SPT	9.0	11.0	SP	0.0	95.0	5.0	NP	NP	NP	-	-	3.6	-	-	-	-	-
4.50	S-16/4	SPT	12.0	13.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-16/5	SPT	13.0	12.9	SP	9.0	85.0	6.0	NP	NP	NP	1.64	1.57	4.5	-	27.0	-	-	2.45
7.50	S-16/6	SPT	16.0	14.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-16/7	SPT	18.0	15.5	SP	11.0	83.0	6.0	NP	NP	NP	1.72	1.64	4.9	-	-	-	-	-
10.50	S-16/8	SPT	23.0	18.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-16/9	SPT	26.0	19.8	SP	7.0	83.0	10.0	NP	NP	NP	-	-	7.6	-	33.0	-	-	-
13.50	S-16/10	SPT	32.0	23.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-



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**BOREHOLE**  
 16

**LOCATION**  
 N-3161503  
 E-727378

**JOB NO.**  
 GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH** 0.0 M **WATER TABLE DEPTH**

**TERMINATION DEPTH** 40.0 M **13.2 M**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters				Specific Gravity	
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo			
15.00	S-16/11	SPT	39.0	26.9	SP	13.0	82.0	5.0	NP	NP	NP	1.76	1.56	12.5	-	-	-	-	-	-	
16.00	S-16/12	SPT	46.0	30.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
18.00	S-16/13	SPT	60.0	37.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
19.50	S-16/14	SPT	70.0	42.1	SP	0.0	95.0	5.0	NP	NP	NP	1.92	1.66	15.6	-	-	-	-	-	-	2.40
21.00	S-16/15	SPT	88.0	50.7	CL	0.0	15.0	85.0	30.2	19.9	10.3	-	-	16.5	-	-	0.18	0.88	-	-	-
22.50	S-16/16	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.00	S-16/17	SPT	REFUSAL	REFUSAL	CL	0.0	13.0	87.0	30.9	19.5	11.4	-	-	-	-	-	0.19	0.90	2.35	-	-
25.50	S-16/18	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	2.01	1.70	18.3	-	-	-	-	-	-	-
27.00	S-16/19	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-16/20	SPT	REFUSAL	REFUSAL	CL	0.0	9.0	91.0	31.6	19.6	12.0	-	-	18.8	-	-	0.19	0.92	-	-	-



SIL		SOGNE ENGINEERING CONSULTANTS SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com			BOREHOLE	LOCATION	JOB NO.	PAGE NO										
		PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.			16	N-3161503 E-727378	GT-1997											
		CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI			STARTING DEPTH		0.0 M	WATER TABLE DEPTH										
		BORE LOG SHEET			TERMINATION DEPTH		40.0 M	13.2 M										
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit		Density		Shear Parameters						
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (v/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
30.00	S-16/21	SPT	REFUSAL	REFUSAL	CL	0.0	97.0	32.5	19.1	13.4	2.06	1.73	19.4	.	.	.	.	2.30
31.00	S-16/22	SPT	REFUSAL	REFUSAL	CL	0.0	97.0	32.5	19.1	13.4	2.06	1.73	19.4	.	.	.	.	2.30
33.00	S-16/23	SPT	REFUSAL	REFUSAL	CL	0.0	97.0	32.5	19.1	13.4	2.06	1.73	19.4	.	.	.	.	2.30
34.50	S-16/24	SPT	REFUSAL	REFUSAL	CL	0.0	91.0	32.9	19.8	13.1	2.17	1.81	19.6	.	.	0.21	0.96	.
36.00	S-16/25	SPT	REFUSAL	REFUSAL	CL	0.0	91.0	32.9	19.8	13.1	2.17	1.81	19.6	.	.	.	.	.
37.50	S-16/26	SPT	REFUSAL	REFUSAL	CL	0.0	81.0	32.9	19.8	13.1	2.29	1.91	19.9	.	.	.	.	2.29
39.00	S-16/27	SPT	REFUSAL	REFUSAL	CL	0.0	81.0	32.9	19.8	13.1	2.29	1.91	19.9	.	.	.	.	.
40.00	S-16/28	SPT	REFUSAL	REFUSAL	CL	0.0	85.0	32.9	19.8	13.1	2.29	1.91	20.2	.	.	.	.	.



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

BOREHOLE		LOCATION		JOB NO.		PAGE NO													
17		N-3161237 E-727376		GT-1997															
STARTING DEPTH				0.0 M		WATER TABLE DEPTH													
TERMINATION DEPTH				40.0 M		12.5 M													
Depth (m)	Sample No	Sample Type	Grain Size Analysis			Density		Shear Parameters											
			Gravel (%)	Sand (%)	Silt Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity			
0.75	S-17/1	SPT	0.0	11.0	89.0	CL	10.1	6.0	10.1	CL	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
1.50	S-17/2	SPT	0.0	79.0	21.0	SP	10.2	7.0	10.2	SP	0.0	1.62	1.58	2.5	0.7	24.0	-	2.40	
3.00	S-17/3	SPT	0.0	96.0	4.0	SP	14.7	12.0	14.7	SP	0.0	-	-	3.7	-	-	-	-	-
4.50	S-17/4	SPT	-	-	-	SP	17.5	16.0	17.5	SP	-	-	-	-	-	-	-	-	-
6.00	S-17/5	SPT	9.0	86.0	5.0	SP	26.9	27.0	26.9	SP	9.0	1.62	1.55	4.6	-	33.0	-	-	2.42
7.50	S-17/6	SPT	-	-	-	SP	31.3	34.0	31.3	SP	-	-	-	-	-	-	-	-	-
9.00	S-17/7	SPT	10.0	82.0	8.0	SP	30.1	35.0	30.1	SP	10.0	1.73	1.65	4.9	-	-	-	-	-
10.50	S-17/8	SPT	-	-	-	SP	30.7	38.0	30.7	SP	-	-	-	-	-	-	-	-	-
12.00	S-17/9	SPT	8.0	88.0	4.0	SP	32.8	43.0	32.8	SP	8.0	-	-	7.2	-	35.8	-	-	-
13.50	S-17/10	SPT	-	-	-	SP	37.6	52.0	37.6	SP	-	-	-	-	-	-	-	-	-



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<b>BOREHOLE</b>	<b>LOCATION</b>	<b>JOB NO.</b>	<b>PAGE NO</b>
17	N-3161237 E-727376	GT-1997	
<b>STARTING DEPTH</b>		<b>0.0 M</b>	<b>WATER TABLE DEPTH</b>
<b>TERMINATION DEPTH</b>		<b>40.0 M</b>	<b>12.5 M</b>

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density		Shear Parameters				Specific Gravity		
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (Nm <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc		Void Ratio, eo	
15.00	S-17/11	SPT	56.0	38.6	SP	11.0	83.0	6.0	NP	NP	NP	1.83	1.62	12.8	.	.	.	.	.	
16.00	S-17/12	SPT	60.0	39.4	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
18.00	S-17/13	SPT	69.0	43.3	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
19.50	S-17/14	SPT	75.0	45.1	SP	0.0	84.0	16.0	NP	NP	NP	1.91	1.67	14.6	.	36.00	.	.	2.44	
21.00	S-17/15	SPT	81.0	46.7	CL	0.0	15.0	85.0	31.3	19.7	11.6	.	.	15.6	.	.	.	.	.	.
22.50	S-17/16	SPT	87.0	48.1	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
24.00	S-17/17	SPT	REFUSAL		CL	0.0	9.0	91.0	31.6	17.9	13.7	.	.	.	.	.	0.19	0.95	2.33	
25.50	S-17/18	SPT	REFUSAL		CL	.	.	.	.	.	.	2.00	1.71	17.0	.	.	.	.	.	.
27.00	S-17/19	SPT	REFUSAL		CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
28.50	S-17/20	SPT	REFUSAL		CL	0.0	5.0	95.0	32.1	18.9	13.2	.	.	18.3	.	.	.	.	.	.

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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		17		GT-1997															
		N-3161237 E-72376		0.0 M		WATER TABLE DEPTH													
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		STARTING DEPTH		TERMINATION DEPTH		12.5 M													
		TERMINATION DEPTH		40.0 M															
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit	Density		Shear Parameters							
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)		Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (Nm <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
30.00	S-17/21	SPT	REFUSAL	REFUSAL	CL	0.0	10.0	90.0	31.6	18.7	12.9	2.11	1.77	19.1	.	.	0.19	0.92	2.31
31.00	S-17/22	SPT	REFUSAL	REFUSAL	CL	0.0	6.0	94.0	31.2	19.5	11.7	2.21	1.85	19.3	.	.	.	.	.
33.00	S-17/23	SPT	REFUSAL	REFUSAL	CL	0.0	0.0	100.0	31.2	19.5	11.7	2.21	1.85	19.3	.	.	.	.	.
34.50	S-17/24	SPT	REFUSAL	REFUSAL	CL	0.0	6.0	94.0	31.2	19.5	11.7	2.21	1.85	19.3	.	.	.	.	.
36.00	S-17/25	SPT	REFUSAL	REFUSAL	CL	0.0	0.0	100.0	31.2	19.5	11.7	2.21	1.85	19.3	.	.	0.20	0.94	.
37.50	S-17/26	SPT	REFUSAL	REFUSAL	CL	0.0	19.0	81.0	31.2	19.5	11.7	2.31	1.93	19.6	.	.	.	.	2.33
39.00	S-17/27	SPT	REFUSAL	REFUSAL	CL	0.0	0.0	100.0	31.2	19.5	11.7	2.31	1.93	19.6	.	.	.	.	.
40.00	S-17/28	SPT	REFUSAL	REFUSAL	CL	0.0	16.0	84.0	31.2	19.5	11.7	2.31	1.93	19.6	.	.	.	.	.

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		17		N-3161321 E-727209		GT-1997														
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.																				
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI																				
BORE LOG SHEET																				
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
0.75	S-18/1	SPT	5.0	8.5	CL	0.0	13.0	87.0	-	-	1.9	-	-	-	-	-	-	-	-	-
1.50	S-18/2	SPT	7.0	10.2	SP	0.0	82.0	18.0	NP	NP	2.9	1.61	0.5	24.0	-	-	-	-	-	2.41
3.00	S-18/3	SPT	11.0	13.5	SP	0.0	89.0	11.0	NP	NP	3.3	-	-	-	-	-	-	-	-	-
4.50	S-18/4	SPT	13.0	14.2	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-
6.00	S-18/5	SPT	17.0	16.9	SP	9.0	82.0	9.0	NP	NP	5.2	1.61	-	29.0	-	-	-	-	-	2.46
7.50	S-18/6	SPT	19.0	17.5	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-
9.00	S-18/7	SPT	24.0	20.6	SP	11.0	83.0	6.0	NP	NP	5.9	1.66	-	-	-	-	-	-	-	-
10.50	S-18/8	SPT	28.0	22.6	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-
12.00	S-18/9	SPT	32.0	24.4	SP	13.0	80.0	7.0	NP	NP	7.6	-	-	34.0	-	-	-	-	-	-
13.50	S-18/10	SPT	36.0	26.1	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-



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BOREHOLE		LOCATION	JOB NO.	PAGE NO																	
17		N-3161321 E-727209	GT-1997																		
STARTING DEPTH		TERMINATION DEPTH	WATER TABLE DEPTH																		
0.0 M		40.0 M	12.7 M																		
BORE LOG SHEET																					
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters							
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity		
15.00	S-18/11	SPT	43.0	29.6	SP	11.0	86.0	3.0	NP	NP	NP	1.86	1.66	11.9	-	-	-	-	-		
16.00	S-18/12	SPT	49.0	32.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	
18.00	S-18/13	SPT	57.0	35.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	
19.50	S-18/14	SPT	64.0	38.5	SP	0.0	87.0	13.0	NP	NP	NP	1.89	1.67	13.5	-	-	-	-	-	2.41	
21.00	S-18/15	SPT	72.0	41.5	CL	0.0	19.0	81.0	31.6	19.5	12.1	-	-	14.6	-	-	0.19	0.92	-	-	
22.50	S-18/16	SPT	78.0	43.1	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24.00	S-18/17	SPT	85.0	45.2	CL	0.0	16.0	84.0	32.0	17.9	14.1	-	-	-	-	-	0.20	0.93	2.31	-	
25.50	S-18/18	SPT	92.0	47.0	CL	-	-	-	-	-	-	1.94	1.67	16.5	-	-	-	-	-	-	-
27.00	S-18/19	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-18/20	SPT	REFUSAL	REFUSAL	CL	0.0	9.0	91.0	32.6	18.5	14.1	-	-	17.6	-	-	-	-	-	-	-



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		17		N-3161321 E-727209		GT-1997														
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.																				
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI																				
BORE LOG SHEET																				
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit		Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
30.00	S-18/21	SPT	REFUSAL		CL	0.0	11.0	89.0	32.2	18.2	14.0	2.06	1.75	17.9	-	-	-	-	-	2.29
31.00	S-18/22	SPT	REFUSAL		CL	0.0	4.0	96.0	32.6	19.5	13.1	2.78	1.93	18.3	-	-	0.20	0.95	-	-
33.00	S-18/23	SPT	REFUSAL		CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34.50	S-18/24	SPT	REFUSAL		CL	0.0	15.0	85.0	-	-	-	2.34	1.97	18.9	-	-	-	-	-	2.35
36.00	S-18/25	SPT	REFUSAL		CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37.50	S-18/26	SPT	REFUSAL		CL	0.0	13.0	87.0	-	-	-	-	-	-	-	-	-	-	-	-
39.00	S-18/27	SPT	REFUSAL		CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00	S-18/28	SPT	REFUSAL		CL	0.0	13.0	87.0	-	-	-	-	-	-	-	-	-	-	-	-



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**BOREHOLE**  
19

**LOCATION**  
N-3161706  
E-727650

**JOB NO.**  
GT-1997

**STARTING DEPTH**  
0.0 M

**TERMINATION DEPTH**  
40.0 M

**WATER TABLE DEPTH**  
13.4 M

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-19/1	SPT	5.0	8.5	CL	0.0	6.0	94.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-19/2	SPT	7.0	10.2	SP	0.0	70.0	30.0	NP	NP	NP	1.68	1.63	3.3	0.6	23.0	-	-	2.41
3.00	S-19/3	SPT	9.0	11.0	SP	0.0	90.0	10.0	NP	NP	NP	-	-	4.6	-	-	-	-	-
4.50	S-19/4	SPT	11.0	12.0	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-19/5	SPT	12.0	11.9	SP	0.0	93.0	7.0	NP	NP	NP	1.70	1.61	5.9	-	27.0	-	-	2.44
7.50	S-19/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-19/7	SPT	19.0	16.3	SP	3.0	91.0	6.0	NP	NP	NP	1.75	1.64	6.6	-	-	-	-	-
10.50	S-19/8	SPT	22.0	17.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-19/9	SPT	27.0	20.6	SP	0.0	93.0	7.0	NP	NP	NP	-	-	7.2	-	33.0	-	-	-
13.50	S-19/10	SPT	34.0	24.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-





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PAGE NO

JOB NO.

