JAIPUR DEVELOPMENT AUTHORITY

Bid Document

For

Construction of 5 nos Tube well, P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I)

Cost : Rs 104.14 Lacs

NIB No. 12/2015-16 **Due On: 11.09.2015**

Executive Engineer (PHE-III)
Jaipur Development Authority
Jaipur

Annexure: 1
NIB for Publication in News Paper

JAIPUR DEVELOPMENT AUTHORITY

Room No. 135, Main Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail: ee.phe3@jaipurjda.org

No:- JDA/EE/PHE-III/2015-16/D-541 **Dated: 04.08.2015**

NOTICE INVITING BID

NIB No. : EE(PHE-III)/12/2015-16

Online Bids are invited up-to 6.00 PM of 11/09/2015 for **"Construction of 5 nos Tube well, P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I)".** Details may be seen in the Bidding Document at our office or the website of State Public Procurement Portal website www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in and www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org For participating in the Bid, the Bidder has to apply for the Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

(Sudhir Verma)
Executive Engineer (PHE-III)
JDA, Jaipur

Annexure: 2

Detail NIB for uploading on SPP Portal, e-Procurement, JDA Protal & as part of NIB Document

JAIPUR DEVELOPMENT AUTHORITY

Room No. 135, Main Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 e.mail: ee.phe3@jaipurjda.org

Bid No:- JDA/EE/PHE-III/2015-16/12 **Dated: 04.08.2015**

NOTICE INVITING BID

NIB No. : EE(PHE-III)/12/2015-16

Name & Address of the Procuring Entity	➢ Name: Executive Engineer (PHE-III), Jaipur Development Authority ➢ Address: 134, Main Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan) ➢ Email: ee.phe3@jaipurjda.org
Subject Matter of Procurement	➢ **Construction of 5 nos Tube well , P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I)**
Bid Procedure	➢ Single-stage Two part (envelope) open competitive eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ Least Cost Based Selection (LCBS)
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in,www.jaipurjda.org
Website for online Bid application and payment *	➢ Website: www.jaipurjda.org ➢ For participating in the Bid, the Bidder has to apply for this Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only. o Bidding document fee: Rs. 1000/- Rupees (One Thousand only) o RISL Processing Fee: Rs. 1000/- (Rupees One Thousand only) Requisite Bid Security Deposit
Estimated Procurement Cost	➢ INR 1,04,14,000/- (Rupees One Crore Four Lacs Fourteen Thousand only)
Bid Security Deposit	➢ Amount (INR) : 2% (Rs. 2,08,280/-) of Estimated Procurement Cost, 0.5% of S.S.I. of Rajasthan, 0.5% (Rs. 52,070/-) for Bidder registered as contractor in JDA, 1% for Sick Industries, other than S.S.I., whose cases are pending with Board of Industrial & Financial Reconstruction
Pre-Bid	➢ N. A.
Start/ End Date for Bid Applying, Online Payment and Bid Submission	➢ Start Date: 12/08/2015 at 9.30 AM onwards ➢ End Date: 11/09/2015 at 6.00 PM
****Date/ Time/ Place of Technical Bid Opening**	➢ N. A.

Date/ Time/ Place of Financial Bid Opening	➢ 16.09.2015 at 3.00 PM ➢ CCC TF 309, Third Floor, Customer Care Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 (Rajasthan)
Bid Validity	➢ 120 days from the bid submission deadline
Completion period of work	➢ 4 Months
Job No.	➢ May / 057 / 2014-15

*****The amount is to be deposited online by bidder. In case the amount exceeds the online payment limit the payment may be made through RTGS/ NEFT in ICICI BANK LTD Bank Account Number 675401700586 IFSC Code ICIC0006754. After successful payment, update the UTR/ Instrument number on JDA Tender portal against the tender you want to participate. The amount deposited will be confirmed by JDA and will be updated online.

