

**HLL INFRA TECH SERVICES LTD. (HITES)**

**As**

**Executing Agency**

**on behalf of**

**Ministry of Health & Family Welfare (MoHFW)**

**Invites Tender**

**for**

**“Topographical Survey & Soil Investigation Work for  
Proposed AIIMS at Darbhanga, Bihar”**

**Tender No.- HITES/IDN/AIIMS-DARBHANGA-SOIL/2022-23**

**Tender Documents**

**(January, 2023)**



**B-14 A, SECTOR 62**

**NOIDA, UP 201 307**

**PH.: 0120 4071 500 FAX: 0120 4071 513**

[www.hllhites.com](http://www.hllhites.com)

**MINISTRY OF HEALTH & FAMILY WELFARE (MoHFW), Govt. of India**  
**NOTICE INVITING TENDER**  
**“Topographical Survey & Soil Investigation for Proposed AIIMS at Darbhanga, Bihar”**

**Tender No.- HITES/IDN/AIIMS-DARBHANGA-SOIL/2022-23**

HLL Infra Tech Services Ltd. (HITES), B-14 A, Sector-62, Noida-201307, as Executing Agency of Ministry of Health & Family Welfare (MoHFW), Government of India invites bids through Single bid system from eligible Soil and Survey Agency/ Firms for carrying out work of Topographical Survey & Soil Investigation at proposed New AIIMS at Darbhanga, Bihar as per details given below:-

<b>Name and Description of work</b>	<b>Estimated cost in Rs. in Lakhs</b>	<b>Completion period of Work</b>	<b>Last date of submission of bids</b>	<b>Bid Security (EMD) amount (in Rs.)</b>
Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga, Bihar	15 Lakhs	30 days	31.01.2023 Up to 15:00 Hrs.	Rs. 30,000/-

The bid document shall be available online from 23-01-2023.

For submission & other tender details, please refer detailed NIT available on websites [www.hllhites.com](http://www.hllhites.com). Corrigendum/Amendments etc., if any, will be notified on these websites only and separate advertisement will not be made for the same.

The bidders are required to submit bids in hard copy duly stamped & signed in all documents by the authorized representative in the office of The Associate Vice President (ID) M/s HLL Infra Tech Services Ltd. (HITES), B-14A, Sector – 62, NOIDA (UP):

- Original non-refundable Demand Draft / Pay order or Banker's Cheque of any Scheduled Bank drawn in favour of M/s HLL Infra Tech Services Ltd. (HITES) Payable at New Delhi/ NOIDA for an amount of Rs. 2000 (Rs. Two Thousand Only inclusive of GST as Tender Fee).
- Original bid security in the form of Demand Draft / Pay order or Banker's Cheque of any Scheduled Bank drawn in favour of M/s HLL Infra Tech Services Ltd. (HITES) Payable at New Delhi/ NOIDA.

HITES reserves the right to accept or reject any application without assigning any reason or incurring any liability whatsoever.

**Associate Vice President (ID)**

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**DISCLAIMER**

This document has been prepared by HLL Infra Tech Services Ltd. (HITES), (A Subsidiary of HLL Lifecare Limited, A Government of India Enterprise) as Executing Agency on behalf of Ministry of Health & Family Welfare (MoHFW) for Pre-investment activities of Proposed All India Institute of Medical Sciences (AIIMS), Darbhanga, Bihar for the Project. The information is provided to prospective Bidders, who are interested to Bid for “*Topographical Survey & Soil Investigation Work for Proposed New AIIMS at Darbhanga, Bihar*”.

This document is neither an agreement, nor an offer or invitation to perform work of any kind to any party.

The purpose of this document is to provide interested parties with information to assist the preparation of their Bid. While due care has been taken in the preparation of the information contained herein, and believe it to be complete and accurate, neither any of their authorities or agencies nor any of their respective officers, employees, agents or advisors give any warranty or make any representations, expressed or implied as to the completeness or accuracy of the information contained in this document or any information which may be provided in association with it.

Further, HITES do not claim that the information is exhaustive. Interested parties are required to make their own inquiry/ survey and will be required to confirm, in writing, that they have done so and they did not rely solely on the information given herein.

HITES reserves the right not to proceed with the Project or to change the configuration of the Project, to alter the timetable reflected in this document or to change the process or procedure to be applied. It also reserves the right to decline to discuss the Project further with any interested party.

No reimbursement of cost of any type or on any account will be made to persons or entities submitting their Bid.

## **General information**

### **Check List for Contractors for Submission of Bids**

1. The bidders should read complete Tender Documents, including all the instructions very carefully, before quoting the rates.
2. The bidders shall quote the rate for complete scope of work in the financial bid in both words and figures.
3. The bidders shall quote his rates keeping in mind the scope of work, specifications, terms and conditions, additional conditions and special conditions etc. and nothing extra shall be payable whatsoever unless otherwise specified.
4. The successful bidder on achieving L-1 status shall also furnish performance guarantee of 3% of the tendered amount in addition to the other deposits mentioned elsewhere in the contract for proper performance of the agreement. The performance guarantee shall be in the shape of FDR or Bank guarantee as per Performa given in Form C.
5. In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof or in the event of the absence of any partner, it must be signed on his behalf by a person holding a power of attorney authorizing him to do so. Such power of attorney should be produced with the tender and it must be disclosed that the firm is duly registered under the Indian Partnership Act-1952.
6. The bidder shall quote their rates considering all prevalent taxes/ cess like GST, Workers Cess or any other tax on material / work as applicable and nothing extra shall be paid to the contractor on this account. HITES shall deduct workers cess, any other tax as applicable, from the RA bills & final bill. However, the contractor shall pay GST to the concerned authorities directly, TDS as applicable shall be deducted from all bills of contractor.
7. The conditional tender will not be entertained at all and bid shall be summarily rejected.
8. Bid documents submitted by intending bidders shall be opened, only of those bidders, whose tender fees and EMD deposited with HITES and other documents are found in order.

**SECTION I**

**NOTICE INVITING TENDER (DETAILED NIT) & INSTRUCTION TO BIDDERS**

**M/s HLL Infra Tech Services Ltd. (HITES)**

**(A Government of India Enterprise)**

**As Executing Agency**

**on behalf of**

**Ministry of Health & Family Welfare (MoHFW)**

- 1.1. HLL Infra Tech Services Ltd. (HITES), B-14 A, Sector-62, Noida-201307, as Executing Agency of Ministry of Health & Family Welfare (MoHFW), Government of India invites bids through Single bid system from eligible Soil and Survey Agency/ Firms for carrying out work of Topographical Survey & Soil Investigation at proposed New AIIMS at Darbhanga, Bihar.
- 1.2. The estimated cost of work is as given in Table - I. The Associate Vice President (ID) M/s HLL Infra Tech Services Ltd. (HITES) (A Subsidiary of HLL Lifecare Limited, A Government of India Enterprise), will deal with all the matters relating to invitation of tenders. Any clarification shall be sought from The Associate Vice President (ID), HITES, B-14A, Sector – 62, NOIDA (UP) -201307, on courier/fax no. : 0120-4071513. The NIT and other details are also available on the website of HITES [www.hllhites.com/tenders/](http://www.hllhites.com/tenders/).