LOCATION

BOREHOLE

STARTING DEPTH

TERMINATION DEPTH

WATER TABLE DEPTH

0.0 M

40.0 M

13.4 M

GT-1997

N-3161706  
E-727650

19

0.0 M

40.0 M

13.4 M

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis						Atterberg limit		Density				Shear Parameters				Specific Gravity							
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo										
15.00	S-19/11	SPT	39.0	26.9	4S	0.0	86.0	14.0	NP	NP	NP	NP	NP	NP	1.84	1.65	11.8	-	-	-	-	-	-	-	-	-	-	
16.00	S-19/12	SPT	46.0	30.2	SP	0.0	83.0	17.0	NP	NP	NP	NP	NP	NP	-	-	13.5	-	-	-	-	-	-	-	-	-	-	-
18.00	S-19/13	SPT	53.0	33.3	SP	-	-	-	NP	NP	NP	NP	NP	NP	1.89	1.65	14.5	-	-	-	-	-	-	-	-	-	-	2.31
19.50	S-19/14	SPT	60.0	36.1	SP	-	-	-	NP	NP	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.00	S-19/15	SPT	68.0	39.2	SP	0.0	81.0	19.0	NP	NP	NP	NP	NP	NP	-	-	15.6	-	-	-	-	-	-	-	-	-	-	-
22.00	S-19/16	SPT	73.0	40.4	CL	0.0	17.0	83.0	28.6	16.2	12.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.00	S-19/17	SPT	77.0	40.9	CL	0.0	11.0	89.0	-	-	-	-	-	-	-	-	17.8	-	-	-	-	-	-	-	-	-	-	2.33
25.50	S-19/18	SPT	81.0	41.4	CL	-	-	-	-	-	-	-	-	-	2.06	1.74	18.3	-	-	-	-	-	-	-	-	-	-	-
27.00	S-19/19	SPT	89.0	43.8	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-19/20	SPT	94.0	46.5	CL	0.0	13.0	87.0	-	-	-	-	-	-	-	-	18.6	-	-	-	-	-	-	-	-	-	-	-

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	19	N-3161706 E-77/650				GT-1997										
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.			STARTING DEPTH	0.0 M	WATER TABLE DEPTH											
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI			TERMINATION DEPTH	40.0 M	13.4 M											
BORE LOG SHEET																
Depth (m)	Sample No	Sample Type	Grain Size Analysis			Symbolic representation	Atterberg limit			Moisture Content (%)	Shear Parameters					
			Gravel (%)	Sand (%)	Silt Clay (%)		Liquid limit (%)	Plastic Limit (%)	Plasticity Index		Bulk Density (gm/cc)	Density	Dry Density (gm/cc)	Cohesion, c (v/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc
30.00	S-19/21	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
31.50	S-19/22	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
32.50	S-19/23	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
34.50	S-19/24	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
36.00	S-19/25	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
37.50	S-19/26	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
39.00	S-19/27	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46
40.00	S-19/28	SPT	0.0	20.0	80.0	30.5	17.3	13.2	19.6	1.80	2.15	1.80	19.6	0.19	0.89	2.46



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**BOREHOLE**  
 20

**LOCATION**  
 N-3161606  
 E-727696

**JOB NO.**  
 GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH** 0.0 M **WATER TABLE DEPTH** 13.2 M

**TERMINATION DEPTH** 40.0 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Shear Parameters							
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Density	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-20/1	SPT	5.0	8.5	CL	0.0	7.0	93.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-20/2	SPT	6.0	8.8	SP	0.0	71.0	29.0	NP	NP	NP	1.67	1.61	3.9	0.8	20.0	-	-	2.40
3.00	S-20/3	SPT	9.0	11.0	SP	0.0	89.0	11.0	NP	NP	NP	-	-	3.9	-	-	-	-	-
4.50	S-20/4	SPT	11.0	12.0	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-20/5	SPT	14.0	13.9	SP	0.0	92.0	8.0	NP	NP	NP	1.72	1.62	6.3	-	29.0	-	-	2.43
7.50	S-20/6	SPT	16.0	14.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-20/7	SPT	20.0	17.2	SP	4.0	93.0	3.0	NP	NP	NP	1.79	1.66	7.6	-	-	-	-	-
10.50	S-20/8	SPT	23.0	18.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-20/9	SPT	28.0	21.4	SP	0.0	91.0	9.0	NP	NP	NP	-	-	7.9	-	-	-	-	-
13.50	S-20/10	SPT	34.0	24.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-






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	20	N-3161606 E-727696	GT-1997	

<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>		<b>STARTING DEPTH</b>	<b>WATER TABLE DEPTH</b>
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>		0.0 M	
<b>BORE LOG SHEET</b>		<b>TERMINATION DEPTH</b>	13.2 M

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
30.00	S-20/21	SPT	REFUSAL	REFUSAL	CL	-	-	-	-	-	-	-	-	-	-	-	-	-
31.50	S-20/22	SPT	REFUSAL	REFUSAL	CL	0.0	19.0	81.0	31.2	18.3	12.9	2.19	1.84	19.3	-	0.19	0.91	2.44
32.50	S-20/23	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-
34.50	S-20/24	SPT	REFUSAL	REFUSAL	SP	6.0	83.0	11.0	NP	NP	NP	2.27	1.90	19.5	-	-	-	-
36.00	S-20/25	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-
37.50	S-20/26	SPT	REFUSAL	REFUSAL	SP	5.0	81.0	14.0	NP	NP	NP	2.31	1.93	19.9	-	-	-	2.46
39.00	S-20/27	SPT	REFUSAL	REFUSAL	SP	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00	S-20/28	SPT	REFUSAL	REFUSAL	SP	8.0	81.0	11.0	-	-	-	-	-	20.1	-	-	-	-

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			21	N-3161431 E-727774	GT-1997	
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.			STARTING DEPTH	WATER TABLE DEPTH		
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI			TERMINATION DEPTH	0.0 M	13.3 M	

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit		Density		Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-21/1	SPT	4.0	6.8	CL	0.0	21.0	79.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-21/2	SPT	5.0	7.3	SP	0.0	83.0	17.0	NP	NP	NP	1.66	1.60	3.6	24.0	-	-	-	2.44
3.00	S-21/3	SPT	7.0	8.6	SP	-	-	-	NP	NP	NP	-	-	6.5	-	-	-	-	-
4.50	S-21/4	SPT	8.0	8.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-21/5	SPT	13.0	12.9	SP	0.0	97.0	3.0	NP	NP	NP	1.69	1.58	6.9	28.0	-	-	-	2.47
7.50	S-21/6	SPT	14.0	12.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-21/7	SPT	18.0	15.5	SP	0.0	93.0	7.0	NP	NP	NP	1.76	1.63	7.9	-	-	-	-	-
10.50	S-21/8	SPT	22.0	17.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-21/9	SPT	26.0	19.8	SP	0.0	88.0	12.0	NP	NP	NP	-	-	8.2	-	-	-	-	-
13.50	S-21/10	SPT	32.0	23.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-



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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters				Water Table Depth			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc		Void Ratio, eo	Specific Gravity	
15.00	S-21/11	SPT	35.0	24.1	SP	0.0	93.0	7.0	-	-	-	1.98	1.80	9.8	-	34.0	-	-	-	-	-
16.00	S-21/12	SPT	40.0	26.3	SP	-	-	-	-	-	-	-	-	12.3	-	-	-	-	-	-	2.45
18.00	S-21/13	SPT	44.0	27.6	SP	-	-	-	-	-	-	1.94	1.71	13.6	-	-	-	-	-	-	2.47
19.50	S-21/14	SPT	53.0	31.9	SP	0.0	83.0	17.0	-	-	-	-	-	-	-	-	-	-	-	-	-
21.00	S-21/15	SPT	62.0	35.7	SP	-	-	-	-	-	-	-	-	16.6	-	-	-	-	-	-	-
22.50	S-21/16	SPT	68.0	37.6	SP	13.0	79.0	8.0	-	-	-	-	-	-	-	-	-	-	-	-	-
24.00	S-21/17	SPT	76.0	40.4	SP	19.0	78.0	3.0	-	-	-	-	-	16.9	-	-	-	-	-	-	2.52
25.50	S-21/18	SPT	84.0	43.0	SP	-	-	-	NP	NP	NP	2.06	1.76	17.2	-	-	-	-	-	-	-
27.00	S-21/19	SPT	91.0	44.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-
28.50	S-21/20	SPT	REFUSAL	REFUSAL	SP	0.0	93.0	7.0	NP	NP	NP	-	-	17.6	-	-	-	-	-	-	-

**BORE LOG SHEET**



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JOB NO.	LOCATION	BOREHOLE	21	WATER TABLE DEPTH
			N-3161431 E-727774	
PAGE NO.	GT-1997			13.3 M
	STARTING DEPTH			
TERMINATION DEPTH			40.0 M	

GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF PUBLIC NOIDA.

EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

Sample No	Sample Type	Observed N-Value		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters			
		Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
11/21	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
11/22	SPT	REFUSAL		SP	0.0	85.0	15.0	NP	NP	NP	17.9	1.82	2.15	1.82	-	-	-	-
11/23	SPT	REFUSAL		CL	0.0	15.0	85.0	30.6	18.8	11.8	-	-	-	-	0.19	0.89	-	2.32
11/24	SPT	REFUSAL		CL	-	-	-	-	-	-	-	2.19	1.85	1.85	-	-	-	-
11/25	SPT	REFUSAL		CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11/26	SPT	REFUSAL		CL	0.0	21.0	79.0	-	-	-	19.1	2.28	1.91	1.91	-	-	-	2.34
11/27	SPT	REFUSAL		CL	-	-	-	-	-	-	19.3	-	-	-	-	-	-	-
11/28	SPT	REFUSAL		CL	0.0	6.0	94.0	-	-	-	19.7	-	-	-	-	-	-	-





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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BOREHOLE** 22  
**LOCATION** N-3161547  
 E-727685  
**JOB NO.** GT-1997  
**PAGE NO**

**STARTING DEPTH** 0.0 M  
**WATER TABLE DEPTH**

**TERMINATION DEPTH** 40.0 M  
**13.2 M**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-22/1	SPT	5.0	8.5	CL	0.0	11.0	89.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-22/2	SPT	7.0	10.2	SP	0.0	76.0	24.0	NP	NP	NP	1.65	1.59	3.9	0.4	23.0	-	-	2.40
3.00	S-22/3	SPT	9.0	11.0	SP	0.0	92.0	8.0	NP	NP	NP	-	-	4.1	-	-	-	-	-
4.50	S-22/4	SPT	10.0	10.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-22/5	SPT	12.0	11.9	SP	0.0	96.0	4.0	NP	NP	NP	1.69	1.60	5.9	-	28.0	-	-	2.42
7.50	S-22/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-22/7	SPT	18.0	15.5	SP	3.0	89.0	8.0	NP	NP	NP	1.73	1.62	6.9	-	-	-	-	-
10.50	S-22/8	SPT	25.0	20.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-22/9	SPT	28.0	21.4	SP	0.0	91.0	9.0	NP	NP	NP	-	-	7.6	-	32.0	-	-	-
13.50	S-22/10	SPT	32.0	23.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-