Note:

1. Bidder (authorised signatory) shall submit their offer on-line in Electronic formats both for technical and financial proposal.
2. In case, any of the bidders fails to pay the Tender Fee, BSD, and RISL Processing Fee, online (subject to confirmation), its Bid shall not be accepted.
3. To participate in online bidding process, Bidders must procure a Digital Signature Certificate (Type III) as per Information Technology Act-2000 using which they can digitally sign their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e. TCS, Safecrypt, Ncode etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC. Also, bidders must register on http://eproc.rajasthan.gov.in(bidders already registered on http://eproc.rajasthan.gov.in before 30-09-2011 must register again).
4. JDA will not be responsible for delay in online submission due to any reason. For this, bidders are requested to upload the complete bid well advance in time so as to avoid 11th hour issues like slow speed; choking of web site due to heavy load or any other unforeseen problems.
5. Bidders are also advised to refer "Bidders Manual Kit" available at eProc website for further details about the e-Tendering process.
6. Training for the bidders on the usage of e-Tendering System (eProcurement) is also being arranged by DoIT&C, GoR on a regular basis. Bidders interested for training may contact e-Procurement Cell, DoIT&C for booking the training slot.
   Contact No: 0141-4022688 (Help desk 10 am to 6 pm on all working days) e-mail: eproc@rajasthan.gov.in
   Address : e-Procurement Cell, JDA, YojanaBhawan, Tilak Marg, C-Scheme, Jaipur
7. The procuring entity reserves the complete right to cancel the bid process and reject any or all of the Bids.
8. No contractual obligation whatsoever shall arise from the bidding document/ bidding process unless and until a formal contract is signed and executed between the procuring entity and the successful bidder.
9. Procurement entity disclaims any factual/ or other errors in the bidding document (the onus is purely on the individual bidders to verify such information) and the information provided therein are intended only to help the bidders to prepare a logical bid-proposal.
10. The provisions of RTPPA Act 2012 and Rules thereto shall be applicable for this procurement. Furthermore, in case of any inconsistency in any of the provisions of this bidding document with the RTPP Act 2012 and Rules thereto, the later shall prevail.

(Sudhir Verma)
Executive Engineer (PHE-III)
JDA, Jaipur

Annexure: 3
As part of NIB Document

Process for Participation & Depositing Payment Online

JAIPUR DEVELOPMENT AUTHORITY, has decided to receive Bidding document fee, RISL Processing Fee and Bid Security Deposit (BSD) through online mode only for which the bidder has to get registered himself on JDA portal www.jaipurjda.org.

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jaipurjda.org(by depositing Rs. 500.00 online, the validity of which remains 3 (three) years).

   For participating in the Bid, the Bidder has to apply for this Bid and pay the Bid Document Fee, RISL Processing Fee and Bid Security Deposit, online only.
2. Registered on e-Procurement Portal of Government of Rajasthan www.eproc.rajasthan.gov.in for online e-Bid submission.

Methods for depositing on line amount

- Online through Internet Banking, Debit Card or Credit Card.
- In case the amount exceeds the online payment limit, the payment may be made through RTGS / NEFT / Transfer in Bank Account Number **675401700586** IFSC Code **ICIC0006754** of ICICI BANK Limited, JDA Campus

  Jaipur.

In case of RTGS / NEFT / Transfer the bidder is required to deposit the requisite amount in the dedicated bank account number as mentioned above and has to get the UTR / Reference number from the bank. This number requires to be updated whiling applying the bid on JDA portal.

While participation in the bid, a receipt will be generated through the system showing the submission details as per **Annexure-4**. The bidder is required to fill the instrument numbers for various heads on e-Procurement portal www.eproc.rajasthan.gov.in as mentioned in the receipt.

