

National Agri-Food Biotechnology Institute
(Dept. of Biotechnology)
Knowledge City, Sector-81, Mohali. (Pb)
Website: www.nabi.res.in

Notice Inviting Tender (NIT)- Technical Bid (Cover 01)

NABI/ENGG/07(084)/2024-25

Name of Work: - Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali.

Sealed item rate e-tender is invited on behalf of the Executive Director, (NABI), Mohali for the work of “- **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali.**” as per terms and conditions provided in the tender document.

The tender document may be purchased directly from the office of NABI, Mohali, by paying Rs. 590/-in cash as cost of tender document or website of NABI www.nabi.res.in or E-Central Public Procurement portal (<https://eprocure.gov.in>) in which case the fee in the form of a Demand draft of Rs. 590/- (Rupees Five Hundred Ninety Rupees only) in favour of National Agri-Food Biotechnology Institute payable at Mohali, shall be payable as cost of tender document. **Both the bids i.e., the Technical & Financial bids, must be submitted on or before 2nd June 2025 (up to 3.00 PM), along with the appropriate EMD as per below mentioned schedule:**

1.	Issue/download of Tender documents	From 19 th May 2025
2.	Last date and time for submission of sealed Tender	2 nd June 2025 (up to 3.00 PM)
3.	Date & time of opening of technical bid	3 rd June 2025 at 3.30 PM
4.	Earnest Money Deposit	Rs. 7,712/-
5.	Time for Completion of Work	06 weeks from period specified in tender document

NOTE: Only online e-tenders shall be accepted. The bids are to be submitted on E Central Public Procurement portal (<https://eprocure.gov.in/eprocure/app>). Bids received by offline mode/FAX/email will be summarily rejected

The ED, NABI reserves the right to accept/reject any tender in part or full without assigning any reason.

Manager Administration

1.0 Sealed item rate tenders are invited on behalf of the Executive Director, NABI from agencies who have executed similar works with Central govt/State govt. /Autonomous bodies, University, Institutes of Central/State Govt./PWDs/MES/HUDA/PUDA/CPWD/PSUs/Private Companies/Industries for the work of - **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali**

1.1 The work is estimated to cost **Rs. 3,88,557/-** only inclusive of taxes & labour cess etc This estimate, however, is given merely as a rough guide.

1.2 The following basic technical eligibility criterion is mandatory for bidders. Failure to submit shall mean to disqualification: -

1.2.1 Bidder having experience (successfully completed) **in similar works** during the last 07 years in Government sector as described above. (Ending last day of the month previous to the one in which applications are invited) as per following criteria: -

Three similar completed works, costing not less than the amount equal to 40% of the estimated cost put to tender.

OR

Two similar completed works, costing not less than the amount equal to 60% of the estimated cost put to tender.

OR

One similar completed work of aggregate cost not less than the amount equal to 80% of the estimated cost put to tender.

1.2.2. **Average annual financial turnover on construction works should be at least 30% of the estimated cost put to tender during the immediate last three consecutive financial years.** Copies of duly attested statement (for last 03years) by Chartered Accountant should be provided.

1.2.3 **The tender fee and earnest money deposit as per mentioned in tender document.**

For this clause 'Similar work' means the work of **Telemetry based flow meter on bore well as per PWRDA/CGWA Guidelines mentioned in criteria no 1.0.**

Department reserves the right to ask contractor for detailed schedule of quantities (BOQ) authenticated by concerned Government department to ascertain the scope of work done, in case, there is any doubt. Contractor shall fully co-ordinate in providing such documents/details.

Note: -The Tenderer shall produce definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, NABI of having satisfactorily completed similar works of magnitude specified above. Completion Certificates to be enclosed.

2. Agreement shall be drawn with the successful tenderer on prescribed format by the Competent Authority. Tenderer shall quote his rates as per various terms and conditions laid down in the tender document.

3. The time allowed for carrying out the work will be **06 weeks** 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 tender documents.

NOTE: - The scanned documents should be clear and readable. In case, the documents are found non-readable

or in-complete (half scanned/without signatures/stamp etc), the same shall not be considered for evaluation. Bidders to do compliance accordingly. Bidders are advised to upload only relevant documents pertaining to cited work to avoid wastage of stationary resources of department.

4. The site for the work is available.

5.(i) Tender forms, NIT and all the Tender documents consisting of plans, specifications, the schedule of quantities of the works to be done and the set of terms & conditions of contract to be complied with by the contractor whose tender may be accepted and other necessary documents can be seen in the office of NABI, Mohali on all working days between 10:00am to 5:00pm.

(ii)Tenders shall be accompanied with tender cost of Rs.590/- in the form of Demand Draft in favour of of National Agri-Food Biotechnology Institute payable at Mohali.

(iii) **Submission of Tender-** The technical bid documents shall should be uploaded in the Cover- 1 & 2 as detailed below:

1. Envelope -1 marked as Technical Bid containing the following-

- a) Scanned Copy of Demand draft of Rs. 590/- or cash receipt in case of issue from NABI office as cost of tender documents.
- b) Scanned Copy of DD in the prescribed format
- c) Scanned Copy of Documents related to eligibility criteria i.e., Completion certificates/proofs of the similar works completed.
- d) Scanned Copy of Tender Acceptance Letter.
- e) Scanned Copy of Average annual financial turnover statement for last 03 consecutive years duly attested by Chartered Accountant

2. Envelope-2 marked as Financial/Price Bid containing the following-

This shall contain the price for the execution of the works specified in the Volume-2 of the tender document in Excel format

Note: -

a) Documents to be uploaded in pdf format only (except price bid which should be in excel format only).

b) The original payment instrument like Demand Draft of any Nationalized Bank against Earnest Money and Cost of Tender Form/ EMD EXEMPTION CERTIFICATE FOR MSME registered firms should sent to the address- NABI, Sector-81, knowledge City, PO- Manauli, SAS Nagar Mohali 140306, Punjab by post/speed post/courier/by hand before bid opening date & time.

c) Tender Fee & EMD fee exemption shall be only be applicable to MSMEs vide gazette notification dated 23rd March 2012 (or as amended from time to time) , which are registered with District Industries Centres or Khadi and Village Industries Commission or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of Micro, Small and Medium Enterprises. Tender Fee, EMD exemption is also applicable to Udyog Aadhaar registered MSME's.

6. a) The contractor whose tender is accepted will be required to furnish performance guarantee of 5% (Five Percent) of the tendered amount in accordance specified in Schedule 'F'. This guarantee shall be in the form of cash (in case guarantee amount is less than Rs. 5000/-) or Deposit at Call receipt of any scheduled bank/Banker's cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay order of any scheduled bank (in case guarantee amount is less than Rs. 1,00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F'.

including the extended period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor.

Upon submission of performance bank guarantee, the EMD submitted by contractor shall be returned.

b) Upon award of work, contractor shall within **07 days sign the indemnity bond** (performa prescribed at the end of tender document) for supply of minor materials and against violation of labour laws, other State/Central Acts/norms as amended from time to time, accidents, damages etc thus indemnifying NABI from negligence, loss of life/property, disputes, claims, violation arising out of the work due to contractor/his partner/workers/sub-contractors etc. NABI shall have authority to take suitable action against contractor both financially as well as legally depending upon the violation by contractor/his partner/workers/sub-contractors etc.

8. The description of the work is as follows:

Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali, Tenderers are advised to inspect and examine the site, external development area of campus and satisfy themselves before submitting their tenders as to the type of system (so far as is practicable), the form, wastage of material 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 tender. A tenderer 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 tenderer shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a tender by a tenderer 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 local conditions and other factors having a bearing on the execution of the work.

9. The Competent Authority does not bind itself to accept the lowest or any other tender and reserves to itself the authority to reject any or all the tenders received without the assignment of any reason. All tenders in which any of the prescribed condition is not fulfilled or any condition including that of conditional rebate is put forth by the tenderer shall be summarily rejected.

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

11. The tender for the works shall remain open for acceptance for a period of **seventy five (75) days** from the receipt of bid in case tenders are invited on 2 envelop system (as per CPWD manual 2019 Clause 4.14) (strike out as the case may be) if any tenderer withdraws his tender before the said period or issue of letter of acceptance, whichever is earlier, or makes any modifications in the terms and conditions of the tender which are not acceptable to the department, then the Institute shall, without prejudice to any other right or remedy, be at liberty to forfeit 100% of the said earnest money, as aforesaid. Further the tenderer shall not be allowed to participate in the retendering process of the work.

12. This Notice Inviting Tender shall form a part of the contract document. The successful tenderer/contractor, on acceptance of his tender by the Accepting/Competent Authority shall within 15 days sign the contract agreement consisting of: -

a) The Notice Inviting Tender, all the documents including financial bid, additional conditions, specifications and drawings, if any, forming the tender as issued/downloaded at the time of invitation of tender and acceptance thereof together with any correspondence leading thereto.

b) Tender form.

14. No price preference to any corporate society/Registered society, Govt. Public Sector undertakings / bodies shall be given and tenders shall be exclusively dealt with on merit.
15. The contractor shall comply with the provisions of the Apprentices Act 1961, minimum wages Act 1948, Workmen's compensation Act 1923, contract labour (Regulation and Abolition Act 1970), payment of wages Act 1938, Employer's liability Act 1938, Maternity Benefits Act 1961, Employee's State Insurance Act, 1948, Employees Provident Fund Act, 1952 and the Industrial Disputes Act 1947, ESI Act as applicable and the rules and regulations issued there under and by the local Administration/ Authorities from time to time as well all provisions of law applicable to workmen. Failure to do so shall amount to breach of the contract and the Engineer-in-Charge may at his discretion terminate the contract. The Contractor shall also be liable for any pecuniary liability arising on account of violation by him of any of the said Acts and shall indemnify the Institute on that account. Institute will not be liable for any act or omission on the part of the contractor in so far as any violation of any of the aforementioned acts.
16. Each tenderer shall submit only one tender; either by him or as partners in a joint venture. A tenderer who submits or participates in more than one tender will be disqualified.
17. Unless otherwise stated, the contract shall be for the whole work as described in the "Schedule of items/quantities of Works" and the drawings. The contractor shall be bound to complete the whole work as described in the schedule of items of works and the drawings, including additional items, if any, as per drawings and instructions. The certificate of completion to be recorded by the Engineer-in-Charge shall be mandatory and will be conclusive proof of completion of work.
18. Interpretations, corrections and changes to the Tenders Documents shall be made by Addendum, if required.
19. Each Tenderer shall ascertain prior to submitting his Tender that he has received all Addenda issued and he shall so acknowledge their receipt in his Tender.
20. The provisions in the Tender documents shall govern over the contents of the above paragraphs if in contradiction or variation.
23. All pages of the Tender should be page numbered.
24. It is the responsibility of tenderer to go through the tender document to ensure furnishing all required documents in addition to above, if any.
25. The authorized signatory of the tenderer must sign the tender duly stamped at appropriate places and initial all the remaining pages of the tender.
26. A tenderer, which does not fulfill any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.
27. Tender sent by fax/telex/electronically shall be ignored.
28. NABI reserves the right to increase or decrease the scope of work.
29. The statutory deductions such as TDS, security 5 % from RA bills, labour cess, etc shall be deducted at source as per prevailing percentage/rates as amended from time to time by Central/Sate Govt.
30. The contractor shall give a list of both gazetted and non-gazetted NABI employees related to him (if any)

TENDER ACCEPTANCE LETTER

To

**The Executive Director
NABI, Mohali, Punjab, India**

Dear Sir,

I/We have read and examined the following Tender Documents relating to the work of Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali

General Conditions

- Instructions to bidders
- General Information
- Specific condition of contract
- Terms and Conditions of Contract Agreement
- Technical specification and Bill of Quantities
- Price Bid

I/We hereby offer to execute the work complete in all respects specified in the underwritten Memorandum within the time specified therein at the rates specified in the bill of Quantities and in accordance, with the specifications, designs, drawings and instructions in writing referred to in the conditions of tender.