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JOB NO.		PAGE NO.																	
LOCATION		WATER TABLE DEPTH																	
BOREHOLE		STARTING DEPTH																	
TERMINATION DEPTH		40.0 M																	
BOREHOLE		40.0 M																	
BOREHOLE		13.2 M																	
<b>BORE LOG SHEET</b>																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-22/11	SPT	37.0	25.5	SP	0.0	87.0	13.0	NP	NP	NP	1.81	1.64	10.6	-	-	-	-	-
16.00	S-22/12	SPT	40.0	26.3	SP	0.0	86.0	14.0	NP	NP	NP	-	-	12.6	33.0	-	-	-	-
18.00	S-22/13	SPT	51.0	32.0	SP	-	-	-	NP	NP	NP	1.88	1.65	13.6	-	-	-	-	2.29
19.50	S-22/14	SPT	58.0	34.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
21.00	S-22/15	SPT	67.0	38.6	SP	0.0	79.0	21.0	NP	NP	NP	-	-	14.6	-	-	-	-	-
22.00	S-22/16	SPT	74.0	40.9	CL	0.0	19.0	81.0	30.6	17.9	12.7	-	-	-	-	-	0.19	0.89	-
24.00	S-22/17	SPT	79.0	42.0	CL	0.0	9.0	91.0	-	-	-	-	-	16.5	-	-	-	-	2.31
25.50	S-22/18	SPT	86.0	44.0	CL	-	-	-	-	-	-	2.09	1.77	18.3	-	-	-	-	-
27.00	S-22/19	SPT	92.0	45.3	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-22/20	SPT	REFUSAL	REFUSAL	CL	0.0	10.0	90.0	-	-	-	-	-	18.0	-	-	-	-	-

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Moisture Content (%)	Shear Parameters				Specific Gravity	
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Cohesion, c (t/m <sup>2</sup> )		Angle of internal friction,	Coefficient of consolidation, Cc	Void Ratio, eo			
30.00	S-22/721	SPT	REFUSAL	REFUSAL	CL	0.0	15.0	85.0	29.5	18.6	10.9	2.14	-	-	19.6	-	-	-	-	-	2.45
31.50	S-22/722	SPT	REFUSAL	REFUSAL	CL	0.0	15.0	85.0	29.5	18.6	10.9	2.14	-	-	19.6	-	-	-	-	-	2.45
32.50	S-22/723	SPT	REFUSAL	REFUSAL	SP	0.0	15.0	85.0	29.5	18.6	10.9	2.14	-	-	19.6	-	-	-	-	-	2.45
34.50	S-22/724	SPT	REFUSAL	REFUSAL	SP	10.0	82.0	8.0	NP	NP	NP	2.23	1.86	19.6	-	-	-	-	-	-	2.47
36.00	S-22/725	SPT	REFUSAL	REFUSAL	SP	0.0	15.0	85.0	29.5	18.6	10.9	2.14	-	-	19.6	-	-	-	-	-	2.47
37.50	S-22/726	SPT	REFUSAL	REFUSAL	SP	15.0	78.0	7.0	NP	NP	NP	2.29	1.91	19.7	-	-	-	-	-	-	2.47
39.00	S-22/727	SPT	REFUSAL	REFUSAL	SP	0.0	15.0	85.0	29.5	18.6	10.9	2.14	-	-	19.6	-	-	-	-	-	2.47
40.00	S-22/728	SPT	REFUSAL	REFUSAL	SP	11.0	82.0	7.0	NP	NP	NP	2.29	1.91	19.8	-	-	-	-	-	-	2.47

**BORE LOG SHEET**

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**BOREHOLE**  
22

**LOCATION**  
N-3161547  
E-727685

**JOB NO.**  
GT-1997

**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH** 0.0 M **WATER TABLE DEPTH**

**TERMINATION DEPTH** 40.0 M **13.2 M**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Moisture Content (%)	Shear Parameters										
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,		Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity								
0.75	S-23/1	SPT	5.0	8.4	CL	0.0	16.0	84.0	-	-	-	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-	-	
1.50	S-23/2	SPT	7.0	10.2	SP	0.0	89.0	11.0	NP	NP	NP	1.64	1.59	-	3.1	-	-	-	-	-	-	-	-	-	-	-	2.41
3.00	S-23/3	SPT	7.0	8.6	SP	-	-	-	NP	NP	NP	-	-	-	5.3	-	-	-	-	-	-	-	-	-	-	-	-
4.50	S-23/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.00	S-23/5	SPT	11.0	10.9	SP	0.0	97.0	3.0	NP	NP	NP	1.68	1.58	-	6.1	-	-	-	-	-	-	-	-	-	-	-	2.45
7.50	S-23/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.00	S-23/7	SPT	19.0	16.3	SP	0.0	96.0	4.0	NP	NP	NP	1.79	1.67	-	7.1	-	-	-	-	-	-	-	-	-	-	-	-
10.50	S-23/8	SPT	23.0	18.5	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12.00	S-23/9	SPT	27.0	20.6	SP	0.0	87.0	13.0	NP	NP	NP	-	-	-	8.8	-	-	-	-	-	-	-	-	-	-	-	-
13.50	S-23/10	SPT	32.0	23.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**BORE LOG SHEET**

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**BOREHOLE**  
23

**LOCATION**  
N-3161498.53  
E-727846.52

**JOB NO.**  
GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NORDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
0.0 M

**TERMINATION DEPTH**  
40.0 M

**WATER TABLE DEPTH**  
13.7 M



		SOIGNE ENGINEERING CONSULTANTS SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com		BOREHOLE 23		LOCATION N-3161498.53 E-727846.52		JOB NO. GT-1997		PAGE NO.										
												PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		STARTING DEPTH 0.0 M		WATER TABLE DEPTH 13.7 M				
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		BORE LOG SHEET																		
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis						Atterberg limit		Density				Shear Parameters			
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
15.00	S-25/11	SPT	37.0	25.4	SP	0.0	94.0	6.0	-	-	-	-	-	-	-	-	-	-		
16.00	S-25/12	SPT	41.0	26.9	SP	-	-	-	-	-	-	11.6	-	-	-	-	-	2.47		
18.00	S-25/13	SPT	49.0	30.7	SP	-	-	-	-	-	-	12.6	1.96	1.74	-	-	-	2.48		
19.50	S-25/14	SPT	58.0	34.7	SP	0.0	86.0	14.0	-	-	-	-	-	-	-	-	-	-		
21.00	S-25/15	SPT	62.0	35.6	SP	-	-	-	-	-	-	-	-	-	-	-	-	-		
22.50	S-25/16	SPT	67.0	36.9	SP	11.0	81.0	8.0	-	-	-	-	-	-	-	-	-	-		
24.00	S-25/17	SPT	73.0	38.7	SP	16.0	78.0	6.0	-	-	-	15.6	-	-	-	-	-	2.54		
25.50	S-25/18	SPT	79.0	40.2	SP	-	-	-	NP	NP	NP	16.6	2.00	1.72	-	-	-	-		
27.00	S-25/19	SPT	85.0	41.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-		
28.50	S-25/20	SPT	90.0	42.5	SP	0.0	96.0	4.0	NP	NP	NP	17.2	-	-	-	-	-	-		







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BOREHOLE LOCATION JOB NO. PAGE NO.  
24 N-3161562 GT-1997

STARTING DEPTH WATER TABLE DEPTH  
0.0 M

TERMINATION DEPTH  
40.0 M

BOREHOLE LOCATION JOB NO. PAGE NO.  
24 N-3161562 GT-1997

BOREHOLE LOCATION JOB NO. PAGE NO.  
24 N-3161562 GT-1997

STARTING DEPTH WATER TABLE DEPTH  
0.0 M

TERMINATION DEPTH  
40.0 M

13.5 M

BORE LOG SHEET

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-23/11	SPT	27.0	18.5	SP	0.0	81.0	19.0	-	-	-	1.88	1.68	11.9	-	-	-	-	-
16.00	S-23/12	SPT	32.0	21.0	CL	0.0	9.0	91.0	-	-	-	-	-	13.6	-	-	-	-	-
18.00	S-23/13	SPT	36.0	22.5	CL	-	-	-	31.2	17.2	14.0	1.97	1.70	16.2	-	-	0.19	0.91	2.31
19.50	S-23/14	SPT	45.0	27.0	CL	0.0	16.0	84.0	-	-	-	-	-	-	-	-	-	-	-
21.00	S-23/15	SPT	50.0	28.7	CL	-	-	-	-	-	-	-	-	16.8	-	-	-	-	-
22.50	S-23/16	SPT	54.0	29.8	CL	0.0	23.0	77.0	-	-	-	-	-	-	-	-	0.21	0.92	2.34
24.00	S-23/17	SPT	62.0	32.8	SP	0.0	88.0	12.0	NP	NP	NP	-	-	16.9	-	-	-	-	2.43
25.50	S-23/18	SPT	68.0	34.6	SP	-	-	-	NP	NP	NP	2.05	1.75	17.3	-	-	-	-	-
27.00	S-23/19	SPT	74.0	36.3	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
28.50	S-23/20	SPT	83.0	39.2	SP	0.0	92.0	8.0	NP	NP	NP	-	-	17.5	-	-	-	-	-







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**BOREHOLE**  
25

**LOCATION**  
N-33161639  
E-727775

**JOB NO.**  
GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
0.0 M

**TERMINATION DEPTH**  
40.0 M

**WATER TABLE DEPTH**  
13.3 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-25/1	SPT	5.0	8.5	CL	0.0	9.0	91.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-25/2	SPT	6.0	8.8	SP	0.0	77.0	23.0	NP	NP	NP	1.63	1.57	3.9	0.6	22.0	-	-	2.42
3.00	S-25/3	SPT	7.0	8.6	SP	0.0	93.0	7.0	NP	NP	NP	-	-	4.9	-	-	-	-	-
4.50	S-25/4	SPT	8.0	8.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-25/5	SPT	9.0	9.0	SP	0.0	91.0	9.0	NP	NP	NP	1.69	1.59	6.1	-	27.0	-	-	2.43
7.50	S-25/6	SPT	11.0	10.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-25/7	SPT	12.0	10.3	SP	7.0	88.0	5.0	NP	NP	NP	1.72	1.62	6.5	-	-	-	-	-
10.50	S-25/8	SPT	16.0	12.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-25/9	SPT	20.0	15.3	SP	0.0	87.0	13.0	NP	NP	NP	-	-	7.8	-	29.0	-	-	-
13.50	S-25/10	SPT	24.0	17.4	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density		Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	
15.00	S-25/11	SPT	28.0	19.3	SP	0.0	84.0	16.0	NP	NP	NP	1.81	1.61	12.6	.	.	.	.
16.00	S-25/12	SPT	32.0	21.0	SP	0.0	81.0	19.0	NP	NP	NP	.	.	13.9	.	.	.	.
18.00	S-25/13	SPT	34.0	21.3	SP	.	.	.	NP	NP	NP	1.82	1.57	16.1	.	.	.	2.33
19.50	S-25/14	SPT	41.0	24.6	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.
21.00	S-25/15	SPT	47.0	27.1	SP	0.0	86.0	14.0	NP	NP	NP	.	.	17.2	.	.	.	.
22.00	S-25/16	SPT	54.0	29.9	CL	0.0	11.0	89.0	29.6	17.9	11.7	.	.	.	.	0.18	0.86	.
24.00	S-25/17	SPT	59.0	31.4	CL	0.0	9.0	91.0	.	.	.	.	.	17.8	.	.	.	2.35
25.50	S-25/18	SPT	65.0	33.2	CL	.	.	.	.	.	.	2.01	1.70	18.0	.	.	.	.
27.00	S-25/19	SPT	71.0	34.9	CL	.	.	.	.	.	.	.	.	.	.	.	.	.
28.50	S-25/20	SPT	81.0	46.5	CL	0.0	10.0	90.0	.	.	.	.	.	18.2	.	.	.	.

**BORE LOG SHEET**



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**BOREHOLE**  
25

**LOCATION**  
M-3161639  
E-727775

**JOB NO.**  
GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
0.0 M

**TERMINATION DEPTH**  
40.0 M

**WATER TABLE DEPTH**  
13.3 M



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BOREHOLE		LOCATION	JOB NO.	PAGE NO															
25		N-3161639 E-727775	GT-1997																
STARTING DEPTH		TERMINATION DEPTH	0.0 M	WATER TABLE DEPTH															
			40.0 M	13.3 M															
<b>BORE LOG SHEET</b>																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit	Density		Shear Parameters							
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)		Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
30.00	S-25/21	SPT	85.0	44.3	CL														
31.50	S-25/22	SPT	92.0	40.5	CL	0.0	16.0	84.0	29.6	18.9	10.7	2.11	1.78	18.8		0.18	0.87	2.47	
32.50	S-25/23	SPT	REFUSAL		SP				NP	NP	NP								
34.50	S-25/24	SPT	REFUSAL		SP	6.0	80.0	14.0	NP	NP	NP	2.25	1.89	19.0					
36.00	S-25/25	SPT	REFUSAL		SP				NP	NP	NP								
37.50	S-25/26	SPT	REFUSAL		SP	5.0	78.0	17.0	NP	NP	NP	2.31	1.94	19.2				2.48	
39.00	S-25/27	SPT	REFUSAL		SP				NP	NP	NP								
40.00	S-25/28	SPT	REFUSAL		SP	8.0	76.0	16.0	NP	NP	NP			19.5					