More details about Registration Process, Terms and Conditions and FAQ along with contact detail is available on JDA website www.jaipurjda.org under eServices>>JDA Tender

Annexure: 4
Template of Online Receipt as part of NIB Document

Bidder has to submitted as proof of deposited amount against the Bid on eProcurement Protal

Jaipur Development Authority

Bid Participation Receipt

Date & Time : 09/06/2015 05:13 PM

Bid Detail

Bid Id :	**6215152001**	**Procurement Entity :**	XXXXXXXXXXXXX
Bid Title :	Testing		
Bid Value :	300000	**Bid Opening Place :**	Manthan Hall, Jaipur Development Authority

Bidder Detail

Name of Entity :	XXXXXXXXXXX	Mobile:	9829012345
Registration Type:	Individual	Instrument Amount :	32500.00
Payment Mode:	Online/UTR	Payment Channel :	Payment Gateway/ICICI Branch - JDA
Instrument No :	456123789	Instrument Date :	17-06-2015

Dates Detail

Sr. No.	Event Name	Event Date
1	Publishing Date	01/06/2015 01:00 PM
2	Bid Opening Date	01/07/2015 03:00 PM

Specific Instrument Detail for eProc Rajasthan

Instrument Type: DD

Instrument Number	Head Name	Amount	Date
10000	Tender Fee	400.00	05/06/2015
10001	RISL Processing Fee	1000.00	05/06/2015
10002	Bid Security Deposit	30,000.00	05/06/2015

Issuer Detail : Jaipur Development Authority **ChallanNumber:** 641515600014

Section A-1
Instructions to Bidders

JAIPUR DEVELOPMENT AUTHORITY JAIPUR

SCHEDULE AND SPECIFICATIONS

1. Name of work:- Construction of 5 nos Tube well, P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I)

2.	NIB No.	:- E.E.(PHE-III)/12/2015-16
3.	Bid cost	:- Rs. 1,04,14,000/-
4.	Cost of the tender documents	:- Rs 1,000/-
5.	Earnest Money	:- Rs. @ ½% Rs. 52,070/- (For Contractors Enlisted in JDA, Jaipur)
		:- Rs. @ 2 % Rs. 2,08,280/- (For Contractors Enlisted in other Govt. Deptts. In Class-A/AA category)
6.	Download of tender documents	: - 12.08.2015 to 11.09.2015 (upto 6.00 PM)
7.	Date & Time of upload of tenders	:- 11.09.2015 (upto 6.00 P.M.)
8.	Date & Time of Opening tenders	:- 16.09.2015 at 3.00 P.M.
9.	Completion period of work	: - 4 Months.

SCHEDULE 'A' : INFORMATION USEFUL FOR THE CONTRACTORS :

The tenderer should see the site and fully understand the condition of the site before tendering and include all lead, lifts etc. **Percentage above/Below or equal to be quoted on the rates as given in the 'G' Schedule part-A and part-B.** The work shall be carried out in accordance with the Rajasthan PWD, PHED and JDA detailed specification and to the entire satisfaction of the Engineer-In charge of the work.

The bid will be opened only of those bidders deposit proper bid security, processing fee, tender fee, VAT clearance certificate (Valid upto Six months back from the opening of Bid) and copy of registration of contractor in required category are found to be in order. The Bid security, tender fee will be accepted only in from of demand draft/banker cheque in the name of Secretary JDA, Jaipur.

If any bidder quotes a rate below than the schedule ''G'' rates, i.e. rates below than at par, than the bidder has to deposit the difference amount i.e. amount between the rates as per at par and below, as work performance guarantee. This amount has to be deposited before the commencement of work and will be refunded after successful completion of work. Lowest bidder will be issued LOA (Letter of Acceptance) and within 7 days period he has to deposit difference amount in the from of B.G./FDR/NSC. The validity of these shall be for a period three months beyond the stipulated date of completion / actual date of completion. In case of non deposition of the same in specified period, the 2 % Bid security will be forfeited. In case work is not completed satisfactorily, the work performance security will be forfeited along with Bid security.

SCHEDULE 'B' : LIST OF THE DRAWING TO BE SUPPLIED BY THE DEPARTMENT:

The drawings may also be seen in the office of undersigned.

SCHEDULE 'C' : LIST OF THE DRAWING TO BE SUPPLIED BY THE CONTRACTOR:

List of the drawing to be supplied by the contractor NIL. But the contractor shall have to arrange at his own cost drawings required for the work after depositing necessary cost within JDA.