I/We hereby certify that I/We had read the entire terms and conditions of the tender documents (including all documents like annexure(s), schedule(s), etc.) which form part of the contract agreement and I/We shall abide hereby by the terms/conditions/clauses contained therein. The corrigendum(s) issued from time to time by your department/organization too have also been taken into consideration, while submitting the acceptance letter. I/We hereby unconditionally accept the tender conditions of above-mentioned tender document(s) in its totality/entirety. In case any provision of this tender is found violated, then your department/organization shall without prejudice to any other right or remedy be at liberty to reject this tender/bid including the forfeiture of the full said earnest money deposit absolutely.

Tenderer's Signature and Seal

Postal Address

DATED:

Witness:

Address:

Occupation:

CONDITIONS OF CONTRACT

Definitions

- I. The **Contract** means the documents forming the tender and acceptance thereof and the formal agreement executed between National Agri-Food Biotechnology Institute (NABI) and the Contractor, together with the documents referred to therein including these conditions, the specifications, designs, drawings and instructions issued from time to time by the Engineer-in- Charge and all these documents taken together, shall be deemed to form one contract and shall be complementary to one another.
- II. In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them: -
- (i) The expression **works**, or **work** shall, unless there be something either in the subject or context repugnant to such construction, be construed and taken to mean the works by or by virtue of the contract contracted to be executed whether temporary or permanent, and whether original, altered, substituted or additional.
- (ii) The **Site** shall mean the land/or other places on, into or through which work is to be executed under the contract or any adjacent land, path or street through which work is to be executed under the contract or any adjacent land, path or street which may be allotted or used for the purpose of carrying out the contract.
- (iii) The **Contractor** shall mean the individual, firm or company, whether incorporated or not, undertaking the works and shall include the legal personal representative of such individual or the persons composing such firm or company, or the successors of such firm or company and the permitted assignees of such individual, firm or company.
- (iv) The Owner/Competent Authority/Institute **means** the Executive Director, NABI
- (v) The **Engineer-in-charge** means the Assistant Engineer (Civil) who shall supervise and be in charge of the work on behalf of the Competent Authority.
- (vi) **Accepting Authority** shall mean the authority Executive Director, NABI
- (vii) **Excepted Risk** are risks due to riots (other than those on account of contractor's Employees), war (whether declared or not) invasion, act of foreign enemies, hostilities, civil war, rebellion revolution, insurrection, military or usurped power, any acts of Government, damages from aircraft, acts of God, such as earthquake, lightening and unprecedented floods, and other causes over which the contractor has no control and accepted as such by the Accepting Authority or causes solely due to use or occupation by owner of the part of the works in respect of which a certificate of completion has been issued or a cause solely due to owner's faulty design of works.
- (viii) **Market Rate** shall be the rate as decided by the Engineer-in-Charge on the basis of the cost of materials and labour as per market at the site where the work is to be executed plus the percentage, all overheads and profits.
- (ix) **Schedule(s)** referred to in these conditions shall mean the relevant schedule(s) annexed to the tender papers or the standard Schedule of Rates of the government mentioned with the amendments thereto issued up to the date of receipt of the tender.
- (X) **Tendered value** means the value of the entire work as stipulated in the letter of award as quoted by bidders.
- (xi) **Date of commencement of work:** The date of commencement of work shall be the date of start or the first date of handing over of the site, whichever is later, in accordance with the phasing if any, as indicated in the tender document.
- III. Where the context so requires, words imparting the singular only also include the plural and vice versa. Any reference to masculine gender shall whenever required include feminine gender and vice versa.

- IV. Headings and Marginal notes to these General Conditions of Contract shall not be deemed to form part thereof or be taken into consideration in the interpretation or construction thereof or of the contract.
- V. The contractor shall be furnished, free of cost one certified copy of the contract documents except standard specifications, Schedule of Rates and such other printed and published documents, together with all drawings as may be forming part of the tender papers. None of these documents shall be used for any purpose other than that of this contract.
- VI. The work to be carried out under the Contract shall, except as otherwise provided in these conditions, include all labour, materials, tools, plants, equipment and transport which may be required in preparation of and for and in the full and entire execution and completion of the works. The descriptions given in the Schedule of Quantities shall, unless otherwise stated, be held to include wastage on materials, carriage and cartage, carrying and return of empties, hoisting, setting, fitting and fixing in position and all other labours necessary in and for the full and entire execution and completion of the work as aforesaid in accordance with good practice and recognized principles.
- VII. The Contractor shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the rates and prices quoted in the Schedule of Quantities, which rates and prices shall, except as otherwise provided, cover all his obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the works.
- VIII. The several documents forming the Contract are to be taken as mutually explanatory of one another, detailed drawings being followed in preference to small scale drawing and figured dimensions in preference to scale and special conditions in preference to General Conditions.
- IX. In the case of discrepancy between the schedule of Quantities, the Specifications and/ or the Drawings, the following order of preference shall be observed: -
- (i) Description of Schedule of Quantities.
 - (ii) Particular Specification and Special Condition, if any.
 - (iii) Drawings.
 - (iv) CPWD Specifications and General Conditions of Contract.
 - (v) Indian Standard Specifications of B.I.S.
- X. If there are varying or conflicting provisions made in any one document forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on the contractor.
- XI. Any error in description, quantity or rate in Schedule of Quantities or any omission therefrom shall not vitiate the Contract or release the Contractor from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the contract.

CLAUSES OF CONTRACT

CLAUSE 1

(i) The contractor shall submit an irrevocable Performance Guarantee of **5% (Five percent)** of the tendered amount in addition to other deposits mentioned elsewhere in the contract for his proper performance of the contract agreement, (not withstanding and/or without prejudice to any other provisions in the contract) within period specified from the date of issue of letter of acceptance. This period can be further extended by the

Competent Authority up to a maximum period as specified in schedule 'F' on written request of the contractor stating the reason for delays in procuring the Performance Guarantee, to the satisfaction of the Engineer-in-Charge. This guarantee shall be in the form of Cash (in case guarantee amount is less than Rs. 5,000/-) or Deposit at Call receipt of any scheduled bank/Banker's Cheque of any scheduled bank/Demand Draft of any scheduled bank/Pay Order of any scheduled bank (in case guarantee amount is less than Rs. 1, 00,000/-) or Government Securities or Fixed Deposit Receipts or Guarantee Bonds of any Scheduled Bank or the State Bank of India in accordance with the form annexed hereto. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the performance guarantee and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit.

(ii) The Performance Guarantee shall be initially valid up to the stipulated date of completion plus 60 days beyond that. In case the time for completion of work gets enlarged, the contractor shall get the validity of Performance Guarantee extended to cover such enlarged time for completion of work. After recording of the completion certificate for the work by the competent authority, the performance guarantee shall be returned to the contractor, without any interest. However, in case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

(iii) The Engineer-in-Charge shall not make a claim under the performance guarantee except for amounts to which the owner is entitled under the contract (not withstanding and/or without prejudice to any other provisions in the contract agreement) in the event of:

(a) Failure by the contractor to extend the validity of the Performance Guarantee as described herein above, in which event the Engineer-in-Charge may claim the full amount of the Performance Guarantee.

(b) Failure by the contractor to owner any amount due, either as agreed by the contractor or determined under any of the Clauses/Conditions of the agreement, within 30 days of the service of notice to this effect by Engineer-in-Charge.

(iv) In the event of the contract being determined or rescinded under provision of any of the Clause/Condition of the agreement, the performance guarantee shall stand forfeited in full and shall be absolutely at the disposal of the Competent Authority.

(v) On substantial Completion of any work which has been completed to such an extent that the intended purpose of the work is met and ready to use, then a provisional Completion certificate shall be recorded by the Engineer-in-Charge. The provisional certificate shall have appended with a list of outstanding balance item of work that need to be completed in accordance with the provisions of the contract. This provisional completion certificate shall be recorded by the concerned Engineer-In-charge with the approval of Superintending Engineer /Project Manager / Chief Engineer/Chief Project Manager, if required. After recording of the provisional Completion Certificate for the work by the competent authority, the 80 % of performance guarantee shall be returned to the contractor, without any interest. However, in case of contracts involving Maintenance of building and services /any other work after construction of same building and services/ other work, then 40% of performance guarantee shall be returned to the contractor, without any interest after recording the provisional Completion certificate.

CLAUSE 1 A

Recovery of Security Deposit

The person/persons whose tender(s) may be accepted (hereinafter called the contractor) shall permit Department at the time of making any payment to him for work done under the contract to **deduct a sum at the rate of 5% of the gross amount** of each running and final bill till the sum deducted will amount to security deposit of 5% of the tendered value of the work. Such deductions will be made and held by Government by way of Security Deposit unless he/they has/have deposited the amount of Security at the rate mentioned above in cash or in the form of Government Securities or fixed deposit receipts. In case a fixed deposit receipt of any Bank is furnished by the contractor to the Government as part of the security deposit and the Bank is unable to make payment against the said fixed deposit receipt, the loss caused thereby shall fall on the contractor and the contractor shall forthwith on demand furnish additional security to the Government to make good the deficit. All compensations or the other sums of money payable by the contractor under the terms of this contract may be deducted from, or paid by the sale of a sufficient part of his security deposit or from the interest arising therefrom, or from any sums which may be due to or may become due to the contractor by Government on any account whatsoever and in the event of his Security Deposit being reduced by reason of any such deductions or sale as aforesaid, the contractor shall within 10 days make good in cash or fixed deposit receipt tendered by the State Bank of India or by Scheduled Banks or Government Securities (if deposited for more than 12 months) endorsed in favour of the Engineer-in-Charge, any sum or sums which may have been deducted from, or raised by sale of his security deposit or any part thereof. The security deposit shall be collected from the running bills and the final bill of the contractor at the rates mentioned above.

The security deposit as deducted above can be released against bank guarantee issued by a scheduled bank, on its accumulations to a minimum of Rs. 5 lac subjects to the condition that amount of such bank guarantee, except last one, shall not be less than Rs. 5 lacs. Provided further that the validity of bank guarantee including the one given against the earnest money shall be in conformity with provisions contained in clause 17 which shall be extended from time to time depending upon extension of contract granted under provisions of clause 2 and clause 5.

In case of contracts involving maintenance of building and services/any other work after construction of same building and services/other work, then 50% of Performance Guarantee shall be retained as Security Deposit. The same shall be returned year wise proportionately.

CLAUSE 2

Compensation for Delay

If the contractor fails to maintain the required progress or to complete the work and clear the site on or before the contract or extended date of completion, he shall, without prejudice to any other right or remedy available under the law to the Government on account of such breach, pay as agreed compensation the amount calculated at the rates stipulated below as the authority specified in schedule 'F' (whose decision in writing shall be final and binding) may decide on the amount of tendered value of the work for every completed day/month (as applicable) that the progress remains below that specified in Clause 5 or that the work remains incomplete. This will also apply to items or group of items for which a separate period of completion has been specified.

(i) Compensation @ point five percent (0.5%) per week of delay for delay of work to be computed on day basis provided always that the total amount of compensation for delay to be paid under this Condition shall not exceed 10% of the Tendered Value of work or of the Tendered Value of the item or group of items of work for which a separate period of completion is originally given.

CLAUSE 3

When Contract can be Determined

Subject to other provisions contained in this clause, the Engineer-in-Charge may, without prejudice to his any other rights or remedy against the contractor in respect of any delay, inferior workmanship, any claims for damages and/or any other provisions of this contract or otherwise, and whether the date of completion has or has not elapsed, by notice in writing absolutely determine the contract in any of the following cases:

(i) If the contractor having been given by the Engineer-in-Charge a notice in writing to rectify, reconstruct or replace any defective work or that the work is being performed in an inefficient or otherwise improper or

unworkman like manner shall omit to comply with the requirement of such notice for a period of seven days thereafter.

(ii) If the contractor has, without reasonable cause, suspended the progress of the work or has failed to proceed with the work with due diligence so that in the opinion of the Engineer-in-Charge (which shall be final and binding) he will be unable to secure completion of the work by the date for completion and continues to do so after a notice in writing of seven days from the Engineer-in-Charge.

(iii) If the contractor fails to complete the work within the stipulated date or items of work with individual date of completion, if any stipulated, on or before such date(s) of completion and does not complete them within the period specified in a notice given in writing in that behalf by the Engineer-in-Charge.

