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OFFICE OF THE DEAN OF
RESEARCH & DEVELOPMENT

NIQ Reference Number: IITG/RND/T94A/23-24

• To

• Date : 21.04.2023

All interested firms/suppliers/Bidders

SUBJECT: Letter of Invitation (LOI) for Drilling of 20 boreholes at Basopatti, Birpur and adjacent areas of Madhubani Region in Bihar as per details listed in Annexure IV, FOR THE DEPARTMENT OF Civil Engineering (PROJECT NO.xxCESPNMOES0099xABK003), IIT GUWAHATI.

Dear Sir/ Madam,

The Director, Indian Institute of Technology Guwahati, invites quotations for **Drilling of 20 boreholes at Basopatti, Birpur and adjacent areas of Madhubani Region in Bihar** as per details mentioned in the **CHECK-LIST** attached herewith. The quotation in **double bid [Details as per Check List]** is to be submitted via <https://mhrd.euniwizarde.com> on or **before 16.05.2023**.

Please note -

- (i) Intending bidders may download the LOI documents from the website <https://mhrd.euniwizarde.com> directly.
- (ii) **The LOI is also published** at <http://www.iitg.ac.in/home/tender/19> and <https://eprocure.gov.in/>
- (iii) There is non-refundable Tender / Form fee of 500.
- (iv) LOI document is divided into three parts i.e. (1) Instruction to Bidders (2) Terms & Conditions and (3) Annexures
- (v) The bid documents are not transferable and should be digitally signed by the authorized bidder.

Kindly read both the Instructions and Terms properly and see that instructions and terms are fully understood and complied. No correspondence shall be entertained in case your quotation is rejected on ground of not complying with our instructions, terms and conditions. In case of doubt please contact us before 7 working days of the deadline for submission of online bid at 0361 258 3089.

Thanking you.

Yours Sincerely,

INSTRUCTION TO BIDDERS

A) Important Date and Time :

- | | | |
|--------|--|---------------------------------------|
| (i) | Date of NIQ publishing | : 21.04.2023 |
| (ii) | Bid submission start date | : 21.04.2023 |
| (iii) | Document download start date | : 21.04.2023 |
| (iv) | Document download end date | : 16.05.2023 |
| (v) | Deadline for submission of online bid | : 1200 Hrs (12 o clock) 16.05.2023 |
| (vi) | Time and date for bid opening | : 1500 Hrs (3:00PM) 16.05.2023 |
| (vii) | Time and Date for price bid opening | : 1200 Hrs (12:00 o clock) 23.05.2023 |
| (viii) | Pre-Bid Meeting Date | : N/A |
| (ix) | Venue of Bid opening | : R & D Section |

B) The Bidder has to submit EMD through e-payment gateway available in the portal

S.no	Name of work	Tender EMD (Rs)	Time limit for completion of work
1.	Drilling of 15 boreholes of 150 mm dia. up to 30m and 5 boreholes up to 100m depth near Birpur, Basopatti, and Madhubani regions in Bihar	Rs. 1.0 Lakh	60 days

a) MSME units are exempted from payment of Tender fee and EMD Charges on submission of documentary proof.

C) Quotations will have to be submitted in a DOUBLE Bid [Technical Details as per CHECK - LIST].

D) NIQ documents needs to be downloaded from website only and submission of Techno-Commercial Bid and Financial Bid will be done as per Time Schedule stated in Point – A.

E) Submission of bids: Bids are to be submitted through online to the website <https://mhrd.euniwizarde.com> in two bids, one in Technical bid & the other is financial bid, before the prescribed date and time using Digital Signature Certificate (DSC). The documents duly digitally signed are to be uploaded.

E) 1. Technical Bid: The technical bid should contain scanned PDF copies (Single pdf file for multiple pages and documents) of the following in **two folders. The seal and signature of the authorized official of firms must appear on all the documents uploaded.**

E) 1. (a) Technical Documents:

- i. Compliance certificate [Annexure –I]
- ii. Contractors Registration certificate.
- iii. PAN details
- iv. Audited Accounts for last 5 years.
- v. Character certificate (Undertaking that currently the Bidder is not blacklisted by any Government organization / institution)
- vi. GST Registration Certificate and GST Clearance certificate
- vii. Banker's Detail.
- viii. List of reputed organizations/institutions, particularly to IIT/Institutes and other Government Organization where similar works have been executed, if any (copy (s) of the work Orders will have to be uploaded).