**TABLE – I**

No.	Description	Details
1	Tender No.	Tender No.- HITES/IDN/AIIMS-DARBHANGA-SOIL/2022-23
2	Name & Description of Work	Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga In Bihar.
3	Location	Proposed AIIMS at Darbhanga, Bihar
4	Estimated cost put to bid	Rs.15 Lakhs (Fifteen Lakhs)
5	Completion period of work	30 days
6	Bid Security (EMD) amount	Rs.30,000/-
7	Tender/ Bid Processing Fee to HITES(DD/ Pay Order or Banker's Cheque)	Rs.2000/- (Rs. Two Thousand only) inclusive of GST as Tender Fee.
8	Date of availability of Bid documents on line.	23.01.2023
10	Last date for submission of bids	31.01.2023 at 15:00 (IST)
11	Date & time for opening of Technical Bids	31.01.2023 at 15:30 (IST)
12	Date of opening of Financial Bids	Technically qualified bidders to be intimated at appropriate stage.

**Note:**

- a. Bank Details of HLL Infra Tech Services Ltd. is as under for the purpose of preparation of Bank Guarantee only:

Name of Beneficiary: HLL Infra Tech Services Ltd.

Bank: HDFC Bank Limited, Sector-18, Noida,

Current Account No.: 57500000119955

IFSC Code: HDFC0000088

### 1.3. **Eligibility Criteria**

The Soil and Survey Agency/ Firms shall be in business for a minimum period of Seven (7) Years and the bidders should meet the following minimum eligibility criteria:

Should have satisfactorily completed "Soil Investigation and Survey works" during the last 7 (seven) years ending last day of the month previous to one the in which tenders are invited including extended date if any.

a) Three Projects each with a total area of **60** Acres or more.

**OR**

b) Two Projects each with a total area of **75** Acres or more.

**OR**

c) One Project with a total area of **120** Acre or more.

**Note:- Copy of work Orders and Completion Certificates of the above works should also be submitted. This should be certified by an officer not below the rank of Project Manager/Executive Engineer & Senior Manager or equivalent**

### 1.4. **Points to be noted by Bidders:**

- a. Tenderer shall submit a written Power of Attorney on non-judicial stamp papers duly notarized, authorizing the signatory/signatories of the tender to commit the tender.
- b. The authorized signatory of the Tenderer/Bidder shall sign each page of the tender.
- c. Cancellation or change of a document such as Power of Attorney, Partnership deed, Constitution of firm etc., which may have bearing on the Tender/Bid shall be communicated forthwith in writing by the Tenderer to HITES.
- d. Bidder/Tenderer should sign all documents submitted by them in self-attestation.
- e. The bids shall be valid for a period of 90 days from the date of opening of Technical bids. Extension of Bid Validity. Prior to the expiry of the original Bid Validity Period, HITES may request Bidders to extend the Bid Validity Period for a specified additional period.
- f. In case any discrepancy is noticed between the Bid documents up to the time of submission of the bid including amendments /corrigendum's if any and hard copies of Bid documents as submitted physically in the office of HITES, then the bid submitted shall become invalid and the HITES shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.

### 1.5. **Tender Documents:**

- a. The bids will be received in TWO PARTS in two separate sealed envelopes:
  - i. Technical Bid (First Envelope)
  - ii. Financial Bid(only Price Bid) (Second Envelope)

The two envelopes shall be wrapped in an outer envelope addressed to "Associate Vice President (ID), HLL Infra Tech Services Ltd (HITES), B-14 A, Sector -62, NOIDA-201307 (U.P)" duly superscribing on top of envelop "Offer for Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga in Bihar" on or before the last date and time for submission. The envelope should also bear the name, telephone number and address of the Bidder.

- b. The Bidders is advised to visit and inspect the site and make reconnaissance survey at his own cost and responsibility to secure all necessary information which may be required for preparation of Tender Rates and for completing the work. Ignorance of site conditions or local information shall not be considered as an excuse for non-performance of the contract. All costs, charges and expenses that may be incurred by the Bidder in connection with preparation of his tender shall be borne by him and HITES will not accept any liability whatsoever in this regard.

- c. The tender document shall be submitted along with detailed program and targets of completion of each item of work.
- d. The Bidder shall provide details of deployment of manpower, machinery, plant and equipment.
- e. The Bidder shall submit the Bio-Data of key personnel to be deployed at site.
- f. If deemed necessary, the HITES through its authorized representative shall carry out inspection of the laboratory facilities and equipment to satisfy itself about the Bidder's capability to carry out the desired work.

**1.6. Tender Evaluation:**

- a. The Technical Bids will be evaluated based on the eligibility criteria and responsiveness to the tender requirements. The Price Bids / Financial Bids of Bidder who fulfill the tender requirements alone shall only be opened. HITES reserves the right to reject any or all of the offers without assigning any reason.
- b. The Offers must be delivered to the address below on or before 15.00 hrs of 31.01.2023. The bidders shall submit their bids in two parts i.e. Technical bid and Financial Bid. Technical bid is to be submitted in separate Envelops: Envelop-I containing Tender fees, EMD for the bid & Technical Bid. Envelope no. II containing Financial bids only. Each envelop will be marked in bold letters indicating its contents.

**Associate Vice President (ID)**

**HLL Infra Tech Services Limited**

**B-14-A, Sector-62,**

**Noida-201307 (U.P.)**

Both the bids shall be placed in single envelop duly super scribed "**Offer for Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga in Bihar**)"

- c. No bidder shall have any cause of action or claim against the HITES for rejection of his/their bid.
- d. The Technical bids submitted without EMD shall be treated non-responsive and shall not be opened.
- e. The successful bidder shall be required to execute a Contract Agreement within seven days of issue of Letter of Award, failing which the Earnest Money shall be forfeited and the offer treated as withdrawn.
- f. The Bid securities/Earnest Money given by unsuccessful bidders during technical bid evaluation etc., should be returned within 30 days of declaration of result of Technical Bid evaluation.

**1.7. Award of contract:**

- a. Subject to meeting the Eligibility Criteria stipulated in clause 1.4 above, HITES will award, the Contract to the Bidder / Tenderer, whose technical bid is found responsive, complete and in accordance with the Bid documents, and whose financial bid on evaluation is found lowest.
- b. In case the financial bid of one or more bidders / tenderers is found equal then all such bidders shall be asked to submit sealed revised offer in the form of letter the revised Offer should not be higher than the offer quoted at the time of submission of original tender. The lowest tender shall be decided on the basis of revised offer. In case any such bidder refuses to submit revised offer, then it shall be treated as withdrawal of his tender before acceptance and 50 % of earnest money shall be forfeited.



- c. If the revised Offer of two or more bidders received in revised offer is again found to be equal, the lowest tender, among such bidders, shall be decided by draw of lots in the presence of the HITES.

**1.8. HITES right to accept any tender and to reject any or all tenders:**

Notwithstanding Clause 1.6 above, HITES reserves the right to accept or reject any offer, and to annul the tender process and reject all offers, at any time prior to award of Contract without thereby incurring any liability to the affected Bidder. HITES has no obligation to inform the affected Bidder or Bidders of the grounds for rejection of bids.

**1.9. Notification of award:**

Prior to the expiry of period of validity/extended validity of the offer as prescribed in this bid document and as subsequently extended by the bidder, HITES will notify the successful Bidder that his offer has been accepted. This letter (hereinafter called 'The Letter of Award') shall mention the awarded Contract Price'. The Letter of Award will be sent to the successful bidder. No correspondence will be entertained by HITES from the unsuccessful Bidders. The Letter of Award shall constitute a part of the contract.

**1.10. Signing of agreement:**

HITES shall prepare the Agreement in the Performa (Form D) included in this Document, duly incorporating all the terms of agreement between HITES and successful parties. Within 7 days from the date of issue of the Letter of Award the successful Bidder will be required to execute the Contract agreement. The performance guarantee should be submitted immediately after issue of letter of award but not later than 7 days of issue of letter of award. One copy of the Agreement duly signed by HITES and the Successful party through their authorized signatories will be supplied by HITES to the Successful Party.

