



INSTITUTE OF NANO SCIENCE AND TECHNOLOGY

Habitat Centre, Sector-64, Phase-X, Mohali-160062

Tender document for the

**NAME OF WORK: CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE
OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-
81, MOHALI, PUNJAB (PACKAGE-VIII)**

(Two Bid System)

Percentage Rate Tender for Works

PART A

Technical / Eligibility Bid

Notice Inviting Tender, Eligibility Criteria, General Conditions of Contract

PART B

Technical Specifications & Specifications for Material to be used in Tubewell

PART C

Financial Bid

January, 2020

PART-A
TECHNICAL/ELIGIBILITY BID
NOTICE INVITING TENDER, ELIGIBILITY CRITERIA,
GENERAL CONDITIONS OF CONTRACT

INDEX

1.0	PRESS NOTICE	4
2.0	PART-A: TECHNICAL NIT/ELIGIBILITY BID	5
2.1	NIT/TENDER DOCUMENT	6
2.2	INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR TENDERING	7
	ELIGIBILITY CRITERIA	8-9
	RECEIPT OF DEPOSITION OF EMD	10
	NOTICE INVITING TENDER-NIT CPWD-6	11-15
	CPWD -7 PERCENTAGE RATE TENDER	16-18
	PROFORMA OF SCHEDULES (A TO F)	19-24
	FORM OF EARNEST MONEY DEPOSIT (BANK GUARANTEE BOND)	25
	FORM OF PERFORMANCE SECURITY (BANK GUARANTEE BOND)	26-27
	INTEGRITY PACT	28-34
	FORM – 'B'	35
	FORM G & FORM H	36-37
	LETTER OF TRANSMITTAL	38
	COMPOSITION OF DRC (Annexure -1)	39

PART B for Particular Specifications, Approved Makes and

PART C for Financial bid

INSTITUTE OF NANO SCIENCE & TECHNOLOGY

Habitat Centre, Sector-64, Phase-X, Mohali-160062

1.0. Press Notice

NOTICE INVITING TENDER

The Director, Institute of Nano Science & Technology, Mohali (INST), on behalf of Institute of Nano Science & Technology Mohali invites percentage rate bids from **competent specialized agencies having experience in boring of deep Tubewell** for the under mentioned work.

NITNO: 05/INST/2019-20

NAME OF WORK: CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB-140306 - (PACKAGE-VIII)

Estimated cost put to tender : ₹ 12, 87,580/-
Earnest Money : ₹ 25,752 /-
Period of Completion : 01 (One) Month (30 days)
Uploading of NIT on website : 15-01-2020

Last Date and Time for Submission of Tender: On **or before 07-02-2020 till 3.00 PM**

For NIT/Tender Documents Details/downloads or any other correction /amendments /modification / extension till the last date of submission of bids, can be downloaded free of cost from the website: www.inst.ac.in or www.eprocure.gov.in

2.0. PART-A: TECHNICAL / ELIGIBILITY BID

2.1 NIT/TENDER DOCUMENT

The Director, Institute of Nano Science & Technology, Mohali (INST) invites percentage rate bids from approved & eligible contractors in composite category of CPWD for the under mentioned work :

N.I.T.No.: 05/INST/2019-20

Name of work	CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB-140306- (PACKAGE-VIII)	
Estimated Cost	₹12,87,580/-	
Period of Completion	01 (One) Month	
Earnest Money Deposit:	₹25,752 /-	
Performance Guarantee	5% of tendered value of schedule	
Security Deposit	2.5% of tendered value	
Tender to be uploaded on website	On 15-01-2020	
Last Date and time of submission of Tender	07-02-2020 up to 3:00 PM INST shall not be responsible for any postal delay or otherwise.	
Date and time of opening of Technical/Eligibility bid/	07-02-2020 at 3:30 PM	
Date and time of opening of Financial bid	To be intimated later	
Validity of offer	60 days from the date of opening of Tender	

Certified that this NIT contains **Part - A** from page 2 to 39, **Part – B** from page 1 to 10 and **Part - C** from page 1 to 3.

This NIT amounting to ₹12, 87, 580/- (Rupees Twelve Lakh Eighty Seven Thousand Five Hundred Eighty Only) is hereby approved.

PMC,
(Tata Consulting Engineers)

Architect,
(Sikka Architect Associates)

Consultant (Engg)

Director,INST

2.2. INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR TENDERING FORMING PART OF BID DOCUMENT.

The Director, Institute of Nano Science & Technology, Mohali (INST) invites **Percentage rates** bids from competent specialized agencies having experience in boring of deep Tubewell for the work:

S. No.	NIT No.	Name of work & Location	Estimated cost put to Tender	Earnest Money	Time/Period of Completion	Last date & time of submission of tender	Time and date of opening of tender
1	2	3	4	5	6	7	8
1	05/INST/2019-20	NAME OF WORK: CONSTRUCTION AND DEVELOPMENT TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB-140306- (PACKAGE-VIII)	₹ 12,87,580/-	₹ 25,752 /-	30days	Up to 03:00 PM on 07-02-2020	03.30 PM on 07-02-.2020

1. The bidder is required to quote his rate in percentage above / below the estimated cost of work i.e. ₹ 12, 87,580/-
2. The intending bidder should read the schedule of quantities, additional conditions, additional specifications, particular specifications, CPWD- 6 and other terms and conditions given in the NIT. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required. The bidder should also read the General Conditions of Contract for CPWD Works 2014 with up to date correction slips, which is available with Government of India Publications.
3. Information and Instructions for bidders posted on website shall form part of bid document.
4. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents can be seen and downloaded from website www.inst.ac.in or www.eprocure.gov.in free of cost.
5. The Tender can only be submitted along with original EMD in the form of Demand Draft or Pay Order or Banker's Cheque or Fixed Deposit Receipts and Bank Guarantee of any scheduled Bank towards EMD in favour of Director, INST, Mohali, or if online submitted, the proof of the remittance to be submitted along with the tender documents.

ELIGIBILITY CRITERIA

The contractors who fulfil any of the following requirements shall be eligible to apply. **Joint ventures are not accepted.**

1.1 The Contractors, who have completed at least one similar work of not less than **₹ 12.90 Lakh** in Central Govt. / State Govt. / Public Sector Undertakings during last two years shall be eligible to apply. The definite proof from the appropriate authority not less than Executive Engineer or equivalent rank of having satisfactorily completed the “**Drilling and Installation of Tubewell Works only**” as mentioned below during the last Two years ending previous day of last day of submission of Bid:

Similar work shall mean works comprising of:- “ **Drilling and Installation of Tubewell Works only.**” executed under one single agreement.”

For 1.1 above ,the financial value of executed work shall be brought to current costing level by enhancing the actual value of work at simple rate of 7% per annum; calculated from the actual date of completion to last date of receipt of eligibility bid . The works should have been executed in the same name in which present bid is made or work experience gained from the works executed by the earlier firm (partnership firm) in the same proportion of share of the applicant in that partnership firm where the applicant was a partner earlier. **The past works as Joint Ventures / SPV / consortiums will not be considered for eligibility.**

- 1.2 The bidder should not have incurred any loss in more than one year during the last two years ending 31st March of 2019. **The bidder shall submit these details as per Form- ‘A’ attached with NIT.**
2. List of eligible similar nature of works successfully completed during the last two years in (Form “Performance report of works referred to in form “G” ----In form “H”)
3. **List of Documents to be submitted along with the tender:**
- i. Demand Draft/ Pay order or Banker’s Cheque/FDR/ Bank Guarantee of any scheduled Bank against EMD (Applicable to all bidders) as per Para 7 of CPWD -6 (**Page-11 of Part A**)
 - ii. Enlistment Order of the Contractor, if any.
 - iii. Copy of Certificate of Registration for GST & GST return up to **31/12/2019** (Applicable to all bidders)
 - iv. Integrity Pact of the bid document shall be signed between Authorized Signatory /Executive Engineer and the successful bidder after acceptance of bid.

- vi. List of eligible similar nature of works successfully completed during the last Two years in (Form "Performance report of works referred to in form "G" ----In form "H")
4. It will be mandatory to constitute Dispute Redressal Committee (DRC). The contractor or INST can only seek arbitration if not satisfied with the decision of DRC.
 5. The bid submitted shall be invalid if:
 - i. The bid is submitted late after scheduled date & time.
 - ii. The bidder is found ineligible.
 - iii. The bidder does not deposit original EMD with the office of Director INST, Mohali.
 - iv. The bidder does not submit all the documents as required and as mentioned above in point No-3
 - v. If any discrepancy is noticed between the documents at the time of submission of bid by the lowest contractor the bid shall become invalid.
 - vi. If a bidder does not quote any percentage above / below on the total amount of the tender or any section / Sub head in percentage rate tender, The tender shall be treat as invalid and will not be considered as lowest tenderer.
 - vii. In the event of tender being submitted by a firm, it must 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 to be produced with the tender and it must disclose that the firm is duly registered under the Indian Partnership Act 1932.
 - viii. If the contractor is found ineligible after opening of bids, his bid shall become invalid.