F) 2. Financial Bid: The financial bid should contain Bill of Quantities (BOQ) in excel format. The bidder is to quote the rate in the space marked for quoting rate in the BOQ. Only downloaded copy with same file name of BOQ document must be uploaded by the bidder after filling up.

G) The Financial Bid of the prospective Bidder will be considered only if the Techno-Commercial Bid of the bidder is found qualified by the Purchase Committee. The decision of the Institute will be final and absolute in this respect.

- H) **Query**, if any, may be made before 7 working days of the deadline for submission of online bid at 0361 258 3089 or the Indentor .
- I) **Evaluation of Process:**
1. Opening of Technical Cover: Technical Documents will be opened by Quotation Opening Committee using Digital Signature Certificate (DSC).
 2. **Technical Documents [Ref. Sl. No.: D) 1. (a)] and Other Important Documents [Ref. Sl. No.: D) 1. (b)] will be opened. If there is any deficiency/discrepancy in the Documents, the bidder may summarily be rejected.**
 3. Decrypted (transformed into readable formats) documents of the covers will be downloaded and handed over to the Purchase Committee.
 4. Summary list of technically qualified bidders will be uploaded online.
 5. During evaluation, the Committee may summon the bidders and seek clarification/ information or additional documents or original hard copy of any of the documents already submitted & if these are not produced within the stipulated time frame, their proposals will be liable for rejection.
 6. The Financial offer of the prospective bidder (BOQ) will be considered only if the Technical Bid of the bidder is found qualified by the Purchase Committee.
- J) **Bid not transferable:** The bid documents are not transferable under any circumstance.
- K) **Award:** The Final Award will be given to the technically qualified firm/Bidder, selected by the Purchase Committee on the lowest quote basis.

TERMS & CONDITIONS

(Please note the term 'both foreign & indigenous' wherever mentioned means the term is applicable to both foreign & indigenous purchase)

01. **Rates:** Rates quoted-(Incl. all taxes) should be quoted as per BOQ sheet, failing which the bid shall be disqualified.
02. **Validity of Quotation:** Quoted rates must be valid for **120 days** from the last date of submission of quotation.
03. **Warranty:** Please refer to annexure IV.
04. **Late Quotation:** Any Quotation uploaded after the deadline for submission of Quotations will be rejected.
05. **Amendments:** At any time prior to the deadline of submission of Quotations, the purchaser, for any reason may modify the NIQ documents by amendment.
06. **Conditional Quotation not acceptable:** All the terms and conditions mentioned herein must be strictly adhered to by all the Bidders. Conditional Quotations shall not be accepted on any ground and shall be rejected straightway. Printed conditions mentioned in the bids submitted by Bidders will not be binding on IITG.
07. **Goods and Service Tax (GST):**
- a) Up-to-date Sales Tax clearance certificate, **GST Registration** number of the firm will have to accompany the quotation.
 - (b) GST Deduction at source as per Order/ notification of the Govt.
 - (c) GST No of IIT Guwahati is 18AAAJI0130P1Z8.
 - (d) HSN / SAC No of the items must be clearly mentioned in the quotation along with GST No.
 - (e) **As per Notification No. 45/2007- Central Tax (Rate) dated 14.11.2017 and 47/2017-Integrated Tax (Rate) dated 14.11.2017, issued by Ministry of Finance, IIT Guwahati will avail 18% GST rate, on the items, as mentioned in the Notification.**
08. **Payment:**
- (a) 100% Payment within 45 days from the date of successful completion of the work to the full satisfaction of the indentor generally through A/c payee cheque.
- OR
09. **PENALTY FOR DELAY IN COMPLETION:**
- For the completion of the work followed by submission of the report and to the full satisfaction of the indentor , the date committed should be strictly adhered to. In the event of delayed i.e. after the expiry of the period as agreed by both the parties, the bidder shall be liable for a penalty deduction at a percentage of the total value of the work subject to a maximum of 10% (ten percent) as detailed below:
- @1% up to one week;

@2.5% up to two weeks;

@5% up to three weeks;

@10% for four weeks and above

For the purpose of this clause, part of the week is considered as a full week. In case of delayed delivery, the Director, IIT Guwahati reserves the right not to accept the subject consignment.