(iv) If the contractor persistently neglects to carry out his obligations under the contract and/ or commits default in complying with any of the terms and conditions of the contract and does not remedy it or take effective steps to remedy it within 7 days after a notice in writing is given to him in that behalf by the Engineer-in-Charge.

(v) If the contractor shall offer or give or agree to give to any person in Government service or to any other person on his behalf any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of this or any other contract for Government.

(vi) If the contractor shall enter into a contract with Government in connection with which commission has been paid or agreed to be paid by him or to his knowledge, unless the particulars of any such commission and the terms of payment thereof have been previously disclosed in writing to the Engineer-in-Charge.

(vii) If the contractor had secured the contract with Government as a result of wrong tendering or other non-bonafide methods of competitive tendering or commits breach of Integrity Agreement.

(viii) If the contractor being an individual, or if a firm, any partner thereof shall at any time be adjudged insolvent or have a receiving order or order for administration of his estate made against him or shall take any proceedings for liquidation or composition (other than a voluntary liquidation for the purpose of amalgamation or reconstruction) under any Insolvency Act for the time being in force or make any conveyance or assignment of his effects or composition or arrangement for the benefit of his creditors or purport so to do, or if any application be made under any Insolvency Act for the time being in force for the sequestration of his estate or if a trust deed be executed by him for benefit of his creditors.

(ix) If the contractor being a company shall pass a resolution or the court shall make an order that the company shall be wound up or if a receiver or a manager on behalf of a creditor shall be appointed or if circumstances shall arise which entitle the court or the creditor to appoint a receiver or a manager or which entitle the court to make a winding up order.

(x) If the contractor shall suffer an execution being levied on his goods and allow it to be continued for a period of 21 days.

(xi) If the contractor assigns, transfers, sublets (engagement of labour on a piece-work basis or of labour with materials not to be incorporated in the work, shall not be deemed to be subletting) or otherwise parts with or attempts to assign, transfer, sublet or otherwise parts with the entire works or any portion thereof without the prior written approval of the Engineer -in-Charge.

When the contractor has made himself liable for action under any of the cases aforesaid, the Competent Authority shall have powers:

(a) To determine the contract as aforesaid (of which termination notice in writing to the contractor under the hand of the Engineer-in-Charge shall be conclusive evidence). Upon such determination, the Security Deposit already recovered and Performance Guarantee under the contract shall be liable to be forfeited and shall be absolutely at the disposal of the Government

(b) After giving notice to the contractor to measure up the work of the contractor and to take such whole, or the balance or part thereof, as shall be un-executed out of his hands and to give it to another contractor to complete the work. The contractor, whose contract is determined as above, shall not be allowed to participate in the tendering process for the balance work.

In the event of above courses being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reasons of his having purchased or procured any materials or entered into any engagements or made any advances on account or with a view to the execution of the work or the performance of the contract. And in case action is taken under any of the provision aforesaid, the contractor shall not be entitled to recover or be paid any sum for any work thereof or actually performed under this contract unless and until the Engineer-in-Charge has certified in writing the performance of such work and the value payable in respect thereof and he shall only be entitled to be paid the value so certified.

CLAUSE 3A

In case, the work cannot be started due to reasons not within the control of the contractor within 1/8th of the stipulated time for completion of work or one month whichever is higher, either party may close the contract. In case contractor wants to close the contract, he shall give notice to the department stating the failure on the part of department. In such eventuality, the Performance Guarantee of the contractor shall be refunded within following time limits:

- (i) If the Tendered value of work is up to Rs. 45 lac: 15 days.
- (ii) If the Tendered value of work is more than Rs. 45 lac and up to Rs. 2.5 Crore: 21 days.
- (iii) If the Tendered value of work exceeds Rs. 2.5 Crore: 30 days.

CLAUSE 4

Contractor liable to pay Compensation even if action not taken under Clause 3

In any case in which any of the powers conferred upon the Competent Authority by Clause-3 thereof, shall have become exercisable and the same are not exercised, the non-exercise hereof shall not constitute a waiver of any of the conditions hereof and such powers shall Notwithstanding be exercisable in the event of any future case of default by the contractor and the liability of the contractor for compensation shall remain unaffected. In the event of the Engineer-in-Charge putting in force all or any of the powers vested in him under the preceding clause he may, if he so desires after giving a notice in writing to the contractor, take possession of (or at the sole discretion of the Engineer-in-Charge which shall be final and binding on the contractor) use as on hire (the amount of the hire money being also in the final determination of the Engineer-in-Charge) all or any tools, plant, materials and stores, in or upon the works, or the site thereof belonging to the contractor, or procured by the contractor and intended to be used for the execution of the work/or any part thereof, paying or allowing for the same in account at the contract rates, or, in the case of these not being applicable, at current market rates to be certified by the Engineer-in-Charge, whose certificate thereof shall be final, and binding on the contractor, clerk of the works, foreman or other authorized agent to remove such tools, plant, materials, or stores from the premises (within a time to be specified in such notice) in the event of the contractor failing to comply with any such requisition, the Engineer-in-Charge may remove them at the contractor's expense or sell them by auction or private sale on account of the contractor and his risk in all respects and the certificate of the Engineer-in-Charge as to the expenses of any such removal and the amount of the proceeds and expenses of any such sale shall be final and conclusive against the contractor.

CLAUSE 5

Time and Extension for Delay

The time allowed for execution of the Works as specified in the Schedule 'F' or the extended time in accordance with these conditions shall be the essence of the Contract. The execution of the works shall commence from such time period as mentioned in schedule 'F' or from the date of handing over of the site whichever is later. If the Contractor commits default in commencing the execution of the work as aforesaid, Government shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the performance guarantee absolutely.

If the work(s) be delayed by: -

- (i) Force majeure, or
- (ii) Abnormally bad weather, rains or
- (iii) Serious loss or damage by fire, or
- (iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the Trades employed on the work.
- (v) Delay on the part of other contractors or tradesmen engaged by owner in executing work not forming part of the Contract, or
- (vi) Non-availability of stores material, which are the responsibility of owner to supply or
- (vii) Non-availability or break down of tools and Plant to be supplied or supplied by Government or
- (viii) Any other cause which, is beyond the Contractor's control.

Then upon the happening of any such event causing delay, the Contractor shall immediately give notice thereof in writing to the authority as indicated in Schedule 'F' but shall nevertheless use constantly his best endeavors to prevent or make good the delay and shall do all that may be reasonably required to the satisfaction of the Engineer-in-Charge to proceed with the works.

The contractor shall have no claim of damages for extension of time granted or rescheduling of milestone/s for events listed in sub clause 5.2.

CLAUSE 8

Completion Certificate and Completion Plans

Within ten days of the completion of the work, the contractor shall give notice of such completion to the Engineer-in-Charge and within thirty days of the receipt of such notice, the Engineer-in-Charge shall inspect the work and if there is no defect in the work, shall furnish the contractor with a final certificate of completion, otherwise a provisional certificate of physical completion indicating defects (a) to be rectified by the contractor and/or (b) for which payment will be made at reduced rates, shall be issued. But no final certificate of completion shall be issued, nor shall the work be considered to be complete until the contractor shall have removed from the premises on which the work shall be executed all scaffolding, surplus materials, rubbish and all huts and sanitary arrangements required for his/their work people on the site in connection with the execution of the works as shall have been erected or constructed by the contractor(s) and cleaned off the dirt from all wood work, doors, windows, walls, floor or other parts of the building, in, upon, or about which the work is to be executed or of which he may have had possession for the purpose of the execution; thereof, and not until the work shall have been measured by the Engineer-in-Charge. If the contractor shall fail to comply with the requirements of this Clause as to removal of scaffolding, surplus materials and rubbish and all huts and sanitary arrangements as aforesaid and cleaning off dirt on or before the date fixed for the completion of work, the Engineer-in-Charge may at the expense of the contractor remove such scaffolding, surplus materials and rubbish etc., and dispose of the same as he thinks fit and clean off such dirt as aforesaid, and the contractor shall have no claim in respect of scaffolding or surplus materials as aforesaid except for any sum actually realized by the sale thereof.

CLAUSE 8A

Completion Plans to be submitted by the Contractor

The contractor shall submit completion plan for various executions, services etc. as applicable within thirty days of the completion of the work.

In case, the contractor fails to submit the completion plan as aforesaid, he shall be liable to pay a sum equivalent to 2.5% of the value of the work subject to a ceiling of Rs. 15,000/- (Rs. Fifteen thousand only) as may be fixed by the Competent Authority concerned and in this respect the decision of the Competent Authority shall be final and binding on the contractor.

CLAUSE 9

Payment of Final Bill

The final bills of contractor shall be paid within 21 days from date of submission of hard copy. The running bills shall not be entertained. The payment shall be made based on measurements recorded against each item mentioned in financial bid and the amount shall be worked out based on the measurements recorded, rates mentioned in this tender document by Department and percentage quote plus/minus quoted by bidder. Contractor shall duly co-operate with Department in verifying measurement at site.

The final bill shall be submitted by the contractor in the same manner as specified in interim bills within three months of physical completion of the work or within one month of the date of the final certificate of completion furnished by the Engineer-in-Charge whichever is earlier. No further claims shall be made by the contractor after submission of the final bill and these shall be deemed to have been waived and extinguished. Payments of those items of the bill in respect of which there is no dispute and of items in dispute, for quantities and rates as approved by Engineer-in-Charge, will, as far as possible be made within the period specified here in under, the period being reckoned from the date of receipt of the bill by the Engineer in- Charge or his authorized Asstt. Engineer, complete with account of materials issued by the Department and dismantled materials.

(a) If the Tendered value of work is up to 1 Crore : 2 months

(b) If the Tendered value of work is more than Rs 1 Crore and upto : 3 months Rs. 10 Crore

(c) If the Tendered value of work exceeds Rs. 10 Crore : 6 months

CLAUSE 10A

Materials to be provided by the Contractor

The contractor shall, at his own expense, provide all materials, required for the works other than those which are stipulated to be supplied by the owner. The contractor shall, at his own expense and without delay, supply to the Engineer-in- Charge samples of materials to be used on the work and shall get these approved in advance. All such materials to be provided by the Contractor shall be in conformity with the specifications laid down or referred to in the contract. The contractor shall, if requested by the Engineer-in- Charge furnish proof, to the satisfaction of the Engineer-in-Charge that the materials so comply. The Engineer-in-Charge shall within thirty days of supply of samples or within such further period as he may require intimate to the Contractor in writing whether samples are approved by him or not. If samples are not approved, the Contractor shall forthwith arrange to supply to the Engineer-in-Charge for his approval, fresh samples complying with the specifications laid down in the contract. When materials are required to be tested in accordance with specifications, approval of the Engineer-in-Charge shall be issued after the test results are received.

The Contractor shall at his risk and cost submit the samples of materials to be tested or analyzed and shall not make use of or incorporate in the work any materials represented by the samples until the required tests or analysis have been made and materials finally accepted by the Engineer-in-Charge. The Contractor shall not be eligible for any claim or compensation either arising out of any delay in the work or due to any corrective measures required to be taken on account of and as a result of testing of materials.

The contractor shall, at his risk and cost, make all arrangements and shall provide all facilities as the Engineer-in-Charge may require for collecting, and preparing the required number of samples for such tests at such time and to such place or places as may be directed by the Engineer-in-Charge and bear all charges and cost of testing unless specifically provided for otherwise elsewhere in the contract or specifications. The Engineer in-Charge or his authorized representative shall at all times have access to the works and to all workshops and places where work is being prepared or from where materials, manufactured articles or machinery are being obtained for the works and the contractor shall afford every facility and every assistance in obtaining the right to such access.

The Engineer-in-Charge shall have full powers to require the removal from the premises of all materials which in his opinion are not in accordance with the specifications and in case of default, the Engineer-in-Charge shall be at liberty to employ at the expense of the contractor, other persons to remove the same without being answerable or accountable for any loss or damage that may happen or arise to such materials. The Engineer-in-Charge shall also have full powers to require other proper materials to be substituted thereof and in case of default, the Engineer-in-Charge may cause the same to be supplied and all costs which may attend such

removal and substitution shall be borne by the Contractor. The contractor shall at his own expense, provide a material testing lab at the site for conducting routine field tests. The lab shall be equipped at least with the testing equipment as specified in schedule F.

