



Balmer Lawrie & Co Ltd.
(A Government of India Enterprise)
Engineering & Projects Department
21, Netaji Subhas Road
Kolkata-700 001

TENDER FOR TOPOGRAPHICAL SURVEY & SOIL INVESTIGATION WORK

FOR

**TEMPERATURE CONTROLLED WAREHOUSE AT INDUSTRIAL
ESTATE PLOT NOS. 5 &13(P), CHHATABAR, DIST-KHORDA,
ODISHA**

TENDER NO: EP/TCW/BHU/SURVEY/SOIL/02

TENDER DATE: 07.06.19

DUE DATE: 27.06.19 upto 16:00 HRS

UNPRICED BID (PART-I)

NOTICE INVITING TENDER
TENDER NO: EP/TCW/BHU/SURVEY/SOIL/02

M/s Balmer Lawrie & Co. Ltd. invites ONLINE BID for carrying out **Topographical Survey & Soil investigation Work** for new project site at plot nos. 5 & 13(P) admeasuring 1.5acres, Chhatabar, District – Khorda, Odisha for construction a Temperature Controlled Warehouse. A site plan has been enclosed for reference.

1.0 SCOPE OF SERVICES

The Scope of Work under this tender will cover topographical land & contour survey and soil investigation work as mentioned in Technical Specification and Schedule of work. The existing soil may have rock layer at shallower depth. The bidder has to assess that while quoting.

2.0 COMPLETION PERIOD

Time is the essence of the contract. The time schedule for completion of the whole work according to the contract shall be **Thirty (30) days** from the date of placement of order by M/s Balmer Lawrie & Co Ltd or handing over of land whichever is later.

3.0 EARNEST MONEY DEPOSIT

Unpriced Part of the Bid should be accompanied by a Demand Draft of **Rs 3,000 (Rupees Three Thousand only)** towards earnest money deposit (EMD) executed by any scheduled bank drawn in favour of M/s Balmer Lawrie & Co Ltd payable at Kolkata.

Earnest Money deposit (EMD) is exempted for agencies registered under NSIC or coming under the definition of Micro and Small Industries and holding valid registration certificates covering the tendered items/services. Declaration of Udyog Aadhar Memorandum (UAM) by the MSE parties on Central Public Procurement Portal (CPPP) shall be mandatory. However, attested/Notarized copy of valid NSIC certificate or “Micro and Small” industry certificate must be submitted in this regard.

For the successful bidder, the EMD will be refunded only after completion of the work. No interest shall be payable towards EMD amount.

For the unsuccessful bidders, the EMD will be refunded only after the successful bidder has accepted the work order and the acknowledgment of the same has been received by the owner.

EMD is liable to forfeiture in the event of:

- i) Withdrawal of offers during validity period of the offer
- ii) Non acceptance of orders by the bidder within the stipulated time after placement of order.
- iii) Any unilateral revision made by the bidder during the validity period of the offer.

- iv) Non-performance of the bidder during the tenure of work.
- v) Bidders submitting false/fabricated/bogus documents in support of their credentials

4.0 **PRE-QUALIFICATION CRITERIA**

The Bidder must meet mandatorily all the criteria as listed below. Should any Bidder fail to comply with the mandatory criteria their offer may not be considered.

- a. Bidders should have satisfactorily completed land & contour survey using **TOTAL STATION** for at least 2 acres of land and soil investigation work during past seven (7) years ending 31st March, 2018 for Two(2) such jobs. Copies of work orders and completion certificates should be submitted along with the bid.
- b. Bidders should have audited annual turnover reports during past three (3) years ending 31st March, 2018.
- c. Bidders should have PAN & GSTIN registration.

5.0 **TENDER DOCUMENTS**

Tender Documents comprises two parts viz. Part-I (Un-priced) and Part-II (Priced). The Un-priced Part consists of Notice Inviting Tender, condition of contract, technical specification & plot location drawing. The Priced Part consists of Priced Schedule. Bidders are requested to download the tender document and read all the terms and conditions mentioned in the tender document and seek clarification if any, from Sri G C Saha, AVP (E&P) (Mobile no. 9748773900). Any clause defining offline bid submission in the tender document shall not be considered.