**1.11. Performance security:**

The successful Bidder shall furnish to HLL a security in the form of a DD/**Bank Guarantee @ of 3% of the contract price** from a Scheduled Commercial bank based in India in the Format given in Form-B. The Performance Security shall be furnished within 7 days of issue of Letter of Award.

Failure of the successful Bidder to submit the required Performance Security by due date above shall constitute sufficient grounds for the annulment of the award of Contract and forfeiture of the EMD.

Further information if any, may be obtained from the address given below:

**Associate Vice President (ID)**  
**HLL Infra Tech Services Limited**  
**B-14-A, Sector-62,**  
**Noida-201307 (U.P.)**

**FORM – “A” (FORM OF BID)**

From

(BIDDER)

To,

**Associate Vice President (ID)  
HLL Infra Tech Services Limited  
B-14-A, Sector-62,  
Noida -201307**

**Name of Work: Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga in Bihar.**

Sir,

Having visited the Site, ascertained the Site conditions and examined the General Conditions of Contract as well as Specific Conditions of Contract, Notice Inviting Bids, Instructions to Bidders etc. and addenda for the above project, we the undersigned, are pleased to submit our technical and financial Bid along with relevant documents.

1. We acknowledge that the Appendix forms an integral part of the Bid.
2. While preparing this Bid, we have gathered our own information and conducted our own inquiry/survey to our satisfaction and we did not rely solely on the information provided in the Bid Documents. We shall not hold CLIENT /HITES responsible on any account in this regard.
3. We hereby certify that all the statements made and information supplied in the enclosed forms and accompanying statements are true and correct.
4. We have furnished all information and details necessary for eligibility and have no further pertinent information to supply.
5. We undertake, if our Bid is accepted, to commence the works within the stipulated time and to complete the whole of the works comprised in the Contract within the stipulated time calculated from the start date
6. If our Bid is accepted, we will furnish a bank guarantee as Performance Guarantee for the due performance of the Contract. The amount and form of such guarantee or bond will be in accordance with as given in the General Conditions of the Contract.
7. We are aware that in the event of delay in execution of the Project, beyond the agreed timelines due to reasons attributable to us, liquidated damages shall be recovered from us.
8. Our Bid is valid for your acceptance for a period of Seventy Five Days from the last date of submission of the Bid as per the Bid Documents or any extension thereto.
9. We agree to the General Conditions of Contract and Specific Conditions of Contract and the terms and conditions mentioned in the Bid Documents.
10. We declare that the submission of this Bid confirms that no agent, middleman or any intermediary has been, or will be engaged to provide any services, or any other item of work related to the award of this Contract. We further confirm and declare that no agency commission or any payment, which may be construed as an agency, commission has been, or will be, paid and that the Bid price does not include any such amount. We acknowledge the right of CLIENT /HITES, if it finds anything to the contrary, to declare our Bid to be non-compliant and if the Contract has been awarded to declare the Contract null and void.
11. We understand that you are not bound to accept the lowest or any Bid you may receive.
12. If our Bid is accepted, we understand that we are to be held solely responsible for the due performance of the Contract.

13. We enclose;

- a. All documents as per the checklist
- b. Bank guarantee for Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only) issued by \_\_\_\_\_ (name of the bank) valid until \_\_\_\_\_ towards EMD.

**Note:**

- i. The Appendix forms part of the Bid
- ii. Bidders are required to fill up all the blank spaces in this form of Bid and Appendix.

Dated this.....day of.....**2023**

Signature .....

Name..... in the capacity of .....

duly authorized to sign Bids for and on behalf of.....

Address .....

Witness – Signature .....

Name .....

Address .....

\*\*\*\*\*

**Certificate**

It is certified that the information given by us towards meeting the requirement of the eligibility to bid are correct. It is also certified that I/We shall be liable to be debarred, disqualified/ cancellation of enlistment in case any information furnished by me/us is found to be incorrect.

Date of submission

**Seal of bidder  
&  
Signature(s) of bidder(s)**

\*\*\*\*\*

APPENDIX TO THE FORM OF BID

1.	Amount of Performance Guarantee to be deposited by financially successful bidder	3 percent of the total contract price
2.	Time for completion	30 Days from handing over of site.
3.	Period of validity of Performance Guarantee	As per of GCC

Signature

(Authorized Signatory)

Date .....

Name .....

Place .....

Address .....

**STRUCTURE & ORGANIZATION**

1.	Name & Address of the bidder	
2.	Telephone No. /Email id /Telex No./Fax No.	
3.	Legal status of the bidder (Attach copies of original document defining the legal status).	
	a)	An Individual
	b)	A proprietary firm
	c)	A firm in partnership
	d)	A limited company or Corporation
4.	Particulars of registration with various Government bodies (attach attested photo-copy).	
	ORGANIZATION/PLACE OF REGISTRATION	REGISTRATION No.
	1.	
	2.	
	3.	
5.	Names and Titles of Directors & Officers with designation to be concerned with this work.	
6.	Designation of individuals authorized to act for the organization.	
7.	Has the bidder or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.	
8.	Has the bidder or any constituent partner in case of partnership firm/ limited company/ joint venture, ever been convicted by the court of law? If so, give details.	
9.	In which field of Civil Engineering Construction, the bidder has specialization and interest?	
10.	Any other information considered necessary but not included above.	

**Signature of bidder(s) with stamp**

**FORM OF PERFORMANCE GUARANTEE BANK GUARANTEE**

(On a stamp paper of appropriate value from any Nationalised Bank or Scheduled Bank)

To,

**Associate Vice President (ID)**

**HLL Infra Tech Services Ltd. (HITES),**

**B-14-A, Sector-62,**

**Noida -201307**

Dear Sir,

In consideration of the CLIENT (Ministry of Health & Family Welfare, GOI) for **Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga in Bihar** which expression shall include his successor and assignees represented by his Project Consultant, M/s HLL Infra Tech Services Ltd.(HITES ), B-14-A, Sector-62, Noida -201307, (herein after called HITES) having awarded to-----  
-----having its Registered Office at -----  
----- (hereinafter referred to as "the said Contractor (s)", which expression shall include his successor and assignees) for the work of Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga In Bihar Contract No. -----in terms interalia, of the and the General Conditions of Contract and upon the condition of the Contractor's furnishing Security for the performance of the Contractor's obligations and discharge of the Contractor's liability under and in connection with the said Contract up to a sum of Rs.-----  
-----Rupees -----) amounting to 3% percent of the total Contract value.

1. We, \_\_\_\_\_(hereinafter called 'The Bank' which expression shall include its successors and assignees) hereby jointly and severally undertake to guarantee the payment to the HITES in rupees forthwith on demand in writing and without protest or demur or any and all moneys payable by the Contractor to the HITES in respect of or in connection with the said Contract inclusive of all the HITES'S losses and damages and costs, (inclusive between attorney and client) charges and expenses and other moneys payable in respect of the above as specified in any notice of demand made by the HITES to the Bank with reference to this guarantee up to an aggregate limit of Rs------(Rupees -----).
2. We \_\_\_\_\_ Bank Ltd. further agree that the HITES shall be sole judge of and as to whether the said Contractor has committed any breach or breaches of any of the terms and conditions of the said Contract and the extent of loss, damage, cost, charges and expenses caused to or suffered by or that may be caused to or suffered by the HITES on account thereof and the decision of the HITES that the said Contractor has committed such breach or breaches and as to the amount or amounts of loss, damage, costs, charges and expenses caused to or suffered by the HITES from time to time shall be final and binding on us.
3. The HITES shall be at liberty without reference to the Bank and without affecting the full liability of the Bank hereunder to take any other Security in respect of the Contractor's obligations and liabilities hereunder or to vary the Contract or the work to be done there under vis-a-vis the Contractor or to grant time or indulgence to the Contractor or to reduce or to increase or otherwise vary the prices of the total Contract value or to release or to forbear from enforcement of all or any of the Security and/or any other Security(ies) now or hereafter held by The HITES and no such dealing(s) reduction(s) increase(s) or other indulgence(s) or arrangements with the Contractor or release or forbearance whatsoever shall absolve the bank of the full liability to the HITES hereunder or prejudice the rights of the HITES against the bank.