CLAUSE 10 D

Dismantled Material Govt. Property

The contractor shall treat all materials obtained during dismantling of a structure, excavation of the site for a work, etc. as Government's property and such materials shall be disposed off to the best advantage of Government according to the instructions in writing issued by the Engineer in-Charge.

CLAUSE 11

Work to be executed in Accordance with Specifications, Drawings, Orders etc.

The contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the specifications. The contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer-in-Charge and the contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the standard specifications of Central Public Works Department or in any Bureau of Indian Standard or any other, published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the contract. The contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

CLAUSE 12:

Deviations/ Variations Extent and Pricing

The Engineer-in-Charge shall have power (i) to make alteration in, omissions from, additions to, or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and (ii) to omit a part of the works in case of non-availability of a portion of the site or for any other reasons and the contractor shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the Engineer-in-Charge and such alterations, omissions, additions or substitutions shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the contractor may be directed to do in the manner specified above as part of the works, shall be carried out by the contractor on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.

12.1 The time for completion of the works shall, in the event of any deviations resulting in additional cost over the tendered value sum being ordered be extended, if requested by the contractor, as follows:

- (i) In the proportion which the additional cost of the altered, additional or substituted work, bears to the original tendered value plus
- (ii) 25% of the time calculated in (i) above or such further additional time as may be considered reasonable by the Engineer-in-Charge.

12.2

Deviation, Extra Items and Pricing

In the case of extra item(s) (items that are completely new, and are in addition to the items contained in the contract), the contractor may within fifteen days of receipt of order or occurrence of the item(s) submit market rate claim rates, supported by proper analysis which shall include invoices, vouchers etc. and Manufacturer's specification for the work failing which the rate approved later by the Engineer- in charge shall be binding and the Engineer-in-Charge shall within prescribed time limit of the receipt of the claims supported by analysis , after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates and the contractor shall be paid in accordance with the rates so determined, failing which it will be deemed to have been approved. In the case of substituted items (items that are taken up with partial substitution or in lieu of items of work in the contract), the rate for the agreement item (to be substituted) and substituted item shall also be determined in the manner as mentioned in the following para.

(a) If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so increased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

(b) If the market rate for the substituted item so determined is less than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the agreement item (to be substituted) so decreased to the extent of the difference between the market rates of substituted item and the agreement item (to be substituted).

Deviation, deviated Quantities, Pricing

In the case of contract items, substituted items, contract cum substituted items, which exceed the limits laid down in schedule F, the contractor may within fifteen days of receipt of order or occurrence of the excess, claim revision of the rates, supported by proper analysis for the work in excess of the above mentioned limits, provided that if the rates so claimed are in excess of the rates specified in the schedule of quantities, the Engineer-in-Charge shall within prescribed time limit of receipt of the claims supported by analysis, after giving consideration to the analysis of the rates submitted by the contractor, determine the rates on the basis of the market rates (as per invoice, vouchers from the manufacturers or suppliers submitted by the agency and duly verified by Engineer in Charge or his representative) and the contractor shall be paid in accordance with the rates so determined. The prescribed time limit for finalizing rates for Extra Item(s), Substitute Item(s) and Deviated Quantities of contract items is within 45 days after submission of proposal by the contractor without observation of the Engineer-in-Charge. If the market rate for the substituted item so determined is more than the market rate of the agreement item (to be substituted), the rate payable to the contractor for the substituted item shall be the rate for the

12.3 The provisions of the preceding paragraph shall also apply to the decrease in the rates of items for the work in excess of the limits laid down in Schedule F, and the Engineer-in-Charge shall after giving notice to the contractor within one month of occurrence of the excess and after taking into consideration any reply received from him within fifteen days of the receipt of the notice, revise the rates for the work in question within one month of the expiry of the said period of fifteen days having regard to the market rates.

12.4 For the purpose of operation of Schedule "F", the following works shall be treated as works relating to foundation unless & otherwise defined in the contract:

- (i) For Buildings: All works up to 1.2 metres above ground level or up to floor 1 level whichever is lower.
- (ii) For abutments, piers and well staining: All works up to 1.2 m above the bed level.
- (iii) For retaining walls, wing walls, compound walls, chimneys, overhead reservoirs/ tanks and other elevated structures: All works up to 1.2 metres above the ground level.
- (iv) For reservoirs/tanks (other than overhead reservoirs/tanks) : All works up to 1.2 metres above the ground level.
- (v) For basement: All works up to 1.2 m above ground level or up to floor 1 level whichever is lower.
- (vi) For Roads, all items of excavation and filling including treatment of sub base.

12.5 Any operation incidental to or necessarily has to be in contemplation of tenderer while quoting tender, or necessary for proper execution of the item included in the Schedule of quantities or in the schedule of rates mentioned above, whether or not, specifically indicated in the description of the item and the relevant specifications, shall be deemed to be included in the rates quoted by the tenderer or the rate given in the said schedule of rates, as the case may be. Nothing extra shall be admissible for such operations.

CLAUSE 13

Foreclosure of contract due to Abandonment or Reduction in Scope of Work

If at any time after acceptance of the tender or during the progress of work, the purpose or object for which the work is being done changes due to any supervening cause and as a result of which the work has to be abandoned or reduced in scope the Engineer-in-Charge shall give notice in writing to that effect to the contractor stating the decision as well as the cause for such decision and the contractor shall act accordingly in the matter. The contractor shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the works in full but which he did not derive in consequence of the foreclosure of the whole or part of the works.

Clause 14

Carrying out part work at risk & cost of contractor

If contractor:

(i) At any time makes default during currency of work or does not execute any part of the work with due diligence and continues to do so even after a notice in writing of 7 days in this respect from the Engineer-in-Charge; or

(ii) Commits default in complying with any of the terms and conditions of the contract and does not remedy it or takes effective steps to remedy it within 7 days even after a notice in writing is given in that behalf by the Engineer-in-Charge; or Fails to complete the work(s) or items of work with individual dates of completion, on or before the date(s) so determined, and does not complete them within the period specified in the notice given in writing in that behalf by the Engineer-in-Charge.

(iii) The Engineer- in-Charge without invoking action under clause 3 may, without prejudice to any other right or remedy against the contractor which have either accrued or accrue thereafter to Government, by a notice in writing to take the part work / part incomplete work of any item(s) out of his hands and shall have powers to:

(a) Take possession of the site and any materials, constructional plant, implements, stores, etc., thereon; and/or

(b) Carry out the part work / part incomplete work of any item(s) by any means at the risk and cost of the contractor.

The Engineer-in-Charge shall determine the amount, if any, is recoverable from the contractor for completion of the part work/ part incomplete work of any item(s) taken out of his hands and execute at the risk and cost of the contractor, the liability of contractor on account of loss or damage suffered by Government because of action under this clause shall not exceed 10% of the tendered value of the work.

In determining the amount, credit shall be given to the contractor with the value of work done in all respect in the same manner and at the same rate as if it had been carried out by the original contractor under the terms of his contract, the value of contractor's materials taken over and incorporated in the work and use of plant and machinery belonging to the contractor.

The certificate of the Engineer-in-Charge as to the value of work done shall be final and conclusive against the contractor provided always that action under this clause shall only be taken after giving notice in writing to the contractor. Provided also that if the expenses incurred by the department are less than the amount payable to the contractor at his agreement rates, the difference shall not be payable to the contractor.

Any excess expenditure incurred or to be incurred by Government in completing the part work/ part incomplete work of any item(s) or the excess loss of damages suffered or may be suffered by Government as aforesaid after allowing such credit shall without prejudice to any other right or remedy available to Government in law or per as agreement be recovered from any money due to the contractor on any account, and if such money is insufficient, the contractor shall be called upon in writing and shall be liable to pay the same within 30 days.

If the contractor fails to pay the required sum within the aforesaid period of 30 days, the Engineer-in-Charge shall have the right to sell any or all of the contractors' unused materials, constructional plant, implements, temporary building at site etc. and adjust the proceeds of sale thereof towards the dues recoverable from the contractor under the contract and if thereafter there remains any balance outstanding, it shall be recovered in accordance with the provisions of the contract.

In the event of above course being adopted by the Engineer-in-Charge, the contractor shall have no claim to compensation for any loss sustained by him by reason of his having purchased or procured any materials or entered into any engagements or made any advance on any account or with a view to the execution of the work or the performance of the contract.

CLAUSE 15

Suspension of Work

(i) The contractor shall, on receipt of the order in writing of the Competent Authority, (whose decision shall be final and binding on the contractor) suspend the progress of the works or any part thereof for such time and in such manner as the Engineer-in-Charge may consider necessary so as not to cause any damage or injury to the work already done or endanger the safety thereof for any of the following reasons:

(a) on account of any default on the part of the contractor or;

(b) for proper execution of the works or part thereof for reasons other than the default of the contractor; or

(c) for safety of the works or part thereof.

The contractor shall, during such suspension, properly protect and secure the works to the extent necessary and carry out the instructions given in that behalf by the Engineer in- Charge.

(ii) If the suspension is ordered for reasons (b) and (c) in sub-para (i) above:

(a) the contractor shall be entitled to an extension of time equal to the period of every such suspension PLUS 25%, for completion of the item or group of items of work for which a separate period of completion is specified in the contract and of which the suspended work forms a part, and;

(b) If the total period of all such suspensions in respect of an item or group of items or work for which a separate period of completion is specified in the contract exceeds thirty days, the contractor shall, in addition, be entitled to such compensation as the Engineer-in- Charge may consider reasonable in respect of salaries and/or wages paid by the contractor to his employees and labour at site, remaining idle during the period of suspension, adding thereto 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in- Charge within fifteen days of the expiry of the period of 30 days.

(iii) If the works or part thereof is suspended on the orders of the Engineer-in-Charge for more than three months at a time, except when suspension is ordered for reason (a) in subpara above, the contractor may after receipt of such order serve a written notice on the Engineer-in-Charge requiring permission within fifteen days from receipt by the Engineer in-Charge of the said notice, to proceed with the work or part thereof in regard to which progress has been suspended and if such permission is not granted within that time, the contractor, if he intends to treat the suspension, where it affects only a part of the works as an omission of such part by owner or where it affects whole of the works, as an abandonment of the works by owner, shall within ten days of expiry of such period of 15 days give notice in writing of his intention to the Engineer-in-Charge. In the event of the contractor treating the suspension as an abandonment of the contract by owner, he shall have no claim to payment of any compensation on account of any profit or advantage which he might have derived from the execution of the work in full but which he could not derive in consequence of the abandonment. He shall, however, be entitled to such compensation, as the Engineer-in-Charge may consider reasonable, in respect of salaries and/or wages paid by him to his employees and labour at site, remaining idle in consequence adding to the total thereof 2% to cover indirect expenses of the contractor provided the contractor submits his claim supported by details to the Engineer-in-Charge within 30 days of the expiry of the period of 3 months.

CLAUSE 16

Action in case Work not done as per Specifications

All works under or in course of execution or executed in pursuance of the contract, shall at all times be open and accessible to the inspection and supervision of the Engineer-In-charge, and the contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the contractor himself. If it shall appear to the Engineer-in-charge, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract, the contractor shall, on demand in writing which shall be made within twelve months (six months in the case of work costing Rs. 10 Lac and below except road work) of the completion of the work from the Engineer-in-Charge specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer-in- Charge in his demand aforesaid, then the contractor shall be liable to pay compensation at the same rate as under clause 2 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer-in-Charge may not accept the item of work at the rates applicable under the contract but may accept such items at reduced rates as the authority specified in schedule 'F' may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the contractor. Decision of the Competent Authority to be conveyed in writing in respect of the same will be final and binding on the contractor.