6.0 **TENDER SUBMISSION**

The intending bidders shall be deemed to have visited the site and familiarise themselves thoroughly with the prevailing site conditions before submission of the tender. Non familiarity with the site conditions and non-visit to site will not be considered reason either for extra claim or for not carrying out the work in strict conformity with the drawing, specification and time schedule.

The tenderer is required to register on the e-procurement site <https://balmerlawrie.eproc.in> and submit their bids online.

For registration and online bid submission tenderer may contact the following officials at the **HELP DESK of M/s C1 India** on browsing to the website <https://balmerlawrie.eproc.in> during business hours (10:00AM to 06:30PM) from Monday to Friday (Excluding holidays of the Company):

Mr. TirthaDas (Kolkata)	tirtha.das@c1india.com	+91-9163254290	MON - FRI
Mr. Artha Ghosh (Kolkata)	partha.ghosh@c1india.com	+91-8811093299	MON - FRI
Mr. CH. Mani Sankar (Chennai)	chikkavarapu.manisankar@c1india.com	+91-8939284159	MON - SAT

Ms. Ujwala Shimpi (Mumbai)	ujwala.shimpi@c1india.com	+91-22-66865608	MON - FRI
Helpdesk Support (Kolkata)		+91-8017272644	MON - SAT
Escalation Level 1			
Mr.Tuhin Ghosh	tuhin.ghosh@c1india.com	+91-8981165071	

The tenderer shall authenticate the bid with his Digital Certificate for submitting the bid electronically on e-procurement platform and the bids not authenticated by digital certificate of the tenderer will not be accepted on the e-procurement platform.

All the tenderers who do not have digital certificates need to obtain Digital Certificate **(with both Signing and Encryption Components)**. They may contact help desk of M/s C1 India.

The tenderer shall furnish the original Demand Draft for EMD to the tender inviting authority so as to reach on or before the due date and time of the Tender either personally or through courier or by post and the receipt of the same within the stipulated time shall be the responsibility of tenderer. The Company shall not take any responsibility for any delay or non-receipt. If any of the documents furnished by the tenderer is found to be false/fabricated/bogus, the tenderer is liable for black listing/forfeiture of the EMD/cancellation of work/criminal prosecution. The tenderer is requested to get a confirmed acknowledgement from the Tender Inviting Authority as a proof of Hardcopies submission to avoid any discrepancy.

The bidders found defaulting in submission of hard copies of original Demand Draft for EMD and other documents to the Tender Inviting Authority on or before the stipulated time in the Tender will not be permitted to participate in the Tender.

The bidder is requested to read all the terms and conditions mentioned in the tender Document and seek clarification if any from if in doubt from Sri G C Saha, AVP (E&P).

The bidder should keep track of any Addendum / Corrigendum / Amendment issued by the Tender Inviting Authority on time-to-time basis in Company's website (www.balmerlawrie.com) and e-procurement site (<https://balmerlawrie.eproc.in>).

The tenderer should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the process and steps. M/s C1 India is not responsible for incomplete bid submission by users. Tenderers may also note that the incomplete bids will not be saved by the system and are not available for the Tender Inviting Authority for processing.

Neither the Company (Balmer Lawrie & Co. Ltd.) nor the service provider (M/s C1 India) is responsible for any failure or non-submission of bids due to failure of internet or other connectivity problems or reasons thereof.

The hardcopies of the Unpriced Bid Documents under sealed envelope should reach the office of **Head (Technical), Balmer Lawrie & Co. Ltd, 21, Netaji Subhas Road, Engineering & Projects Department, 2nd Floor, Kolkata – 700 001** on or before the due date of submission of tender. The Bidders who are submitting the Bids in person are requested to drop the same in our tender box located at the entrance of 2nd floor at the above address.

7.0 SUPPLY OF MATERIAL

All materials required for the work shall be supplied by the agency.