SCHEDULE 'D' : TEST OF THE MATERIALS :

The test of the material and workmanship shall be conducted by the JDA staff as necessary, The result of such tests should confirm to the standard laid down in the Indian standards and or the standards laid down in the detailed specification of the Public Works Deptt,. Proper quality control is required to be maintained by the contractor. Qualified personnel as required under the contractor enlistments rules duly approved by the Deptt. shall have to be engaged at site by the contractor. The deptt. reserves the right to engage such staff and recover the expenses from the contractor on such account in case of his failure to do so.

SCHEDULE 'E' : SAMPLES OF THE MATERIALS :

The samples of the material to be used by the contractor shall be deposited 15 days in advance with the Engineer In charge and be got approved by him before use.

SCHEDULE 'F' : TIME OF COMPLETION :

The work should start within Ten days of issue of work order and complete within **4 months.**

SCHEDULE 'G' : ATTACHED SEPARATELY BASED ON JDA PHE BSR 2013, JAIPUR.

SCHEDULE 'H' : SPECIAL CONDITION.

SCHEDULE 'I' : SPECIAL TERMS & CONDITION FOR DRINKING WATER TUBE WELL/PIPE LINE WORKS : ATTACHED SEPARATELY.

Annexure A : Compliance with the code of Integrity and No Conflict of Interest

Annexure B : Declaration by the Bidder regarding Qualifications

Annexure C : Grievance Redressal during Procurement Process

Annexure D : Additional Conditions of Contract

SIGNATURE OF CONTRACTOR

with full address & Mobile No. :

EXECUTIVE ENGINNER (PHE-III)
Jaipur Development Authority,
Jaipur

Section A-2
General Conditions of Contract

(Appendix XI of PWF & AR. Govt. of Rajasthan effective up to date shall be applicable)

Section A-3
Scope of work &
Special Conditions of Contract

SCHEDULE 'H'