SOIGNE ENGINEERING CONSULTANTS SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com		BOREHOLE		LOCATION		JOB NO.		PAGE NO											
		26		N-3161465 E-727936		GT-1997													
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC, NOIDA.				STARTING DEPTH		WATER TABLE DEPTH													
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				TERMINATION DEPTH		40.0 M		13.8 M											
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit		Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>	
15.00	S-26/11	SPT	33.0	22.7	SP	0.0	89.0	11.0	NP	NP	11.5	1.62	1.81	•	•	•	•	•	•
16.00	S-26/12	SPT	41.0	26.9	SP	0.0	85.0	15.0	NP	NP	12.9	•	•	30.0	•	•	•	•	•
18.00	S-26/13	SPT	50.0	31.4	SP	•	•	•	NP	NP	15.3	1.60	1.84	•	•	•	•	•	2.42
19.50	S-26/14	SPT	56.0	33.7	SP	•	•	•	NP	NP	•	•	•	•	•	•	•	•	•
21.00	S-26/15	SPT	62.0	35.7	SP	0.0	82.0	18.0	NP	NP	16.5	•	•	•	•	•	•	•	•
22.00	S-26/16	SPT	71.0	39.3	CL	0.0	8.0	92.0	31.2	13.0	•	•	•	•	•	0.19	0.91	•	•
24.00	S-26/17	SPT	79.0	42.0	CL	0.0	11.0	89.0	•	•	17.5	•	•	•	•	•	•	•	2.36
25.50	S-26/18	SPT	84.0	43.0	CL	•	•	•	•	•	18.3	1.71	2.02	•	•	•	•	•	•
27.00	S-26/19	SPT	91.0	44.8	CL	•	•	•	•	•	•	•	•	•	•	•	•	•	•
28.50	S-26/20	SPT	REFUSAL	REFUSAL	CL	0.0	6.0	94.0	•	•	18.6	•	•	•	•	•	•	•	•

Depth (m)	Sample No	Sample Type	Observed N-Value		Symbolic representation	Grain Size Analysis				Atterberg limit			Density				Shear Parameters				Water Table Depth
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>v</sub>	Specific Gravity		
30.00	S-26/21	SPT	REFUSAL	REFUSAL	CL	0.0	19.0	81.0	28.9	17.5	11.4	2.09	1.76	18.8	-	-	0.17	0.84	2.45		
31.50	S-26/22	SPT	REFUSAL	REFUSAL	CL	0.0	19.0	81.0	28.9	17.5	11.4	2.09	1.76	18.8	-	-	0.17	0.84	2.45		
32.50	S-26/23	SPT	REFUSAL	REFUSAL	SP	4.0	86.0	10.0	NP	NP	NP	-	-	-	-	-	-	-	-		
34.50	S-26/24	SPT	REFUSAL	REFUSAL	SP	4.0	86.0	10.0	NP	NP	NP	2.14	1.80	19.2	-	-	-	-	-		
36.00	S-26/25	SPT	REFUSAL	REFUSAL	SP	4.0	86.0	10.0	NP	NP	NP	-	-	-	-	-	-	-	-		
37.50	S-26/26	SPT	REFUSAL	REFUSAL	SP	10.0	81.0	9.0	NP	NP	NP	2.24	1.87	19.6	-	-	-	-	2.50		
39.00	S-26/27	SPT	REFUSAL	REFUSAL	SP	5.0	83.0	12.0	NP	NP	NP	-	-	-	-	-	-	-	-		
40.00	S-26/28	SPT	REFUSAL	REFUSAL	SP	5.0	83.0	12.0	NP	NP	NP	-	-	19.9	-	-	-	-	-		

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

BOREHOLE LOCATION

26 N-3161465 E-727936

STARTING DEPTH 0.0 M

TERMINATION DEPTH 40.0 M

JOB NO. GT-1997

PAGE NO

13.8 M

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BOREHOLE

26

LOCATION

N-3161465 E-727936

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BOREHOLE

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LOCATION

N-3161465 E-727936

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13.8 M

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BOREHOLE

26

LOCATION

N-3161465 E-727936

JOB NO.

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13.8 M

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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		LOCATION		JOB NO.		PAGE NO																
		N-3161565 E-7Z7925		GT-1997																		
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		STARTING DEPTH		WATER TABLE DEPTH																		
		TERMINATION DEPTH		0.0 M		13.5 M																
BORE LOG SHEET																						
Depth (m)	Sample No	Sample Type	Sample			Grain Size Analysis			Atterberg limit			Density				Shear Parameters				Specific Gravity		
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo				
0.75	S-27/1	SPT	4.0	6.8	CL	0.0	11.0	89.0	-	-	-	2.1	-	-	-	-	-	-	-	-	-	
1.50	S-27/2	SPT	5.0	7.3	SP	0.0	80.0	20.0	NP	NP	NP	3.3	1.61	1.66	1.61	21.0	-	-	-	-	2.41	
3.00	S-27/3	SPT	7.0	8.6	SP	0.0	89.0	11.0	NP	NP	NP	4.1	-	-	-	-	-	-	-	-	-	-
4.50	S-27/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-
6.00	S-27/5	SPT	10.0	10.0	SP	0.0	96.0	4.0	NP	NP	NP	6.8	1.57	1.68	1.57	27.0	-	-	-	-	-	2.45
7.50	S-27/6	SPT	14.0	12.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-
9.00	S-27/7	SPT	18.0	15.5	SP	7.0	94.0	1.0	NP	NP	NP	7.1	1.62	1.73	1.62	-	-	-	-	-	-	-
10.50	S-27/8	SPT	22.0	17.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-
12.00	S-27/9	SPT	25.0	19.1	SP	0.0	89.0	11.0	NP	NP	NP	7.6	-	-	-	32.0	-	-	-	-	-	-
13.50	S-27/10	SPT	29.0	21.0	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-











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**BOREHOLE**  
28  
N-3161696  
E-727817

**JOB NO.**  
GT-1997

**LOCATION**  
N-3161696  
E-727817

**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
0.0 M

**TERMINATION DEPTH**  
40.0 M

**WATER TABLE DEPTH**  
13.2 M

**BORE LOG SHEET**

Depth (m)	Sample No.	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
15.00	S-28/11	SPT	32.0	22.0	GS	0.0	86.0	14.0	NP	NP	NP	1.88	1.69	11.2	-	-	-	-	-	
16.00	S-28/12	SPT	36.0	23.6	GS	0.0	89.0	11.0	NP	NP	NP	-	-	12.6	32.0	-	-	-	-	
18.00	S-28/13	SPT	41.0	25.7	SP	-	-	-	NP	NP	NP	1.96	1.71	14.5	-	-	-	-	2.46	
19.50	S-28/14	SPT	47.0	28.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	
21.00	S-28/15	SPT	51.0	29.4	SP	0.0	93.0	7.0	NP	NP	NP	-	-	16.9	-	-	-	-	-	
22.00	S-28/16	SPT	57.0	31.5	CL	0.0	6.0	94.0	31.2	18.2	13.0	-	-	-	-	-	0.19	0.91	-	
24.00	S-28/17	SPT	62.0	33.0	CL	0.0	19.0	81.0	-	-	-	-	-	17.2	-	-	-	-	2.31	
25.50	S-28/18	SPT	67.0	34.3	CL	-	-	-	-	-	-	2.07	1.76	17.9	-	-	-	-	-	
27.00	S-28/19	SPT	74.0	36.4	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28.50	S-28/20	SPT	80.0	46.5	CL	0.0	15.0	85.0	-	-	-	-	-	18.3	-	-	-	-	-	

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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		28		GT-1997															
		N-3161696 E-727817		0.0 M		WATER TABLE DEPTH													
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		STARTING DEPTH		TERMINATION DEPTH		13.2 M													
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit		Density		Shear Parameters							
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-28/21	SPT	85.0	44.3	CL	0.0	18.0	82.0	28.5	17.6	10.9	2.16	1.82	18.6	-	-	-	-	-
31.50	S-28/22	SPT	90.0	39.7	CL	0.0	18.0	82.0	28.5	17.6	10.9	2.16	1.82	18.6	-	-	0.17	0.83	2.43
32.50	S-28/23	SPT	REFUSAL	REFUSAL	SP	9.0	81.0	10.0	NP	NP	NP	2.21	1.85	19.2	-	-	-	-	-
34.50	S-28/24	SPT	REFUSAL	REFUSAL	SP	9.0	81.0	10.0	NP	NP	NP	2.21	1.85	19.2	-	-	-	-	-
36.00	S-28/25	SPT	REFUSAL	REFUSAL	SP	9.0	81.0	10.0	NP	NP	NP	2.21	1.85	19.2	-	-	-	-	-
37.50	S-28/26	SPT	REFUSAL	REFUSAL	SP	7.0	82.0	11.0	NP	NP	NP	2.29	1.92	19.5	-	-	-	-	2.48
39.00	S-28/27	SPT	REFUSAL	REFUSAL	SP	7.0	82.0	11.0	NP	NP	NP	2.29	1.92	19.5	-	-	-	-	-
40.00	S-28/28	SPT	REFUSAL	REFUSAL	SP	10.0	79.0	11.0	NP	NP	NP	2.29	1.92	19.5	-	-	-	-	-



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**BOREHOLE**

29

**LOCATION**

N-3161789.46  
 E-727689.29

**JOB NO.**

GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**STARTING DEPTH**  
 0.0 M

**WATER TABLE DEPTH**

**TERMINATION DEPTH**  
 40.0 M

**13.8 M**

**CLIENT :-EXECUTIVE ENGINEER (P) NORDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-29/1	SPT	4.0	6.8	CL	0.0	13.0	87.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-29/2	SPT	5.0	7.3	SP	0.0	72.0	28.0	NP	NP	NP	1.67	1.62	3.3	0.6	21.0	-	-	2.41
3.00	S-29/3	SPT	7.0	8.6	SP	0.0	90.0	10.0	NP	NP	NP	-	-	3.9	-	-	-	-	-
4.50	S-29/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-29/5	SPT	11.0	10.9	SP	0.0	94.0	6.0	NP	NP	NP	1.71	1.62	5.5	-	28.0	-	-	2.45
7.50	S-29/6	SPT	16.0	14.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-29/7	SPT	18.0	15.5	SP	0.0	96.0	4.0	NP	NP	NP	1.73	1.63	6.3	-	-	-	-	-
10.50	S-29/8	SPT	22.0	17.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-29/9	SPT	27.0	20.6	SP	0.0	91.0	9.0	NP	NP	NP	-	-	8.6	-	31.0	-	-	-
13.50	S-29/10	SPT	31.0	22.4	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density		Shear Parameters				Void Ratio, eo	Specific Gravity
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (V/m2)	Angle of Internal Friction,	Coefficient of consolidation, Cc		
15.00	S-29/11	SPT	36.0	24.8	SP	0.0	89.0	11.0	NP	NP	NP	1.79	1.59	12.6	-	-	-	-	-
16.00	S-29/12	SPT	42.0	27.6	SP	8.0	12.0	80.0	NP	NP	NP	-	-	13.6	-	-	-	-	-
18.00	S-29/13	SPT	48.0	30.1	SP	0.0	82.0	18.0	NP	NP	NP	1.82	1.56	16.3	-	-	-	-	2.32
19.50	S-29/14	SPT	53.0	31.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
21.00	S-29/15	SPT	59.0	34.0	SM	0.0	42.0	58.0	-	-	-	-	-	17.6	-	-	-	-	-
22.50	S-29/16	SPT	64.0	35.4	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24.00	S-29/17	SPT	69.0	36.7	SM	0.0	54.0	46.0	-	-	-	-	-	17.8	-	-	-	-	2.43
25.50	S-29/18	SPT	75.0	38.3	SM	-	-	-	-	-	-	2.11	1.78	18.6	-	-	-	-	-
27.00	S-29/19	SPT	81.0	39.9	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-29/20	SPT	85.0	46.5	SM	0.0	52.0	48.0	-	-	-	-	-	19.4	-	-	-	-	-

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

BOREHOLE LOCATION STARTING DEPTH TERMINATION DEPTH

29 N-3161789.46 E-727689.29 0.0 M 40.0 M 13.8 M

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**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Observed N-Value		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Moisture Content (%)	Shear Parameters				Specific Gravity		
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)		Cohesion, c (V/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo			
30.00	S-29/21	SPT	93.0	44.3	SP	0.0	92.0	8.0	NP	NP	NP	2.18	1.82	19.5	.	.	.	.	.	2.46	
31.00	S-29/22	SPT	REFUSAL	REFUSAL	SP	0.0	98.0	2.0	NP	NP	NP	2.25	1.88	19.8	.	.	.	.	.	.	.
33.00	S-29/23	SPT	REFUSAL	REFUSAL	SP	0.0	98.0	2.0	NP	NP	NP	2.25	1.88	19.8	.	.	.	.	.	.	.
34.50	S-29/24	SPT	REFUSAL	REFUSAL	SP	0.0	98.0	2.0	NP	NP	NP	2.25	1.88	19.8	.	.	.	.	.	.	.
36.00	S-29/25	SPT	REFUSAL	REFUSAL	SP	0.0	98.0	2.0	NP	NP	NP	2.25	1.88	19.8	.	.	.	.	.	.	.
37.50	S-29/26	SPT	REFUSAL	REFUSAL	SP	0.0	96.0	4.0	NP	NP	NP	2.33	1.94	19.9	.	.	.	.	.	.	2.47
39.00	S-29/27	SPT	REFUSAL	REFUSAL	SP	0.0	96.0	4.0	NP	NP	NP	2.33	1.94	19.9	.	.	.	.	.	.	.
40.00	S-29/28	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	NP	2.33	1.94	20.0	.	.	.	.	.	.	.