8.0 WORKS CONTRACT

Rates shall be inclusive of all taxes, duties & GST as applicable under works contract.

9.0 PAN, GSTIN & PF registration

Tenderers are required to submit PAN, GST registration, Provident Fund registration along with Un-priced part of their offer, failing which their offer may be liable to be rejected.

10.0 NON-CONFORMANCE

Tenders not conforming to the above mentioned requirements are liable to be rejected.

11.0 VALIDITY OF OFFER

Tendered shall keep their offer valid for a period of 90 days from the date of opening of Unpriced bid.

12.0 RATES AND OTHER ENTRIES

- (a) The tenderer should quote for all items in the Schedule of Rates. The rates should be expressed in English both in figures and words. Where discrepancy exists between the two, the rates expressed in words will prevail. Similarly if there is any discrepancy between unit rate and total amount, the unit rate will prevail.
- (b) The rates should be quoted in the same units as mentioned in the tender schedule of quantities.
- (c) All entries in the tender documents should be in ink / type. Corrections if any should be attested by full signature of the tenderer.
- (d) Every page of the tender document including annexure / enclosures shall be stamped and signed by the tenderer or his authorized representative thereby indicating that each and every page has been read and the points noted.

13.0 RIGHT TO ACCEPT OR REJECT TENDER

- 13.1 Balmer Lawrie & Co Ltd reserves the right to accept or reject any or every tender without assigning any reason whatsoever / or to negotiate with the tenderer (s) in the

manner it considers suitable. In the event of receipt of lowest price from more than one (1) bidders, fresh price bids shall be invited from the lowest bidders only to determine final lowest bidder for placement of order. Fresh price bids shall be submitted in a sealed hard envelop within 5(five) days of notification by BLCL.

13.2 Bids of any tenderer may be rejected if a conflict of interest between the bidder and Company (BLCL) is detected at any stage.

13.3 All the bids will be evaluated based on pre-qualification and other criteria as mentioned in this NIT. Tenders of those bidders who are not meeting the pre-qualification criteria will not be considered for commercial evaluation.

13.4 Tender if submitted through e-mail or fax shall be summarily rejected.

13.5 Hard copy of Price Bid should not be submitted in the envelope containing Un-priced documents failing which the bid will be summarily rejected.

13.6 **Clarifications /exceptions / deviations to the tender terms & conditions and specifications:**

Balmer Lawrie & Co. Ltd expects Tenderers to confirm compliance to tender terms & conditions and specifications, failing which the Tenderers are liable to be rejected. Hence all Tenderers in their own interest are advised to submit their bids in all respects confirming to all terms & conditions of the bid document.

Bids shall be evaluated based on the information / documents available in the bid. Hence Tenderers are advised to ensure that they submit appropriate and relevant supporting documentation alongwith their proposal in the first instance itself. Bids not complying the requirements of bid documents will be rejected without any further opportunity.

For any Technical clarifications / queries Tenderers are requested to contact **Sri G C Saha, e-mail:saha.gc@balmerlawrie.com**) (from 10.00AM to 06.00PM, Monday - Saturday).

Yours faithfully,
for **BALMER LAWRIE & CO. LTD.**

G C SAHA
ASSOCIATE VICE PRESIDENT (E&P)

CONDITIONS OF CONTRACT

1.0 DEFINITIONS

The following expressions hereunder and elsewhere in the contract documents used shall have the following meanings respectively assigned to them namely,

- 1.1 The "Owner / Employer" shall mean Balmer Lawrie & Co. Ltd having its registered office at 21, Netaji Subhas Road, Kolkata - 700 001 and shall include its successors and assigns.
- 1.2 The "Project" shall mean **“Construction of Temperature controlled warehouse at Chhatabar, Odisha”**
- 1.3 The 'Engineer-In-Charge'/'Engineer' shall mean the Engineer /Officer authorized by the 'Owner' for the purpose of the contract for overall inspection, Co-ordination and certification of billing.