10. **Enquiry during the course of evaluation not allowed:** No enquiry shall be made by the bidder(s) during the course of evaluation of the Bids till final decision is uploaded / published in the e-procurement website. However, the Purchase Committee or its authorized representative (IIT Guwahati) can make any enquiry/seek clarification from the bidders. In such a situation, the agency shall extend full co-operation. The bidders may also be asked to arrange demonstration of the offered items, in a short period notice, as such the bidders have to be ready for the same.
11. The acceptance of the quotation will rest solely with the Director, IITG, who in the interest of the Institute is not bound to accept the lowest quotation and reserves the right to himself to reject or partially accept any or all the quotations received without assigning any reasons.
12. **Force Majeure:** If the performance of the obligation of either party is rendered commercially impossible by any of the events hereafter mentioned that party shall be under no obligation to perform the agreement under order after giving notice of 15 days from the date of such an event in writing to the other party, and the events referred to are as follows:
- I) any law, statute or ordinance, order action or regulations of the Government of India,
 - II) Any kind of natural disaster, and
 - III) Strikes acts of the Public enemy, war, insurrections, riots, lockouts, sabotage.
13. **Termination for default:** Default is said to have occurred -
- (a) If the work or any of its component is found having poor workmanship, faulty designs, poor performance and bad quality of materials used.
 - (b) If the Bidder fails to deliver any or all of the services within the time period(s) specified in the purchase order or any extension thereof granted by IITG.
 - (c) If the Bidder fails to perform any other obligation(s) under the contract.
 - (d) Under the above circumstances IITG may terminate the contract / purchase order in whole or in part and forfeit the Security Deposit as applicable. In addition to above, IITG may at its discretion also take the following actions:
IITG may procure, upon such terms and in such manner, as it deems appropriate, goods similar to the undelivered work and the defaulting Bidder shall be liable to compensate IITG for any extra expenditure involved defaulted work
14. **Applicable Law:**
- (a) The contract shall be governed by the laws and procedures established by Govt. of India and subject to exclusive jurisdiction of Competent Court and Forum in Guwahati.
 - (b) Any dispute arising out of this purchase shall be referred to the Director IIT Guwahati, and if either of the parties hereto is dissatisfied with the decision, the dispute shall be referred to the decision of an Arbitrator, who should be acceptable to both the parties, to be appointed by the Director of the Institute. The decision of such Arbitrator shall be final and binding on both the parties.

Encl.: CHECK LIST
Encl.: ANNEXURES

Asstt. Registrar (R&D)

CHECK - LIST

FOR THE DEPARTMENT OF CE (PROJECT NO. xxCESPNMOES0099xABK003):

Sl. No.	Items Required	Quantity	Bid Type
1	<p>Drilling of 15 boreholes of 150 mm dia. up to 30 m and 5 boreholes up to 100 m depth near Birpur, Basopatti, and Madhubani regions in Bihar</p> <p><i>[Only for any technical clarification required, please contact Ph. No: 0361-258- 3329 before 7 working days of last date of submission of bids.]</i></p> <p>NIQ Ref. No.: IITG/RND/T94A/23-24, dated 21.04.2023</p>	20	DOUBLE BID

ANNEXURE -I

NIQ Reference Number: IITG/RND/T94A/23-24

COMPLIANCE CERTIFICATE

(A certificate of compliance to NIQ term to be enclosed in the Technical bid)

Sl. No.	NIQ Terms and Conditions	Yes / No
01	Rate quoted as per instruction	
02	AMC rate after warranty provided	
03	Validity of quoted rate for 120 days agreed	
04	PBG term agreed	
05	Payment term agreed	
06	Delivery terms agreed	
07	Warranty period agreed	
08	Literature: Printed Literature provided	
09	Dealership / distributorship certificate (in case of dealers/agents) provided	
10	Sales Service: address of after Sales Service centre in India provided	
11	Manufacturer certificate provided	
12	ISO/ ISI certification provided	
13	Applicable law terms agreed	
14	Additional Terms for Imported Goods (in case of foreign goods) agreed	

Sign. :.....