BOREHOLE LOCATION JOB NO. PAGE NO  
 29 N-3161789.46 GT-1997  
 E-727689.29

STARTING DEPTH WATER TABLE DEPTH  
 0.0 M

TERMINATION DEPTH  
 40.0 M

13.8 M





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<b>BOREHOLE</b>	<b>BOREHOLE</b>	<b>JOB NO.</b>	<b>PAGE NO</b>
	30	GT-1997	
<b>LOCATION</b>	<b>LOCATION</b>	<b>STARTING DEPTH</b>	<b>WATER TABLE DEPTH</b>
	N-3161551.09 E-728015.0	0.0 M	14.5 M
<b>TERMINATION DEPTH</b>	40.0 M		

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limits (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (vmz)	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-30/1	SPT	6.0	10.1	CL	0.0	19.0	81.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-30/2	SPT	7.0	10.2	SP	0.0	62.0	38.0	-	-	-	-	-	-	-	-	-	-	-
3.00	S-30/3	SPT	8.0	9.8	SP	0.0	97.0	3.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
4.50	S-30/4	SPT	10.0	10.9	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
6.00	S-30/5	SPT	13.0	12.9	SP	0.0	95.0	5.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
7.50	S-30/6	SPT	18.0	16.6	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
9.00	S-30/7	SPT	20.0	17.2	SP	0.0	93.0	7.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
10.50	S-30/8	SPT	26.0	21.0	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
12.00	S-30/9	SPT	31.0	23.7	SP	0.0	95.0	5.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
13.50	S-30/10	SPT	35.0	25.3	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP









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**BOREHOLE**  
 31  
**LOCATION**  
 N-3161625.17  
 E-727934.64

**JOB NO.**  
 GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
 0.0 M  
**WATER TABLE DEPTH**  
 11.2 M  
**TERMINATION DEPTH**  
 40.0 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters									
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m2)	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity				
15.00	S-31/11	SPT	35.0	24.1	SP	0.0	88.0	12.0	NP	NP	NP	1.84	1.65	11.4	.	.	.	.	.				
16.00	S-31/12	SPT	40.0	26.3	SP	0.0	91.0	9.0	NP	NP	NP	.	.	12.3	.	36.0	.	.	.	.			
18.00	S-31/13	SPT	46.0	28.9	SP	.	.	.	NP	NP	NP	1.95	1.71	14.0	.	.	.	.	2.45	.			
19.50	S-31/14	SPT	51.0	30.7	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.		
21.00	S-31/15	SPT	57.0	32.8	SP	0.0	93.0	7.0	NP	NP	NP	.	.	15.2	.	.	.	.	.	.	.		
22.50	S-31/16	SPT	63.0	34.8	CL	0.0	8.0	92.0	31.5	17.6	13.9	.	.	.	.	.	0.19	0.92	.	.	.		
24.00	S-31/17	SPT	70.0	37.2	CL	0.0	15.0	85.0	.	.	.	.	.	16.7	.	.	.	.	.	.	2.32	.	
25.50	S-31/18	SPT	76.0	38.9	CL	.	.	.	.	.	.	2.06	1.76	17.2	.	.	.	.	.	.	.	.	.
27.00	S-31/19	SPT	80.0	39.4	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
28.50	S-31/20	SPT	85.0	46.5	CL	0.0	20.0	80.0	.	.	.	.	.	18.3	.	.	.	.	.	.	.	.	.





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	<b>STARTING DEPTH</b> 0.0 M				<b>WATER TABLE DEPTH</b> 10.9 M			

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET																							
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Shear Parameters										
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Density	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity				
0.75	S-32/1	SPT	4.0	6.8	CL	0.0	13.0	87.0	-	-	-	-	-	-	-	-	-	-	-				
1.50	S-32/2	SPT	8.0	11.7	SP	0.0	77.0	23.0	NP	NP	NP	NP	1.64	1.57	4.4	0.5	24.0	-	-	2.40			
3.00	S-32/3	SPT	10.0	12.3	SP	0.0	88.0	12.0	NP	NP	NP	NP	-	-	5.2	-	-	-	-	-	-		
4.50	S-32/4	SPT	11.0	12.0	SP	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	
6.00	S-32/5	SPT	13.0	12.9	SP	0.0	81.0	19.0	NP	NP	NP	NP	1.73	1.64	5.5	-	25.0	-	-	-	2.41		
7.50	S-32/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	
9.00	S-32/7	SPT	15.0	12.9	SP	5.0	79.0	16.0	NP	NP	NP	NP	1.82	1.70	7.2	-	-	-	-	-	-	-	
10.50	S-32/8	SPT	18.0	14.5	SP	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-
12.00	S-32/9	SPT	22.0	16.8	SP	0.0	84.0	16.0	NP	NP	NP	NP	-	-	8.5	-	31.0	-	-	-	-	-	-
13.50	S-32/10	SPT	24.0	17.4	SP	-	-	-	NP	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-



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**BOREHOLE**

32

**LOCATION**

N-3161686  
E-727879

**JOB NO.**

GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**

0.0 M

**TERMINATION DEPTH**

40.0 M

**WATER TABLE DEPTH**

10.9 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
15.00	S-32/11	SPT	31.0	21.4	SP	0.0	89.0	11.0	NP	NP	NP	1.82	1.64	11.1	-	-	-	-	-	-
16.00	S-32/12	SPT	35.0	23.0	SP	0.0	88.0	12.0	NP	NP	NP	-	-	12.6	-	33.0	-	-	-	-
18.00	S-32/13	SPT	42.0	26.4	SP	-	-	-	NP	NP	NP	1.94	1.71	13.7	-	-	-	-	-	2.45
19.50	S-32/14	SPT	48.0	28.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-
21.00	S-32/15	SPT	52.0	30.0	SP	0.0	91.0	9.0	NP	NP	NP	-	-	15.0	-	-	-	-	-	-
22.50	S-32/16	SPT	61.0	33.7	CL	0.0	7.0	93.0	31.5	17.6	13.9	-	-	-	-	-	0.19	0.92	-	-
24.00	S-32/17	SPT	66.0	35.1	CL	0.0	12.0	88.0	-	-	-	-	-	16.2	-	-	-	-	-	2.32
25.50	S-32/18	SPT	72.0	36.8	CL	-	-	-	-	-	-	2.06	1.76	17.1	-	-	-	-	-	-
27.00	S-32/19	SPT	78.0	38.4	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-32/20	SPT	82.0	46.5	CL	0.0	21.0	79.0	-	-	-	-	-	17.9	-	-	-	-	-	-





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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA. CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		32		N-3161686 E-727879		GT-1997														
		STARTING DEPTH		TERMINATION DEPTH		0.0 M		WATER TABLE DEPTH												
								10.9 M												
BORE LOG SHEET																				
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo			
30.00	S-32/21	SPT	88.0	44.3																
31.00	S-32/22	SPT	REFUSAL		0.0	12.0	88.0	29.2	17.5	11.7	2.13	1.80	18.2			0.17	0.85			2.43
33.00	S-32/23	SPT	REFUSAL																	
34.50	S-32/24	SPT	REFUSAL		6.0	87.0	7.0	NP	NP	NP	2.20	1.85	18.8							
36.00	S-32/25	SPT	REFUSAL																	
37.50	S-32/26	SPT	REFUSAL		8.0	89.0	3.0	NP	NP	NP			19.2							2.50
39.00	S-32/27	SPT	REFUSAL																	
40.00	S-32/28	SPT	REFUSAL		8.0	85.0	7.0	NP	NP	NP			19.5							

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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NORDA.		33		N-3161860 E-721767		GT-1997													
		STARTING DEPTH		TERMINATION DEPTH		0.0 M		WATER TABLE DEPTH											
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				14.2 M															
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit		Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m2)	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	
0.75	S-33/1	SPT	5.0	8.5	CL	0.0	15.0	85.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-33/2	SPT	7.0	10.2	SP	0.0	75.0	25.0	-	-	-	-	-	-	-	-	-	-	2.40
3.00	S-33/3	SPT	8.0	9.8	SP	0.0	91.0	9.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
4.50	S-33/4	SPT	10.0	10.9	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
6.00	S-33/5	SPT	12.0	11.9	SP	0.0	93.0	7.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	2.41
7.50	S-33/6	SPT	13.0	12.0	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
9.00	S-33/7	SPT	18.0	15.5	SP	0.0	95.0	5.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
10.50	S-33/8	SPT	24.0	19.4	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
12.00	S-33/9	SPT	31.0	23.7	SP	0.0	91.0	9.0	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-
13.50	S-33/10	SPT	35.0	25.3	SP	-	-	-	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	-

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>	Specific Gravity	
15.00	S-35/11	SPT	39.0	26.9	SP	0.0	84.0	16.0	-	-	-	1.79	1.61	10.9	-	32.0	-	-	-	
16.00	S-35/12	SPT	45.0	29.6	CL	9.0	13.0	78.0	30.5	18.2	12.3	-	-	12.9	-	-	-	-	-	
18.00	S-35/13	SPT	51.0	32.0	SP	0.0	86.0	14.0	NP	NP	NP	1.80	1.58	14.2	-	-	-	-	2.30	
19.50	S-35/14	SPT	58.0	34.9	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	
21.00	S-35/15	SPT	63.0	36.3	SM	0.0	56.0	44.0	-	-	-	-	-	15.9	-	-	-	-	-	
22.50	S-35/16	SPT	71.0	39.3	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24.00	S-35/17	SPT	74.0	39.3	SM	0.0	60.0	40.0	-	-	-	-	-	16.9	-	-	-	-	2.43	
25.50	S-35/18	SPT	78.0	39.9	SM	-	-	-	-	-	-	2.13	1.81	17.8	-	-	-	-	-	
27.00	S-35/19	SPT	85.0	41.8	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28.50	S-35/20	SPT	92.0	46.5	SM	0.0	52.0	48.0	-	-	-	-	-	18.1	-	-	-	-	-	

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

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BOREHOLE LOCATION JOB NO. PAGE NO  
33 N-3161860 GT-1997

STARTING DEPTH WATER TABLE DEPTH  
0.0 M

TERMINATION DEPTH  
40.0 M

14.2 M





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**BOREHOLE**

34

**LOCATION**

N-3161525.85  
E-728098.04

**JOB NO.**

GT-1997

**STARTING DEPTH**

0.0 M

**TERMINATION DEPTH**

40.0 M

**WATER TABLE DEPTH**

12.6 M

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC INOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
0.75	S-34/1	SPT	6.0	10.1	CL	0.0	13.0	87.0	-	-	2.6	-	-	-	-	-	-	-
1.50	S-34/2	SPT	8.0	11.7	SP	0.0	69.0	31.0	-	-	3.2	1.58	1.0	21.0	-	-	-	2.42
3.00	S-34/3	SPT	11.0	13.5	SP	0.0	84.0	16.0	NP	NP	3.9	-	-	-	-	-	-	-
4.50	S-34/4	SPT	15.0	16.4	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
6.00	S-34/5	SPT	21.0	20.9	SP	0.0	89.0	11.0	NP	NP	5.5	1.71	1.62	28.0	-	-	-	2.43
7.50	S-34/6	SPT	27.0	24.9	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
9.00	S-34/7	SPT	32.0	27.5	SP	2.0	90.0	8.0	NP	NP	6.5	1.72	1.62	-	-	-	-	-
10.50	S-34/8	SPT	34.0	27.5	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
12.00	S-34/9	SPT	45.0	34.4	SP	5.0	82.0	13.0	NP	NP	7.1	-	-	33.0	-	-	-	-
13.50	S-34/10	SPT	51.0	36.9	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-








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		35		N-3161626 E-728035		GT-1997		35											
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.				STARTING DEPTH		WATER TABLE DEPTH													
				0.0 M		0.0 M													
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				TERMINATION DEPTH		40.0 M		11.4 M											
				BORE LOG SHEET															
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit		Density				Shear Parameters					
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-35/1	SPT	4.0	6.8	CL	0.0	12.0	88.0	-	-	-	2.6	-	-	-	-	-	-	-
1.50	S-35/2	SPT	5.0	7.3	SP	0.0	72.0	28.0	NP	NP	1.66	1.60	4.0	0.8	20.0	-	-	-	2.41
3.00	S-35/3	SPT	7.0	8.6	SP	0.0	89.0	11.0	NP	NP	-	-	5.2	-	-	-	-	-	-
4.50	S-35/4	SPT	10.0	10.9	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
6.00	S-35/5	SPT	13.0	12.9	SP	0.0	92.0	8.0	NP	NP	1.75	1.66	5.5	-	27.0	-	-	-	2.43
7.50	S-35/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
9.00	S-35/7	SPT	17.0	14.6	SP	4.0	85.0	11.0	NP	NP	1.80	1.67	7.6	-	-	-	-	-	-
10.50	S-35/8	SPT	19.0	15.4	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
12.00	S-35/9	SPT	24.0	18.3	SP	0.0	88.0	12.0	NP	NP	-	-	8.3	-	30.0	-	-	-	-
13.50	S-35/10	SPT	29.0	21.0	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-



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			35	N-3161626 E-728035	GT-1997	35
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NORDA.			STARTING DEPTH	WATER TABLE DEPTH		
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI			TERMINATION DEPTH	40.0 M		11.4 M