2.0 DETAILS OF HARD COPIES TO BE SUBMITTED ALONG WITH THE TENDER

The tender, as submitted, shall consist of the following:

- (i) Hard copy of Un-priced Tender Document duly filled in, stamped and signed by the Tenderer as prescribed in different clauses of Tender documents. **No hard copy of priced bid shall be submitted.** Priced bid shall only be submitted online. The price bid file in pdf format shall be downloaded from the website, bidder to fill in their item-wise rates & amounts on hard copy, stamp, sign, scan and upload the same.
- (ii) Earnest money amounting to and in the manner specified along with the Un-priced bid.
- (iv) Similar work in past Seven years by the tenderer as mentioned in the pre-qualification criteria under NIT with copy of work orders and completion document from the client/ consultant appointed by the client.
- (v) Audited annual report for last three financial years.
- (vi) PAN / GSTIN / PF

3.0 RATES AND OTHER ENTRIES

- (a) The tenderer should quote for all items in the Schedule of Rates. The rate should be expressed in English both in figures and words. Where discrepancy exists between the two, the rates expressed in words will prevail. Similarly if there is any discrepancy between unit rate and total amount, the unit rate will prevail.
- (b) The rates should be quoted in the same units as mentioned in the tender schedule of quantities.

- (c) All entries in the tender documents should be in ink / type. Corrections if any should be attested by full signature of the tenderer.
- (d) Every page of the tender document including annexure / enclosures shall be stamped and signed by the tenderer or his authorised representative thereby indicating that each and every page has been read and the points noted.

4.0 RIGHT TO ACCEPT OR REJECT TENDER

The Owner reserves the right to accept or reject any or every tender without assigning any reason whatsoever / or to negotiate with the tenderer(s) in the manner the Owner considers suitable.

5.0 CONSTRUCTION WATER & POWER

The agency has to make his own arrangement for both construction water and electrical power. The Owner does not undertake to supply water and electrical power to the agency.

All temporary arrangements for distribution of construction water and electrical power line shall be removed forthwith after completion of the work or if there is any hindrance caused to the other works, the agency will re-route or remove the temporary lines at his own cost in a manner so as to continue his (agencies') work in an uninterrupted manner.

6.0 SITE PARTICULARS

The intending tenderers shall be deemed to have visited the site and familiarised themselves thoroughly with the site conditions before submitting the tender. Non-familiarity with the site conditions will not be considered reason either for extra claims or for not carrying out the work in strict conformity with the drawings and specifications. Sri G C Saha (phone no. 9748773900) may be contacted during office hours (Monday to Friday 10.00AM to 6.30PM) may be contacted to guide for site visit.

7.0 SUPPLY OF MATERIAL

All materials required for the work shall be supplied by the agency. In addition, all materials required for temporary and enabling work shall be arranged and provided by the agency. All incidental expenses, loading, unloading, transportation, handling, storage after delivery etc. shall be the responsibility of the agency and cost towards such expenses should be included in the finished item rates.

All other materials, as required to complete the works in all respects according to the contract rates shall be inclusive of all freights and other taxes, duties, loading, unloading, transporting, handling and storage charges etc.

8.0 TERMS OF PAYMENT

No mobilisation advance shall be paid to the agency. Since the job tenure is only one(1) month, no interim payment shall be done.

100% of the Final bill value shall be payable by the Owner after submission of Bills accompanied by the relevant documents duly certified by Engineer-in-Charge.

9.0 LABOUR LAWS

- (i) No Labour below the age of eighteen (18) years shall be employed on Work.
- (ii) Agency shall not pay less than what is provided under law to labourers engaged by him on Work.
- (iii) Agency shall at his expense comply with all labour laws and keep Owner indemnified in respect thereof.
- (iv) In addition to above, rules and regulations as contained in Contract Labour (Regulation and Abolition) Act, 1970 will also be applicable for this contract. For the purpose of registration as per the above Act, Agency may contact Owner for further details.
- (v) Agency shall secure full safety of the workers / employees engaged by him in the Site premises and shall take at his own cost, insurances and such other safety regulations for the said purpose.