Receipt of deposition of original EMD

(Receipt No...../ Date.....)

1	Name of work	Construction and Development of Tube well at INST , Knowledge Sector-81, Mohali – Punjab-140306 : (Package-VIII)
2	NIT No	05/INST/2019-20
3	Estimated Cost	₹ 12,87,580/-
4	Amount of Earnest Money Deposit	₹ 25,752 /-
5	Last date of submission of bid	Upto 3:00 PM on 05-02-2020

(# To be filled by EMD receiving Officer)

1	Name of Contactor		
2	Form of EMD		
3	Amount Earnest Money Deposit		
4	Date of submission of EMD		

Signature, Name and Designation of EMD

Receiving officer (FO. INST)

Along with Office Stamp

CPWD-6 FOR TENDERING

Percentage rate bids are invited on behalf of Institute of Nano Science and Technology, Mohali. Percentage rate bids from competent specialized agencies having experience in installation and commissioning for the work of “:**CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII).**”

1. The enlistment of the contractors should be valid on the last date of submission of bids.
In case the last date of submission of tender is extended, the enlistment of contractor should be valid on the original date of submission of bids.
- 1.1 The work is estimated to cost ₹ 12, 87,580/-. This estimate, however, is given merely as a rough guide.
2. Agreement shall be drawn with the successful bidders on prescribed Form No. CPWD 7 (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website. Bidders shall quote his rates as per various terms and conditions of the said form which will form part of the agreement.
3. The time allowed for carrying out the work will be **30 days** from the date of start as defined in schedule ‘F’ or from the first date of handing over of the site, whichever is later, in accordance with the phasing, if any, indicated in the bid documents.
4. (i). The site for the work is available.
(ii). The architectural & structural drawing shall be made available in phased manner as per requirement of the same as per approved programme of completion submitted by the contractor after award of the work.
5. The bid document consisting of plans, specifications, the schedule of quantities of various types of items to be executed and the set of terms and conditions of the contract to be complied with and other necessary documents except Standard General Conditions of Contract Form can be seen from website www.eprocure.gov.in or www.inst.ac.in free of cost.
6. When tenders are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
7. Earnest Money ₹ **25,752** /- can be paid in the form of Demand Draft or Pay order or Banker’s Cheque or Fixed Deposit Receipt (drawn in favour Director, INST, Mohali payable at Mohali) along with Bank Guarantee of any Scheduled Bank wherever applicable in accordance with the Form annexed hereto having validity for 6 months or more from the last date of receipt of tenders shall be submitted with the tender.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money **or ₹ 20 lakh**, whichever is less, shall have to be

deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any schedule bank having validity for 6 months or more from the last date of receipt of bids.

The original EMD shall be deposited by the bidder before opening of Eligibility/ Technical Bid in the office of the **Director, Institute of Nano Science and Technology, Mohali**, failing which the tender shall be rejected.

The bank details of INST are as follows:	
1. Account Name :	Director, INST Mohali
2. Name of Bank :	Canara Bank
3. Bank Address :	Sector-34A, Chandigarh-160022
4. Type of Account :	Current Account
5. Account No. :	2452201001102
.6. IFSC Code :	CNRB0002452
7. MICR Code :	160015003

Copy of Enlistment Order and certificate of work experience and other documents as specified in the press notice shall be submitted with the tender. However, certified copy of all the documents as specified in press notice shall have to be submitted by the lowest bidder only within a week physically in the office of the tender opening authority.

Bid/ tender documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited along with the tender and other documents placed envelope are found in order.

8.0 “Submission of Tender”

Tender shall be submitted by the bidders in three envelopes along with letter of transmittal as attached with this document in the following manner:

Envelope No- 1 shall contain the EMD

Envelope No-2 shall contain signed and stamped documents confirming the eligibility of the bidder (**Technical Bid**)

Envelope No-3 shall contain signed and stamped price bid (**Financial Bid**).

Bidder shall clearly mention the envelope No. on each envelope. All envelopes shall be put together in one large envelope and submitted. Addressed to the

The Director,

Institute of Nano Science &
Technology Habitat Centre,
Sector-64, Phase-X, Mohali-
160062

Sub: NIT No.: 5/INST/2019-20 for the work “CONSTRUCTION AND DEVELOPMENT OF TUBEWELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)

Opening of technical bid and financial

After evaluation of applications of tenders, a list of short listed bidders will be prepared. Whose eligibility documents are found to be in order?

Thereafter the financial bids of only the verified eligible bidders shall be opened at the **same day or notified time, date and place** in the presence of the qualified bidders or their representatives.

The bid shall remain valid for a period of 60 days from the date of opening of Technical bid.

The bid submitted shall be opened at **03:30 PM on 07-02-2020**

9. The bid/ tender submitted shall become invalid if:
- i. The bid is not submitted in three envelopes along with letter of transmittal / not mentioning envelope No. on all the envelopes / not submitted as per instruction given above **“Submission of Tender”**
 - ii. The bidder does not deposit original EMD along with the tender.
 - iii. The bidder does not submit all the documents as required and as mentioned above in **List of Documents to be submitted along with the tender.**
 - iv. If any discrepancy is noticed between the documents at the time of submission of bid by the lowest contractor the bid shall become invalid.
 - v. if a bidder does not quote any percentage above / below on the total amount of the tender or any section / Sub head in percentage rate tender, The tender shall be treat as invalid and will not be considered as lowest tenderer.
 - vi. In the event of tender being submitted by a firm, it must 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 to be produced with the tender and it must disclose that the firm is duly registered under the Indian Partnership Act.
10. Intending Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their bids as to the nature of the ground and sub-soil (so far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charge consequent on any misunderstanding or otherwise shall be allowed. The bidders shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidders implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools

and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

11. The competent authority on behalf of the Director, INST Mohali does not bind itself to accept the lowest or any other bid and reserves to itself the authority to reject any or all the bids received without the assignment of any reason. All bids in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the bidders shall be summarily rejected.

Canvassing whether directly or indirectly, in connection with bidders is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.

12. The competent authority on behalf of Director, INST Mohali reserves to himself the right of accepting the whole or any part of the bid and the bidders shall be bound to perform the same at the rate quoted.
13. The contractor shall not be permitted to bid for works in the INST / CPWD Circle responsible for award and execution of contracts, in which his near relative is posted a Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Junior Engineer (both inclusive). He shall also intimate the names of persons who are working with him in any capacity or are subsequently employed by him and who are near relatives to any gazetted officer in the Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
14. No Engineer of Gazetted Rank or other Gazetted Officer employed in Engineering or Administrative duties in an Engineering Department of the Government of India is allowed to work as a contractor for a period of one year after his retirement from Government service, without the prior permission of the Government of India in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or before submission of the bid or engagement in the contractor's service.
15. The bid for the works shall remain open for acceptance for a period of **Sixty (60) days** from the date of opening of financial bids, if any bidders withdraws his bid before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the bid which are not acceptable to the department, then the Government shall, without prejudice to any other right or remedy, be at liberty to forfeit 50% of the said earnest money as aforesaid. Further the bidders shall not be allowed to participate in the re-bidding process of the work.
16. This notice inviting Bid shall form a part of the contract document. The successful bidders/ contractor, on acceptance of his bid by the Accepting Authority shall within 15 days from the stipulated date of start of the work, sign the contract consisting of:
 - a) The Notice Inviting Bid, all the documents including additional conditions, specifications and drawings, if any, forming part of the bid as uploaded at the time of invitation of bid and the rates quoted online at the time of

submission of bid and acceptance thereof together with any correspondence leading thereto

- b) Standard C.P.W.D. Form 7 or other Standard C.P.W.D. Form as applicable.
- c) Standard General Condition of Contract for CPWD 2014 (amended upto last date of receipt of tender).

17. GST or any other tax applicable in respect of inputs procured by the contractor for this contract shall be payable by the contractor and Government will not entertain any claim whatsoever in respect of the same. However, component of GST at time of supply of service (as provided in CGST Act 2017) provided by the contract shall be varied if different from that applicable on the last date of receipt of tender including extension if any.

Director, INST, Mohali

GOVERNMENT OF INDIA

INSTITUTE OF NANO SCIENCE, PUNJAB.