CLAUSE 17

Contractor Liable for Damages, defects during defect liability period

If the contractor or his working people or servants shall break, deface, injure or destroy any part of building in which they may be working, or any building, road, road kerb, fence, enclosure, water pipe, cables, drains, electric or telephone post or wires, trees, grass or grassland, or cultivated ground contiguous to the premises on which the work or any part is being executed, or if any damage shall happen to the work while in progress, from any cause whatever or if any defect, shrinkage or other faults appear in the work within twelve months after a certificate final or otherwise of its completion shall have been given by the Engineer in-Charge as aforesaid arising out of defect or improper materials or workmanship the contractor shall upon receipt of a notice in writing on that behalf make the same good at his own expense or in default the Engineer-in-Charge cause the same to be made good by other workmen and deduct the expense from any sums that may be due or at any time thereafter may become due to the contractor, or from his security deposit or the proceeds of sale thereof or of a sufficient portion thereof. The security deposit of the contractor shall not be refunded before the expiry of twelve months after the issue of the certificate final or otherwise, of completion of work, or till the final bill has been prepared and passed whichever is later. Provided that in the case of road work, if in the opinion of the Engineer-in-Charge, half of the security deposit is sufficient, to meet all liabilities of the contractor under this contract, half of the security deposit will be refundable after six months and the remaining half after twelve months of the issue of the said certificate of completion or till the final bill has been prepared and passed whichever is later.

The Warranty/Defect Liability period after the completion of works will be **24 months (from the date of completion recorded or handing over of the work, whichever is later)**. In addition to this, extended warranty, if any for items as given by the manufacturer will also be applicable. Warranty will be inclusive of all accessories and it will also cover all wearable & non-wearable components. Replacement and repair will be under taken for the defective goods.

Upon receipt of notice during the warranty/Defect liability period, the Contractor shall, within 48 hours on a 24(hrs) X 365 (days) basis respond to take action and to repair or replace the defective goods or parts thereof, free of cost, at the ultimate destination. The Supplier/Contractor shall take over the replaced parts/goods after providing their replacements and no claim, whatsoever shall lie on the Owner/Institute for such replaced parts/goods thereafter. The penalty clause for non-rectification will be applicable as per tender conditions.

If the Contractor, having been notified, fails to respond to take action to repair or replace the defect(s) within 48 hours on a 24(hrs) X 365 (days) basis, the Owner may proceed to take such remedial action(s) as deemed fit by the Owner, at the risk and expense of the Contractor and without prejudice to other contractual rights and remedies, which the Owner may have against the Contractor.

Clause 18 B

Ensuring Payment and Amenities to Workers if Contractor fails

In every case in which by virtue of the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and of the Contract Labour (Regulation and Abolition) Central Rules, 1971, Government is obliged to pay any amounts of wages to a workman employed by the contractor in execution of the works, or to incur any expenditure in providing welfare and health amenities required to be provided under the above said Act and the rules under Clause 19H or under the C.P.W.D. Contractor's Labour Regulations, or under the Rules framed by Government from time to time for the protection of health and sanitary arrangements for workers employed by C.P.W.D. Contractors, Government will recover from the contractor, the amount of wages so paid or the amount of expenditure so incurred; and without prejudice to the rights of the Government under subsection(2) of Section 20, and sub-section (4) of Section 21, of the Contract Labour (Regulation and Abolition) Act, 1970, Government shall be at liberty to recover such amount or any part thereof by deducting it from the security deposit or from any sum due by Government to the contractor whether under this contract or otherwise Government shall not be bound to contest any claim made against it under sub-section (1) of Section 20, sub-section (4) of Section 21, of the said Act, except on the written request of the contractor and upon his giving to the Government full security for all costs for which Government might become liable in contesting such claim.

CLAUSE 19

Labour Laws to be complied by the Contractor

The contractor shall obtain a valid licence under the Contract Labour (R&A) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, before the commencement of the work, and continue to have a valid license until the completion of the work, if required as per labour law. The contractor shall also abide by the provisions of the Child Labour (Prohibition and Regulation) Act, 1986.

The contractor shall also comply with the provisions of the building and other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 and the building and other Construction Workers Welfare Cess Act, 1996. Any failure to fulfil these requirements shall attract the penal provisions of this contract arising out of the resultant non-execution of the work.

CLAUSE 19A

No labour below the age of fourteen years shall be employed on the work.

CLAUSE 19 B

Payment of wages:

(i) The contractor shall pay to labour employed by him either directly or through subcontractors, wages not less than fair wages as defined in the C.P.W.D Labour Regulations or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970 and the contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

(ii) The contractor shall, notwithstanding the provisions of any contract to the contrary, cause to be paid fair wage to labour indirectly engaged on the work, including any labour engaged by his sub-contractors in connection with the said work, as if the labour had been immediately employed by him.

(iii) In respect of all labour directly or indirectly employed in the works for performance of the contractor's part of this contract, the contractor shall comply with or cause to be complied with the Central Public Works Department contractor's Labour Regulations made by Government from time to time in regard to payment of wages, wage period, deductions from wages recovery of wages not paid and deductions unauthorized made, maintenance of wage books or wage slips, publication of scale of wages and other terms of employment, inspection and submission of periodical returns and all other matters of the like nature or as per the provisions of the Contract Labour (Regulation and Abolition) Act, 1970, and the Contract Labour (Regulation and Abolition) Central Rules, 1971, wherever applicable.

(iv) (a) The Engineer-in-Charge concerned shall have the right to deduct from the moneys due to the contractor any sum required or estimated to be required for making good the loss suffered by a worker or workers by reason of non-fulfilment of the conditions of the contract for the benefit of the workers, non-payment of wages or of deductions made from his or their wages which are not justified by their terms of the contract or non-observance of the Regulations.

(b) Under the provision of Minimum Wages (Central) Rules, 1950, the contractor is bound to allow to the labours directly or indirectly employed in the works one day rest for 6 days continuous work and pay wages at the same rate as for duty. In the event of default, the Engineer-in-Charge shall have the right to deduct the sum or sums not paid on account of wages for weekly holidays to any labours and pay the same to the persons entitled thereto from any money due to the contractor by the Engineer-in-Charge concerned.

(v) The contractor shall comply with the provisions of the Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employees Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contractor's Labour (Regulation and Abolition) Act 1970, or the modifications thereof or any other laws relating thereto and the rules made thereunder from time to time.

(vi) The contractor shall indemnify NABI against payments to be made under and for the observance of the laws aforesaid and any other law, Labour Regulations without prejudice to his right to claim indemnity from his sub-contractors.

(vii) The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.

(viii) Whatever is the minimum wage for the time being, or if the wage payable is higher than such wage, such wage shall be paid by the contractor to the workmen directly without the intervention of Jamadar and that Jamadar shall not be entitled to deduct or recover any amount from the minimum wage payable to the workmen as and by way of commission or otherwise.

(ix) The contractor shall ensure that no amount by way of commission or otherwise is deducted or recovered by the Jamadar from the wage of workmen.

CLAUSE 20

Minimum Wages Act to be complied with

The contractor shall comply with all the provisions of the Minimum Wages Act, 1948, and Contract Labour (Regulation and Abolition) Act, 1970, amended from time to time and rules framed thereunder and other labour laws affecting contract labour that may be brought into force from time to time.

CLAUSE 21

Work not to be sublet. Action in case of insolvency

The contract shall not be assigned or sublet without the written approval of the Engineer-in - Charge. And if the contractor shall assign or sublet his contract, or attempt to do so, or become insolvent or commence any

insolvency proceedings or make any composition with his creditors or attempt to do so, or if any bribe, gratuity, gift, loan, perquisite, reward or advantage pecuniary or otherwise, shall either directly or indirectly, be given, promised or offered by the contractor, or any of his servants or agent to any public officer or person in the employ of Government in any way relating to his office or employment, or if any such officer or person shall become in any way directly or indirectly interested in the contract, the Engineer in- Charge on behalf of the President of India shall have power to adopt the course specified in

Clause 3 hereof in the interest of Government and in the event of such course being adopted, the consequences specified in the said Clause 3 shall ensue.

CLAUSE 24

Life Cost Cycle

The contractor shall be responsible for safety, quality and soundness of the buildings including structural elements beyond maintenance period. The contractor shall have obligation to rectify such defects minimum up to 5 (five) years from the date of completion of work. The defects have to be rectified within a reasonable time not exceeding three months after issue of notice by Engineer- in- Charge.

CLAUSE 25

Settlement of Disputes & Arbitration

Except where otherwise provided in the contract, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter: (i) If the contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer-in-Charge or if the Engineer in Charge considers any act or decision of the contractor on any matter in connection with or arising out of the contract or 51 carrying out of the work, to be unacceptable and is disputed, such party shall promptly within 15 days of the arising of the disputes request the Chief Engineer/ CPM, or where there is no Chief Engineer/CPM, request the Additional Director General/Special Director General ,who shall refer the disputes to Dispute Redressal Committee (DRC) within 15 days along with a list of disputes with amounts claimed if any in respect of each such dispute. The Dispute Redressal Committee (DRC) give its decision within a period of 60 days extendable by 30 days by consent of both the parties from the receipt of reference from CE/CPM/ADG/SDG. The constitution of Dispute Redressal Committee (DRC) shall be as indicated in Schedule 'F'. Provided that no party shall be represented before the Dispute Redressal Committee by an advocate/legal counsel etc. The DRC will submit its decision to the concerned ADG/SDG for acceptance. ADG/ SDG in a time limit of 30 days from receipt of DRC decision will convey acceptance or other wise on the said decision .If the Dispute Redressal Committee (DRC) fails to give its decision within the aforesaid period or the ADG/SDG fails to give his decision in the aforesaid time limit or any party is dissatisfied with the decision of Dispute Redressal Committee (DRC)/ ADG/ SDG then either party may within a period of 30 days from the receipt of the decision of Dispute Redressal Committee (DRC)/ ADG/SDG or on expiry of aforesaid the time limits available to DRC/ ADG/SDG ,may give notice to the Chief Engineer/CPM, CPWD, in charge of the work or if there be no Chief Engineer/ CPM,, the Additional Director General /Special Director General concerned or if there be no Additional Director General/ Special Director General, the Director General, CPWD for appointment of arbitrator on prescribed proforma as per Appendix XVII under intimation to the other party. It is a term of contract that each party invoking arbitration must exhaust the aforesaid mechanism of settlement of claims/disputes prior to invoking arbitration. The CE/ADG/ SDG /DG shall in such case appoint the sole arbitrator or one of the three arbitrators as the case may be within 30 days of receipt of such a request and refer such disputes to arbitration. Wherever the Arbitral Tribunal consists of three Arbitrators, the contractor shall appoint one arbitrator within 30 days of making request for arbitration or of receipt of request by Engineer-in-charge to CE/ADG/ SDG /DG for appointment of arbitrator, as the case may be, and two appointed arbitrators shall appoint the third arbitrator who shall act as the Presiding Arbitrator. In the event of a. A party fails to appoint the second Arbitrator, or b. The two appointed Arbitrators fail to appoint the Presiding Arbitrator, then the Director General, CPWD shall appoint the second or Presiding Arbitrator as the case may be. (ii) Dispute or difference shall be referred for adjudication through 52 arbitration by a Tribunal having sole arbitrator where claimed amount is Rs. 20 Crore or less. Where claimed Value is more

than Rs. 20 Crore, Tribunal shall consist of three Arbitrators as above. The requirements of the Arbitration and Conciliation Act, 1996 (26 of 1996) and any further statutory modification or reenactment thereof and the rules made there under and for the time being in force shall be applicable. It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed, if any, in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the decision of the ADG/ SDG on the finding / recommendation of DRC. It is also a term of this contract that any member of the Arbitration Tribunal shall be a Graduate Engineer with experience in handling public works engineering contracts, and further he shall have earlier worked at a level not lower than Chief Engineer/ equivalent (i.e. Joint Secretary level of Government of India). This shall be treated as a mandatory qualification to be appointed as arbitrator. Parties, before or at the time of appointment of Arbitral Tribunal may agree in writing for fast track arbitration as per the Arbitration and Conciliation Act, 1996 (26 of 1996) as amended in 2015. Subject to provision in the Arbitration and Conciliation Act, 1996 (26 of 1996) as amended in 2015 whereby the counter claims if any can be directly filed before the arbitrator without any requirement of reference by the appointing authority. The arbitrator shall adjudicate on only such disputes as are referred to him by the appointing authority and give separate award against each dispute and claim referred to him and in all cases where the total amount of the claims by any party exceeds Rs. 1,00,000/-, the arbitrator shall give reasons for the award. It is also a term of the contract that fees payable to arbitral tribunal shall be as approved by DG, CPWD, OM issued vide no.2/2006/SE(TLC)/CSQ /137 dated 19-11-2019 (or its latest amendment as approved by DG, CPWD). This fee shall be shared equally by parties. The place of arbitration shall be as mentioned in Schedule F. In case there is no mention of place of arbitration, the arbitral tribunal shall determine the place of arbitration. The venue of the arbitration shall be such place as may be fixed by the Arbitral Tribunal in consultation with both the parties. Failing any such agreement, then the Arbitral Tribunal shall decide the venue.