Bidder : M/s.....

Official seal of the Bidder

ANNEXURE-III

NIQ Reference Number: IITG/RND/T94A/23-24

BIDDERS DETAIL

Sl. No.	Name of the company/Firm	To be filled by Bidder (Documentary Proof must be attached as applicable)
01	Registered office Name & Address Details of contact person Name designation Telephone number e-mail	
02	Name & Address of service centre in Guwahati city Contact person/s Name designation Telephone number e-mail	
03	Is the company/firm a registered company/firm? If yes, mention year and place of the establishment of the company and submit documentary proof.	
04	Is the company/firm registered for GST? If yes, submit valid registration certificate.	
05	List the major clients with whom your organization has been associated and submit documentary proof/PO.	

Note: Document/s if attached to the NIQ compliance Certificate the same may be referred to in the remark column above

Sign. :.....
Bidder : M/s.....

Official seal of the Bidder

NIQ Reference Number: IITG/RND/T94A/23-24

INTRODUCTION

To understand and minimize the probable seismic hazards posed by the Birpur, Basopatti, and adjacent regions of Madhubani, Bihar, Indian Institute of Technology Guwahati invites sealed bids for “Drilling of 15 boreholes of 150 mm dia. up to 30 m and 5 boreholes up to 100 m depth” as per specifications given in this document. The offer should be made on the original specified Bid Performa only, contained in the Schedule of Bid document as given later in the document. All offers should be made in English. The envelop should be addressed to “Assistant Registrar, Research and Development Section, Indian Institute of Technology Guwahati, Amingaon, North Guwahati, Assam – 781039” with a superscript, Bid offer for “Drilling of 20 boreholes to understand subsurface stratifications and strength characterizations of Madhubani and its adjacent regions”.

Technical Specifications

SECTION: I

(A) ELIGIBILITY CRITERIA AND DIFFERENT PARAMETERS FOR TECHNICAL BID QUALIFICATION

(i) Qualifying Criteria:

1. Tenderer should have carried out successfully complete works amounting to:
 - a. One work of at least Rs. 32 lakh successfully completed within last 5 years.
 - b. Two works of at least Rs. 24 lakh each, successfully completed within last 5 years.
 - c. Three works of at least Rs. 16 lakh each, successfully completed within last 5 years.
2. The determination will take in to account the Bidders financial and technical capabilities necessary to perform the contract. It will be based upon the examination of the documentary evidence of the Bidder’s qualifications submitted by the bidder.
3. Tenderer must possess annual average turnover of at least 12 lakh during last three years (namely FY2021-22, 2020-2021 and FY 2019-2020).
4. IITG will deduct 2% of GST amount and deposit it in Government account. It will be the tenderer’s responsibility to deposit GST in the service tax department.
5. Possession of relevant manpower for related services viz. Civil Engineer; geotechnical scientists, geologists and field and laboratory support.
6. (a) The company should have well Equipped soil testing laboratory having NABL accredited laboratory or MoU with institution/organization having similar Laboratory.