STATE: Punjab

PERCENTAGE RATE TENDER & CONTRACT FOR WORKS

Tender for the work of: CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII) to be submitted the by 3:00 PM on 07-02-2020 to the Director, INST, Habitat Centre Phase-X, Mohali to be opened in presence of tenderers who may be present at 3:30 PM on 07-02-2020 in the office of Director, INST, Mohali.

TENDER

I/We have read and examined the Notice Inviting Tender, Schedule A, B, C, D, E & F, Specifications applicable, Drawings & Designs, General Rules and Directions, Conditions of Contract, Clauses of Contract, Special Conditions, Schedule of Rate and other documents and Rules referred to in the conditions of contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified for the Director, INST, Mohali within the time specified in Schedule 'F', viz. Schedule of Quantities and in accordance in all respects with the Specifications, Designs, Drawings and instructions in writing referred to in Rule-1 of General Rules and Directions and in Clause 11 of the Conditions of Contract and with such materials as are provided for, by and in respects in accordance with, such conditions so far as applicable.

We agree to keep the tender open for 60 Sixty days from the date of opening of tender and not to make any modifications in its terms and conditions.

A sum of ₹ 25,752/- is hereby forwarded in FDR of a Scheduled Bank/ Demand Draft of a Scheduled Bank/ Bank guarantee issued by a scheduled bank as earnest money. If I/we fail to furnish the prescribed Performance Guarantee within prescribed period, I/we agree that the said Director, INST, Mohali or his successor in office shall without prejudice to any other right or remedy be at liberty to forfeit the said Earnest Money absolutely. Further, if I/we fail to commence work as specified, I/we agree that Director, INST, Mohali or his successors in office shall, without prejudice to any other right or remedy available in law, be at liberty to forfeit the said Performance Guarantee absolutely. The said Performance Guarantee shall be a guarantee to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 12.2 & 12.3 of the tender form. Further, I/We agree that in case of forfeiture of earnest money or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

I/ We undertake and confirm that eligible similar work(s) has/ have not been got executed through another contractor on back to back basis. Further that, if such a violation comes to the notice of INST, Mohali, then I/we shall be debarred for tendering in INST, Mohali in future forever. Also, if such a violation comes to the notice of INST, Mohali before date of start of work, the Engineer-in-Charge shall be free to forfeit the entire amount of Earnest Money Deposit/ Performance Guarantee.

I/We hereby declare that I/we shall treat the tender documents, drawings and other records connected with the work as Secret / Confidential documents and shall not communicate information / derived therefrom to any person other than a person to whom I/we am/are may authorized to communicate the same or use the information in any manner prejudicial to the safety of the State.

DatedXX
Witness: -XX.
.....
Address: -XX.
Occupation: -XX.

Signature Contractor.....
Postal Address: -

Telephone No.
Fax:-
E-Mail:-

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the INST, Mohali for a sum of ₹.....
(Rupees.....)

The letters referred to below shall form part of

this contract agreement.

For & on behalf of INST, Mohali

i) XXX
Signature.....

ii) XXX

iii) XXX

iv) XXX

Dated:

Authorized Signatory, INST

XXX: To be filled by the INST

XX: To be filled by the Contractor

Name of work : CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)

1. **Reference to General Conditions of Contract:** General Conditions of Contract 2014 with amendments issued up to the last date of submission of tender.
- 2 Estimated Cost of work : ₹ 12, 87,580/-
- 3 Earnest Money : ₹ 25,752 /- (To be returned after receiving performance guarantee).
- 4 Performance Guarantee : **5% of tendered value**
- 5 Security Deposit : **2.5% of tendered value**

SCHEDULE 'F':

General Rules & Directions:

Officer Inviting Tender : Director, INST, Mohali.

Maximum Percentage for quantity of items

Work to be executed beyond which rates are to be determined in accordance with

Clauses 12.2 & 12.3 : Refer Clause-12 below

Definitions:

Engineer-in-Charge: **Consultant (Engg), INST**

Accepting Authority: **Director, INST, Mohali (Pb)**

PMC (Project Management Consultant) : **M/s Tata Consulting Engineers (TCE)**

Architect : **M/s Sikka Architects & Associates**

Percentage on cost of materials and labour 15%

To cover all overheads and profits

Standard Schedule of Rates: (i) CPWD Delhi Schedule of Rates 2019 with correction slips upto date of receipt of tender.
(ii) Punjab Common Schedule of Rates
(iii) CPWD Electrical Schedule of Rates

Department : Institute of Nano Science and Technology, Mohali.

Standard CPWD Contract Form: Form GCC 2014, CPWD Form 7 modified & duly amended upto date of submission of tender.

Clause-1:

1.	Time allowed for submission of Performance guarantee from date of issue of letter of acceptance, in days.	10 days
2.	Maximum allowable extension with late fee @ 0.10% per day of performance guarantee amount beyond the period as provided in (i) above	1 to 5 Days
Clause-2: i	Authority for fixing compensation under clause 2	Director, INST Mohali
ii	Whether Clause 2(A) shall be applicable	Not Applicable
CLAUSE 5	Number of days from the date of issue of letter of acceptance for reckoning date of start.	10 Days
	Mile Stone	Table of Milestones (Refer Part-A, Page No.-25)
	Time allowed for execution of work	90 days
	Authority to decide	
i	Extension of time	Director, INST, Mohali (Pb.)
ii	Re-scheduling of Mile stone	Director, INST, Mohali (Pb.)
iii	Shifting of Date of Start in case of delay in handing over of site	Director, INST, Mohali (Pb.)
Clause 6, 6A		
	Clause applicable – (6 or 6A)	Clause-6A (Computerize Measurement to be submitted by agency)
Clause 7	Gross work to be done together with net payment /adjustment of advances for material collected, if any, since the last such payment for being eligible to interim payment.	₹ 7 Lakh
Clause-10-B (ii):	Whether clause 10-B (ii) shall be applicable	Yes
Clause-10-C	Component of Labour expressed as percent of total value of work.	Not applicable
Clause-10 CA:		Not applicable

	Clause 10 CC to be applicable in contracts with stipulated period of completion exceeding the period shown in the next column	Not applicable
Schedule of component of other materials, Labour, POL etc. for price escalation:		
	<p>Component of civil construction materials (except materials covered under clause 10CA) expressed as percent of total value of work</p> <p>Component of Labour expressed as percent of total value of work.</p> <p>Component of P.O.L. expressed as percent of total value of work.</p>	Not applicable
Clause-11	Specifications to be followed for execution of work	As per Part B (Page no. 1-10) & C.P.W.D. Specifications 2009 Vo. I & II with up to date correction slips till receipt of tender
Clause-12:	Type of Work	Project and original works
12.2 & 12.3	Deviation limit beyond which clause 12.2 & 12.3 shall apply for Building work	30%
12.5(i)	Deviation limit beyond which clause 12.2 & 12.3 shall apply for foundation works (except earth work)	100%
(ii)	Deviation limit for items in earth work subhead of DSR or related items	100%
Clause-16:	Competent Authority for deciding reduced rates	Director, INST, Mohali

Clause-17:

Defect Liability Period	1. Tube Well	12 Months
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Clause-18: List of mandatory machinery tools

& Plants to be deployed by the

NA

Contractor at site

Clause-25: Dispute Redressal Committee (DRC)

Constitution of Dispute Redressal Committee (DRC)	Competent Authority to appoint DRC.
DRC Constituted vide No. 15(3)/2019-INST dated 18-03-2019 (Annexure – 1) (Part A page 40)	Director, INST, Mohali

Clause-36 (i)

Sr. No	Minimum Qualification of Technical Representative	Discipline	Designation (Principal Technical/ Technical Representative)	Minimum Experience	Number	Rate at which recovery shall be made from contractor in the event of non-deployment.	
						Figures	Words
---NIL---							

Assistant Engineers retired from Government Services that are holding Diploma will be treated at par with Graduate Engineers.

Clause-42:

i) a) Schedule/ Statement for determining theoretical quantity of cement & bitumen	Delhi Schedule of Rates 2018 with correction slips issued up to the date of receipt of tender and as per nomenclature of the items
---	---

ii) Variations permissible on theoretical quantities.

a) Cement 2% plus/ minus.

b) Steel Reinforcement and structure steel

Sections for each diameter, section and category. 2% plus/ minus.

c) Bitumen for all work. 2.5% Plus only & Nil on minus side.

d) All other materials Nil

TABLE OF MILE STONE (S)

Name of work: CONSTRUCTION AND DEVELOPMENT OF TUBEWELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)

S I · N O ·	Description of Milestone (Physical & Financial)	Time Allotted in days(From date of start)	Amount to be withheld in case of non-achievement of milestone (% of Tendered Amount)
1.	Work upto 1/8 th of the tendered amount	10 days	In the event of not achieving the necessary progress as accessed from the running payments, 1% of the tendered value of work will be withheld for failure of each milestone.
2.	Work upto 3/8 th of the tendered amount	15 days	
3.	Work upto 3/4 th of the tendered amount	22 days	
4.	Full Work Completed in all respect.	30 days	

Terms of payment:

Stage payment of the contractor for various components of work shall be regulated as per CPWD specifications. For works for which the % payment is not specially mentioned in the specification, the rate of stage payment shall be decided by Engineer- in charge.