4. This guarantee shall not be determined or affected by the liquidation or winding up, dissolution, or change of constitution or insolvency of the Contractor but shall in all respects and for all purposes be binding and operative until payment of all monies payable to the HITES in terms thereof.
5. The bank hereby waives all rights at any time inconsistent with the terms of this guarantee and the obligations of the Bank in terms hereof shall not be anyway affected or suspended by reason of any dispute or disputes having been raised by the Contractor stopping or preventing or purporting to stop or prevent any payment by the Bank to the HITES in terms hereof.
6. The amount stated in any notice of demand addressed by the HITES to the Bank as liable to be paid to the HITES by the Contractor or as suffered or incurred by the HITES on account of any losses or damages or costs, charges and/or expenses shall be conclusive evidence of the amount so liable to be paid to the HITES or suffered or incurred by the HITES as the case may be and shall be payable by the Bank to The HITES in terms hereof.
7. This guarantee shall be a continuing guarantee and shall remain valid and irrevocable for all claims of the HITES and liabilities of the Contractor arising up to and until midnight of
8. This guarantee is valid till -----(date to be mentioned) (Six months beyond the stipulated date of completion or the extended period, thereof)
9. This guarantee shall be in addition to any other guarantee or Security whatsoever that the HITES may now or at any time anyway may have in relation to the Contractor's obligations/or liabilities under and/or in connection with the said Contract, and the HITES shall have full authority to have recourse to or enforce this Security in preference to any other guarantee or Security which the HITES may have or obtain and no forbearance on the part of the HITES in enforcing or requiring enforcement of any other Security shall have the effect of releasing the Bank from its full liability hereunder.
10. It shall not be necessary for the HITES to proceed against the said Contractor before proceeding against the Bank and the Guarantee herein contained shall be enforceable against the Bank notwithstanding that any Security which The HITES may have obtained or obtain from the Contractor shall at the time when proceedings are taken against the said bank hereunder be outstanding or unrealised.
11. We, the said Bank undertake not to revoke this guarantee during its currency except with the consent of the HITES in writing and agree that any change in the constitution of the said Contractor or the said bank shall not discharge our liability hereunder.
12. We \_\_\_\_\_ the said Bank further that we shall pay forthwith the amount stated in the notice of demand notwithstanding any dispute/difference pending between the parties before the arbitrator and/or that any dispute is being referred to arbitration.
13. Notwithstanding anything contained herein above, our liability under this guarantee shall be restricted to Rs.----- (Rupees -----) and this guarantee shall remain in force till ----- and unless a claim is made on us within 6 months from that date, that is before----- all the claims under this guarantee shall be forfeited and we shall be relieved of and discharged from our liabilities there under.

Notwithstanding anything contained herein above:

- (a) Our liability under this Bank Guarantee shall not exceed Rs. -----  
(Rupees -----)
- (b) This Bank Guarantee shall be valid up to -----
- (c) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before -----  
-----at (bank address)otherwise, all your rights under this guarantee shall be forfeited and bank shall be relieved and discharged from all the liabilities there under irrespective of whether or not the original bank guarantee returned to us or not



Dated \_\_\_\_\_ day of \_\_\_\_\_ 2023

For and on behalf of Bank.

Issued under seal:

**NOTE:**

"The Bank Guarantee issued by the bank must be routed through SFMS platform as per following details:

Bank: HDFC Bank Limited, Sector-18, Noida,  
Current Account No.: 57500000119955

IFSC Code: HDFC0000088

**Form D**

**FORM OF AGREEMENT**

This agreement is made at ----- on the ---- day of ----- 2023 between CLIENT/HITES” which expression shall, unless repugnant to the context or meaning thereof be deemed to mean and include its successors, legal representatives and assigns) of the **First Part.**

M/s ----- a Company incorporated under the Companies Act 1956 having Head Office at -----, (hereinafter called the “Contractor” which expression unless repugnant to the context shall mean and include its successors-in-interest assigns etc.) of the **Second Part.**

Whereas CLIENT/HITES is desirous that certain works should be executed, for *Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga In Bihar* herein after called the “The Project” and has accepted a Tender submitted by the contractor for the execution and completion of such works as well as guarantee of such works and the remedying of defects therein.

NOW THIS AGREEMENT WITHNESSTH as follows:

1. In this agreement words and expression shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.
2. The following documents shall be deemed to form and be read and constructed as part of this agreement Viz.
  - i) Tender Document
  - ii) Financial Bid
  - iii) Amendments & other documents (To be specifically added)
  - iv) Letter of Award (LOA) No. \_\_\_\_\_ dated \_\_\_\_\_.
3. In consideration of the payment to be made by HITES to the Contractor as hereinafter mentioned, the Contractor hereby covenants with HITES to execute and complete the Project - **Topographical Survey & Soil Investigation Work for Proposed AIIMS at Darbhanga In Bihar** from the date of commencement and remedy and defects therein in conformity in all respects with the provisions of the Contract.
4. Whereas HITES has accepted bid/ negotiated Bid for the above mentioned work for an amount of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ Only). The above bid/ negotiated bid amount is inclusive of all prevailing taxes including Goods and Services Tax(GST), Building and other Construction Workers welfare Cess and any other applicable statutory taxes, levies as per terms & conditions of Bid document.

HITES hereby covenants to pay the Contractor in consideration of the execution and completion of the project and remedying of defects therein for contract price of ----- of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ Only),

Above being the sum stated in the letter of Award (LOA) subject to such additions there to or deductions there from as may be made under the provisions of the Contract at the times and in the manner prescribed by the Contract.

**5. OBLIGATION OF THE CONTRACTOR**

The Contractor shall ensure full compliance with tax laws of India with regard to this Contract and shall be solely responsible for the same.

IN WITNESS OF WHEREOF the parties hereto have caused their respective common seals to be hereunto affixed / (or have hereunto set their respective hands and seals) the day and year first above written.

For and on behalf of the Contractor	For on behalf of HITES
-------------------------------------	------------------------

Signature of the authorized official	Signature of the authorized official
Name of the Contractor Stamp / Seal of the Contractor	Name of the official Stamp / Seal
SIGNED, SEALED AND DELIVERED By the said	By the Said
on behalf of the Contractor:	on behalf of the HITES
in the presence of:  Witness _____ Name _____ Address _____	in the presence of:  Witness _____ Name _____ Address _____

**Form-“E”****GST Registration Details**

<b>Sr. NO.</b>	<b>Description</b>	<b>Details</b>
1.	Entity Name	
2.	Address (As per registration with GST)	
3.	City	
4.	Postal code	
5.	Region/State (complete state name)	
6.	Permanent account number	
7.	GSTN/ARN/UID/Provisional with ID No. (Copy of acknowledgement required)	
8.	Type of business (As per registration with GST)	
9.	Service accounting code/HSN Code	
10.	Contract Person	
11.	Phone Number and Mobile Number	
12.	Email –ID	
13.	Compliance Rating (If updated by GSTN)	