(ii) Parameters for Technical Qualifications:

Sr. No.	IIT Guwahati Requirements	Tenderer Data
1	Tender Fee Rs 500/- through e-payment gateway available in the portal	
2	E.M.D. Rs. 1.0 Lakh through e-payment gateway available in the portal	
3	Tenderer must have experience of successfully complete work in soil/rock	
4	Annual minimum turnover of Rs 1200000.00 of the value of the work for the last three years	

Tenderer's Signature with Stamp

(B) SCOPE OF CONTRACTOR

1. Tenderer shall have to deal with labor and materials with site difficulties and discomfort.
2. The equipment and the works shall confirm in all respects of Indian and American Society of Testing and Materials (ASTM) standards of engineering.
3. The tenderer has to arrange photographs of work at different stages of progress as per the instruction of site in charge from IIT Guwahati. Photographs of site clearance should also be included. Fortnightly progress of the work should be reported to IIT Guwahati representatives. 3 hard copies and 1 soft-copy of final report of the proposed drilling investigations has to be submitted to IIT Guwahati.
4. Completion of work will only be considered after completion of the borehole as per suggestion of IIT Guwahati supervision.
5. Successful tenderer will have to start the drilling work within 15 days from the date of order. The total work shall be completed within 60 days of the date of order. The work of drilling the new borehole will have to start immediately on showing the exact site and work of all boreholes should be completed within the time specified above.
8. If the contractor does not complete any part of the work (as mentioned in the tender) due to any reason, the payment for that part of work will not be released till work is completed satisfactorily.
9. The contractor shall have to engage a qualified technical representative (preferably geologist) on full time, for necessary instructions during the entire work.
10. The contractor shall be responsible for workman's compensation if any such case of death or injury. During the work, any damage to the Government property will be recovered from

contractor's account.

11. The contractor shall have to keep record of workers working on site and will have to submit that record every week to IIT Guwahati. Any serious medical conditions of the people at work should be informed to IIT Guwahati representatives. Relevant checkups are the sole responsibilities of the contractor.

12. It is the responsibility of the contractor to keep track of the disputes that should be referred to at the court in Guwahati.

13. The rates quoted in "Bid Price Schedule" shall be stated in words as well as in figures. In case of any mismatch, rates in words will be considered.

14. If any extra item comes-up during the process of work, the same shall be carried out by the contractor and shall be paid as per the rates fixed-up by IIT Guwahati (if such rates are not fixed earlier) or as per CPWD regulations.

15. IIT Guwahati reserves the right to accept or to reject any tender in part or full without assigning any reason whatsoever.

16. No change in terms of payment from the contractor will be accepted.

17. The materials must be as per technical specifications given in the tender documents.

18. Contractor must ensure that each of the drilled borehole is filled with sand completely once the operation at that borehole location is complete, before moving to the next borehole location.

19. Contractor has to make his own arrangement for water required for drilling of borehole. In any circumstances water and water tanker will not be provided by IIT Guwahati. Any other terms of tenderer for water tanker will not be accepted at any stage.

19. Assistant Registrar, R&D and the Principal Investigator of this project reserve the right; (i) to change/ alter or waive any technical or commercial terms, conditions and qualification, (ii) to reject all the tenders or the lowest or any other tender in part or full without assigning any reason whatsoever, (iii) for making changes/ relaxation in eligibility criteria at any time, (iv) to split the tender and award to more than one tenderer in the interest of public. The tenderer shall have no cause of action or claim against the Institute or its office employees, successors or assignee for rejection of the tender.

Tenderer's signature and stamp

(A)INSTRUCTIONS TO TENDERERS

1. EXAMINATION BY TENDERERS:

1.1. Prior to submitting the tender, each tenderer must do the following steps:

- (a) Tenderer must have to visit the site, assess site conditions, and check difficulties and discomforts at the drilling locations.
- (b) Examine all instructions, eligibility criteria and specifications in the tendering document.
- (c) Get familiarized with all Centre's, State's and local laws, ordinance, rules and regulations, and codes affecting the services including the cost of permits and licenses required for working at the site.
- (d) Any legal disputes between the contractor and IIT Guwahati needs to be resolved at IIT Guwahati.
- (e) No additional claim, discrepancy etc. shall be entertained after opening of the tender.