Stage Payment for SITC items, shall be as mentioned below:

- a. 50% Payment within 15 days of supply of the system at site in good condition along with test reports etc.
- b. 35% Payment after installation (ready for testing and commissioning)
- c. 10% Payment after testing, commissioning.
- d. 5% after Handing over to the department for beneficial use.

FORM OF EARNEST MONEY DEPOSIT

(BANK GUARANTEE BOND)

WHEREAS, contractor..... (Name of contractor) (Hereinafter called "the contractor") has submitted his tender dated (Date) for the construction of (Name of work) (Hereinafter called "the Tender")

KNOW ALL PEOPLE by these presents that we..... (Name of bank) having our registered office at..... (hereinafter called "the Bank") are bound unto..... (Name and division of Executive Engineer) (Hereinafter called "the Engineer-in-Charge") in the sum of ₹ (₹ in words) for which payment well and truly to be made to the said Engineer-in-Charge the Bank binds itself, his successors and assigns by these presents. SEALED with the Common Seal of the said Bank thisday of..... 20.....

THE CONDITIONS of this obligation are:

- (1) If after tender opening the Contractor withdraws, his tender during the period of validity of tender (including extended validity of tender) specified in the Form of Tender;
- (2) If the contractor having been notified of the acceptance of his tender by the Engineer-in-Charge:
 - (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to contractor, if required; OR (b) fails or refuses to furnish the Performance Guarantee, in accordance with the provisions of tender document and Instructions to contractor,

We undertake to pay to the Engineer-in-Charge either up to the above amount or part thereof upon receipt of his first written demand, without the Engineer-in-Charge having to substantiate his demand, provided that in his demand the Engineer-in-Charge will note that the amount claimed by him is due to him owing to the occurrence of one or any of the above conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date* after the deadline for submission of tender as such deadline is stated in the Instructions to contractor or as it may be extended by the Engineer-in-Charge, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE.....

SIGNATURE OF THE BANK

WITNESS.....

SEAL

(SIGNATURE, NAME AND ADDRESS)

*Date to be worked out on the basis of validity period of 6 months from last date of receipt of tender.

FORM OF PERFORMANCE SECURITY

BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between _____ and _____ (hereinafter called "the said contractor(s)") for the work _____ (hereinafter called "The said agreement") having agreed to production of a irrevocable Bank Guarantee for ₹ _____ (Rupees _____ only) as security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

We _____ (hereinafter referred to as "the Bank) hereby undertake to (indicate the name of the bank) pay to the Government an amount not exceeding ₹ _____ (Rupees _____ only) on demand by the Government.

We _____ do hereby undertake to pay the amounts due and payable (indicate the name of the bank) under this Guarantee without any demure, merely on a demand from the Government stating that the amount claimed is required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding ₹ _____ (Rupees _____ only).

We, the said bank further undertake to pay to the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

We _____ further agree that the guarantee herein contained shall (indicate the name of the Bank) remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineer-in-Charge on behalf of the Government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said contractor (s) and accordingly discharges this guarantee.

We _____ further agree with the Government that the government (indicate name of the bank) shall have the fullest liberty without our consent and without effecting in any manner our obligations hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

We _____ lastly undertake not to revoke this guarantee except (indicate the name of Bank) with the previous consent of the Government in writing.

This guarantee shall be valid upto _____ unless extended on demand by Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to ₹_____ (Rupees _____ only) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the _____ day of _____ for _____
—.

(Indicate the name of Bank)

INTEGRITYPACT

To,

.....,

.....,

.....

Sub: NIT No.: 5/INST/2019-20 for the work “CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)”

Dear Sir,

It is hereby declared that Institute of Nano Science & Technology, Mohali is committed to follow the principle of transparency, equity and competitiveness in public procurement.

The subject Notice Inviting Tender (NIT) is an invitation to offer made on the condition that the Bidder will sign the integrity Agreement, which is an integral part of tender / bid documents, failing which the tenderer/ bidder will stand disqualified from the tendering process and the bid of the bidder would be summarily rejected.

This declaration shall form part and parcel of the Integrity Agreement and signing of the same shall be deemed as acceptance and signing of the Integrity Agreement on behalf of the Institute of Nano Science & Technology, Mohali.

Yours faithfully,

Director,

Institute of Nano Science & Technology, Mohali

INTEGRITY PACT

To,

The Director,

Institute of Nano Science &
Technology Habitat Centre,
Sector-64, Phase-X, Mohali-
160062

Sub: NIT No.: 5/INST/2019-20 for the work “CONSTRUCTION AND DEVELOPMENT OF TUBEWELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)”

Dear Sir,

I/We acknowledge that Nano Science & Technology, Mohali is committed to follow the principles thereof as enumerated in the Integrity Agreement enclosed with the tender/bid document.

I/We agree that the Notice Inviting Tender (NIT) is an invitation to offer made on the condition that I/We will sign the enclosed integrity Agreement, which is an integral part of tender documents, failing which/ We will stand disqualified from the tendering process. I/We acknowledge that the making of the bid shall be regarded as an unconditional and absolute acceptance of this condition of the NIT.

I/We confirm acceptance and compliance with the Integrity Agreement in letter and spirit and further agree that execution of the said Integrity Agreement shall be separate and distinct from the main contract, which will come into existence when tender/bid is finally accepted by Nano Science & Technology, Mohali. I/We acknowledge and accept the duration of the Integrity Agreement, which shall be in the line with Article 1 of the enclosed Integrity Agreement.

I/We acknowledge that in the event of my/our failure to sign and accept the Integrity Agreement, while submitting the tender/ bid, Nano Science & Technology, Mohali shall have unqualified, absolute and unfettered right to disqualify the tenderer/bidder and reject the tender/bid in accordance with terms and conditions of the tender/bid.

Yours faithfully,

(Duly authorized signatory of the Bidder)

**To be signed by the bidder and same signatory competent / authorized to
sign the relevant contract on behalf of Institute of Nano Science &
Technology, Mohali.
INTEGRITY AGREEMENT**

This Integrity Agreement is made at on this.....dayof.....20.....

BETWEEN

Institute of Nano Science & Technology (Hereinafter referred as the **Principal/Owner**’, which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

AND

..... (Name and Address of the Individual/firm/Company) through..... (Hereinafter referred to as the (Details of duly authorized signatory)

“**Bidder/Contractor**” and which expression shall unless repugnant to the meaning or context hereof include its successors and permitted assigns)

Preamble

WHEREAS the Principal / Owner has floated the Tender (NIT No. 4/INST/2019-20) (hereinafter referred to as “**Tender/Bid**”) and intends to award, under laid down organizational procedure, contract for “**Sub: NIT No.: 5/INST/2019-20 for the work “CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)**”

.” hereinafter referred to as the “**Contract**”.

AND WHEREAS the Principal/ Owner values full compliance with all relevant laws of and, rules, regulations, economic use of resources and of fairness/ transparency in its relation with its Bidder(s) and Contractor(s).

AND WHEREAS to meet the purpose aforesaid both the parties have agreed to enter into this Integrity Agreement (hereinafter referred to as “Integrity Pact” or “Pact”), the terms and conditions of which shall also be read as integral part and parcel of the Tender/Bid documents and Contract between the parties.

NOW, THEREFORE, in consideration of mutual covenants contained in this Pact, the parties hereby agree as follows and this Pact witnesses asunder:

Article 1: Commitment of the Principal/Owner

- (1) The Principal/Owner commits itself to take all measures necessary to prevent corruption and to observe the following principles:
 - (a) No employee of the Principal/Owner, personally or through any of his/her family members, will in connection with the Tender, or the execution of the Contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit

- which the person is not legally entitled to.
- (b) The Principal/Owner will, during the Tender process, treat all Bidder(s) with equity and reason. The Principal/Owner will, in particular, before and during the Tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the Tender process or the Contract execution.
 - (c) The Principal/Owner shall endeavor to exclude from the Tender process any person, whose conduct in the past has been of biased nature.
 - (2) If the Principal/Owner obtains information on the conduct of any of its employees which is a criminal offence under the Indian Penal code (IPC)/Prevention of Corruption Act, 1988 (PC Act) or is in violation of the principles herein mentioned or if there be a substantive suspicion in this regard, the Principal/ Owner will inform the Chief Vigilance Officer and in addition can also initiate disciplinary actions as per its internal laid down policies and procedures.