**Signature of bidder(s) with stamp**

**Annexure -1 – Checklist****CHECK LIST OF DOCUMENTS TO BE SUBMITTED WITH THE BID****TECHNICAL PACKAGE – Hard Copy**

<b>Sl. No.</b>	<b>Name of Document</b>	<b>Mode of Submission</b>
1.	Non –refundable payment of Rs.2,000/- (Rs. Two Thousand only) inclusive of GST as Tender Fee / Processing Fee, in favour of “HLL Infra Tech Services Limited”	<b>Original</b>
2.	Bid Security / EMD in favour of “HLL Infra Tech Services Limited” payable at Noida / Delhi	
3.	Form of bid and Appendix (Form A) for the bid	
4.	Details of Eligible Similar Works completed with supporting documents	
5.	Form “B” (Structure and Organization)	
6.	Form “E” (GST Registration Details)	
7.	All pages of the entire Corrigendum/ addendum (if any) signed by the authorized person of the bidder/bidder.	
8.	Any other document as specified in the bid document.	
<b>Note:- All the documents should be in readable, printable &amp; legible form</b>		

**FINANCIAL PACKAGE: Hard Copy**

<b>S. No</b>	<b>Name of Document</b>	<b>Mode of submission</b>
1.	Price Bid (Financial Bids – Volume-2)	<b>Original</b>

## **SECTION-II**

### **SCOPE OF WORK**

#### **1. GENERAL**

Detailed Geo-Technical Investigation is to be carried out in the area of plot of 150 acre (approximate) at proposed Site of New All India Institute of Medical Sciences (AIIMS), At Darbhanga in Bihar.

The Scope of work is as mentioned below:

#### **2. TOPOGRAPHICAL SURVEY WORK**

- 2.1 Topographical Survey work of 150 acre (approximate) land, All India Institute of Medical Sciences (AIIMS), At Darbhanga in Bihar.
- 2.2 Survey of land boundary with co-ordinates of each corner points and dimension of each arm by total station. Construction of Bench mark by embedding an RCC pillar 30cm \* 30 cm \* 105 cm buried 75cm in ground along with entire boundary wall.
- 2.3 Survey of total area of land i.e. topographical survey with contour interval of 50 m in transverse and longitudinal direction, and preparation of Master Plan showing the followings:
  - a. All natural features like ditches, paths, drains, culverts, temporary/ permanent structures, approach and its features, and, water bodies etc. Geographical north to be established with DGPS.
  - b. All botanicals feature like trees, with reference distance from grid and crown diameter with local name if identified.
  - c. All man made features like existing buildings, road, overhead electric lines, plumbing lines, electrical pylons, wells, pipe line, height of electric wire, and all other permanent structures.
  - d. To submit AutoCAD drawing with hard copy 06 (Six) sets A0 sizes and soft copy.
- 2.4 Ground levels shall be at 50 meter intervals in longitudinal as well as transverse direction (with grid and duly marked on the drawing) and at sudden change of levels and other features etc. or as decided by the Engineer-In-Charge. Care should be taken to give sufficient topographical details to exhibit the contour of the ground .fixing of primary Control Points before the commencement of Topographical Survey; Horizontal control grid will be established using Total station. Initial RL of permanent bench mark to be fixed either by fly leveling (Mean sea level must be transferred with respect to existing nearby reference).
- 2.5 Levelling of control points. The scope of work involves carrying out of leveling as mentioned in description of works. The survey should cover all the control points and connecting them to GTS benchmarks.

#### **3. FIELD INVESTIGATIONS – SOIL**

##### **3.1 BORING**

- a) Bore holes shall be taken at specified locations to obtain information about the subsoil profile, its nature and strength and to collect soil samples for strata identification and conducting laboratory tests. The sequence of boring shall be fixed with the approval of the Engineer-in-Charge and on ascertaining preliminary nature of subsoil profile, the Engineer-in-Charge in charge shall reserve the right to increase or decrease the number of proposed Bore holes. The payment shall be made as per actual quantities executed. The minimum diameter of the bore holes shall be 150 mm and boring shall be carried out in accordance with the provisions of IS: 1892.
- b) All bore holes shall extend upto 30.0 Mtr. Depths or directed by the Engineer-in-Charge. The refusal criteria shall be strictly as per IS: 1892. When the boreholes are to be terminated in soil strata, an additional Standard Penetration Test shall be carried out at the termination depth. No extra payment shall be made for carrying out Standard penetration Test. The site data shall be made available to HITES as and when each bore is completed either by fax/ courier/ speed post/ hand delivery showing location of the borehole on the plan and the soil data alongwith visual description. The comments

regarding the strata and the nature of variations shall also be included.

- c) Collecting undisturbed soil samples from each bore hole at 3 m intervals or at every change of strata whichever is earlier using straight open end sampling tubes fitted to an adapter (with ball and socket arrangement) and using a standard SPT setup also collecting disturbed soil samples at 1.5 m intervals or at every change of strata.
- d) Recording ground water table level if observed upto the depth of exploration during boring work, withdrawing the casing pipes.
- a) On completion of the boreholes, the agency shall backfill all the bore holes as directed by the Engineer-In-Charge. The boreholes shall not be back filled till verified by the Engineer-In-Charge. Arrangements shall be made by the agency to preserve the boreholes so that the depth can be verified.
  - i. Test on un disturbed samples
    - Bulk density and moisture content
    - Relative density (for sand)
    - Unconfined compression test
    - Box shear test (in case of sand)
    - Tri-axial shear tests: (Depending on the type of soil and field conditions on undisturbed or re-moulded samples).
      - ii. Un consolidated un-drained
      - iii. Consolidated un-drained test with the measurement of Pre Water Pressure.
      - iv. Consolidated drained
      - v. Consolidation Test (in case of cohesive soil)

### 3.2 SALIENT TEST REQUIREMENT

- i. Chemical analysis of sub-soil shall include determination of pH value, carbonate, sulphate (both SO<sub>3</sub> and SO<sub>4</sub>), chloride and nitrate contents: organic matter; salinity and any other chemical harmful of the foundation material. The contents in soil shall be indicated as percentage (%).
  - ii. Chemical analysis of sub-soil water sample include the determination of the properties such as colour, odour, turbidity, pH value and specific conductivity both at 250 C and chemical contents such as Carbonates, Sulphates (both SO<sub>3</sub> and SO<sub>4</sub>), Chloride, Nitrates, Organic matter and any other chemical harmful to the foundation material. **The contents such as Sulphates, Saltpeter, etc. shall be indicated as ppm by weight.**
- 3.3 Submission of comprehensive soil report in triplicate, including recommendation regarding type of foundation with safe bearing capacity or load carrying capacity, along with soil & water samples taken for the lab tests, tabulated along with bore logs. Submission of graphical representation and its classification.
- 3.4 The above list of tests is indicative. The Agency shall adhere to the provisions of the relevant BIS Code, to meet the codal requirements.

**SECTION-III**  
**TERMS AND CONDITIONS**

**1. Rates**

The rates set down against the items shall be for full value of the work described there under and shall include for profit and overheads and for the cost of every description of work and materials together with all costs in connection with or arising from the execution and completion of the works as specified. They are to include the costs for mobilization and demobilization of manpower, plants & equipment's etc. and all labor, transport, cartage, material, running & maintenance of plant, equipment, pumps, generators, engines, lifting devices, cables, plain and perforated linings, measuring devices and taking of records, collection & making of samples & their testing at authorized laboratories, machinery and appliances, staging, medical welfare facilities, housing accommodation for the AGENCY's staff and employees, fuel, water, drainage, pumping, all costs in connection with labor ordinances, customs, all taxes (including GST) unless specifically mentioned to have been excluded elsewhere in these documents, establishment charges, bond, royalties, rents, telephone services, provision of skilled technical supervision and assistance, kit allowances, insurance medical expenses, fares, salaries & allowances and all contingent expenses, liabilities and responsibilities mentioned and referred to or to be inferred from the drawings, specifications and bill of quantities.