10.0 IMPLEMENTATION OF APPRENTICES ACT 1964

Agency shall comply with the provisions of the Apprentices Act, 1964 and the Rules and orders issued there under from time to time. If he fails to do so, his failure will be a breach of Contract and the Engineer-in-Charge may, at his discretion, cancel Contract. Agency shall also be liable for any pecuniary liability arising on account of any violation by him of the provision of the Act.

11.0 INSURANCE & INDEMNITY

Agency shall at his own expense carry out and maintain insurance with reputable companies to the satisfaction of the Owner as follows:

- (i) **Employees Compensation Insurance:**
Insurance shall effect for all agency's' employees engaged in the performance of this Contract. If any of the work is sublet, after necessary approval by the Owner, the agency shall require the Sub-agency to provide Employees Compensation Insurance' for the Sub-agency's employees, if such employees are not covered under the Agency's Insurance.

It shall be responsibility of the agency to ensure that he conforms to the various provisions of numerous statutory Acts as indicated below wherever applicable in respect of contract labour to be engaged by him. He shall also indemnify the Company against all losses/claims in respect of injuries to any contract labour engaged by him or physical damage to any Company property/company employees whatsoever, arising out of the execution of the work/carrying out of the contract. The agency shall also indemnify the Company against claims or losses arising on account of non-compliance of statutory provisions or for any reason whatsoever in respect of the various Acts mentioned below or any other Act not mentioned hereunder which are relevant and applicable in the context :

- Contract Labour (Regulations & Abolitions) Act 1970
- Employees Provident Fund & Miscellaneous Provision Act 1952
- Employees State Insurance Act 1948
- Minimum Wages Act 1948
- Payment of Wages Act 1936
- Employees' Compensation Act 1923
- Payment of Bonus Act 1965
- Labour Welfare Fund.
- Building and other construction worker's Act 1996 and rule 1998

12.0 ARBITRATION

Any dispute or difference arising under this Contract shall be referred under jurisdiction of Kolkata to a sole arbitrator to be appointed by the Chairman & Managing Director of Balmer Lawrie & Co Ltd and the provisions of Arbitration Act, 1996 including any statutory modifications or enactment thereof shall apply to the Arbitration proceedings. The fees of the arbitrator, if any, shall be shared equally by both the parties. The award shall be a speaking award stating reason therefor and is final & binding on the parties. The proceeding shall be conducted in English language and courts at Kolkata will have exclusive jurisdiction to settle any dispute arising out of this contract.

Notwithstanding the existence of any dispute or arbitration in terms hereof or otherwise, the Agency shall continue and to be bound to continue and perform the works to completion in all respects according to the Contract (unless the Contract or works be determined by the Owner) and the Agency shall remain liable and bound in all respects under the Contract.

13.0 EXTRA ITEMS OF WORK

During the course of execution of the work, should the agency come across items of work which are not covered under the Schedule of Rate or not included therein, the Agency shall draw the attention of the Owner / Engineer-in-Charge to the same and such items of work shall be treated as extra only with the prior approval of Engineer-in-Charge in writing. Agency shall submit a quotation along with the rate analysis for such accepted extra items before he commences work or purchases the materials in connection with such items.

For extra items, rates shall be derived from similar item rates included in the schedule of work. Where there is no such similar item available in the schedule, rate shall be analysed as follows:

Rate for extra item = Cost of material (a) + cost of labour inclusive of all necessary tools, tackles, equipment, machinery and consumable (b) required to carry out the work + 15% of (a+b) towards profit and overhead + taxes, duties etc.

TECHNICAL SPECIFICATION FOR TOPOGRAPHICAL SURVEY AND SOIL INVESTIGATION WORK

1.0 PROJECT

Balmer Lawrie & Co. Ltd. propose to construct a temperature controlled warehouse comprising cold chambers for refrigerated stuff and potato, 2/3 storied office buildings, plant buildings, in-plant road etc at Industrial Estate, Chhatabar, Odisha in a land of 1.5acres (approx. 90M x 68M). The height of warehouse shall be limited to 15M from ground level. In order to assess land development work and to design warehouse/building foundations, road/pavement etc; a detailed land & contour survey and soil investigation is needed, which shall be done under scope of this tender.