2. TENDER PRICES:

- a. The prices and discounts quoted by the Bidder and Work Components shall confirm to the requirements mentioned.
- b. The Bidder shall fill in rates and prices for all items of the Works included in the Work Components. If no rate or price is quoted by the Bidder against any item, it shall be assumed to have been covered by the rates for other items. The Bidder shall have to execute the same without any additional charges.
- c. The price to be quoted in the Letter of Interest shall be the total price of the Bid excluding any discounts offered.
- d. Bids with conditional discounts shall be treated as invalid. The Bidder may, however, quote any unconditional discounts and the methodology for their application in the Letter of Transmittal.
- e. The rates and prices quoted by the Bidder shall not be subject to any adjustment due to escalation during the execution of the Contract. These will remain valid for the entire period of the work.
- f. The rates and prices quoted by the Bidder shall be inclusive of all duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as on the date of submission of bids.

3. DOCUMENTS COMPRISING THE TENDER

The original and duplicate tenders prepared by the tenderer shall be in two cover comprising of the following components:

- a. Cover A: Eligibility Criteria and Technical Bid

b. Cover B: Price Schedule Cover

4. PERIOD OF BID VALIDITY

Bids shall remain valid for a period of 120 days after the last date of opening of bid. Bids with a shorter period of validity shall be liable to rejection.

5. EARNEST MONEY DEPOSIT (EMD)

- b) The Bidder has to submit EMD through e-payment gateway available in the portal.
- c) Any bid not accompanied by the earnest money in proper form and of appropriate amount shall be rejected outright.
- d) The earnest money shall be refunded without any interest as below:
 - (i) In case of unsuccessful bidders – as soon as possible after the successful bidder furnishes the performance security.
 - (ii) In case of successful bidder – as soon as possible after signing the Contract and furnishes the required performance security.
- e) No interest will be paid on EMD and Performance Security Deposit.
- f) **MSME units are exempted from payment of Tender fee and EMD Charges on submission of documentary proof.**
- g) The earnest money shall be forfeited-
 - (i) If a Bidder withdraws the bid during the period of bid validity.
 - (ii) If the successful Bidder fails to sign the Contract within one month from the date of issuance of the letter of intent.
 - (iii) If the successful Bidder fails to furnish a performance security within 2 (Two) weeks of issuance of the letter of intent.

5. SIGNING OF CONTRACT

- a) On receipt of the notification of award/ order, successful tenderer has to execute the necessary arrangement with the institute as per the prevailing rules and regulations of the institute along with performance security deposit.
- b) Contract shall be constituted according to and subject to laws of India and State of Assam and under the jurisdiction of court of Assam at Guwahati only.

6. SECURITY DEPOSIT

- a) On receipt of notification of award from the institute, the work-awarded tenderer shall furnish 10% security deposit in accordance with the conditions of the contract, in the form acceptable to the IITG within 15 days, valid for 6 months.
 - b) Failure of the work-awarded tenderer to comply with the requirement of above clause shall constitute sufficient grounds for the annulment of the award and forfeiture of the EMD, in which event the IITG may make the award to the next lowest evaluated tenderer or call for new tenders.
-

Bank Details:

Name of Party/Contractor:

Address:

Telephone No.:

E-mail ID:

PAN No. (Self-Attested Xerox copy of Pan card).:

Name of the Bank:

Name of the Branch:

Address:

Account No.(IN full Digit):

Type of Account:

MICR No.:

IFSE Code No.:

The information given above is true to the best of my knowledge and belief.

Party's Stamp & Signature

SECTION: III

1. GENERAL

The purpose of the investigation is to determine the in-situ properties/ strength characteristics of the subsurface soil/ rock. The approx. depth of 15 boreholes have been sanctioned to be up to 30m and for 5 boreholes up to 100m from the existing ground level. Four boreholes are planned in and around Madhubani district. Standard Penetration Test (SPT) and Undisturbed Sample (UDS) samples to be obtained at the prescribed depths in borehole. The in-situ field tests are to be conducted in the presence of representative/s from IIT Guwahati. The quantity of SPT, UDS and Core sampling will vary according to the requirement at the site.

2. DEFINITION

- (a) Satisfactory completion of borehole drilling to the maximum prescribed depth in all sorts of soil, kankar, boulder, soft or hard rock. Above stated depths are approximate and the contractor may have to go higher or lower depths as decided by the IIT Guwahati officials and local site conditions.
- (b) After completion of drilling, borehole must be filled up by appropriate material to prevent any accident, before mobilizing the instruments and manpower from the test location. The contractor will be responsible for any injury or accident in this condition.