SPECIAL CONDITIONS

1. If there is any typographical error or otherwise in the 'G' Schedule the rates given in the relevant BSR on which schedule 'G' has been prepared, shall prevail.
2. The contractor shall follow the contractor labour regulation and abolition Act 1970 & Rule 1971.
3. The JDA shall have right to cause on audit and technical examination of the work and the final bills of the contractor including all supporting vouchers, abstract etc. to be made within two years after payment of the final bills and if as a result such audit any amount is found to have been over paid/excess in respect of any work done by the contractor under the contract or any work claimed by him to have been done under this contract and found not to have been executed the contractor shall be liable to refund such amount and it shall be lawful ;for the JDA to recover such sum from him in ;the manner prescribed in special condition no. 8 or any other manner legally permissible and if it is found that the contractor was paid less then that 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 paid by the JDA to the contractor.
4. The contractor shall not work after the sunset and before sunrise without specific permission of the authority Engineer.
5. Whenever any claim against the contractor for the payment of a sum of money arises out or under the contracts, the JDA shall be entered to recover the sum by appropriating in part or whole of the security deposit of the contractor. In the event of the security being insufficient or if no security has been taken from the contractor then the balance of the total sum recoverable as the case may shall be deducted from any sum then due or which a any time there contract with the JDA should this sum be sufficient to recover the full amount recoverable, the contractor shall pay to JDA on demand the balance remaining due. The JDA shall further have the right to effect such recoveries under P.D.R. Act.
6. The rate quoted by the contractor shall remain valid for a period of 120 days from the date of opening of the tenders.
7. By submission of this tender the contractor agree to abide with all printed conditions provided in the PWD manual from 64 (Chapter 3-para 36) and subsequent modification.
8. No conditions are to be added by the contractor and conditional tender is liable to be rejected.
9. All transaction in the execution of this work and this tender will be liable to sale-tax vide section 2(B) read with sub clause (4) Sale-tax Rule, 1954.
10. If any Bid withdraws his Bid prior to expiry of said validity period given at S.No. 7 or mutually extended prior or makes modifications in the rates, terms and conditions of the tender within the said period which are not acceptable to the department or fails to commence the work in the specified period, fails to execute the agreement and fails to furnish performance guarantee the department shall without prejudice to any, other right or remedy, be at liberty to forfeit the amount of earnest money given in any form absolutely. If any contractor, who having submitted a Bid does not execute the agreement or start the work or dose not complete the work and the work has to be put to re-biding, he shall stand debarred from participating in bidding in JDA for Six Months in addition to forfeiture of Earnest Money / Security Deposit /Performance Guarantee and other action under agreement
11. Rules regarding enlistment of contractors provide that work upto five times limit for which they are qualified for tendering can be allotted to them. Therefore, before tender the contractors will keep this in mind, and submit the details of work. Bids with incomplete or incorrect information are liable to be rejected.
12. Any material not conforming to the specifications collected at site shall have to be removed by the contractor within a period of 3 days of the instructions, issued by the Engineer-Incharge in writing. Failing which, such material shall be removed by the Engineer-Incharge at risk and the contractor after expiry of 3 days period.
13. The material collected at site and paid provisionally shall remain under the watch and ward of the contractor till it is consumed, fully on the work.
14. The rates provided in Bid documents are inclusive of all Taxes, royalty.
15. No extra lead of earth/material shall be paid over and above as specified in 'G' schedule. Source/borrow pit area for earth shall have to be arranged by the Contractor at his own cost.
16. Undersigned has full right to reject any or all Bids without given any reasons.
17. Mortar of Masonry work and lean concrete will be permitted mixer with hopper.
18. As per Supreme Court decision "All contracts with Governments shall require registration of workers under the building and other construction workers (Regulation of Employment and Conditions of Service) Act, 1996 and extension of benefits to such workers under the act."
19. The Bidder are required to submit copy of their enlistment as contractor.
20. Conditions of RPWA-100 will be mandatory & acceptable to the contractor.
21. Any Bid received with unattested cutting/overwriting in rates shall be rejected and such bidder will be debarred from Bidding for three months in JDA.
22. All the provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and Rules, 2013 will be applicable. If there is any contradictions in existing special conditions and provisions of THE RAJASTHAN TRANSPARENCY IN PUBLIC PROCUREMENT ACT, 2012 and RULES, 2013 shall be applicable.

Signature of Contractor
with full address & Mobile No.

Executive Engineer (PHE-III)
JDA, Jaipur

SCHEDULE 'I'

Name of work:- Construction of 5 nos Tube well , P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I).

Scope of work:-

1. Providing, Laying, Jointing, Testing and commissioning of uPVC pipeline including valves etc and construction of 5 no tube wells.
2. Operation and maintenance for **Three** year of entire scheme (inclusive of 5 no Tube Wells also).O&M includes repairing of pump set and starter of tube well including lowering and unlowering, repair of pipe lines and other works to keep the scheme operational.

SPECIAL CONDITIONS OF THE CONTRACT (Part-A)