2.0 SCOPE OF WORK FOR SURVEY

Conducting detailed topographical & contour survey by using TOTAL STATION INSTRUMENT i.e. to pinpoint all salient features such as roads, boundary wall, electric/ telephone lines, nallah, drain, trees, building etc. taking all boundary measurement, internal angles, north direction, establishing HFL, invert level of final storm water discharge point taking spot levels at 4M x 4M grid or as specified, plotting and developing survey drawing on Autocad of 0.25M contour interval etc including mobilization and demobilization of all instruments, personnel, fixing one stone pillar or other means as suitable at site for Temporary Bench Mark (TBM) etc.

3.0 SCOPE OF WORK FOR SOIL INVESTIGATION

The nature and extent of soil investigation as needed for the above project, has been briefly described below: Bidders need to understand the nature of prevailing soil in that zone and quote in accordance.

Standard Penetration Test to be carried out at locations as decided by the Engineer-in-charge with the soil investigation agency. Soil samples to be collected as per code of practice to determine soil parameters. Bore-logs showing various soil strata along with SPT values shall be furnished in the Soil Investigation Report. The bores shall be done to an average depth of 15 meters or the refusal strata whichever is less from the existing ground level. Soil samples shall be taken at an interval of 3.0 meters or change in strata, whichever occurs earlier. The consolidation properties of the base soil to be assessed with relevant tests and the data are to be included in the report. The CBR values are to be determined at site and on laboratory samples. The bearing capacity recommendation should take care of the settlement criteria stipulated in the IS code. Dynamic cone penetration tests to correlate the data available from various bores shall be conducted.

The ground water level shall be determined and to be incorporated in the report. The elevation of ground water table shall be incorporated in the bore-logs mentioned above.

Laboratory tests shall be carried out in order to determine the following soil characteristics:

- a) Natural moisture content
- b) Liquid limit
- c) Plastic limit
- d) Bulk and dry density
- e) Specific gravity
- f) Particle size distribution
 - a) Sieve
 - b) Hydrometer
- g) Tri-axial/direct shear test
- h) Consolidation test
- i) Sulphate and chloride content
 - a) On soil
 - b) On water

CBR value shall be obtained at three locations at site to decide the pavement. Specific recommendation for pavement sub-grade/sub-base, boundary wall foundation etc. to be incorporated in the report.

All the above test results shall be furnished along with the Soil Investigation Report for each of the samples collected at site.

Filled-up soil/black cotton soil, if available within the proposed area, a proper assessment shall be made for such soil strata. The Soil Investigator shall measure the depth of such soil layer at different locations within the plot and type of such soil shall be investigated. A representation in the drawing shall be made showing depth of such strata across the pavement area by incorporating cross sectional profile so as to assess the extent of site development activity needed to optimize cutting/filling.

4.0 SUBMISSION OF SOIL INVESTIGATION REPORT

A comprehensive topographical & contour survey report along with 3 sets colour drawings in A1 size both for land survey and contour survey. Autocad file shall also require to be submitted by the agency.

A comprehensive Soil Investigation Report shall be prepared and hard copy shall be submitted by the agency in duplicate alongwith soft copy in pdf. The report shall consist of at least the following information:

- A brief summary explaining the basic soil characteristics of the land area along with specific recommendation towards allowable net bearing capacity for building foundation of footing size 2Mx2M, 3Mx3M, strip, raft foundation etc with variable foundation depth, pavement design. The bearing capacity recommendation should be made considering Shear Parameters of soil as well as the settlement criteria.
- Technical representation of all the bore-logs duly incorporating the bore no. and location of such bore at site showing all the soil strata encountered during execution of boring and Ground Water Table available at the particular location.