Article 2: Commitment of the Bidder(s)/Contractor(s)

- (1) It is required that each Bidder/Contractor (including their respective officers, employees and agents) adhere to the highest ethical standards, and report to the Government / Department all suspected acts of fraud or corruption or Coercion or Collusion of which it has knowledge or becomes aware, during the tendering process and throughout the negotiation or award of a contract.
- (2) The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent shall disclose names and addresses of foreign agents/representatives, if any. Either the Indian agent on behalf of the foreign principal or the foreign principal directly could bid in a tender but not both. Further, in cases where an agent participates in a tender on behalf of one manufacturer, he shall not be allowed to quote on behalf of another manufacturer along with the first manufacturer in a subsequent/parallel tender for the same item.
 - (a) The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the Contract.
 - (3) The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
 - (4) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm indulge in fraudulent practice means a willful misrepresentation or omission of facts or submission of fake/forged documents in order to induce public official to act in reliance thereof, with the purpose of obtaining unjust advantage by or causing damage to justified interest of others and/ or to influence the procurement process to the detriment of the Government interests.
 - (5) The Bidder(s)/Contractor(s) will not, directly or through any other person or firm use Coercive Practices (means the act of obtaining something, compelling an action or influencing a decision through intimidation, threat or the use of force directly or indirectly, where potential or actual injury may befall upon a person, his/her reputation or property to influence their participation in the tendering process).

Article 3: Consequences of Breach

Without prejudice to any rights that may be available to the Principal/Owner under law or the Contract or its established policies and laid down procedures, the Principal/Owner shall have the following rights in case of breach of this Integrity Pact by the Bidder(s)/Contractor(s) and the Bidder/Contractor accepts and undertakes to respect and uphold the Principal/Owner's absolute right:

- (1) If the Bidder(s)/ Contractor(s), either before award or during execution of Contract has committed a transgression through a violation of Article 2 above or in any other form, such as to put his reliability or credibility in question, the Principal/Owner after giving 14 days' notice to the contractor shall have powers to disqualify the Bidder(s) Contractor(s) from the Tender process or terminate/ determine the Contract, if already executed or exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of transgression and determined by the Principal/ Owner. Such exclusion may be forever or for a limited period as decided by the Principal/ Owner.
- (2) Forfeiture of EMD/Performance Guarantee/Security Deposit: If the Principal/Owner has disqualified the Bidder(s) from the Tender process prior to the award of the Contract or terminated/determined the Contract or has accrued the right to terminate/determine the Contract according to Article 3(1), the Principal/Owner apart from exercising any legal rights that may have accrued to the Principal/Owner, may in its considered opinion forfeit the entire amount of Earnest Money Deposit, Performance Guarantee and Security Deposit of the Bidder/Contractor.
- (3) Criminal Liability: If the Principal/ Owner obtains knowledge of conduct of a Bidder or Contractor, or of an employee or a representative or an associate of a Bidder or Contractor which constitutes corruption within the meaning of Prevention of Corruption Act, or if the Principal/Owner has substantive suspicion in this regard, the Principal/Owner will inform the same to law enforcing agencies for further investigation.

Article 4: Previous Transgression

- (1) The Bidder declares that no previous transgression so occurred in the last 5 years with any other Company in any country confirming to the anti-corruption approach or with Central Government or State Government or any other Central/ State Public Sector Enterprises in India that could justify his exclusion from the Tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the Tender process or action can be taken for banning of business dealings/ holiday listing of the Bidder/Contractor as deemed fit by the Principal/Owner.
- (3) If the Bidder/Contractor can prove that he has resorted / recouped the damage caused by him and has installed a suitable corruption prevention system, the Principal/Owner may, at its own discretion, revoke the exclusion prematurely.

Article 5: Equal Treatment of all Bidders/Contractors/Associate Agencies

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder/Contractor shall be responsible for any violation(s) of the principles laid down in this agreement/ Pact by any of its Associate agencies.

- (2) The Principal/Owner will enter into Pacts on identical terms as this one with all Bidders and Contractors.
- (3) The Principal/Owner will disqualify Bidders, who do not submit, the duly signed Pact between the Principal/Owner and the bidder, along with the Tender or violate its provisions at any stage of the Tender process, from the Tender process.

Article 6- Duration of the Pact

This Pact begins when both the parties have legally signed it. It expires for the Contractor/Vendor 12 months after the completion of work under the contract or till the continuation of defect liability period, whichever is later and for all other bidders, till the Contract has been awarded.

If any claim is made/lodged during the time, the same shall be binding and continue to be valid despite the lapse of this Pacts as specified above, unless it is discharged/determined by the Competent Authority, i.e. Institute of Nano Science & Technology.

Article 7- Other Provisions

- (1) This Pact is subject to Indian Law, place of performance and jurisdiction is the headquarters of the division of the Principal/Owner who has floated the tender.
- (2) Changes and supplements need to be made in writing. Side agreements have not been made.
- (3) If the Contractor is a partnership or a consortium, this Pact must be signed by all the partners or by one or more partner holding power of attorney signed by all partners and consortium member In case of a Company, the Pact must be signed by a representative duly authorized by board resolution.
- (4) Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to the original intentions.
- (5) It is agreed term and condition that any dispute or difference arising between the parties with regard to the terms of this Integrity Agreement / Pact, any action taken by the Owner/Principal in accordance with this Integrity Agreement/ Pact or interpretation thereof shall not be subject to arbitration.

Article 8- LEGAL AND PRIOR RIGHTS

All rights and remedies of the parties hereto shall be in addition to all the other legal rights and remedies belonging to such parties under the Contract and/or law and the same shall be deemed to be cumulative and not alternative to such legal rights and remedies aforesaid. For the sake of brevity, both the Parties agree that this Integrity Pact will have precedence over the Tender/ Contract documents with regard any of the provisions covered under this Integrity Pact.

IN WITNESS WHEREOF the parties have signed and executed this Integrity Pact at the place and date first above mentioned in the presence of following witnesses:

.....

(For and on behalf of Principal/Owner)

.....

(For and on behalf of Bidder/Contractor) WITNESSES:

1.....

(Signature, name and address)

2.....

(Signature, name and address) Place:

Dated:

FORM "B"

FORM OF BANKERS' CERTIFICATE FROM A SCHEDULED BANK

This is to certify that to the best of our knowledge and information that M/s./ Sh.....having marginally noted address, a customer of our bank are/is respectable and can be treated as good for any engagement upto a limit of ₹..... (Rupees.....)

This certificate is issued without any guarantee or responsibility on the bank or any of the officers.

(Signature)

For the Bank

NOTE

Banker's certificates should be on letter head of the Bank, sealed in cover addressed to tendering authority.

In case of partnership firm, certificate should include names of all partners as recorded with the Bank.

FORM 'G'
DETAILS OF ELIGIBLE SIMILAR NATURE OF WORKS COMPLETED DURING THE
LAST SEVEN YEARS ENDING PREVIOUS DAY OF LAST DATE OF SUBMISSION OF
TENDERS.

1 S.No.	2 Name of work / Project and Location	3 Owner or sponsoring organization	4 Gross amount of work done of items/ components mentioned in Cost of work in Crore of	5 Date of Commencement as per contract	6 Stipulated date of completion	7 Actual Date of Completion	8 Whether the work was done on back to back basis—Yes/No	9 Litigation / arbitration cases pending / in progress with details *	10 Name and address/ telephone Number of officer to whom reference

FORM 'H'

PERFORMANCE REPORT OF WORKS REFERRED TO IN FORMS "G"

- 1. Name of work/project & location :
- 2. Agreement no. :
- 3. Estimated cost :
- 4. Tendered cost :
- 5. Date of start :
- 6. Date of completion
- (i) Stipulated date of completion :
- (ii) Actual date of completion :
- 1. (a) Whether case of levy of compensation for delay has been decided or not? : Yes / No
- (b) If decided, amount of compensation levied for delayed completion, if any. :
- 8. Performance Report :
- (1) Quality of work : Outstanding/Very Good/Good/Poor
- (2) Financial soundness : Outstanding/Very Good/Good/Poor
- (3) Technical Proficiency : Outstanding/Very Good/Good/Poor
- (4) Resourcefulness : Outstanding/Very Good/Good/Poor
- (5) General Behaviour : Outstanding/Very good/Good/Poor

Executive Engineer or Equivalent

LETTER OF TRANSMITTAL (on letter Head of the bidder)

To,

The Director,

Institute of Nano Science &
Technology Habitat Centre,
Sector-64, Phase-X, Mohali-
160062

Sub: NIT No.: 5/INST/2019-20 for the work “CONSTRUCTION AND DEVELOPMENT OF TUBE WELL AT INSTITUTE OF NANO SCIENCE & TECHNOLOGY AT KNOWLEDGE CITY, SECTOR-81, MOHALI, PUNJAB (PACKAGE-VIII)”

Sir,

Having examined the details given in press notice and bid document for the above work, I/we here-by submit the relevant information in three (3) sealed envelopes as required containing the following documents.