BORE LOG SHEET																							
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density				Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity				
15.00	S-35/11	SPT	32.0	22.0	SP	0.0	94.0	6.0	NP	NP	NP	1.83	1.64	11.3	-	-	-	-	-	-	-		
16.00	S-35/12	SPT	38.0	25.0	SP	0.0	93.0	7.0	NP	NP	NP	-	-	12.6	-	34.0	-	-	-	-	-	-	
18.00	S-35/13	SPT	43.0	27.0	SP	-	-	-	NP	NP	NP	1.94	1.71	13.5	-	-	-	-	-	-	-	2.45	
19.50	S-35/14	SPT	52.0	31.3	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-	-	-	
21.00	S-35/15	SPT	55.0	31.7	SP	0.0	94.0	6.0	NP	NP	NP	-	-	15.2	-	-	-	-	-	-	-	-	
22.50	S-35/16	SPT	62.0	34.3	CL	0.0	9.0	91.0	31.5	17.6	13.9	-	-	-	-	-	-	-	-	-	0.19	0.92	
24.00	S-35/17	SPT	69.0	36.7	CL	0.0	11.0	89.0	-	-	-	-	-	16.3	-	-	-	-	-	-	-	-	2.32
25.50	S-35/18	SPT	72.0	36.8	CL	-	-	-	-	-	-	2.05	1.74	17.5	-	-	-	-	-	-	-	-	-
27.00	S-35/19	SPT	81.0	39.9	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.50	S-35/20	SPT	88.0	46.5	CL	0.0	16.0	84.0	-	-	-	-	-	18.1	-	-	-	-	-	-	-	-	-



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	35		N-3161626 E-728035		GT-1997		35	

<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>				<b>STARTING DEPTH</b>		<b>WATER TABLE DEPTH</b>	
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>				0.0 M		11.4 M	

BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-35/21	SPT	95.0	44.3	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.00	S-35/22	SPT	REFUSAL	REFUSAL	CL	0.0	16.0	84.0	29.2	17.5	11.7	2.12	1.79	18.5	-	0.17	0.85	2.43	-
33.00	S-35/23	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
34.50	S-35/24	SPT	REFUSAL	REFUSAL	SP	6.0	86.0	8.0	NP	NP	NP	2.20	1.84	19.5	-	-	-	-	-
36.00	S-35/25	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
37.50	S-35/26	SPT	REFUSAL	REFUSAL	SP	6.0	89.0	5.0	NP	NP	NP	-	-	19.6	-	-	-	2.50	-
39.00	S-35/27	SPT	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
40.00	S-35/28	SPT	REFUSAL	REFUSAL	SP	8.0	85.0	7.0	NP	NP	NP	-	-	19.8	-	-	-	-	-





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<b>BOREHOLE</b>	36	<b>LOCATION</b>	N-3161592	<b>JOB NO.</b>	GT-1997	<b>PAGE NO</b>	
			E-728038		0.0 M		<b>WATER TABLE DEPTH</b>
<b>STARTING DEPTH</b>		<b>TERMINATION DEPTH</b>					
0.0 M		40.0 M					

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
15.00	S-36/11	SPT	33.0	22.7	SP	0.0	94.0	6.0	NP	NP	NP	1.84	1.65	11.3	-	-	-	-	-	
16.00	S-36/12	SPT	38.0	25.0	SP	0.0	96.0	4.0	NP	NP	NP	-	-	12.2	34.0	-	-	-	-	
18.00	S-36/13	SPT	42.0	26.4	SP	-	-	-	NP	NP	NP	1.93	1.70	13.8	-	-	-	-	2.45	
19.50	S-36/14	SPT	55.0	33.1	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	
21.00	S-36/15	SPT	61.0	35.2	SP	0.0	94.0	6.0	NP	NP	NP	-	-	15.9	-	-	-	-	-	
22.50	S-36/16	SPT	67.0	37.1	CL	0.0	11.0	89.0	31.5	17.6	13.9	-	-	-	-	-	0.19	0.92	-	
24.00	S-36/17	SPT	74.0	39.3	CL	0.0	16.0	84.0	-	-	-	-	-	16.2	-	-	-	-	2.31	
25.50	S-36/18	SPT	76.0	38.9	CL	-	-	-	-	-	-	2.06	1.75	17.6	-	-	-	-	-	
27.00	S-36/19	SPT	81.0	39.9	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28.50	S-36/20	SPT	89.0	46.5	CL	0.0	20.0	80.0	-	-	-	-	-	18.5	-	-	0.20	0.91	-	



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		37		N-3161976.27 E-727783.15		GT-1997													
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.				STARTING DEPTH		WATER TABLE DEPTH													
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				TERMINATION DEPTH		0.0 M		14.7 M											
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit		Density				Shear Parameters				Specific Gravity	
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc		Void Ratio, eo
0.75	S-37/1	SPT	5.0	8.5	CL	0.0	16.0	84.0	-	-	-	2.5	-	-	-	-	-	-	-
1.50	S-37/2	SPT	6.0	8.8	SP	0.0	72.0	28.0	-	-	-	3.2	1.62	0.7	22.0	-	-	-	2.40
3.00	S-37/3	SPT	7.0	8.6	SP	0.0	92.0	8.0	NP	NP	NP	4.4	-	-	-	-	-	-	-
4.50	S-37/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-37/5	SPT	11.0	10.9	SP	0.0	91.0	9.0	NP	NP	NP	5.0	1.62	-	27.0	-	-	-	2.42
7.50	S-37/6	SPT	13.0	12.0	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-37/7	SPT	16.0	13.8	SP	0.0	94.0	6.0	NP	NP	NP	6.2	1.62	-	-	-	-	-	-
10.50	S-37/8	SPT	20.0	16.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-37/9	SPT	22.0	16.8	SP	0.0	95.0	5.0	NP	NP	NP	7.3	-	-	33.0	-	-	-	-
13.50	S-37/10	SPT	27.0	19.5	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-



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**BOREHOLE**

**STARTING DEPTH**

**WATER TABLE DEPTH**

**TERMINATION DEPTH**

**0.0 M**

**40.0 M**

**14.7 M**

**37**

**N-3161976.27  
E-727783.15**

**GT-1997**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
15.00	S-37/11	SPT	31.0	21.4	GS	0.0	88.0	12.0	NP	NP	NP	1.75	1.60	9.1	-	-	-	-	
16.00	S-37/12	SPT	37.0	24.3	CL	5.0	14.0	81.0	30.9	18.4	12.5	-	-	11.4	-	-	0.90	-	
18.00	S-37/13	SPT	39.0	24.5	SP	0.0	88.0	12.0	NP	NP	NP	1.83	1.59	15.3	-	-	-	2.30	
19.50	S-37/14	SPT	43.0	25.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	
21.00	S-37/15	SPT	50.0	28.8	SM	0.0	53.0	47.0	-	-	-	-	-	17.2	-	-	-	-	
22.50	S-37/16	SPT	54.0	29.9	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	
24.00	S-37/17	SPT	60.0	31.9	SM	0.0	61.0	39.0	-	-	-	-	-	17.5	-	-	-	2.41	
25.50	S-37/18	SPT	65.0	33.2	SM	-	-	-	-	-	-	2.10	1.77	18.5	-	-	-	-	
27.00	S-37/19	SPT	74.0	36.4	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	
28.50	S-37/20	SPT	82.0	46.5	SM	0.0	58.0	42.0	-	-	-	-	-	19.1	-	-	-	-	



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	<b>STARTING DEPTH</b> 0.0 M			<b>WATER TABLE DEPTH</b> 14.7 M	

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	
30.00	S-37/21	SPT	87.0	44.3	SP	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	
31.00	S-37/22	SPT	REFUSAL	REFUSAL	SP	0.0	82.0	18.0	-	-	NP	NP	NP	2.15	-	19.5	-	-	-	2.47
33.00	S-37/23	SPT	REFUSAL	REFUSAL	SP	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-
34.50	S-37/24	SPT	REFUSAL	REFUSAL	SP	0.0	91.0	9.0	-	-	NP	NP	NP	2.25	1.88	19.7	-	-	-	-
36.00	S-37/25	SPT	REFUSAL	REFUSAL	SP	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-
37.50	S-37/26	SPT	REFUSAL	REFUSAL	SP	0.0	93.0	7.0	-	-	NP	NP	NP	2.28	1.90	19.8	-	-	-	2.48
39.00	S-37/27	SPT	REFUSAL	REFUSAL	SP	-	-	-	-	-	NP	NP	NP	-	-	-	-	-	-	-
40.00	S-37/28	SPT	REFUSAL	REFUSAL	SP	0.0	96.0	4.0	-	-	NP	NP	NP	-	-	-	-	-	-	-





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BOREHOLE	38	JOB NO.	GT-1997	PAGE NO.	
	N-3161673 E-728080		LOCATION		

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		STARTING DEPTH	0.0 M	WATER TABLE DEPTH	
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		TERMINATION DEPTH	40.0 M		11.5 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters				
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (V/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>
0.75	S-38/1	SPT	4.0	6.8	CL	0.0	15.0	85.0	-	-	2.8	-	-	-	-	-	-	-
1.50	S-38/2	SPT	6.0	8.8	SP	0.0	79.0	21.0	NP	NP	4.0	1.65	1.59	0.8	24.0	-	-	2.42
3.00	S-38/3	SPT	8.0	9.8	SP	0.0	88.0	12.0	NP	NP	5.5	-	-	-	-	-	-	-
4.50	S-38/4	SPT	10.0	10.9	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
6.00	S-38/5	SPT	11.0	10.9	SP	0.0	89.0	11.0	NP	NP	5.8	1.74	1.64	-	26.0	-	-	2.44
7.50	S-38/6	SPT	13.0	12.0	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
9.00	S-38/7	SPT	15.0	12.9	SP	6.0	86.0	8.0	NP	NP	7.3	1.82	1.70	-	-	-	-	-
10.50	S-38/8	SPT	21.0	17.0	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
12.00	S-38/9	SPT	23.0	17.6	SP	0.0	88.0	12.0	NP	NP	8.3	-	-	-	31.0	-	-	-
13.50	S-38/10	SPT	28.0	20.3	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-



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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.						
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI						

BORE LOG SHEET																				
Depth (m)	Sample No	Sample Type	Observed N-Value		Corrected N-Value	Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value			Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-38/21	SPT	94.0	44.3	44.3	CL	0.0	12.0	88.0	29.8	17.5	12.3	2.16	1.81	19.2	-	-	0.18	0.86	2.42
31.00	S-38/22	SPT	REFUSAL	REFUSAL	REFUSAL	CL	0.0	12.0	88.0	29.8	17.5	12.3	2.16	1.81	19.2	-	-	0.18	0.86	2.42
33.00	S-38/23	SPT	REFUSAL	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
34.50	S-38/24	SPT	REFUSAL	REFUSAL	REFUSAL	SP	6.0	88.0	6.0	NP	NP	NP	2.21	1.85	19.3	-	-	-	-	-
36.00	S-38/25	SPT	REFUSAL	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
37.50	S-38/26	SPT	REFUSAL	REFUSAL	REFUSAL	SP	5.0	90.0	5.0	NP	NP	NP	-	-	19.5	-	-	-	-	2.52
39.00	S-38/27	SPT	REFUSAL	REFUSAL	REFUSAL	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
40.00	S-38/28	SPT	REFUSAL	REFUSAL	REFUSAL	SP	6.0	88.0	6.0	NP	NP	NP	-	-	19.8	-	-	-	-	-

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						PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		STARTING DEPTH 0.0 M		WATER TABLE DEPTH 14.6 M									
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		TERMINATION DEPTH 40.0 M		14.6 M															
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-39/1	SPT	5.0	8.5	CL	0.0	29.0	71.0	-	-	-	3.6	-	-	-	-	-	-	-
1.50	S-39/2	SPT	7.0	10.2	SP	0.0	75.0	25.0	-	-	-	4.2	1.57	1.64	0.9	22.0	-	-	2.39
3.00	S-39/3	SPT	7.0	8.6	SP	0.0	88.0	12.0	NP	NP	-	-	-	-	-	-	-	-	-
4.50	S-39/4	SPT	11.0	12.0	SP	-	-	-	NP	NP	9.2	-	-	-	-	-	-	-	-
6.00	S-39/5	SPT	12.0	11.9	SP	0.0	94.0	6.0	NP	NP	10.1	1.53	1.69	1.53	28.0	-	-	-	2.42
7.50	S-39/6	SPT	18.0	16.6	SP	-	-	-	NP	NP	12.5	-	-	-	-	-	-	-	-
9.00	S-39/7	SPT	20.0	17.2	SP	0.0	91.0	9.0	NP	NP	13.8	1.52	1.73	1.52	-	-	-	-	-
10.50	S-39/8	SPT	23.0	18.6	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
12.00	S-39/9	SPT	25.0	19.1	SP	0.0	93.0	7.0	NP	NP	15.8	-	-	-	32.0	-	-	-	-
13.50	S-39/10	SPT	28.0	20.3	SP	-	-	-	NP	NP	16.4	-	-	-	-	-	-	-	-







<b>SOIGNE ENGINEERING CONSULTANTS</b> SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com	<b>BOREHOLE</b> 40		<b>LOCATION</b> N-3162036 E-72/845		<b>JOB NO.</b> GT-1997		<b>PAGE NO.</b>	
	<b>STARTING DEPTH</b> 0.0 M				<b>WATER TABLE DEPTH</b> 14.8 M			