**2. Mode of Payment:**

Sl. No.	Stage of work	Percentage of Total Fees Payable
1.	On Mobilization of manpower & machinery at site	10%
2.	On submission of draft Report	40%
3.	On submission of final Report and approval from HITES	50%

GST amount as applicable shall be reimbursed by HITES on production of relevant documentations by agency of having paid to the concerned authorities.

The contract price is inclusive of all taxes, duties, cess and statutory levies payable under any law (as applicable on the date of submission of bid) by the contractor in connection with execution of the contract.

The contract price will be adjusted prospectively for any increase / decrease in the GST rate on works contract notified by Government of India.

The quantities given in the BOQ are only for the guidance of the Contractor and are to be paid on the basis of actual quantities of works executed by him under this contract. The part payment against above stages on part completion of required scope of work under a particular stage can be released as per decision of Engineer in-charge by mentioning the reasons for the same.

**3. Time of Completion**

The time of completion of the site work including mobilization shall not exceed Thirty (30) days reckoned from the date of issue of letter of Award or handing over of site whichever is later..

Total time period for completion of job will be as per following from the date of issue of letter of award. The work is to be done in phases in order of priority as given below:

**Table -1**

Sl. No.	Particulars (a)	Submission of Draft report (b)	Submission of Final Report (C)



A.	Topographical Plan with Contours (as per Scope of Work)	20 days from date of award of work	30 days from the date of award of work
B.	Soil Investigation Report	20 days from the date of award of work	30 days from the date of award of work

**4. Supervision**

The work will be carried out under the direction and supervision of a qualified engineer.

**5. Setting out of the works**

The AGENCY shall be responsible for the setting out of the position of each borehole.

**6. Particulars of the site**

Information regarding the site may be obtained by the TENDERER independently from the HITES.

**7. Access to the site**

Prior approval of the HITES for working at the site and using the access routes thereto shall be obtained by the AGENCY before commencing work.

**8. AGENCY's working area**

The AGENCY shall be allotted a suitable working area near the site of works by the HITES. The AGENCY shall make all arrangements at his own cost for providing his site office and other facilities.

**9. Transport to the site**

The AGENCY shall be responsible for the provision of all necessary transport, whether for personnel, plant, stores, equipment or samples etc. at his own cost.

**10. Areas available for the works**

- a. The AGENCY shall not use any portion of the site for any purpose not connected with the works unless prior written permission has been obtained from the HITES.
- b. The AGENCY shall exercise every care in gaining access to the various working areas and in setting up and operating his plant so as to avoid damage to the property of HITES or any third party.
- c. The AGENCY shall keep all plant, equipment, materials and the areas of the site in reasonably good order and tidy to the satisfaction of the HITES throughout the course of the works. Upon completion of his operations in any working area, the AGENCY shall fill in, plug and consolidate the boreholes, remove all arising and make good any damage caused by his operations at his own expense and to the satisfaction of the HITES.

**11. Personnel and Supervision**

- a. The Agency is to supply suitable personnel to conduct the subsoil investigation and such personnel are to be skilled in the work required by the contract. The work is to be done under the proper supervision of supervisors fully qualified in their respective duties with regard to making borings, taking samples, identifying soils and carrying out tests on soils at site and in the laboratory.
- b. The AGENCY shall maintain at site a representative who shall be in overall charge of the works and who shall be thoroughly versed in all aspects of boring and drilling, sampling and the field testing work specified herein. The AGENCY shall engage qualified and experienced HITES/geologists with relevant experience for this work at the site.

**12. Supply of Water and Electricity**

The Agency shall make his own arrangements for Water and electricity for carrying out of work.

### **13. Testing Laboratories**

All tests required to be conducted under this work, shall be held at the designated laboratories approved by the HITES.

### **14. Delay and extension**

If the work is delayed by force majeure or any other cause in the absolute discretion of HITES is beyond the Agency's control, they shall immediately upon the happening of such event contributing to delays give notice thereof in writing to HITES but shall nevertheless use constantly their best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of HITES to proceed with the work.

Request for extension of time shall be made by the Agency in writing within seven days of the happening of the event causing delay. The survey Agency shall also indicate with any such request, the period for which extension is required. In any such case HITES may give a fair and reasonable extension of time for completion of individual items or group of items of work for which separate period of completion is specified in the contract as a whole, but it shall be the sole discretion of the HITES to grant or refuse such extension.

The decision of HITES in regard to the extension will be communicated to the Agency in writing within a reasonable time but no compensation or any extra amount shall be paid for such extension granted by HITES.

### **15. Compensation payable for delay in completion and risk prejudice clause**

The Agency shall be liable to pay compensation to HITES in case of delay in fulfilling obligation under this agreement for causes solely attributable to the survey Agency at 1% (One percent) of contract amount per week of delay subject to maximum of 5% (five percent only) of the total contract price towards their contract.

### **16. Risk Prejudice Clause**

In case progress of any part of Agency's work is found to be unsatisfactory by HITES at any time during the execution vis-a-vis, the terms of contract, HITES shall give the Agency a fortnight's notice in writing asking for their plans for remedying the situation and to complete the job within the time mutually agreed, subject however to the conditions that the entire work falling within their scope of work shall be completed within the stipulated time. On the failure to remedy the situation as per agreed time with HITES, HITES shall have the right to withhold that portion of the work and get the same done at the risk and cost of the Agency after giving one weeks' notice.

### **17. Arbitration**

If at any time any doubt, question, dispute or difference whatsoever, shall arise between the Agency and HITES upon or relating to or in connection with this contract, either of the parties may give the other notice in writing of the existence of such doubt, question, dispute or difference and the same shall be referred to the Chairman - cum - Managing Director, HITES or his nominee as Sole Arbitrator. The decision of the sole arbitrator thereon shall be final, conclusive and binding upon the parties to dispute. The party invoking arbitration shall specify the dispute or disputes to be referred to the arbitration under the clause together with the amount or amounts claimed in respect of each of dispute.

### **18. Jurisdiction of Court**

All disputes arising out of the contract shall have the jurisdiction of courts of the Union Territory of Delhi only.

### **19. Termination of Contract**

HITES reserves the right to terminate, or postpone the work on account of un-fulfillment of contractual obligation(s) or any sufficient cause, HITES being sole judge of the same. The Agency shall be paid for the useful work done upto the date of termination. HITES shall determine the credit to be given to the detailer for the value of the work executed by the

Agency. The Agency shall give HITES all the data, compiled report, drawings etc. prepared by them till the date of termination before the final dues are paid to the Agency. Even after the termination of agreement, the Agency shall continue to cooperate with HITES to such a reasonable extent as may be necessary to clarify or explain any reports or recommendations in documents or detailing made by them.

**20. Breach of Trust**

Unless otherwise directed by HITES specifically, the Agency shall not contact directly or indirectly the client or any other authorities connected with the project. Non-compliance of this clause shall be treated as breach of trust resulting in the termination of contract between HITES and the Agency for with without any prior notice to him. In such event, no job will be entrusted to him in future by HITES.