1. I/we have furnished all information and details necessary for eligibility and have no further pertinent information to supply.

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 found to be incorrect.

Enclosures:

Seal of bidder

Date of submission:

Signature(s) of bidder(s).

Composition of DRC under Clause 25

Issued vide office order No. 15(3)/2019-INST, Dated: 18.03.2019

In accordance with Clause 25 of Part 'A' of Tender Document of INST for various packages for Construction and Development of Institute Campus at Sector-81, Mohali, the Director, Institute of Nano Science and Technology has been pleased to reconstitute a Dispute Redressal Committee (DRC) for redressal of disputes arisen between the contractors and the Institute on the matters pertaining to the said project. The reconstituted committee along with ToR is as under:

1. Dr. R.K. Sinha, Director, CSIO, Chandigarh : **Chairman**
2. Dr. S.K. Sardana (Retd. IDES), Member Judge, : **Member**
Chandigarh Disputes Redressal Commission, Chandigarh
3. Dr. Sandeep Chatterjee, Registrar, IIT Delhi : **Member**
4. Shri Moloy Roy (Civil Engineer), Former Vice President, : **Member**
M/s. JMC Projects India Ltd., Kolkata
5. Shri S.K. Srivastava, (Retd. Spl. D.G., CPWD) : **Member**
370, Asiad Village Complex, Siri fort, New Delhi-110049
6. Shri J.K. Chowdhary (Retd. Chief Engineer, CPWD), : **Member**
C-2/2369, Vasant Kunj, New Delhi-110070

Terms of Reference:

Tenure: Till the completion of the project of Construction & Development of INST Campus at Sector 81, Mohali, or further orders, whichever is earlier.

Quorum: Chairman and three other members

The above order will take immediate effect.

TECHNICAL SPECIFICATIONS

1.0 INSTALLATION OF TUBEWELL

1.1 The construction of tube well shall conform to IS 2800-1979 (Part-I & Part-II) with latest amendments.

1.2 Specifications of Housing pipe, Stainless Steel Cage type wire wound screen, specials and gravel etc.

a) M.S. Housing pipes shall conform to IS 4270-1992 with latest amendments.

b) Unless otherwise specified Stainless Steel Cage type wire wound screen should conform to IS 8110-2000 with latest amendments.

1.2.1. 300mm N.B. M.S Pipe – 300mm nominal bore Mild Steel Electric Resistant Welded pipes having outside diameter as 323.90mm; wall thickness 8mm. Both ends of pipe shall be threaded with 88.90mm length of threaded portion on each end. The threads shall be 'V' type with 8 threads per inch. One end of the pipe shall be fitted with a socket having overall length 177.8mm. The other end shall be provided with suitable rubber protection ring. The pipe shall be capable of withstanding Hydraulic test pressure of 7 Mpa.

1.2.2. 250mm N.B. M.S Pipe – 250mm nominal bore Mild Steel Electric Resistant Welded pipes having outside diameter as 273.00mm; wall thickness 8mm. Both ends of pipe shall be threaded with 88.90mm length of threaded portion on each end. The threads shall be 'V' type with 8 threads per inch. One end of the pipe shall be fitted with a socket having overall length 177.8mm. The other end shall be provided with suitable rubber protection ring. The pipe shall be capable of withstanding Hydraulic test pressure of 7 Mpa.

1.2.3. 200mm N.B. M.S Pipe – 200mm nominal bore Mild Steel Electric Resistant Welded pipes having outside diameter as 219.10mm; wall thickness 6.4mm. Both ends of pipe shall be threaded with 76.20mm length of threaded portion on each end. The threads shall be 'V' type with 8 threads per inch. One end of the pipe shall be fitted with a socket having overall length 152.4mm. The other end shall be provided with

suitable rubber protection ring. The pipe shall be capable of withstanding Hydraulic test pressure of 7 Mpa.

1.2.4. 150mm N.B. M.S Pipe – 150mm nominal bore Mild Steel Electric Resistant Welded pipes having outside diameter as 168.30mm; wall thickness 6.4mm. Both ends of pipe shall be threaded with 63.5mm length of threaded portion on each end. The threads shall be 'V' type with 8 threads per inch. One end of the pipe shall be fitted with a socket having overall length 152.4mm. The other end shall be provided with suitable rubber protection ring. The pipe shall be capable of withstanding Hydraulic test pressure of 7 Mpa.

1.2.5. GENERAL CONDITIONS APPLICABLE TO ALL SIZES

- a) The length of the pipe should be 4 to 7 meters.
- b) The grade of steel to be used shall be of Fe110. The pipe of Mild Steel Electric Resistant Welded which when analyzed in accordance with methods specification shall not show more than 0.06% phosphorus and 0.06% Sulphur.
- c) The pipes shall be painted with black bitumen paint.
- d) The pipe shall be circular and truly straight.

1.3 STAINLESS STEEL CAGE TYPE WIRE WOUND SCREEN

1.3.1 It shall be ERW Stainless Steel Cage type wire bound screen as per IS 8110-2000 with latest edition material specifications as per AISI Type 304-Grade, S.S.304 Screen will be of conical/trapezoidal wire spirally wound fabricated cage. The wrapping wire having a 'V' shaped wedge type profile wire with flat surface on the outside, a reducing expanding slots on the inside of variable dimensions, Resistance Welded to a cylindrical body made of number of longitudinal high tensile support rods to provide smooth unrestricted bore which are in turn welded into cylindrical couplings at either end.

1.3.2 Ring will be 150mm in length with 8 threads per inch (tpi).

1.3.3. Screen will have evenly distributed slot openings.

1.3.4. Open area of the screen will be designed so that the entrance velocity is not less than 0.03m/sec.

1.3.5. Slot will be smooth with clean edges.

1.3.6. Wedge shaped inwardly widening slots will be of non-clogging type.

1.3.7. Equivalent thickness of screen with slot size 0.75mm to 1.0mm shall be as per table given below

Sr. No.	N.B. of the S.S. Screen in mm	Depth of tube well in Meter	Equivalent thickness in mm
1.	150	Upto 200	3.87
2.	150	201 to 350	5.15
3.	200	Upto 200	6.15
4.	200	201 to 350	6.63

1.4 (a) M.S. Reducer

M.S. Housing pipes are to be connected through properly designed reducer with M.S. blind pipes. Both the joints are to be screwed type and to be provided with suitable threaded socket.

(b) M.S. Centering Guide

Suitable M.S. Centering guides fabricated out of M.S. flat 32mm x 6mm thick are to be provided in the tube well after every 10 to 12 meter interval from bottom upwards till housing. The diameter of centering guides should be 50mm-75mm less than the bore hole diameter. Centering guides should also be provided at the starting and finishing point of screen for securing the position of the well.

(c) Gravel

The gravel shall consist of hard well rounded particles reasonably uniform in diameter and its size shall be determined by the contractor after analyzing the character of the water bearing formations to be tapped. It should conform to IS 4097-1997 with up to date amendments.

1.5.1. DEVELOPMENT OF TUBE WELL

The tube well shall be developed with the help of the Air Compressor of the capacity corresponding to the depth shown in the table below:

Sr. No.	Depth of tubewell in Meter	Capacity of Air Compressor to be used
1.	Upto 180	330 Cfm at 250 PSig
2.	180 to 400	550 Cfm at 600 PSig

1.5.2. Finally the development of the tube well should be done with the pump set at 1.20 to 1.25 times the developed discharged with air compressor.

Note: Engineer-in-charge will satisfy himself regarding the proper rating of Cfm and PSI of the compressor before it is applicable at site.

1.6. VERTICALITY AND ALIGNMENT

1.6.1. For verticality and alignment, the requirement as laid down in Clause-4 of IS 2800-1979 Part-II will be ensured.

1.7. DRILLING PROCEDURE

1.7.1 The drilling will be continued by the contractor up to 180 meters. Depth, or as decided by the Engineer-in-Charge where to be stopped. The Strata Charts prepared on the basis of various strata as encountered during drilling shall be prepared by the tenderer and submit details of the tube well assembly to be lowered into the bore for the approval of the Engineer-in-Charge/Superintending Engineer.