1. Contractor shall get the uPVC pipe inspected from the third party (CEIL, SGS, RITES) before bringing the material at site. The inspection charges shall be born by the contractor. No payment of these items shall be made before the third party inspection.
2. In case of pipe line testing shall be done as per the relevant Code and the leakage level shall not be more than as per IS 8329. Only 80% of the payment shall be released after providing, laying and jointing of pipes and special in trenches, 20% of the payment shall be released after testing as above.
3. The quantity of work can be increased or decreased. However, no guarantee is given about the actual quantity of work.
4. No extra payment shall be made to the contractor on account of excavation in collapsible strata or in hard or rocky strata. The tenderers shall have to make their own arrangement for completing the work and no claim in this respect will entertained.
5. On collection of complete material for each section the same shall be got checked by Engineer–in–Charge or his authorized representative. Such approval shall in no way release the contractor of his responsibility regarding completion of work, as per required specification until the contract is complete.
6. The electric connection, if required, for construction and testing purpose shall be arranged by the contractor at his own cost.
7. The contractor shall make his own arrangement regarding water required for the execution and testing of the work and shall also arrange for the supply of drinking water to his own employees. He shall defray all charges in this connection and should include in his rates a sufficient amount to cover such charges. All such facilities as are required now to be provided for the labour, made under labour welfare rules enforce, shall also be provided by the contractor at his own cost.
8. The contractor will be required to see that the usual hours of work are adhered too. No work shall be done after the sun set without the permission of the engineer-in-charge.
9. The security deposit of the work shall be refundable after six months from the date of completion of the work only after successful testing of the works.
10. The contractor/firm or company while executing the work will adopt all safety measures at his cost to safeguard from any loss of life and damage of public and private property. If any loss and damage is occurred, they will pay the full compensation from their own pocket to the concern. All the consequence (legal and or financial) will be born by the contractor only and JDA will not be responsible in any way.
11. Water for construction / testing purpose shall have to arranged by contractor at his own cost. If water is supplied by the department, the same shall be recovered from the contractor from each running bill at the rate of 1% of total value of pipe line laying work, In case of metered connection the charges shall be recovered on the actual consumption basis on the commercial rates.
12. The contractor shall be fully responsible for structural safety and water tightness of pipeline when tested.
13. No secured advance against material procured at site will be allowed.
14. Pipeline laying should be done in the presence an Engineer not below the rank of Junior Engineer of the JDA, and trench shall be refilled after checking of Assistant engineer. After taking layout, the contractor shall submit day to day schedule of work to the Engineer–in-charge in advance.
15. The contractor/firm or company will take utmost care to safeguard the water mains, Electric and Telephone cable existing surface drains water connections etc., while executing the work. Any damages/rectification shall be born by the contractor only
16. The contractor shall, at his own cost, arrange to provide, erect and maintain necessary display boards/ flags/banners etc. at selection points of project site giving such information as considered necessary for public awareness/ information/ safety as directed by the Engineer-in-charge.
17. Contractor shall provide sufficient number of boards at site of work indicating "JDA AT WORK" at his own cost as required by Engineer-in-charge.
18. The surplus earth and damaged materials will be immediately removed from the site of work and dumped as per instruction of Engineer-in-charge.
19. The material collected at site and paid provisionally shall remain under the watch and ward of the contractor till it is consumed fully on the work.
20. Any material not conforming to the specifications collected at site shall have to be removed by the contractor within a period of 3 days of the instructions, issued by the Engineer-in-charge, failing which, such material shall be removed by the Engineer-in-charge at risk and the contractor after expiry of 3 days period.

21. The contractor/firm/company is bound to get the workmen insured against accident from the Insurance Company at his own cost.
22. Contractor shall be the sole custodian of the men and material at work and will be fully responsible for any loss of life or other wise occurred during the execution of the works.
23. The Engineer – in – Charge or his authorized representative will carry out as and when considered necessary for the quantity and quality of work done and for the materials used in the work. The contractor, unless otherwise specified shall provide all facilities and arrangements to undertake these tests and all testing charges shall be borne by the contractor.
24. The contractor shall supply required quantity of samples desired by executive engineer, the samples so obtained shall be sent to authorized laboratory for testing, if the material is not found according to the specifications the entire lot of supply will also be rejected. The entire cost of samples and testing shall be borne by the contractor.
25. **As Built Drawings.**
    The submission of the As-built drawings of the water line work is the precondition for the final payment. The final drawings shall be submitted in one reproducible set and 3 copies on linen bound in an album of an approved size. The contractor shall submit all the completion drawings. The scale of drawing and the size of drawing shall be as per the direction of the Engineer in Charge.
26. The contractor shall be solely responsible for all kind of liaison before starting the work with PHED/Other JDA zone/JVVNL & BSNL etc. which is required to avoid any damage of already laid pipe lines, Electric, BSNL cables. The contractor shall also liaison for the inter connection work with existing PHED system.
27. Before start of work contractor has to inform concerned JDA zone officers to avoid/minimize road damage
28. The follow up / liaison for submitting Electric bill in JDA and deposited the cheque / DD to concern JVVNL, Jaipur office in every month during O & M period shall be in the scope of contractor.
29. If there is any typographical error or otherwise in the 'G' Schedule. The nomenclature and the rates as given in the relevant BSR-2013 and JDA approved items/rates on which schedule 'G' is based, shall prevail.