**SECTION-IV**  
**TECHNICAL SPECIFICATIONS**

**1. SPECIFICATIONS:**

- a. All works relating to soil investigation shall conform to relevant Indian standards and the specifications given hereunder. In case of conflict between the two, the more stringent shall be adopted.
- b. **Boring**
- i. Boring shall be carried out in accordance to the provisions of relevant Indian Standard Code with shell and auger equipment. The boreholes shall have a diameter of 150 mm and shall be suitably lined throughout, particularly in cohesion less soil or soft cohesive soil. The toe of the lining shall at no time be more than 1.0m above the level to which the material has been removed from the borehole.
  - ii. Before taking any undisturbed samples or making any in-situ test, the lining shall be carried down to the bottom of the borehole.
  - iii. Auger of proper size shall be used in soft to firm clays and silts to avoid suction. The use of same shall only be restricted to moderately stiff to hard clays and sandy strata below water table. The use of a chisel bit shall be permitted only in boulder or rock formation or through local obstruction etc.
  - iv. Uncased boreholes may be permitted only upto a depth where the sides of the hole can stand unsupported. In case side falls or squeezing is noticed, steps shall be taken immediately to stabilize the sides of the borehole by casing pipes as directed.
  - v. Wash boring or any similar methods of boring, employing a water jet and/or a percussion bit may be permitted by the HITES in case boring and sufficient progress becomes impossible considering the sub-soil condition.
  - vi. No water shall be added while boring through cohesive soils and cohesion less soils above the water table. While boring through cohesion less soil below water table, water level in the casing shall always be maintained at or above the water table.
  - vii. The cutting brought up by the auger, shell or the cutting shoe of the split-spoon or undisturbed sampler shall be carefully examined and the soil description duly recorded after performing field identification tests.
  - viii. After completion of the boring at any borehole, a bore log shall be submitted in an approved proforma and submitted to the HITES in duplicate. After observing the position of the water table, backfilling of the borehole shall be carried out in an approved manner as directed by the HITES.
- c. **Samples**
- i. Disturbed Samples shall be taken from borehole cuttings, split spoon sampler and cutting edge of undisturbed sampler for clarification tests at the site in duplicate. The samples should be taken at 1.5 m interval or at every identifiable change of strata, whichever is met earlier to give a reliable record of the variations in the conditions of the soils.
  - ii. Undisturbed Samples shall be taken from the boreholes at 3 mtr. following intervals or at every identifiable change of strata whichever is met earlier.
  - iii. In case of sandy strata, the intervals of sampling shall be suitably increased. Sampling procedures and samplers for recovering undisturbed samples shall normally conform to Indian Standard Code requirements unless otherwise specified and directed by the HITES.
  - iv. In the case of cohesive deposits, undisturbed samples shall be taken by an open tube sampler or a piston sampler. The size of the sampler should be such that a sample having a minimum size of 100mm diameter and 300mm long can be recovered. The

sampler shall be pushed strictly by hand or by jacking in soft to firm deposit and no hammering shall be allowed.

- v. The samples shall be sealed, packed and properly labeled and transported to the laboratory. The top and bottom of a sample must be indicated clearly on the sample tube to facilitate the laboratory testing in proper orientation as specified by the HITES.

d. **Dispatch of Samples**

Samples shall be dispatched to the laboratory as soon as possible after being **obtained** and shall not be allowed to accumulate on site. If it appears to the HITES that there is a danger of samples deteriorating through further storage, the AGENCY shall dispatch such samples as soon as directed by the HITES.

e. **In-situ Test**

**Standard Penetration Test (SPT)** shall be conducted at 3.0 m intervals or at every identifiable change of strata, whichever is met earlier:

The driving of the split-spoon shall be terminated only when number of blows is greater than 100 per 15 cms of penetration. The test shall be conducted after driving the casing to the bottom of the borehole and after cleaning it.

f. **Daily Boring & Drilling Report**

Complete record of boring and drilling shall be submitted daily to the HITES along with **drill** observer's remarks for all the boreholes.

g. **Laboratory Tests**

- i. **General:** Laboratory tests shall be carried out in consultation with the HITES and as per Indian standard Codal requirements. For this purpose a list of all undisturbed samples and core samples collected from each borehole shall be submitted to the HITES with records of bore logs and in-situ tests. The laboratory tests depending on the type of the soil on selected soil samples, shall include but not limited to:

- a) Liquid & Plastic Limits
- b) Grain Size distribution
- c) Void ratio
- d) Atterburg limits
- e) Sieve analysis

The results of all tests shall be submitted along with relevant graphs.

- ii. The water samples shall be tested to indicate its usability from portable and **construction** criteria.
- iii. **Preparation of test specimens:** The various tests shall be carried out as per the procedures laid down in the relevant I.S. codes. In case of soft to firm cohesive strata undisturbed soil samples, test samples for all types of shear tests shall be prepared by hand trimming or soil lathe. Care shall be taken against bending of soil samples at the time of horizontal ejection of the samples from the sampling tubes. Samples shall be ejected from the sampling tubes in the same direction of travel in which the samples entered the sampling tubes.
- iv. **Similarly,** test specimens for consolidation tests shall also be prepared to the required size by hand trimming only and the ring of the consolidation apparatus shall be inserted by pressing gently with the hands and carefully removing the material around the ring. In no case shall the ring be forced into the soil. Great care shall be taken during the trimming.
- v. **Unconfined Compression Test** shall be conducted on selected undisturbed samples. Each unconfined compression test (natural & Re-moulded) shall comprise tests on a minimum of three soil specimens not less 38 mm diameter and a height to diameter ratio of 2, together with the determination of natural moisture content

and density. The water content of the specimen shall be taken from the failure zone of the specimen. The test results shall be observed and reported as per standard practice. The TENDERER shall quote in the bill of quantities for each confined compression test to include for all the above mentioned items.

- vi. **Triaxial Tests** shall be conducted on the undisturbed samples selected by the HITES on a minimum of three specimens tested at different cell pressures. The moisture content before and after the test and the density of each specimen shall be determined. The rate **inserted** in the bill of quantities for the triaxial compression test by the tender shall include for all the above items.
- vii. **Consolidation Tests** shall be conducted on undisturbed samples selected by the HITES. The co-efficient of consolidation, the coefficient of volume compressibility and **compression** index and the coefficient of permeability shall be determined and reported.
- viii. Unloading of the test specimens shall be done in suitable stages.
- ix. **Rock Sample Test** Rock samples shall be prepared and tested for crushing strength having L/D ratio not less than 2 and also stress strain relationship and modulus of elasticity shall be reported. Density, porosity, water absorption, specific gravity shall also be **determined** on rock samples as per Indian Standard practice.
- x. **Chemical Analysis** Chemical analysis of soil and water samples shall be carried out for pH value, sulphate content (So<sub>4</sub>), calcium content (Ca), Chloride content (Cl) and total dissolved **solids** in water.
- xi. Other tests **as** required & directed by the HITES shall be carried out.
- xii. On **completion** of each bore hole, three copies of a preliminary bore hole log shall be submitted to the HITES together with one set of the disturbed samples taken in the bore hole.

The preliminary bore logs shall show:

1. Ground level referred to the available benchmark at site.
2. The locations of the bore holes, on a plan.
3. The preliminary description of each stratum.
4. The thickness of each stratum with the boundaries.
5. The position, type and identification of each sample and site test.
6. Any site test results available.
7. The levels at which each separate ground water level is first encountered at which it comes to rest (standing water level).

**h. Detailed Report including recommendations:**

On completion of all field and laboratory testing, a detailed report in triplicate shall be prepared and submitted to the HITES. The report (in soft as well as hard copy) shall also include but not be limited to the following:

- i) Survey of land boundary with co-ordinates of each corner points and dimension of each arm by total station.
- ii) Survey of total area of land that is topographical survey with contour interval of 50m in transverse and longitudinal direction, and preparation of:-
- iii) Master Plan showing the following:-
  - a. All natural features like ditches and water bodies. Geographical north to be established with DGPS.
  - b. All botanicals feature like trees, with reference distance from grid and crown diameter with local name if identified.