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**  
**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-40/1	SPT	4.0	6.8	CL	0.0	11.0	89.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-40/2	SPT	5.0	7.3	SP	0.0	69.0	31.0	-	-	-	1.63	1.57	3.9	0.6	20.0	-	-	2.40
3.00	S-40/3	SPT	6.0	7.4	SP	0.0	93.0	7.0	NP	NP	NP	-	-	4.6	-	-	-	-	-
4.50	S-40/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-40/5	SPT	11.0	10.9	SP	0.0	91.0	9.0	NP	NP	NP	1.69	1.60	5.9	-	25.0	-	-	2.43
7.50	S-40/6	SPT	13.0	12.0	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-40/7	SPT	17.0	14.6	SP	0.0	97.0	3.0	NP	NP	NP	1.71	1.60	6.9	-	-	-	-	-
10.50	S-40/8	SPT	20.0	16.2	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-40/9	SPT	24.0	18.3	SP	0.0	95.0	5.0	NP	NP	NP	-	-	8.5	-	32.0	-	-	-
13.50	S-40/10	SPT	27.0	19.5	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-



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BOREHOLE LOCATION JOB NO. PAGE NO.  
40 N-3162036 GT-1997

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

STARTING DEPTH 0.0 M WATER TABLE DEPTH 14.8 M  
TERMINATION DEPTH 40.0 M

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters				Specific Gravity
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo		
15.00	S-40/11	SPT	30.0	20.7	SP	0.0	87.0	13.0	NP	NP	NP	1.76	1.57	11.9	-	-	-	-	-	
16.00	S-40/12	SPT	38.0	25.0	CL	8.0	13.0	79.0	12.1	18.4	30.5	-	-	12.5	-	0.18	0.89	-	-	
18.00	S-40/13	SPT	35.0	22.0	SP	0.0	81.0	19.0	NP	NP	NP	1.81	1.56	15.9	-	-	-	-	2.29	
19.50	S-40/14	SPT	41.0	24.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	
21.00	S-40/15	SPT	52.0	30.0	SM	0.0	47.0	53.0	-	-	-	-	-	16.9	-	-	-	-	-	
22.50	S-40/16	SPT	58.0	32.1	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
24.00	S-40/17	SPT	64.0	34.0	SM	0.0	59.0	41.0	-	-	-	-	-	17.6	-	-	-	-	2.41	
25.50	S-40/18	SPT	71.0	36.3	SM	-	-	-	-	-	-	2.09	1.76	18.6	-	-	-	-	-	
27.00	S-40/19	SPT	76.0	37.4	SM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
28.50	S-40/20	SPT	82.0	46.5	SM	0.0	56.0	44.0	-	-	-	-	-	18.9	-	-	-	-	-	



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PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		40		N-3162036 E-727845		GT-1997													
		STARTING DEPTH		TERMINATION DEPTH		0.0 M		14.8 M											
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		BORE LOG SHEET		STARTING DEPTH		TERMINATION DEPTH		0.0 M											
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Density		Shear Parameters									
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Atterberg limit	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (V/m2)	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
30.00	S-40/21	SPT	88.0	44.3	SP	0.0	90.0	10.0	NP	NP	NP	2.14	1.80	19.1	.	.	.	.	2.48
31.00	S-40/22	SPT	REFUSAL	REFUSAL	SP	0.0	90.0	10.0	NP	NP	NP	2.14	1.80	19.1	.	.	.	.	2.48
33.00	S-40/23	SPT	REFUSAL	REFUSAL	SP	0.0	90.0	10.0	NP	NP	NP	2.14	1.80	19.1	.	.	.	.	2.48
34.50	S-40/24	SPT	REFUSAL	REFUSAL	SP	0.0	96.0	4.0	NP	NP	NP	2.24	1.87	19.5	.	.	.	.	2.49
36.00	S-40/25	SPT	REFUSAL	REFUSAL	SP	0.0	96.0	4.0	NP	NP	NP	2.24	1.87	19.5	.	.	.	.	2.49
37.50	S-40/26	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	NP	2.29	1.91	19.6	.	.	.	.	2.49
39.00	S-40/27	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	2.29	1.91	19.6	.	.	.	.	2.49
40.00	S-40/28	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	2.29	1.91	19.6	.	.	.	.	2.49



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		41		N-3162087 E-727870		GT-1997			
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.				STARTING DEPTH		WATER TABLE DEPTH			
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				TERMINATION DEPTH		40.0 M		14.6 M	

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters						
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Particle Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction, φ	Coefficient of Consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>	Specific Gravity	
0.75	S-41/1	SPT	5.0	8.5	CL	0.0	40.0	60.0	-	-	-	-	-	-	-	-	-	-	-	
1.50	S-41/2	SPT	6.0	8.8	SP	0.0	66.0	34.0	-	-	-	1.66	1.58	4.8	1.2	18.0	-	-	-	2.40
3.00	S-41/3	SPT	7.0	8.6	SP	0.0	92.0	8.0	NP	NP	-	-	-	-	-	-	-	-	-	-
4.50	S-41/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	9.6	-	-	-	-	-	-	-	-	-
6.00	S-41/5	SPT	10.0	10.0	SP	0.0	96.0	4.0	NP	NP	10.6	1.68	1.52	10.6	-	28.0	-	-	-	2.43
7.50	S-41/6	SPT	12.0	11.0	SP	-	-	-	NP	NP	12.6	-	-	12.6	-	-	-	-	-	-
9.00	S-41/7	SPT	15.0	12.9	SP	0.0	96.0	4.0	NP	NP	13.6	1.74	1.53	13.6	-	-	-	-	-	-
10.50	S-41/8	SPT	18.0	14.5	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-	-
12.00	S-41/9	SPT	22.0	16.8	SP	0.0	95.0	5.0	NP	NP	15.8	-	-	15.8	-	31.0	-	-	-	-
13.50	S-41/10	SPT	25.0	18.1	SP	-	-	-	NP	NP	16.3	-	-	16.3	-	-	-	-	-	-





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BOREHOLE LOCATION JOB NO. PAGE NO  
41 N-3162087 GT-1997

STARTING DEPTH WATER TABLE DEPTH  
0.0 M 14.6 M


PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density				Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity		
30.00	S-41/21	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.		
31.00	S-41/22	SPT	REFUSAL	REFUSAL	SP	0.0	90.0	10.0	NP	NP	NP	2.16	1.83	18.3	.	.	.	.	2.45		
33.00	S-41/23	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	
34.50	S-41/24	SPT	REFUSAL	REFUSAL	SP	0.0	94.0	6.0	NP	NP	NP	2.72	1.87	18.9	.	.	.	.	.	.	
36.00	S-41/25	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	19.1	.	.	.	.	.	.	
37.50	S-41/26	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	2.35	1.97	19.3	.	.	.	.	2.47	.	
39.00	S-41/27	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.	.
40.00	S-41/28	SPT	REFUSAL	REFUSAL	SP	0.0	96.0	4.0	NP	NP	NP	.	.	20.6	.	.	.	.	.	.	.



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			42	N-3161638.06 E-728551.58	GT-1997	
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NORDA.			STARTING DEPTH	WATER TABLE DEPTH		
			TERMINATION DEPTH	40.0 M		14.7 M
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI						

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis			Atterberg limit			Density		Shear Parameters				Specific Gravity		
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (v/m <sup>2</sup> )	Angle of Internal Friction,		Coefficient of consolidation, C <sub>c</sub>	Void Ratio, e <sub>o</sub>
15.00	S-42/11	SPT	39.0	26.9	CL	0.0	39.0	61.0	29.1	18.2	10.9	1.85	1.67	10.9	-	-	0.17	0.84	-
16.50	S-42/12	SPT	46.0	30.2	CL	-	-	-	-	-	-	-	-	12.9	-	-	-	-	-
18.00	S-42/13	SPT	53.0	33.3	CL	0.0	9.0	91.0	31.5	17.8	13.7	1.95	1.67	16.5	-	-	0.19	0.92	2.34
19.50	S-42/14	SPT	60.0	36.1	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21.00	S-42/15	SPT	68.0	39.2	CL	0.0	16.0	84.0	-	-	-	-	-	17.9	-	-	-	-	-
22.50	S-42/16	SPT	70.0	38.7	CL	-	-	-	-	-	-	-	-	-	-	-	-	-	2.30
24.00	S-42/17	SPT	77.0	40.9	SM	0.0	56.0	44.0	-	-	-	-	-	18.2	-	-	-	-	-
25.50	S-42/18	SPT	81.0	41.4	SP	0.0	91.0	9.0	NP	NP	NP	2.16	1.82	18.8	-	-	-	-	-
27.00	S-42/19	SPT	89.0	43.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
28.50	S-42/20	SPT	95.0	46.5	SP	4.0	90.0	6.0	NP	NP	NP	-	-	19.2	-	-	-	-	-



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BOREHOLE		LOCATION	JOB NO.	PAGE NO																
42		N-3161638.06 E-728551.58	GT-1997																	
STARTING DEPTH		WATER TABLE DEPTH																		
TERMINATION DEPTH		0.0 M	40.0 M	14.7 M																
<b>BORE LOG SHEET</b>																				
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis	Atterberg limit			Density		Shear Parameters									
			Observed N-Value	Corrected N-Value		Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
30.00	S-42/21	SPT	REFUSAL		45	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-
31.50	S-42/22	SPT	REFUSAL		SP	0.0	6.0	94.0	NP	NP	NP	-	-	19.6	-	-	-	-	-	2.45
33.00	S-42/23	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-
34.50	S-42/24	SPT	REFUSAL		SP	0.0	91.0	9.0	NP	NP	NP	2.25	1.88	19.8	-	-	-	-	-	-
36.00	S-42/25	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-
37.50	S-42/26	SPT	REFUSAL		SP	0.0	90.0	10.0	NP	NP	NP	2.31	1.93	19.9	-	-	-	-	-	2.47
39.00	S-42/27	SPT	REFUSAL		SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-	-
40.00	S-42/28	SPT	REFUSAL		SP	0.0	85.0	15.0	NP	NP	NP	-	-	19.9	-	-	-	-	-	-

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI



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		43		N-3161687.86 E-72/542.46		GT-1997													
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.				STARTING DEPTH		WATER TABLE DEPTH													
CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				TERMINATION DEPTH		0.0 M		13.5 M											
BORE LOG SHEET																			
Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit		Density				Shear Parameters				
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-43/1	SPT	5.0	8.5	CL	0.0	4.0	96.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-43/2	SPT	7.0	10.2	SP	0.0	83.0	17.0	NP	NP	1.68	1.62	3.6	0.8	22.0	-	-	-	2.42
3.00	S-43/3	SPT	10.0	12.3	SP	0.0	88.0	12.0	NP	NP	-	-	4.7	-	-	-	-	-	-
4.50	S-43/4	SPT	11.0	12.0	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
6.00	S-43/5	SPT	13.0	12.9	SP	0.0	95.0	5.0	NP	NP	1.70	1.60	6.0	-	29.0	-	-	-	2.45
7.50	S-43/6	SPT	15.0	13.8	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
9.00	S-43/7	SPT	20.0	17.2	SP	5.0	93.0	2.0	NP	NP	1.75	1.64	6.8	-	-	-	-	-	-
10.50	S-43/8	SPT	25.0	20.2	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-
12.00	S-43/9	SPT	26.0	19.8	SP	0.0	91.0	9.0	NP	NP	-	-	7.5	-	34.0	-	-	-	-
13.50	S-43/10	SPT	30.0	21.7	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-	-



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	43		N-3161687.86 E-727542.46		GT-1997													
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.				STARTING DEPTH		WATER TABLE DEPTH												
CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI				TERMINATION DEPTH		13.5 M												
BORE LOG SHEET																		
Depth (m)	Sample No	Sample type	Sample		Grain Size Analysis				Atterberg limit		Density		Shear Parameters					
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
15.00	S-43/11	SPT	33.0	22.7	SP	0.0	88.0	12.0	NP	NP	1.84	1.64	11.9	.	.	.	.	.
16.00	S-43/12	SPT	36.0	23.6	SP	0.0	85.0	15.0	NP	NP	.	.	13.2	.	.	.	.	.
18.00	S-43/13	SPT	41.0	25.7	SP	.	.	.	NP	NP	1.89	1.65	14.6	.	.	.	.	2.32
19.50	S-43/14	SPT	47.0	28.2	SP	.	.	.	NP	NP	.	.	.	.	.	.	.	.
21.00	S-43/15	SPT	53.0	30.5	SP	0.0	83.0	17.0	NP	NP	.	.	15.5	.	.	.	.	.
22.00	S-43/16	SPT	57.0	31.5	CL	0.0	19.0	81.0	29.3	12.8	.	.	.	.	.	0.17	0.85	.
24.00	S-43/17	SPT	68.0	36.1	CL	0.0	16.0	84.0	.	.	.	.	17.7	.	.	.	.	2.34
25.50	S-43/18	SPT	76.0	38.9	CL	.	.	.	.	.	2.06	1.74	18.6	.	.	.	.	.
27.00	S-43/19	SPT	84.0	41.3	CL	.	.	.	.	.	.	.	.	.	.	.	.	.
28.50	S-43/20	SPT	92.0	46.5	CL	0.0	17.0	83.0	.	.	.	.	18.9	.	.	.	.	.