3. DRILLING PROCEDURE

- a) The contractor may preferably employ hydraulic rig for drilling/ auger shell method.
- b) The collection of the sample at required depths will be contractor's responsibility and drilling work can be only stop after the permission of the IIT Guwahati's officials.
- c) The drill monitoring chart and the physical onsite drilling logs have to be maintained by the site geologist (employed by the contractor) with a mutual consent to the IIT Guwahati representatives.
- d) After completion of drilling, each borehole should be filled up by appropriate material to prevent any accident or damage due to it.
- e) Static Water Level (SWL) measurements to be done after a minimum period of 24 hours from back washing.
- f) If collapsible nature of soil is encountered, casing has to be put in stages.

4. BOREHOLE

- a) 150 mm dia boreholes below existing ground level up to 30 m and 100m depth.
- b) Collection of Undisturbed Samples (UDS) at every 3.0 m interval up to 30m followed by 5.0

interval beyond 30m depth for each borehole as per IS: 2132 (1986). Sample should be collected in new Shelby (provided by contractor) as per Indian Standard and ASTM standard.

- c) Performing Standard Penetration Tests (SPT) as per instruction of IIT Guwahati representative for each borehole as per IS: 2131 (1981). 2.5-m depth intervals up to 15 m depth and at 3.5 m-depth intervals between 15 and 40 m depth. Below 40 m depth, SPT shall be conducted at 5m depth intervals. Samples obtained from SPT shall be treated as Disturbed Samples (DS).
- d) Collection of the core samples and estimation of the Total Core recovery (TCR) and Rock Quality Designation (RQD).

5. MUD PACKING

After successful completion of drilling mud packing should be started. The packing should be done from ground level to the termination depth for the respective borehole.

6. WATER TANKER

The water tanker for the work of drilling and other activities for the borehole will not be provided by IIT Guwahati in any circumstances. The contractor has to arrange for water tanker at its own.

7. MUD DISPOSAL

The bore will be constructed in and around the Madhubani district and Basopatti Region of Bihar. To avoid any accident, the tenderer must dispose of mud and cutting after the completion of drilling work. It should not be staged at site. It will be the contractor's responsibility if any accident, police case, death, court case, injury happens due to not properly dispose of mud and cutting from the bore site.

8. PENALTY

We have mentioned 45 days' period for completion of drilling work in all respect as per tender specifications. If the contractor could not complete the work in specified time, penalty at a rate mentioned at point no 17 will be charged. If work is not completed during this penalty period than contract will be terminated, security deposit will be forfeited and party will be black listed.

Tenderer's signature and stamp

BOREHOLE DRILLING, FIELD AND LABORATORY TESTING SPECIFICATIONS

A total no. of 20 boreholes of diameter 150 mm each have to be drilled by in accordance with IS: 1892-1979. Out of these 20 boreholes, 15 boreholes need to be drilled till 30m each and the remaining 5 have to be drilled till 100m depth at Basopatti, Birpur and adjacent regions of Madhubani in Bihar. Samples need to be collected at regular intervals of 3.0m till 30m depth and 5m interval beyond 30m depth in accordance with IS: 2132-1986. All the operations need to comply with both the Indian and American standards.