- c. All man made features like existing buildings, road, overhead electrical lines, electrical pylons, wells, pipe line, height of electrical wire, and all other permanent structures.
- iv) A plot plan in A1/A0 sheet showing the locations and reduced levels of all field tests e.g. boreholes, trial pits, static cone penetration tests, dynamic cone penetration tests, plate load tests, etc. properly drawn to scale and dimensioned with reference to the established gridlines.
- v) A plan showing the position of all boreholes. A true cross section of all individual bore holes and trial pits with reduced levels and coordinates showing the classification and thickness of individual stratum, position of ground water table, various in-situ tests conducted and samples collected at different depths and the rock stratum, if met with.
- vi) A description of the procedure of investigation and testing employed.
- vii) A set of longitudinal and transverse soil profiles connecting various boreholes in order to give a clear picture of the variation of the subsoil strata as per IS: 6065 (each soil profile to be submitted in separate sheets).
- viii) Past observations and historical data, if available, for the area or for other areas with similar soil profile or with similar structures in the surrounding areas.
- ix) Detailed bore logs, subsoil sections in different directions, laboratory and field test results both in tabular as well as in graphical form, showing variations of each of the soil properties with depths in each borehole.
- x) Plot of Standard Penetration Test (N values both uncorrected and corrected) with depth for identified areas.
- xi) Results of all laboratory test summarized for each sample and for each layer alongwith all the relevant charts, tables, graphs, figures, supporting calculations, conclusions and photographs of representative rock cores.
- xii) For all tri-axial shear tests stress vs strain diagrams as well as Mohr's circle envelopes shall be furnished. If back pressure is applied for saturation, the magnitude of the same shall be indicated. The value of modulus of elasticity (E) shall be furnished for all tests alongwith relevant calculations.
- xiii) Modulus of elasticity calculated from the crushing strength of rock, if applicable.
- xiv) 'e' vs. log 'p', settlement vs. log 't' plots depending upon the shape of the plot to determine the co-efficient of consolidation 'Cv' and time for 90% and 100% consolidation.
- xv) Coefficient of volume decrease (mv) and coefficients of permeability and compression of Index (Cc) shall be determined and reported. Pre-consolidation pressure shall be determined for each test and shall be taken into consideration in recommending the anticipated settlement along with the time to achieve the same.

i. **RECOMMENDATIONS**

Recommendation shall be given area wise duly considering the type of soil, structure and foundation in the area. The recommendations shall include but not be limited to the following:-

i) **For shallow foundations**

The following shall be recommended with comprehensive supporting calculations.

- a) Net safe allowable bearing pressure for isolated strip footing of suitable sizes (Varying from Footings and continuous 1 to 4m) at suitable foundation depth as per site condition below ground level considering both shear failure and settlement

criteria, giving reasons for type of shear failure adopted in the calculations.

- b) Net safe allowable bearing pressure for Raft Foundation at suitable foundation depth as per site condition below ground level consideration both shear failure and settlement criteria, giving reasons for type of shear failure adopted in the calculations. Such Footings to be suggested for Raft Foundation giving data for modulus of Sub grade Reaction.
- c) Magnitude of settlement expected of the structure.

**ii) For Deep Foundation / Pile Foundation**

The following shall be recommended with comprehensive supporting calculations.

- a) If Raft foundation is unable to take load of buildings and pile foundation is required, provide all parameters related to design of pile foundation.
- b) Specific recommendation relating to likely liquefaction of soil. If so recommendations for the type of foundations with safe load bearing capacity / load conveying capacity in case of piles.

**iii) For Foundation on rock**

Recommendation regarding the allowable bearing capacity of rock, if applicable, for spread footing and raft foundation.



# **FINANCIAL BID (IN SEPARATE ENVELOPE)**

**SECTION-V****FINANCIAL BID****SCHEDULE OF QUANTITIES****FOR****TOPOGRAPHICAL SURVEY & SOIL INVESTIGATION WORK FOR PROPOSED AIIMS AT  
DARBHANGA IN BIHAR****(This BOQ template must not be modified/replaced by the bidder and the same should be submitted)**

Sl. No.	Item Description	Quantity	Unit	Rate in Rs.(Incl. of Taxes, GST etc.)	Amount in Rs.(Incl. of Taxes, GST, etc.)	Amount in words
<b>A.</b>	<b>Topographical Survey, Collection of field and report submission as per detailed of work enclosed.</b>					
i.	Site Survey and Collection of field Data as per defined scope of work of the area earmarked in enclosed layout drawings and submission of report complete in all respect and as directed by Engineer-in charge	150	Acre			
ii.	Construction of Bench Mark as mentioned in scope of work complete in all respect and as directed by Engineer-in charge	75	Nos			
<b>Total amount in figure (in Rupees) (A)</b>						
<b>Total amount in words (A)</b>						
<b>B.</b>	<b>Soil boring, sampling, chemical analysis and report submission as per detailed scope of work given below – (approx.. for 21 bores)</b>	700	RM			
	Boring of holes of 150 mm dia. In all types of soil excluding soft and hard rock but including boulders, gravels etc. upto the depth of 30 meter below the existing G.L. or refusal whichever is met earlier complete in all respects or as per the direction of Engineer-In-Charge (The quoted rate shall also include the cost of following.)					

	<p>Conducting standard penetration test in all bore hole at intervals of 3 m and also at change of strata as per IS codes of practices. (From natural ground level to 3.0m or up-to-refusal depth as per IS: 1892 or where "N" value exceeds 100 whichever comes earlier)</p> <p>Collecting undisturbed soil samples from each bore hole at 3 m intervals or at every change of strata whichever is earlier using straight open end sampling tubes fitted to an adapter (with ball and socket arrangement) and using a standard SPT setup also collecting disturbed soil samples at 1.5 m intervals or at every change of strata.</p> <p>Recording of water table in bore hole after completion of boring as per scope of work</p> <p>Collection of water samples from bore holes for chemical test and analysis</p> <p>Conducting necessary tests on samples collected from each hole. The laboratory tests include chemical analysis of soil and water as per scope.</p> <p>Submission of comprehensive soil report in triplicate, including recommendation regarding type of foundation with safe bearing capacity or load carrying capacity, along with soil &amp; water samples taken for the lab tests, tabulated along with bore logs.</p> <p>Submission of graphical representation and its classification</p>				
<b>Total amount in figure (in Rupees) (B)</b>					
<b>Total amount in words (B)</b>					

### **Financial Bid Summary**

Sl. No.	Description	Amount (Rs) inclusive of Taxes, GST, etc.
<b>A.</b>	<b>Topographical Survey, Collection of field and report submission</b>	
<b>B.</b>	<b>Soil boring, sampling, chemical analysis and report submission</b>	
<b>TOTAL AMOUNT IN RUPEE (A+B)</b>		
<b>TOTAL AMOUNT IN WORDS</b>		

**Note:**

- i. This is an **"Item Rate Tender"**. Rates shall include cost of materials, labour, plants & equipment taxes, duties, GST, etc and all necessary apparent services required for complete execution in accordance with relevant drawings and specification. The HITES decision on interpretation of bill of quantities shall be final and binding on the contractor.
- ii. The quantities given in this Bill of Quantities are liable to variations. Such variations in quantities shall not, however, vitiate the contract in any way whatsoever and all quoted rates shall remain valid as per deviation limits provided in the contract. Contractor shall be paid for the actual measured quantities of work executed by him/them
- iii. Rates quoted shall be firm and shall not be subject to any price variations except as specifically provided in the contract.