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**BOREHOLE**  
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**LOCATION**  
N-3161687.86  
E-727542.46

**JOB NO.**  
GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
0.0 M

**TERMINATION DEPTH**  
40.0 M

**WATER TABLE DEPTH**  
13.5 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters				Specific Gravity		
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc		Void Ratio, eo	
30.00	S-43/21	SPT	REFUSAL	REFUSAL	CL	0.0	23.0	77.0	31.2	17.1	14.1	2.15	1.80	19.2	.	.	0.19	0.91	2.45	
31.50	S-43/22	SPT	REFUSAL	REFUSAL	CL	0.0	23.0	77.0	31.2	17.1	14.1	2.15	1.80	19.2	.	.	0.19	0.91	2.45	
32.50	S-43/23	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
34.50	S-43/24	SPT	REFUSAL	REFUSAL	SP	6.0	86.0	8.0	NP	NP	NP	2.22	1.86	19.5	.	.	.	.	.	.
36.00	S-43/25	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
37.50	S-43/26	SPT	REFUSAL	REFUSAL	SP	10.0	84.0	6.0	NP	NP	NP	2.28	1.90	19.7	.	.	.	.	2.47	
39.00	S-43/27	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
40.00	S-43/28	SPT	REFUSAL	REFUSAL	SP	13.0	78.0	9.0	NP	NP	NP	.	.	19.8	.	.	.	.	.	.



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**BOREHOLE**  
 44  
 N-3161424.43  
 E-727233.20

**LOCATION**

**JOB NO.**  
 GT-1997

**PAGE NO.**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**


**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

**STARTING DEPTH**  
 0.0 M  
**WATER TABLE DEPTH**

**TERMINATION DEPTH**  
 40.0 M  
 12.5 M

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis				Atterberg limit			Density				Shear Parameters			
			Observed N-Value	Corrected N-Value	Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity
0.75	S-44/1	SPT	5.0	8.5	CL	0.0	40.0	60.0	-	-	-	-	-	-	-	-	-	-	-
1.50	S-44/2	SPT	7.0	10.2	SP	0.0	90.0	10.0	NP	NP	NP	1.66	1.61	3.2	-	26.00	-	-	2.42
3.00	S-44/3	SPT	8.0	9.8	SP	0.0	93.0	7.0	NP	NP	NP	-	-	4.5	-	-	-	-	-
4.50	S-44/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
6.00	S-44/5	SPT	12.0	11.9	SP	0.0	97.0	3.0	NP	NP	NP	1.71	1.62	5.6	-	29.00	-	-	2.45
7.50	S-44/6	SPT	16.0	14.7	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
9.00	S-44/7	SPT	19.0	16.3	SP	0.0	96.0	4.0	NP	NP	NP	1.78	1.67	6.8	-	-	-	-	-
10.50	S-44/8	SPT	23.0	18.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-
12.00	S-44/9	SPT	28.0	21.4	SP	0.0	97.0	3.0	NP	NP	NP	-	-	7.9	-	-	-	-	-
13.50	S-44/10	SPT	31.0	22.4	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-	-

	<b>SOIGNE ENGINEERING CONSULTANTS</b> SCF 23, MM, Manimajra, Chandigarh email: soigneconsultants@gmail.com		BOREHOLE	LOCATION	JOB NO.	PAGE NO

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :-EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

**BORE LOG SHEET**

Depth (m)	Sample No	Sample Type	Sample		Grain Size Analysis	Atterberg limit			Density		Shear Parameters									
			Observed N-Value	Corrected N-Value		Symbolic representation	Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, e <sub>o</sub>	Specific Gravity
15.00	S-44/11	SPT	44.0	30.3	SP	0.0	94.0	6.0	NP	NP	NP	1.86	1.67	11.6	.	36.00	.	.	.	
16.00	S-44/12	SPT	55.0	36.1	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
18.00	S-44/13	SPT	64.0	40.2	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
19.50	S-44/14	SPT	82.0	49.3	SP	0.0	97.0	3.0	NP	NP	NP	1.93	1.68	14.6	.	.	.	.	2.41	
21.00	S-44/15	SPT	89.0	51.3	SP	0.0	95.0	5.0	NP	NP	NP	.	.	16.6	.	.	.	.	.	.
22.50	S-44/16	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.	.
24.00	S-44/17	SPT	REFUSAL	REFUSAL	CL	0.0	12.0	88.0	30.2	19.9	10.3	.	.	.	.	.	.	0.18	0.88	2.31
25.50	S-44/18	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	1.99	1.69	17.6	.	.	.	.	.	.
27.00	S-44/19	SPT	REFUSAL	REFUSAL	CL	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
28.50	S-44/20	SPT	REFUSAL	REFUSAL	CL	0.0	16.0	84.0	32.2	18.6	13.6	.	.	18.6	.	.	.	0.20	0.94	.



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DEPTH (m)		Sample No	Sample Type	Observed N-Value	Corrected N-Value	Symbolic representation	Grain Size Analysis				Atterberg limit			Density				Shear Parameters				WATER TABLE DEPTH					
							Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of internal friction,	Coefficient of consolidation, Cc	Void Ratio, eo	Specific Gravity	STARTING DEPTH	TERMINATION DEPTH	0.0 M	40.0 M	12.5 M		
30.00	5-44/21	SPT	REFUSAL	REFUSAL	CL		0.0	22.0	78.0																		
31.00	5-44/22	SPT	REFUSAL	REFUSAL	CL		0.0	22.0	78.0				2.06	1.73	18.9												
33.00	5-44/23	SPT	REFUSAL	REFUSAL	CL																						
34.50	5-44/24	SPT	REFUSAL	REFUSAL	SP		0.0	83.0	17.0				2.13	1.79	19.0												
36.00	5-44/25	SPT	REFUSAL	REFUSAL	SP																						
37.50	5-44/26	SPT	REFUSAL	REFUSAL	SP		0.0	87.0	13.0	28.9	17.6	11.3	2.29	1.91	19.6												2.35
39.00	5-44/27	SPT	REFUSAL	REFUSAL	SP																						
40.00	5-44/28	SPT	REFUSAL	REFUSAL	SP		0.0	86.0	14.0						19.9												

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.  
 CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

**BORE LOG SHEET**

SOIGNE ENGINEERING CONSULTANTS SCF 23, MM, Manimajra, Chandigarh email: soignecconsultants@gmail.com		BOREHOLE		LOCATION		JOB NO.		PAGE NO										
PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.		45		N-3161260.14 E-727492.92		GT-1997												
		STARTING DEPTH		TERMINATION DEPTH		0.0 M		WATER TABLE DEPTH										
CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI		40.0 M		13.4 M														
BORE LOG SHEET																		
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit		Density				Shear Parameters			
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (N/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
0.75	S-45/1	SPT	5.0	8.5	CL	0.0	25.0	75.0	-	-	2.8	-	-	-	-	-	-	-
1.50	S-45/2	SPT	7.0	10.2	SP	0.0	84.0	16.0	NP	NP	4.8	1.65	1.57	25.0	-	-	-	2.42
3.00	S-45/3	SPT	8.0	9.8	SP	-	-	-	NP	NP	5.9	-	-	-	-	-	-	-
4.50	S-45/4	SPT	9.0	9.8	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
6.00	S-45/5	SPT	12.0	11.9	SP	0.0	95.0	5.0	NP	NP	6.2	1.71	1.61	29.0	-	-	-	2.44
7.50	S-45/6	SPT	16.0	14.7	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
9.00	S-45/7	SPT	19.0	16.3	SP	0.0	92.0	8.0	NP	NP	7.9	1.74	1.61	32.0	-	-	-	-
10.50	S-45/8	SPT	23.0	18.6	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-
12.00	S-45/9	SPT	28.0	21.4	SP	0.0	90.0	10.0	NP	NP	8.6	-	-	-	-	-	-	-
13.50	S-45/10	SPT	31.0	22.4	SP	-	-	-	NP	NP	-	-	-	-	-	-	-	-



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BOREHOLE	LOCATION	JOB NO.	PAGE NO.
45	N-3161260.14 E-727492.92	GT-1997	
STARTING DEPTH		0.0 M	WATER TABLE DEPTH
TERMINATION DEPTH		40.0 M	13.4 M

PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.

CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI

BORE LOG SHEET

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters					
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of Consolidation, Cc	Void Ratio, e <sub>0</sub>	Specific Gravity
15.00	S-45/11	SPT	44.0	30.3	SP	0.0	96.0	4.0	NP	NP	NP	1.82	1.65	10.1	.	35.0	.	.	.
16.00	S-45/12	SPT	55.0	36.1	SP	.	.	.	NP	NP	NP	.	.	11.8	.	.	.	.	2.46
18.00	S-45/13	SPT	64.0	40.2	SP	.	.	.	NP	NP	NP	1.91	1.68	13.7	.	.	.	.	.
19.50	S-45/14	SPT	82.0	49.3	SP	0.0	88.0	12.0	NP	NP	NP	.	.	.	.	.	.	.	.
21.00	S-45/15	SPT	89.0	51.3	SP	.	.	.	NP	NP	NP	.	.	15.5	.	.	.	.	.
22.50	S-45/16	SPT	REFUSAL	REFUSAL	SP	9.0	83.0	8.0	NP	NP	NP	.	.	.	.	.	.	.	.
24.00	S-45/17	SPT	REFUSAL	REFUSAL	SP	6.0	89.0	5.0	NP	NP	NP	.	.	16.9	.	.	.	.	2.51
25.50	S-45/18	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	2.10	1.79	17.2	.	.	.	.	.
27.00	S-45/19	SPT	REFUSAL	REFUSAL	SP	.	.	.	NP	NP	NP	.	.	.	.	.	.	.	.
28.50	S-45/20	SPT	REFUSAL	REFUSAL	SP	0.0	92.0	8.0	NP	NP	NP	.	.	18.5	.	.	.	.	.









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**BOREHOLE**  
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**LOCATION**  
 N-3161379.55  
 E-727896.81

**JOB NO.**  
 GT-1997

**PAGE NO**

**PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.**

**CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI**

BORE LOG SHEET																		
Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis			Atterberg limit			Density		Shear Parameters				
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Plasticity Index	Bulk Density (gm/cc)	Dry Density (gm/cc)	Moisture Content (%)	Cohesion, c (t/m <sup>2</sup> )	Angle of Internal Friction,	Coefficient of consolidation, Cc	Void Ratio, eo
			STARTING DEPTH			TERMINATION DEPTH			0.0 M			40.0 M			WATER TABLE DEPTH			
															14.0 M			
15.00	S-46/11	SPT	33.0	18.9	SP	0.0	91.0	9.0	NP	NP	NP	1.85	1.63	13.8	-	-	-	-
16.00	S-46/12	SPT	40.0	20.6	CL	0.0	7.0	93.0	-	-	-	-	-	14.9	-	-	-	-
18.00	S-46/13	SPT	42.0	20.7	CL	-	-	-	30.2	19.9	10.3	1.92	1.66	15.8	-	0.18	0.88	2.32
19.50	S-46/14	SPT	50.0	22.5	CL	0.0	3.0	97.0	-	-	-	-	-	-	-	-	-	-
21.00	S-46/15	SPT	68.0	27.1	CL	-	-	-	-	-	-	-	-	16.9	-	-	-	-
22.50	S-46/16	SPT	73.0	27.7	CL	0.0	21.0	79.0	-	-	-	-	-	-	-	0.20	0.92	-
24.00	S-46/17	SPT	81.0	29.0	SP	0.0	82.0	18.0	-	-	-	-	-	18.0	-	-	-	2.41
25.50	S-46/18	SPT	87.0	29.7	SP	-	-	-	NP	NP	NP	2.13	1.79	19.2	-	-	-	-
27.00	S-46/19	SPT	94.0	30.6	SP	-	-	-	NP	NP	NP	-	-	-	-	-	-	-
28.50	S-46/20	SPT	96.0	30.7	SP	0.0	89.0	11.0	NP	NP	NP	-	-	19.3	-	-	-	-



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	46	N-3161379.55 E-727896.81	GT-1997		

<b>PROJECT :- GEOTECHNICAL INVESTIGATION REPORT FOR REDEVELOPMENT OF BOTANICAL GARDEN OF INDIAN REPUBLIC NOIDA.</b>		<b>STARTING DEPTH</b>	<b>WATER TABLE DEPTH</b>
<b>CLIENT :- EXECUTIVE ENGINEER (P) NOIDA CENTRAL DIVISION CPWD, NEW DELHI</b>		0.0 M	
<b>BORE LOG SHEET</b>		<b>TERMINATION DEPTH</b>	14.0 M

Depth (m)	Sample No	Sample Type	Sample		Symbolic representation	Grain Size Analysis				Atterberg limit			Plasticity Index	Density		Moisture Content (%)	Shear Parameters				Specific Gravity	
			Observed N-Value	Corrected N-Value		Gravel (%)	Sand (%)	Silt Clay (%)	Liquid limit (%)	Plastic Limit (%)	Bulk Density (gm/cc)	Dry Density (gm/cc)		Cohesion, c (kN/m <sup>2</sup> )	Angle of Internal Friction,		Coefficient of consolidation, Cc	Void Ratio, eo				
30.00	S-46/21	SPT	99.0	29.7	SP	0.0	93.0	7.0	NP	NP	NP	NP	2.18	19.4	19.9	2.47						
31.00	S-46/22	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						
33.00	S-46/23	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						
34.50	S-46/24	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						
36.00	S-46/25	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						
37.50	S-46/26	SPT	REFUSAL	REFUSAL	SP	0.0	95.0	5.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						
39.00	S-46/27	SPT	REFUSAL	REFUSAL	CL	0.0	19.0	81.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						
40.00	S-46/28	SPT	REFUSAL	REFUSAL	CL	0.0	15.0	85.0	NP	NP	NP	NP	2.22	19.9	19.9	2.47						