1.8 FINAL TEST

1.8.1. The final test is to be conducted by the contractor to clearly indicate the performance of the tube well with regard to the yield and the draw down.

1.8.2. The proforma as per IS 2800 (Part-I) – 1979 is to be filled and submitted by the driller after the tube well has been completed.

SPECIFICATIONS OF MATERIAL TO BE USED IN TUBEWELL
AT INST CAMPUS SECTOR 81, MOHALI

Specifications for drilling, installing, testing and commissioning of tubewell of 200 mm diameter size down to a depth of approximately 200 m or as directed by Engineer in Charge as per site requirement at site for **INST CAMPUS** with reverse circulation drilling method including all other works contingent there to complete duly tested and handed over in proper working order to the Engineer of INST..

The installation of the tubewell shall confirm to IS: 2800 – 1979 (Part 1 & 2) with latest amendments.

1.0 GENERAL CONDITIONS

1. The method of drilling shall be Reverse circulation rotary method.
2. The depth of the borehole and its diameter shall be defined by the INST based on local conditions and performance of existing wells in the area.
3. The proposed depth of borehole is 200 m.
4. The borehole diameter shall be 500 mm for 200 mm dia screen.
5. The strata samples shall be collected at 3m interval and at change of strata and all samples shall be after rinsing with water shall be kept in sample box. For the 200 m deep borehole a minimum of 70 samples shall be collected and kept at site. A record of drilling shall be there in the site register.
6. The borehole drilled shall be electrically logged and three logs shall be obtained viz. Normal 16", Normal 64" and Self Potential.
7. Based on electrical log and strata samples, a reputed geologist/Hydrologist shall design the well assembly keeping in view the sizes as per work order. The gravel grade, slot width and clay seal position shall be decided by Hydrologist/geologist. The length of housing pipe shall be around 100 m.
8. The contractor shall submit the recommendations to the INST Engineer.
9. The final design of assembly shall be approved by the INST management on recommendation of site Engineer concerned. After this only the tubewell assembly shall be fabricated and lowered.

10. The lowering of the assembly shall be in the presence of Engineer concerned. During the lowering the well Assembly shall be kept in **hanging position**. If at any time it is felt that the assembly pipes have touched the bottom, no effort shall be made to force the assembly down as it may damage the screens. In such a case the entire assembly shall be pulled out, borehole again washed and assembly lowered again. All the joints shall be welded on the both sides of the threaded couplings. The assembly shall remain in hanging position till end of the gravelling. Even after gravelling the assembly shall be supported at surface with the help of a suitable clamp. This means that at no time the assembly shall rest on its bottom pipe.
11. Centring guides shall be welded to the well assembly at an interval of 12 m from the bottom of the well to the housing pipe depth. These shall not be against screen positions.

2.0 WATER FOR DRILLING AND PROTECTION OF WELL AGAINST CONTRIBUTION FROM SHALLOW AQUIFERS OR ANY OTHER POLLUTANTS

All water to be used on the work shall be clean fresh water to be obtained from a source to be approved by site Engineer. The contractors shall provide at all times an ample supply of water for all purpose to the full satisfaction of the Engineer.

All precautions are warranted to ensure purity of water so that uncontaminated water is made available to the INST at all times. For achieving this goal following precautionary measures shall be taken during installation of tubewell. To protect the well water contamination from the shallow aquifers a clay seal shall be placed in the gravel pack at depth indicated by the electric log analyst.

- i. The drilling water for tubewell shall be fresh water and not from village pond etc.
- ii. **No cow dung shall be used during the drilling operations to prevent caving etc.** for this purpose bentonite mud shall be used
- iii. A seal shall be provided in the gravel pack at appropriate depth. This seal shall be of good impervious clay/bentonite. The thickness of this seal shall be about 3 m and the depth range shall be decided after electric logging against good clay strata.

3.0 DEVELOPMENT OF TUBEWELL

The tube well shall be developed as per IS: 11189 -1985 with latest amendments.

The Process of development is Surge water back and forth through the screen, pack and aquifer at higher velocities than during final pumping (operational) rates

3.1 Primary Development of the tubewell shall be done by Compressed air method with air compressor of capacities as **350 cfm @ 500 psi**.

Note: Engineer will satisfy himself regarding the proper rating of CFM & PSI of the compressor before it is applied at site.

The development shall be started from the lowest most screen upwards till all screens are developed and the discharge water is fairly silt free. Later the air line shall be lowered to the lowest part of the well and pumped till water is clear.

3.2.1 Final development shall be taken up with **Over Pumping** unit adopting raw hiding method initially and ending with constant pumping. The over pumping and raw hiding shall be done with a pump of capacity at **40 m³/hour**. At the end of development, the discharges water shall be totally silt free.

4.0 TUBEWELL STERILIZATION AND PROCEDURE FOR STERILISATION

Tube well shall be sterilized on completion of development by the following procedure to prevent or retard the growth of corrosion and encrustation fostering organisms.

- Estimate the volume of water in the casing and screens.
- Add sufficient chlorine to yield a concentration of 1000 mg/l in well water.
- Mix the solution thoroughly in the well by surging from the bottom of the well to the water surface.
- Allow 6-8 hours contact time for the solution in the well, during which the well should be surged every 2 hours interval.
- At the end, pump the well and pumped discharge to flow back into the well to thoroughly flush the inside of the casing and the pump column pipe and the gravel pack if present, for at least 30 minutes.
- Pump the well to waste until there is little or no odour or taste of chlorine in the discharge.

5.0 Final testing of well for discharge

The Step Draw Down test at three different shall be conducted on the tubewell at the end of the development and sterilisation. At each discharge rate the pump shall be run for a period of one hour. Water level shall be measured at the beginning of the test and then at about 10 m interval during the test. This data shall be utilized to calculate specific capacity of the tubewell.

6.0 MS PIPES

6.1 200 mm N.B.M.S. Pipe (IS 4270:2001)

200 mm nominal bore mild steel Electric Resistant welded pipes having outside diameter as 219.1 mm; wall thickness 6.4 mm. Both ends of the pipes shall be threaded with 88.90 mm length of threaded portion on each end. The threads shall be 'V type and 8 threads per 25.4 mm. The pipe shall be capable of withstanding Hydraulic test pressure of 7 Mpa.

- The grade of steel to be used shall be of Fe 415. the pipe shall be manufactured from steel which when analyzed in accordance with methods specified in IS 228-1959 or latest, shall not show more than 0.06% phosphorus and 0.06% Sulphur.
- The pipes shall be painted with black bitumen paint.
- The pipe shall be circular and truly straight.

7.0 STAINLESS STEEL CAGE TYPE WIRE WOUND SCREEN (as per is 8110-2000 with latest edition)

It shall be ERW stainless steel cage type wire bound screen as per IS: 8110-2000 or latest and material specifications as per ISI type 304-Grade, S.S. 304 of heavy grade. Screen will be of continuous trapezoidal wire spirally wound fabricated cage. The wrapping wire having a V shaped wedge type profile wire with flat surface on the outside a reducing expanding slots on the inside of various dimensions, resistance welded to a cylindrical body made of number of longitudinal high tensile support rods to provide smooth unrestricted bore which are in turn welded into cylindrical ring couplings body made of number of longitudinal high tensile support rods to provide

smooth unrestricted bore which are in turn welded into cylindrical ring couplings at either end.

For 200 m depth borehole the screen shall be End Ring will be 150 mm in length with 8 threads per 25.4 mm.

- 1 Screen will have evenly distributed slot openings.
- 2 Slot will be smooth with clean edges.
- 3 Wedge shaped inwardly widening slots will be of non-clogging type.
- 4 Thickness of screen for 200 m depth shall be of normal grade with equivalent thickness of 7.0 mm.

8.0 M.S. CENTERING GUIDE

Suitable M.S. Centering Guides fabricated out of M.S. flat 32 mm x 6mm thick are to be provided in the Tube well after every 12 m interval from bottom upwards till housing. The diameter of centering guides should be 50mm- 75 mm less than the bore hole diameter. Centering guides should also be provided on the bail plug. At no place they shall be on the screen. The strips of the centring guides shall be aligned in one direction to facilitate proper gravel packing.

9.0 GRAVEL

It shall be as per IS: 4097 -1988 with latest amendments

It must be clean with little loss of material during development. It must comprise of well rounded grains having high hydraulic conductivity. 90 – 95 % should be quartzitic in composition. Its Uniformity coefficient should be 2.5 or less matching with formation and the largest size should not be more than 10 mm.