- All laboratory test results against each individual test samples taken at site to be furnished in the form of tables.
- Specific recommendation in relation to pavement sub-grade design to be furnished. In case filled up/black cotton soil layer exists, specific recommendation to construct the building foundation/pavement/boundary wall on such soil to be indicated.
- All supporting calculations in order to derive the recommended allowable bearing capacity and settlement calculation to be furnished in proper manner.
- All SPT test results to be furnished in the bore-log duly incorporating the depth of such test to be taken up to full depth from ground level.
- CBR value based on site investigation (in- site) and on laboratory value.

NOTE: PLANT LAYOUT SHOWING BOREHOLE LOCATIONS TO BE PROVIDED LATER



SCHEDULE OF WORK

Name of work : Land Survey & Soil investigation Work at Plot no. 5 & 13(P), Industrial estate, Chhatabar, Khorda, Odisha					
Sl No	Description	Unit	Qty	Rate in (Rs.)	Amount in (Rs.)
1	Mobilization, at site with all necessary plant and machinery, providing site establishment etc. The item also includes providing enabling works like platforms and temporary approaches etc to carry out the work.	LS	1		
2	Clearing of bushes, shrubs, trees etc including uprooting to facilitate soil investigation work and clearing, carting away material outside our premises. Plot area approx. 1.5 acres	LS	1	BIDDER NOT TO QUOTE HERE. PRICE TO BE QUOTED ONLINE ONLY	
3	Carryout 150 mm dia investigation bores up to a maximum depth of 15 M from existing ground level or upto refusal strata as per scope of work, preparing bore log data etc., arranging collection of undisturbed soil samples complete (4nos bore holes to be done).	RM	60		
4	Carry out standard penetration test at an interval of 2.0M and /or starting of every new soil strata. Collection of field data for preparation of investigation report and working out the bearing capacity.	Nos	30		
5	Collect disturbed soil samples every 3 meter or at change in strata for physical identification and preparation of boring log.	Nos	20		
6	Collect water samples in one gallon capacity polythene container and indicate water table in the report.	Nos	02		
7	Conduct laboratory test as required:				
i	Natural moisture content	Nos	20		

ii	Liquid limit	Nos	20		
iii	Plastic limit	Nos	20		
iv	Bulk and dry density	Nos	20		
v	Specific gravity	Nos	20		
vi	Particle size distribution				
	i) Sieve	Nos	20		
	ii) Hydrometer	Nos	20		
vii	Triaxial / direct shear test	Nos	8		
vii	Consolidation test	Nos	8		
ix	Chemical test analysis for pH sulphate and chloride content				
	i) On soil	Nos	8		
	ii) On water	Nos	8		
8	Determination of CBR value on laboratory samples.	Sets	8		
9	Conducting field CBR value at site to determine quality of existing soil surface.	Nos	2		
10	Dynamic cone penetration test.	Nos	2		
11	Preparation and submission of soil investigation report based on field data available from the tests. The report should be prepared in line with the scope of work enclosed. It should include specific recommendation regarding net soil bearing capacity based on the field data. The supporting calculations for deriving bearing capacity should be a part of the report. The report should include all other information as per requirement stipulated in scope of work.	LS	1		
12	Conducting detailed topographical & contour survey by using TOTAL STATION INSTRUMENT i.e to pinpoint all salient features such as roads, boundary wall, electric/ telephone lines, nallah, drain, trees, building etc. taking all boundary measurement, internal angles, north direction, establishing HFL, invert level of	LS	1		

	final storm water discharge point taking spot levels at 4M x 4M grid or as specified, plotting and developing survey drawing on Autocad of 0.25m contour interval etc including mobilization and demobilization of all instruments, personnel , fixing one stone pillar or other means as suitable at site for TBM etc all complete as per direction of Engineer-in-Charge. Cost also to include putting up atleast 8nos concrete precast pillar to mark four corner points and intermediate points of the entire plot for future reference.				
	TOTAL				
	Add GST @ 18%				
	TOTAL WITH GST				
	(Rupees.....only)				