CLAUSE 27

Lumpsum Provisions in Tender

When the estimate on which a tender is made includes lump sum in respect of parts of the work, the contractor shall be entitled to payment in respect of the items of work involved or the part of the work in question at the same rates as are payable under this contract for such items, or if the part of the work in question is not, in the opinion of the Engineer-in-Charge payable of measurement, the Engineer-in-Charge may at his discretion pay the lump -sum amount entered in the estimate, and the certificate in writing of the Engineer-in-Charge shall be final and conclusive against the contractor with regard to any sum or sums payable to him under the provisions of the clause.

CLAUSE 28

Action where no Specifications are specified

In the case of any class of work for which there is no such specifications as referred to in Clause 11, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there are no such specifications in Bureau of Indian Standards, the work shall be carried out as per manufacturers' specifications, if not available then as per state/ District Specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer-in-Charge.

CLAUSE 29

Withholding and lien in respect of sum due from Contractor

(i) Whenever any claim or claims for payment of a sum of money arises out of or under the contract or against the contractor, the Engineer-in Charge or the Government shall be entitled to withhold and also have a lien to retain such sum or sums in whole or in part from the security, if any deposited by the contractor and for the purpose aforesaid, the Engineer-in-Charge or the Government shall be entitled to withhold the security deposit, if any, furnished as the case may be and also have a lien over the same pending finalization or adjudication of any such claim. In the event of the security being insufficient to cover the claimed amount or amounts or if no security has been taken from the contractor, the Engineer-in-Charge or the Government shall be entitled to withhold and have a lien to retain to the extent of such claimed amount or amounts referred to above, from any sum or sums found payable or which may at any time thereafter become payable to the contractor under the same contract or any other contract with the Engineer-in-Charge of the Government or any contracting person

54 through the Engineer-in-Charge pending finalization of adjudication of any such claim. It is an agreed term of the contract that the sum of money or moneys so withheld or retained under the lien referred to above by the Engineer-in-Charge or Government will be kept withheld or retained as such by the Engineer-in-Charge or Government till the claim arising out of or under the contract is determined by the arbitrator (if the contract is governed by the arbitration clause) by the competent court, as the case may be and that the contractor will have no claim for interest or damages whatsoever on any account in respect of such withholding or retention under the lien referred to above and duly notified as such to the contractor. For the purpose of this clause, where the contractor is a partnership firm or a limited company, the Engineer-in-Charge or the Government shall be entitled to withhold and also have a lien to retain towards such claimed amount or amounts in whole or in part from any sum found payable to any partner/limited company as the case may be, whether in his individual capacity or otherwise. (ii) Government shall have the right to cause an audit and technical examination of the works and the final bills of the contractor including all supporting vouchers, abstract, etc., to be made after payment of the final bill and if as a result of such audit and technical examination any sum is found to have been overpaid in respect of any work done by the contractor under the contract or any work claimed to have been done by him under the contract and found not to have been executed, the contractor shall be liable to refund the amount of over-payment and it shall be lawful for Government to recover the same from him in the manner prescribed in sub-clause (i) of this clause or in any other manner legally permissible; and if it is found that the contractor was paid less than what was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be duly paid by Government to the contractor, without any interest thereon whatsoever. Provided that the Government shall not be entitled to recover any sum overpaid, nor the contractor shall be entitled to payment of any sum paid short where such payment has been agreed upon between the Superintending Engineer or Executive Engineer on the one hand and the contractor on the other under any term of the contract permitting payment for work after assessment by the Superintending Engineer or the Executive Engineer

CLAUSE 30

Unfiltered water supply

The contractor(s) shall make his/their own arrangements for water required for the work and nothing extra will be paid for the same. This will be subject to the following conditions. (i) That the water used by the contractor(s) shall be fit for construction purposes to the satisfaction of the Engineer-in-Charge. (ii) The Engineer-in-Charge shall make alternative arrangements for supply of water at the risk and cost of contractor(s) if the arrangements made by the contractor(s) for procurement of water are in the opinion of the Engineer-in-Charge, unsatisfactory

CLAUSE 30 A

Alternate water arrangements

The contractor shall be allowed to construct temporary wells in Government land for taking water for construction purposes only after he has got permission of the Engineer-in-Charge in writing. No charges shall be recovered from the contractor on this account, but the contractors shall be required to provide necessary safety arrangements to avoid any accidents or damage to adjacent buildings, roads and service lines. He shall be responsible for any accidents or damage caused due to construction and subsequent maintenance of the wells and shall restore the ground to its original condition after the wells are dismantled on completion of the work.

CLAUSE 31

Hire of Plant & Machinery

The contractor shall arrange at his own expense all tools, plant, machinery and equipment (hereinafter referred to as T&P) required for execution of the work.

CLAUSE 32

Employment of Technical Staff and employees

Contractors Superintendence, Supervision, Technical Staff & Employees (i) The contractor shall provide all necessary superintendence during execution of the work and all along thereafter as may be necessary for proper fulfilling of the obligations under the contract. The contractor shall immediately after receiving letter of acceptance of the tender and before commencement of the work, intimate in writing to the Engineer-in-Charge, the name(s), qualifications, experience, age, address(s) and other particulars along with certificates, of the principal technical representative to be in charge of the work and other technical representative(s) who will be supervising the work. Minimum requirement of such technical representative(s) and their qualifications and experience shall not be lower than specified in Schedule 'F'. Even if the contractor (or partner(s) in case of firm/ company) is himself / herself an Engineer, it is necessary on the part of the contractor to employ principal technical representative / technical representative (s) as per stipulation in Schedule 'F' The Engineer-in-Charge shall within 3 days of receipt of such communication intimate in writing his approval or otherwise of such a representative(s) to the contractor. Any such approval may at any time be withdrawn and in case of such withdrawal, the contractor shall appoint another such representative(s) according to the provisions of this clause. Decision of the tender accepting authority shall be final and binding on the contractor in this respect. Such a principal technical representative and other technical representative(s) shall be appointed by the contractor soon after receipt of the approval from Engineer-in-charge and shall be available at site before start of work. All the provisions applicable to the principal technical representative under the Clause will also be applicable to other technical representative(s) The principal technical representative and other technical representative(s) shall be present at the site of work for supervision at all times when any construction activity is in progress and also present himself/themselves, as required, to the Engineer-in-Charge and/or his designated representative to take instructions. Instructions given to the principal technical representative or other technical representative(s) shall be deemed to have the same force as if these have been given to the contractor. The principal technical representative and other technical representative(s) shall be actually 57 available at site fully during all stages of execution of work, during recording/checking/test checking of measurements of works and whenever so required by the Engineer-in-Charge and shall also note down instructions conveyed by the Engineer-in-Charge or his designated representative(s) in the site order book and shall affix his/their signature in token of noting down the instructions and in token of acceptance of measurements/checked measurements/ test checked measurements. The representative(s) shall not look after any other work. Substitutes, duly approved by Engineer-in-Charge of the work in similar manner as aforesaid shall be provided in event of absence of any of the representative(s) by more than two days. If the Engineer-in-Charge, whose decision in this respect is final and binding on the contractor, is convinced that no such technical representative(s) is/are effectively appointed or is/are effectively attending or fulfilling the provision of this clause, a recovery (nonrefundable) shall be effected from the contractor as specified in Schedule 'F' and the decision of the Engineer-In-Charge as recorded in the site order book and measurement recorded checked/test checked in Measurement Books shall be final and binding on the contractor. Further if the contractor fails to appoint suitable technical Principal technical representative and/or other technical representative(s) and if such appointed persons are not effectively present or are absent by more than two days without duly approved substitute or do not discharge their responsibilities satisfactorily, the Engineer-in-Charge shall have full powers to suspend the execution of the work until such date as suitable other technical representative(s) is/are appointed and the contractor shall be held responsible for the delay so caused to the work. The contractor shall submit a certificate of employment of the technical representative(s) (in the form of copy of Form-16 or CPF deduction issued to the Engineers employed by him) along with every on-account bill final bill and shall produce evidence if at any time so required by the Engineer-in-Charge. (ii) The contractor shall provide and employ on the site only such technical assistants as are skilled and experienced in their respective fields and such foremen and supervisory staff as are competent to give proper supervision to the work. The contractor shall provide and employ skilled, semiskilled and unskilled labour as is necessary for proper and timely execution of the work. The Engineer-in-Charge shall be at liberty to object to and require the contractor to remove from the works any person who in his opinion misconducts himself, or is incompetent or negligent in the performance of his duties or whose employment is otherwise considered by the Engineer-in-Charge to be undesirable. Such person shall not be employed again at works site without the written permission of the Engineer-in-Charge and the persons so removed shall be replaced as soon as possible by competent substitutes.

CLAUSE 33

Levy/Taxes payable by Contractor

- (i) GST, Building and other Construction Workers Welfare Cess or any other tax, levy or Cess in respect of input for or output by this contract shall be payable by the contractor and Government shall not entertain any claim whatsoever in this respect except as provided under Clause 34.

- (ii) The contractor shall deposit royalty and obtain necessary permit for supply of the red bajri, stone, kankar, etc. from local authorities. If pursuant to or under any law, notification or order any royalty, cess or the like becomes payable by the Government of India and does not any time become payable by the contractor to the State Government, Local authorities in respect of any material used by the contractor in the works, then in such a case, it shall be lawful to the Government of India and it will have the right and be entitled to recover the amount paid in the circumstances as aforesaid from dues of the contractor

CLAUSE 35

Termination of Contract on death of contractor

Without prejudice to any of the rights or remedies under this contract, if the contractor dies, the Engineer-In-charge on behalf of the Executive Director, NABI shall have the option of terminating the contract without compensation to the contractor.

CLAUSE 36

If relative working in department then the contractor not allowed to tender

The contractor shall not be permitted to tender for works if officials responsible for award and execution of contracts. 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 Officer in NABI. Any breach of this condition by the contractor would render him debarred from tendering.

NOTE: By the term "near relatives" is meant wife, husband, parents and grandparents, children and grandchildren, brothers and sisters, uncles, aunts and cousins and their corresponding in-laws.

CLAUSE 37

No Gazetted Engineer to work as Contractor within one year of retirement

No engineer of gazetted rank or other gazetted officer employed in NABI engineering division or administrative duties shall work as a contractor or employee of a contractor for a period of one year after his retirement from NABI service without the previous permission of Competent Authority at NABI in writing. This contract is liable to be cancelled if either the contractor or any of his employees is found at any time to be such a person who had not obtained the permission of Competent Authority at NABI as aforesaid, before submission of the tender or engagement in the contractor's service, as the case may be.

CLAUSE 40

Apprentices Act provisions to be complied with

The contractor shall comply with the provisions of the Apprentices Act, 1961 and the rules and orders issued thereunder from time to time. If he fails to do so, his failure will be a breach of the contract and the owner may, in his discretion, cancel the contract. The contractor shall also be liable for any pecuniary liability arising on account of any violation by him of the provisions of the said Act.

Clause 41

Release of Security deposit after labour clearance

Release of Security Deposit of the work shall not be refunded till the contractor produces a clearance deposit after labour certificate from the Labour Officer. As soon as the work is virtually complete the contractor shall apply for the clearance certificate to the Labour Officer under intimation to the Engineer-in-Charge. The Engineer-in-Charge, on receipt of the said communication, shall write to the Labour Officer to intimate if any complaint is pending against the contractor in respect of the work. If no complaint is pending, on record till after 3 months after completion of the work and/or no communication is received from the Labour Officer to this effect till six months after the date of completion, it will be deemed to have received the clearance certificate and the Security Deposit will be released if otherwise due.