Item No.	Description of the items	Indicative quantum of Work per bore hole. Rates are to be quoted per unit of items	Remarks
A	Field test – drilling (preferably with Hydraulic rig/ Auger shell method), sampling and preparation of Lithology as per the template provided.		
1a	<p>Drilling of 15 boreholes (preferably with Hydraulic rig/ Auger shell method) – up to 30 m [IS: 5313-1980] depth. Conducting Standard Penetration Test [SPT] (as per IS: 2131-1981) at 2.5-m depth intervals to 15 m depth and at 3.5 m-depth intervals between 15 and 40 m depth. Below 40 m depth, SPT shall be conducted at 5m depth intervals. Samples obtained from SPT shall be treated as Disturbed Samples (DS). Soil classification, grain size distribution up to clay size by Sieve and Hydrometer /Pipette analysis (IS:2720 Part 4-1985), Atterberg's limit, consolidation, water content, cohesion, angle of internal friction, specific gravity, bulk unit weight determination from the samples collected.</p> <p>Undisturbed sampling [UDS] (IS:2132-1986, IS:763-1978, IS:9640-1980, IS:10108-1982) at 3 m interval or at the changes of soil strata (Using appropriate soil samplers) up to maximum depth starting first sampling from 4m depth. For depths where UDS cannot be retrieved, DS must be collected at that level and same should be reported in the report. Direct Shear [DS/remolded] (IS:2720 Part 13-1986) on</p> <p>Sandy type soils. (UDS) [Consolidated drained] (for sandy soil and some cohesive soil samples if considered necessary). Coefficient of consolidation, Cc(UDS)</p>	<p>30 running meter depth considering varied site conditions likely to be encountered</p> <p><i>Rates are to be quoted for per 30m borehole.</i></p>	<p>Water table is to be recorded if found within 30 m.</p> <p>If hard rock is encountered within 30m then rock drilling has to be continued till required depth of borehole.</p> <p>Boreholes of 150 mm diameter shall be drilled to 30-40m depth. Below this, the borehole diameter shall be reduced to 100 mm. If very hard soils are met, diameter of borehole beyond 70-80 m depth may be reduced further to 75 mm as per site conditions.</p>

	<p>– for cohesive soils (IS:2720 Part XV-1965), Direct Shear [DS/remolded] (IS:2720 Part 13-1986) on Sandy type soils, Tri-axial shear (DS) [Consolidated Undrained].</p>		
1b	<p>Drilling of 5 boreholes (preferably with Hydraulicrig/ Auger shell method) – up to 100 m [IS: 5313- 1980] depth. Conducting Standard Penetration Test [SPT] (as per IS: 2131-1981) at 2.5-m depth intervals to 15 m depth and at 3.5 m-depth intervals between 15 and 40 m depth. Below 40 m depth, SPT shall be conducted at 5m depth intervals. Samples obtained from SPT shall be treated as Disturbed Samples (DS). Soil classification, grain size distribution up to clay size by Sieve and Hydrometer /Pipette analysis (IS:2720 Part 4-1985), Atterberg's limit, consolidation, water content (IS:2720 Part 2-1973), cohesion, angle of internal friction, specific gravity, bulk unit weight determination from the samples collected.</p> <p>Undisturbed sampling [UDS] (IS:2132-1986, IS:763-1978, IS:9640-1980, IS:10108-1982) at 3 m interval or at the changes of soil strata (Using appropriate soil samplers) up to maximum depth starting first sampling from 4m depth. For depths where UDS cannot be retrieved, DS must be collected at that level and same should be reported in the report. Direct Shear [DS/remolded] (IS:2720 Part 13-1986) on Sandy type soils. (UDS) [Consolidated drained] (for sandy soil and some cohesive soil samples if considered necessary). Coefficient of consolidation, Cc(UDS) – for cohesive soils (IS:2720 Part XV-1965), Direct Shear [DS/remolded] (IS:2720 Part 13-1986) on Sandy type soils, Tri-axial shear (DS) [Consolidated Undrained].</p>	<p>100 running meter depth considering varied site conditions likely to be encountered. <i>Rates are to be quoted for per 100m borehole.</i></p>	

1c	Rock classification in terms of RQD, [IS: 11315 pt. 11- 1985] at 3m intervals up to 40m depth and 5m interval beyond 40m depth.	<i>Rates are to be quoted for per 30m and 100m borehole drilling both.</i>	Subject to the field conditions wherever Rock is encountered within the required borehole depth.
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*The depth of drilling may vary based on stratification

*** Prices of the work and material must be as per tender specifications.**

Prices must include everything.

***Note: The quantities mentioned are approximate. Payment will be made as per actual.**

Bidder's Sign with Seal