10.0 HANDING OVER OF TUBEWELL BY CONTRACTOR

The Tube well should be handed over to the INST in the complete shape. The housing pipe should be closed by a well cap for the period between the completion of the Tubewell and the installation of the pump set. The cap should be of such a design that it is easily removable causing no damage to the housing pipe.

The drilling agency on completion of installation of the tubewell shall submit a well completion report on their letter head that shall include the following.

- i) Location of the tubewell
- ii) Date of start of drilling
- iii) Date of completion of drilling
- iv) Method of drilling
- v) Total depth of the borehole drilled
- vi) Diameter of the finished borehole with depth ranges in meters.
- vii) Electrical logging/geophysical logging report.
- viii) Final Lithological log with depth range, thickness and type of formation.
- ix) Length and diameter of various pipes. Such as surface casing, housing pipe and casing pipe.

- x) Length and type of screens with slot width.
- xi) Filter pack material, grade, volume used
- xii) Sealing and grouting, nature and depth range
- xiii) Development methods deployed and periods thereof.
- xiv) Development discharge by pump.
- xv) Method of sterilization and volume of chlorine solution used.
- xvi) Clear depth of the well.
- xvii) Pumping test data
- xviii) Diagram of tube well assembly

11. MODE OF MEASUREMENT & RATES

11.1. All measurements will be taken from the ground level where the bore is drilled.

11.2. The rates quoted must include octroi, terminal tax, sales tax and all taxes applicable. The rates must include carriage of all the material boring equipments, T&P and other consumables.

11.3 The rates must include cutting, threading, assembling of pipe etc.

12.4. The quoted rate shall be inclusive of all the operations described in Para 1 to Para 10 of Specifications. **(Page 5 to Page10 of Part -B)**

PART -C : Bore well Items BOQ for One Tube Well					
Name of Work:	Construction and Development of Tube Well at INST Campus, Knowledge City, Sector-81, Mohali- (Punjab)- (Package-VIII)				
S. No.	Item Description	Unit	Qty	Rate ₹	Amount ₹
	Part -I				
1	Boring/drilling of 500mm dia bore upto 200 meter with Reverse Rotary Rig in all kinds of soil including the cost of consumable stores, fuel, oil and transportation of Rig to the site. Complete in all respects.				
(a)	Driling of 500mm dia bore upto 150m. depth.	Metre	150.00	914.50	137175.00
(b)	Driling of 500mm dia bore beyond 150m depth upto 200m. depth.	Metre	50.00	1189.50	59475.00
	Note: The above rates included the cost of electric logging which shall be carried.				
Note: 1	Erection and dismantling boring plant including all arrangement for the site of work from the store of contractor at site and back are to be made by the contractor at his own cost. All rates should be quoted for supplying the material at site of work. Pits for collection of water and water for drilling tube well be arrabged by the firm / contractor at site at his own cost.				
2	Makingelectronic logging of bore hole with electric well logger including cost of equipment complete in all respects.q	Job	1	14043.00	14043.00
3	Supplying, lowering of MS Pipe as per IS: 1239/3589 including MS sockets having dimensions as per IS Code duly welded with MS electrode to have extra strength to lower the pipe into tubewll bore.				
©	200 mm nominal diameter (weight 33.6 kg per metre) 6.4 mm thickness	Metre	180.00	2437.00	438660.00
	(ii) if any negative tolerance is there the recovery shall be made accordingly from the rates allotted to the agency.				
4	Supplying, lowering of Stainless Steel Cage type wire wound screen as per IS: 8110-2000 or latest with SS Socket to Strainer to Strainer Duly welded with suitable grade with grade S S welding electrode to lower the strainer into tubewell bore.				
(a)	200 mm internal diameter (slot size 0.50/0.75mm) 6.40mm thickness	M	20.00	13740.00	274800.00
5	Supplying lowering of SS Special socket to connect blind MS pipe and SS screens Pipe 8" (200 mm i/d).	Nos	12.00	664.50	7974.00
6	Supplying and fixing of bail plug of M.S. pipe complete with inverted U-hook attached to the bottom plug complete in all respects.				
©	200 mm internal diameter 6.4 mm thickness	Nos	4.00	2189.00	8756.00
7	Supply & fixing of mild steel centering guide made out of 32mm x 6 mm thick M.S.strip complete in all respects	Nos	8.00	286.50	2292.00
8	Supply & fixing of well cap having threads to fix on housing pipe complete in all respects.				
(c)	200mm internal diameter	No	1.00	715.00	715.00
9	Supplying and fixing M.S. Clamps of size 150mm x 12mm made out of MS Flat 1.52m long, suitable to fit Housing Pipe including the cost of Nut & Bolts of suitable size complete in all respects.	Each	1.00	2807.00	2807.00

10	Supplying at site wooden box of suitable size with Lid & locking arrangement for preserving strata sample collected from the bore.e	Each	1.00	500.00	500.00
11	Supplying at quarry site of gravel of 1 mm to 3mm sizes including pouring and packing in the annular space between the pipes assembly and the bore.The gravel should be free from, dust, dirt or the vegetable manner as per IS 4097/1997 with latest amendments.(Rate including loading & unloading and Carriage from quarry site).	cum	34.00	518.00	17612.00
12	Providing a sanitary seal of about 3m thickness at a depth greater than 30 m below ground level in the annular space in gravel pack. The actual depth to be decided after electric logging by the design Engineer. As per 2 (iii) of specifications on page 2 of Part -B.	Each	1.00	500.00	500.00
13	Development and Stabilizing of the tubewell with air compressor of required capacity as directed by the engineer-in-charge including cost of tools, appliances & consumable to the satisfaction of Engineer -in-Charge. .				
a)	Capacity of Air compressor 300cfm at 250PSI	Hrs	24.00	2089.00	50136.00
14	Development and Stabilizing of tubewell with submersible pump of required capacity as directed by the engineer-in-charge including cost of tools, appliances & consumable to the satisfaction of Engineer-in-Charge.	Hrs	12.00	1155.00	13860.00
15	Testing of tubewell with pump for efficiency determination at three different discharges	Hrs	3.00	250.00	750.00
16	Sterilization of the tubewell with Na Hypo of 10% strength as per procedure given in specifications at 4.0 (page 3 of Part-B)	Litre	50.00	67.00	3350.00
17	Providing and fixing single / multistage submersible tubewell pump suitable for 200mm bore with stainless steel casing, NORYL impeller, stainless steel shaft and built in non return valve coupled with submersible squirrel cage motors suitable for 440V ± 10% volts. 3 phase, 50 cycles AC supply.				
	(1) Capacity 250 lpm upto 130 m head				
	(a) KSB make Model no BPD 302/12 or Equivalent 3 phase	No	1.00	75000.00	75000.00
	Part -II				
18	65mm dia GI column pipe of heavy class duly flanged.	mtr.	130.00	780.00	101400.00
19	Providing and fixing gunmetal pressure gauge (100mm dia) of rating (0-10 kg/cm ²) with gunmetal isolating cock and connecting pipe.	No.	1.00	3000.00	3000.00
20	Providing and fixing 65mm cable clips with nuts & bolts.	Nos.	50.00	75.00	3750.00
21	Providing and fixing 65mm dia supporting clamps with nuts and bolts.	Pair	1.00	400.00	400.00
22	Providing and fixing 3C - 6 sq.m submersible cable.	M	150.00	175.00	26250.00
23	Providing and fixing Butterfly valve of cast body with stainless steel disc and stainless steel stem, teflon bushing and niterite o'rings.				
a)	80mm dia	No.	1.00	6000.00	6000.00
24	Supplying & laying 1.1KV grade aluminium conductor PVC insulated and PVC sheathed armoured cables including 8 SWG GI earth wire on surface/cable trays as required.				

a)	3 Core - 6sq.mm	M	15.00	225.00	3375.00
25	Providing and fixing dust and vermin proof motor control panel fabricated from 14 SWG MS sheet with stove enamelled paint and comprising of: (for Tubewell pumps)	No.	1.00	35000.00	35000.00
a)	One feeder of 63 ampere 4 Pole ELCB.				
b)	One fully automatic star delta starter with push buttons and indicating lights.				
c)	One panel type volt meter 96mm square with Rotary selection switch for reading voltage between phase and neutral or incoming feeder.				
d)	Three Neon Phase indicating lights on the incoming Main.				
e)	One Ampere meter 96mm square panel type of appropriate range.				
f)	Etched plastic identification plates for all switch gears.				
g)	Space for liquid level controller.				
h)	All internal wiring should be colour coded from incoming main to switchgear, starters, meters, indicating lights.				
	Total In Figures				1287580.00
	Quoted Rates in Figures(Percentage)	Less(-)/Above(+)			
	Quoted Rates in Words (Percentage)				