OTHER CONDITIONS

- 1. The safety precautions/provisions as per CPWD Safety Code mentioned in CPWD General Condition of Contract 2020 may be required to execute the work by contractor free of cost.**
- 2. Model Rules for the Protection of Health and Sanitary Arrangements for Workers to be followed by Contractor as per CPWD General Condition of Contract 2020.**
- 3. Contractor Should be follow C.P.W.D. Contractor's Labour Regulations as per CPWD General Condition of Contract 2020.**
- 4. List of acts and omissions for which fine can be imposed to be implemented on site as per CPWD General Condition of Contract 2020.**

PROFORMA OF SCHEDULES

SCHEDULE 'A'

Schedule of quantities in Vol-II.

SCHEDULE 'E'

Reference to General Conditions of contract.

Name of work:

Estimated cost of work: Rs.

(i) Earnest money: Rs. 6,217/-.(to be returned after receiving performance guarantee)

(ii) Performance Guarantee: 5% of tendered value.

(iii) Security Deposit: 5% of tendered value

or

5% of tendered value plus 50% of PG for contracts involving maintenance of the building and services/ other work after construction of same building services/ other work.

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS

Officer inviting tender: **-ED, NABI**

Definitions:

2(v) Engineer-in-Charge: - **Assistant Engineer - Civil**

2(viii) Accepting Authority: - **ED, NABI**

2(x) Percentage on cost of materials and labour to cover all overheads and profits: - **15%**

2(xi) Standard Schedules of Rates: - **CPWD DSR 2023 along with Market rates for non-scheduled items**

Clause 1

(i) Time allowed for submission of Performance Guarantee, programme chart (Time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW welfare board or proof of applying thereof from the date of issue of letter of acceptance: - **07 days**

(ii) Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above: - **07 days**

Clause 2

Authority for fixing compensation under clause 2: - **ED, NABI**

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start of work: - **07 days**

Time allowed for execution of work: - **06 weeks of award/acceptance letter by NABI.**

Authority to decide:

(i) Extension of time: - **ED, NABI**

(ii) Rescheduling of mile stones: - **ED,NABI**

(iii) Shifting of date of start in case of delay in handing over of site: - **ED, NABI**

Clause 8A

Authority to decide compensation on account if contractor fails to submit completion plans; - **ED, NABI**

Clause 11

Specifications to be followed for execution of work: -**Technical Specifications mentioned in Vol.-II of tender document.**

Clause 12

Authority to decide deviation upto 1.5 times of tendered amount: - **ED, NABI**

12.2 & 12.3

Deviation Limit beyond which clauses 12.2 & 12.3 shall apply for building work: - **as per CPWD Works Manual 2022 with up to date amendments**

Clause 16

Competent Authority for deciding reduced rates: - **ED, NABI**

Clause 32 (i)

Requirement of Technical Representative(s) and recovery Rate-----CPWD MANUAL 2022
Or
as amended from time to time by CP

SPECIAL CONDITIONS OF CONTRACT

- A. The contractor shall be required to submit in duplicate the following drawings & information for approval of the form the Engineer-In-charge of department before commissioning the work:
- 1) Complete layout dimensions for every unit / group of units with dimensions required for erection/execution purposes.
 - 2) Any other drawing / information not specifically mentioned above but deemed to be necessary for the job by the contractor.
- The above should be submitted by contractor in desired soft copy version along with colored hard copies (2 nos).
- B. Power supply/Electricity for construction purpose shall be arranged by contractor at its own. In case, it is provided by Department, contractor shall make arrangements for suitable metering of electrical consumption along with allied installation of inventory/equipment. Contractor shall not damage any inventory of Department. Contractor shall be responsible for any accident arriving as per result of non-standard installations etc.
- C. Contractor to provide all for testing:
- a) The contractor shall provide and pay for all necessary tools, instruments, gadgets and testing equipment required for conducting various tests at site apart from the test certificate from the manufacturer of material. Any defects in material and / or in workmanship detected during initial testing shall be rectified by the contractor at his own cost. Testing shall be carried out in the presence of Engineer-In-Charge or his representative to his entire satisfaction. The installation shall be commissioned after approval by Engineer-In-Charge.
 - b) Apart from test certificate, the following tests for materials to be got done by contractor from laboratory house approved by Engineer-in-charge in case in-house mechanism is not available: -

Civil/Public health Works: -

- i) Test certificate for materials
- ii) Calibration Certificate of Water Meter from NABL Lab or as per PWRDA Guidelines
- iii) Warranty Certificate of meter and battery

No extra charges shall be paid to contractor for the aforesaid testing to be done whether at site or from laboratory. Any other test on material, if felt by Engineer-in-charge shall be done by contractor without any extra payment claims.

- D. **Guarantee and defect liability period:** The work covered by this contract shall be guaranteed by the contractor against faulty material and workmanship for a period of **24 months** from the date of virtual completion or date of possession, whichever is later. Any part found defective shall be replaced/repared free of all costs by the contractor. The contractor shall guarantee that all equipment shall work satisfactorily and that the performance and efficiency of the equipment shall not be less than the specified values.

The services of the contractor's personnel if requested for short time interval (one/two days' time) during the defect liability period shall be made available free of any cost to NABI.

- E. **Maintenance:** During the guarantee & defect liability, the contractor shall provide at no extra cost necessary material and personal to carry out the repairs & routine

maintenance. The contractor shall attend to all problems experienced in the operation of the system within a reasonable time but not more than 2 working days of receiving the complaint and take corrective action immediately.

In case of failure, NABI shall have the liberty to get it done on the risk and cost of contractor & recover from security deposit.

- F. The tenderer must visit the site at NABI, sector 81, Mohali before quoting the rates. No request shall be entertained after award of work regarding site conditions whatsoever.
- G. No T&P will be issued by the department.
- H. Deduction on account of Income Tax shall be made as per prevailing rate by the relevant authority from time to time.
- I. Cost of taxes, GST, other statutory deductions shall be deemed to be included in the quote by bidder.
- J. Labour cess shall be deducted and deposited to concerned authority.
- K. The Contractor shall abide to all the statutory laws, rules regulations etc. as required for the execution of work as per the local administration/govt., central govt. (as applicable). The Contractor shall have valid licenses/NOCs for carrying out the allotted work. In case of failure, contractor shall be fully responsible for all the penalties etc. and will indemnify NABI of the same.
- L. The contractor shall abide by all the Electrical and other safety norms during the execution of work and till the completion of defect liability period.

Form of Contract

THIS CONTRACT is made on day of 2024

BETWEEN

National Agri-Food Biotechnology Institute (NABI) which is a society registered under the Societies Registration Act, XXI of 1860 and having its Office at Knowledge City, Sector-81, Mohali (hereinafter called Owner, which expression shall where the context so admits include its successors and permitted assigns) of the one part,

AND

CONTRACTOR, having its registered office at (Hereinafter referred to as CONTRACTOR) which expression shall, include its successors and permitted assigns, of the other part.

WHEREAS OWNER intends to have certain Services for - **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali.** (hereinafter referred to as PROJECT),

AND WHEREAS said CONTRACTOR is in the business of providing inter-alia management, construction works and possesses experience, expertise and knowledge in this regard,

AND WHEREAS OWNER has selected CONTRACTOR to undertake the said services hereinafter referred to and specified in this CONTRACT as “- **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali** ”.

AND WHEREAS said CONTRACTOR agrees to perform such WORKS, SERVICES as the terms and conditions for the performance of the said WORKS, SERVICES as detailed herein.

NOW THEREFORE, in consideration of the premises and the covenants set forth in this CONTRACT, OWNER & CONTRACTOR mutually agree and confirm the agreement detailed herein and witnessed as follows:

Clause -1: CONTRACT DOCUMENT

The following documents shall constitute the CONTRACT in addition to Form of Contract

1. Tender Document with terms & conditions, technical eligibility criteria.
2. Financial bid submitted by contractor.
3. All correspondence / Minutes of meetings/Negotiation etc. between NABI & CONTRACTOR after the issue of NIT document till the award of work.
4. Award letter

Clause-2 EFFECTIVE DATE OF CONTRACT

This CONTRACT shall be deemed to have come into force with effect from 7th day of issue of letter of Award by NABI

Clause-3 SERVICES TO BE PERFORMED

CONTRACTOR shall perform the SERVICES as herein specified upon the general terms and conditions and within time frame specified in the CONTRACT.

Clause-4 REMUNERATION AND CONTRACT PRICE

OWNER shall, in considerations of the SERVICES performed pay to CONTRACTOR remuneration based on work done by contractor at site.

Clause-5 CONTRACT PERIOD

On signing by OWNER and CONTRACTOR this CONTRACT shall be deemed to have come into force from the effective date of CONTRACT i.e. from 7th day of issue of letter of award by NABI and shall remain in force for 24 months beyond the completion of work at site. In the event of increase in the contract time period, nothing extra will be payable to CONTRACTOR beyond the quoted rates.

Clause-6 ENTIRE CONTRACT

The Contract documents hereof embody the entire CONTRACT between the PARTIES hereto, and the PARTIES declare that in entering this CONTRACT they do not rely upon any previous representation, whether express or implied and whether oral or written, or any inducement, understanding or agreement of any kind not included within the Contract documents, and unless herein incorporated all prior negotiations, representations, and/or agreements and understandings relating to the subject matter are hereby treated as null and void.

Clause-7 JURISDICTION & APPLICABLE LAW

Notwithstanding any other Court or Courts having jurisdiction to decide the question(s) forming the subject matter of the reference, any/all actions and proceeding arising out of or relative to the CONTRACT (including any arbitration in terms thereof) shall lie only in the Court of Competent Civil Jurisdiction in this behalf at Mohali and only the said Court(s) shall have jurisdiction to entertain and try any such action(s) and/or proceeding(s) to the exclusion of all other Courts. NABI may make any byelaw(s), rules or regulation and carry out any amendment at any stage, in the rules or procedure necessary for the accomplishment of the purpose.

The laws of India for the time being in force shall govern this CONTRACT.

Clause-8 NOTICES

1. Any notice, consent, document or other communication required or permitted to be given under this contract shall be deemed to have been validly served if it is in writing and is signed by an authorized officer of the party giving the notice, and delivered or sent by registered post or by speed mail or courier to the address of the parties set out

below or such other address as may be notified as the appropriate address from time to time for the purpose of this contract.

NABI: Executive Director, NABI or his nominee
Knowledge City, Sector-81, Mohali

CONTRACTOR:

.....
.....

2. Date of notice of instruction shall be the day on which said notice or instruction is received.

3. Any PARTY may change its notice address at any time by so advising the other PARTY thereof in writing.

IN WITNESS WHEREOF the PARTIES hereto have duly executed this CONTRACT in two originals at the place, and date as follows:

For and on behalf of
NABI

For and on behalf of
CONTRACTOR

Name
Designation
Place
Date

Name
Designation
Place
Date

Witness

Witness

1.

2.

LIST OF MAKES TO BE ADOPTED

Note: - All material makes shall be ISI marked except mentioned in BOQ & got approved from Engg-in-charge.

INDEMNITY BOND (A- MINOR MINERALS)
(ON NON – JUDICIAL STAMP PAPER OF APPROPRIATE VALUE)

NAME OF THE WORK: _____

Know all men by these presents that I/We _____ (Name of the Contractor with address) do hereby execute Indemnity Bond in favour of National Agri-Food Biotechnology Institute (NABI) having their office at Knowledge City, Sector-81, Mohali and for the project of - **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali.** under consideration.

On this _____ day of _____

This Deed witnesseth as follows

I/We _____ (Name of the Contractor) hereby do indemnity and save harmless NABI having its office at Knowledge City, Sector-81, Mohali for the project of **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali** from any claims by the State /Central Government Department responsible for collection of royalty for minor minerals like earth, red bajri, stone, kankar etc., on non-payment of royalty as due for the minor minerals used in the execution of the contract, in terms of provisions of the relevant State/central Act and Rules made thereon.

IN WITNESS WHEREOF THE _____

HAS SET HIS/HER HANDS ON THIS DAY OF _____
SIGNED AND DELIVERED BY THE AFORESAID
IN THE PRESENCE OF WITNESSES

- 1) _____
- 2) _____

INDEMNITY BOND (B- VIOLATION OF LAWS, NORMS, ACCIDENTS, DAMAGES ETC)

(On Non-Judicial Stamp Paper of appropriate value)

Name of the work _____

KNOW all men by these presents that I/We _____ (Name of Contractor with address) do hereby execute Indemnity Bond in favour of National Agri-Food Biotechnology Institute having their office at Knowledge City, Sector-81, Mohali and for the project of – **Provision of Telemetry based flow meter on bore well as per PWRDA Guidelines at NABI, Knowledge City, Sector-81, Mohali.** Mohali under consideration.

On this day of

THIS DEED WITNESSETH AS FOLLOWS:

I/We, (Name of Contractor) hereby do indemnify and save harmless NABI having their office at Knowledge City, Sector-81, Mohali from the following: -

1. Any third-party claims, civil or criminal complaints/liabilities/material/life loss during site mishaps and other accidents such as snake bites etc or disputes and/or damages occurring or arising out of any mishaps at the site due to faulty work, negligence, faulty construction and/or for violating any law, rules and regulations in force, for the time being while executing/executed civil works by me/us.
2. Any damages, loss or expenses due to or resulting from any negligence or breach of duty on the part of me/us or any sub-Contractor/s if any, servants or agents.
3. Any claims by an employee of mine/ours or of sub-Contractors if any, under the workman compensation act and employers' Liability act, 1939 or any other law rules and regulations in force for the time being and any acts replacing and/or amending the same or any of the same as may be in force at the time and under any law in respect of injuries to persons or property arising out of and in the course of execution of the Contract work and/or arising out of and in the course of employment of any workman/employee.
4. Any act or omission of mine/ours or sub-Contractor/s if any, our/their servants or agent which may involve any loss, damage, liability, civil or criminal action.

IN WITNESS WHEREOF THE HAS SET HIS/THEIR HANDS ON THIS DAY
OF SIGNED AND DELIVERED BY THE AFORESAID IN THE PRESENCE OF
WITNESSES:

- 1.
- 2.

I/53053/2023

ਪੰਜਾਬ ਜਲ ਨਿਯੰਤਰਣ ਤੇ ਵਿਕਾਸ ਅਥਾਰਟੀ
ਐਸ.ਸੀ.ਓ. ਨੰ: 149-152, ਤੀਸਰੀ ਮੰਜਿਲ,
ਸੈਕਟਰ 17-ਸੀ, ਚੰਡੀਗੜ੍ਹ।

Web Site: www.pwrda.org



Punjab Water Regulation &
Development Authority.

S.C.O 149-152, 3rd Floor, Sector 17-C,
Chandigarh.

email- secretary.pwrda@punjab.gov.in

PUBLIC NOTICE

The Punjab Water Regulation and Development Authority through its resolution no. 67.06 has amended the specifications for Digital Water Flow Meters (with telemetry and without telemetry) and Mechanical Water Flow Meters to be installed by various Water Users as provided in the Punjab Groundwater Extraction and Conservation Directions, 2023. The amended specifications are placed at **Annexure A**.

2. The units shall install the required water meters at each of its extraction structure within three months of the date of Permission. However, it is advised that the units may install water meters of required specifications immediately so as to pay Groundwater charges based on actual consumption.

Head Permission and Monitoring Division

No.72245/PWRDA-SECY0MISC/9/2021/I/53053/2023

Dated: 19/07/2023

ANNEXURE-A**A. SPECIFICATION FOR ELECTROMAGNETIC OR ULTRASONIC (DIGITAL) WATER METERS**

I.	Metering Technology:	Electromagnetic or Ultrasonic
II.	Communication Type:	LAN (for internet connectivity) or LoRa WAN and/or Cellular (GPRS / 3G / 4G/ 5G)
III.	Power Source:	<p>a. Meter and Pump/Motor should have same power source. Power source of Pump and Meter shall be interlocked in such a way that Pump/Motor shuts off if power to the meter is disconnected.</p> <p>b. Metering data shall be stored in the meter even if telemetry system is temporarily off due to power failure due to any reason. Under such scenario the Telemetry system shall be capable of recovering all such data.</p>
IV.	Sealing:	Meter and telemetry system shall have proper mechanical and electronic sealing (through software) arrangement. Any attempt to open the meter or system enclosure should physically damage the tag.
V.	Compliance:	Meter shall preferably comply to ISO 4064 Standards and shall have IP 68 ingress protection.
VI.	Metrological Specification:	<p>a. Turndown ratio of 10 or above</p> <p>b. Technology: electromagnetic or ultrasonic</p>
VII.	Size:	<p>a. DN 40 - Flow range: 0.5 lps to 5 lps</p> <p>b. DN 100 - Flow range: 3 to 30 lps</p> <p>c. DN 150 - Flow range: 13 to 130 lps</p>
VIII.	Material of Construction:	Construction material shall preferably comply to ISO 4064.

IX.	Accuracy:	Meter shall be of accuracy better than $\pm 2\%$ for the operating flow range (from 10 % to 100 % of maximum flow rate).
X.	Markings on the Body of the Meter:	a. Make/Brand, Size / Nominal Dia. b. Sl. No. / Year of Manufacture, Metrological specifications etc. c. Model Number and Certification of Calibration agency.
XI.	Meter indicator:	<p>Digital indicator shall be designed in such a way that if the protective glass is broken for a reason or another, the indicator cannot be removed from its place. The protective cover of the indicator shall be made of sturdy glass/PP/PC.</p> <p>a. It shall be of straight reading type.</p> <p>b. No. of digits and verification scale interval shall be as per provisions under ISO 4064 to meet the required accuracy.</p> <p>c. Indicative range shall be as detailed below:</p> <div style="text-align: right;"> <p>Q_3 Indicating range (minimum values)</p> </div> <div style="text-align: center;"> <p>m^3/h m^3</p> <p>$Q_3 \leq 6.3 \ 9 \ 999$</p> <p>$6.3 < Q_3 \leq 63 \ 99 \ 999$</p> <p>$63 < Q_3 \leq 630 \ 999 \ 999$</p> <p>$630 < Q_3 \leq 6 \ 300 \ 9 \ 999 \ 999$</p> </div> <p><i>Note: Q_3 is the Highest flow rate within the rated operating conditions at which the meter is to operate within the maximum permissible errors</i></p> <p>d. Totalizer shall be made of suitable material required to maintain IP 68 protection class.</p> <p>e. There shall be no multiplication factors on reading display, only the exact reading of Volume extracted shall be displayed.</p>
XII.	Parameters to monitor:	<p>Meter shall record and transmit the following parameters to a secure cloud:</p> <p>a. Timestamp</p> <p>b. Cumulative Volume</p> <p>c. Meter serial number</p> <p>d. Device last calibration date (This should be a Colored coded intimation, The date shall be displayed in Red if certificate is expired.)</p> <p>e. Tubewell ID (as provided by PWRDA)</p>

XVI.	Data acquisition:	<p>a. Meter should be equipped with complete AMR / AMI system along with Data Management software. The Data Management Software must be capable of running on a standard PC.</p> <p>b. Data Management Software should be cloud based and should have web portal access so that PWRDA can view customer data through browser.</p> <p>c. In addition to above, Data Management Software will be installed on Server placed in Central Data Base/Control Room, and the software may have option for individual customer to view their meter consumption data through Web portal. Consumer, engineer and manager screens shall be available separately.</p> <p>d. Data Collection Unit shall be capable of taking data from meter, pump etc. and should be posted in Data Management Software.</p>
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XIII.	Telemetry System:	<p>a. AMR/AMI system should have the facility to detect and communicate any abnormalities, i.e. high consumption, tampering, malfunction etc. along with necessary alarms.</p> <p>b. System will communicate in real time for battery and tamper alarms, in order to provide relevant monitoring and management data for operational purposes.</p> <p>c. Battery shall be replaceable without any data loss. d. Meters should report an alarm to the server as and when tampered.</p> <p>e. All Water Meter readings should be time stamped. f. Meter should have the capability to detect and record reverse flow separately.</p> <p>g. Meter should be capable of to, Zero (No) Flow, High Flow.</p> <p>h. AMR/AMI should operate even in electrically noisy environments with electromagnetic interference. The</p>
		<p>AMR/AMI should function even in the presence of high voltage power lines.</p> <p>i. Communication shall be encrypted to avoid tampering. j. Meter should be configurable either using the DTU or from the server.</p> <p>k. Loss of communication should be indicated in the server on real time basis.</p> <p>l. Telemetry system should be capable of storing at least 2 years of data of each Meter.</p> <p>m. In case telemetry is non-functional because of power cut or weak cellular signals, the meter should be able to store the data and transmit to the cloud as soon as the telemetry system is live.</p> <p>n. This data shall also be used for retrieval in case of any dispute between meter data and online data.</p> <p>o. In case a meter is replaced the Telemetry system should be able to co-relate the readings of the new and old meters.</p> <p>p. Telemetry system shall have an appropriate power backup of at least 30 Hours. Battery usage has to be indicated at the server.</p>
XIV.	Cloud:	Communication / telemetry data should be directly captured in a secure cloud.
XV.	Transmission frequency:	<p>a. Data should be transmitted on real time basis by Meters .</p> <p>b. All data transmitted to the Authority shall be date and time stamped.</p>

XVII.	Data Management Software:	<p>a. Web based Data Management Software must be capable of running on Windows XP Professional, Windows Vista, Windows 7 and / or the latest version of Windows Operating System or other Operating Systems such as HP Unix, Linux, Solaris, etc.</p> <p>b. Data Management Software should be cloud base and should have web portal access so that PWRDA can view customer data through browser. In addition to above, Data Management Software will be installed on Server placed in Central Data Base / Control Room, and the software may have option for individual customer to view their meter consumption data through Web portal.</p> <p>c. Data Management Software shall provide database backup/restore functions and must have real-time data access. The software should be web-enabled and alerts to be provided through email and/or SMS to the user as well as PWRDA.</p> <p>d. Data Management Software shall post the reading from the communication infrastructure on to appropriate accounts within the Database.</p> <p>e. Data Management Software should be able to display all kind of data on screen at any time.</p> <p>f. Data Management Software should have capability to add additional customer information and create customizable data fields.</p> <p>g. Telemetry software shall be compatible with the Online Metering and Billing applications of PWRDA.</p>
XVIII.	Real-time data to PWRDA:	<p>Un-tampered data from the secure cloud shall be sent to Punjab Water Regulation and Development Authority (PWRDA) real-time data management platform once it is ready. Proper cyber security measures shall be taken in the secure cloud.</p>
XIX.	Installation of meter:	<p>a. Location: The meter shall be installed at the bore-well pump discharge line before any branching and preferably as shown in Figure 1.</p> <p>b. Bypassing: There shall be no bypassing of pipe prior to the installed flow meter.</p> <p>c. Full flow: Installation of meter shall ensure that pipe shall have full water at all times. Sufficient upstream and downstream straight length shall be provided for meter (Refer to Figure 1.)</p> <p>d. Meter performance shall not get affected by external magnetic field, as specified in ISO 4064.</p> <p>e. Meters must be able to retain their accuracy, when installed in either horizontal and/or vertical planes.</p>

XX	Lab Testing/ Calibration:	<p>Meters shall be calibrated from any laboratory accredited by National Accreditation Board for Testing and Calibration Laboratories (NABL) or by an equipment certified by NABL as given below:</p> <p>i) Each meter shall either have been calibrated less than one year prior to the date of application or within three months from the grant of permission. Thereafter, the meter shall be calibrated each time before before applying for renewal of Permission.</p>
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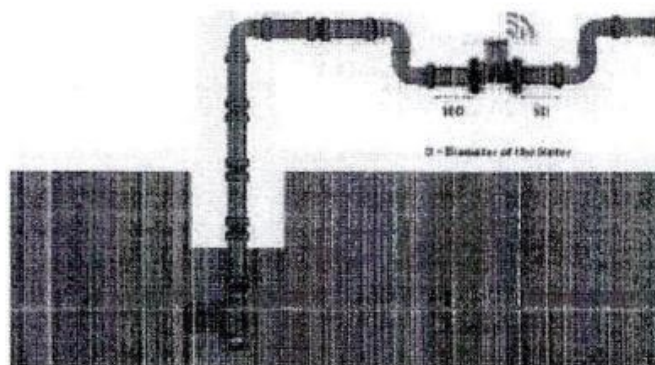


Figure. 1

Installation position of tamper proof flow' meter with telemetry at ground water abstraction structures.