Special conditions for Tube well work

1. The tenderers are advised to study geographical, geological, hydrological and geo-physical condition prevailing in the jurisdiction of JDA for which they are tendering for the work of drilling of 200 mm tube well for power pump with development etc. complete. The rates shall be quoted based on their own assessment of the above features including the nature of the strata to be encountered and approachability of the site etc.
2. No extra charges for higher size drilling in collapsible strata will be paid by the JDA. The tenderers shall have to make their own arrangement for completing the work and no claim in this respect will entertained.
3. Payment will be made on completion of individual tube well in all respect including development.
4. The boring shall be accepted only when it's Yield is 7000 LPH or more for 200 mm diameter TUBE WELL at a draw down not exceeding 7 meters. Only payment of Drilling shall be made for the tube wells having discharge less than above. It is responsibility of contractor to fill up bore holes of such unsuccessful tube wells up to the ground level immediately.
5. **Inspection and Checking of work**
   As material are collected and the construction of each section of work is completed it will be checked by Engineer–in–Charge or his authorized representative and the representative of the contractor will assertion from the engineer from time to time that what part and portion he wishes to check over and pass out. Such approval shall in no way release the contractor of his responsibility regarding completion of work, as per required specification until the contract being completed.
6. **Water Supply for Work and Drilling Purposes**
   The contractor shall make his own arrangement regarding water required for the execution and testing of the work and shall also arrange for the supply of drinking water to his own employees. He shall defray all charges in this connection and should include in his rates a sufficient amount to cover such charges. All such facilities as are required now to be provided for the labour, made under labour welfare rules enforce, shall also be provided by the contractor at his own cost.
7. **Time of Working**
   The contractor will be required to see that the usual hours of work are adhered too. No work shall be done in the night without prior permission of Engineer – in – Charge except when it is absolutely necessary in the public interest. In this case contractor shall immediately inform the Engineer– in–Charge and get it approved.
8. **Release of Electric connection from JVVNL**
   The contractor shall be responsible for getting electric connection released from JVVNL on behalf of JDA. For this JDA shall provide duly signed application form which shall be produced by contractor in JVVNL office. In normal case the final payment shall not be passed till electric connection is released and testing as per norms is done, however in case of non-feasibility of electric connection area the decision of EIC shall be final. The amount required for release of electric connection shall be deposited by contractor to JVVNL office at first stage which shall be reimbursed to him on producing of original receipt of JVVNL.
9. Electric and water connections for construction and testing purpose if needed, shall be arranged by the contractor himself at his own cost.
10. The following information's shall be furnished on completion by the contractor in accordance with clause No. of 12.2 of IS 2800 (Part I) : 1991, while handling over the tube well
    a) Total depth of tube well drilled.

b) Strata chart of tube well indicating different type of soil formation met with at different depths and indicating the depths of each type of soil formation from hydrologist.
c) Samples of strata collected, neatly packed and correctly marked in sample bags.
d) Position of every joint in well assembly.
e) Method used for development.
f) Total hours of development done.
g) Developed discharge in L.P.S.
h) Discharge is totally sand free or presence of sand particles is there.
i) PPM and turbidity after development.
j) Pumping water level at developed discharge, and
k) Static water level

11. The format as per IS: 2800 (Part I): 1991 for furnishing the details is given as below-

a) Agency drilling the tube well.....
b) Location of tube well.....
c) Method of drilling adopted.....
d) Date of starting .....
e) Date of completion .....
f) Pilot hole and test hole ..... Bit Size.....

Bit type .....Hours.....from .....to .....

g) Coring done .....Bit size..... Bit type
Hours .....recovery.....from.....to.....
h) Reaming .....Bit Size.....Bit Type .....
Hours.....from.....to.....
i) Lithological data

From	To	Formation
.....	.....	.....
.....	.....	.....
.....	.....	.....

j) Total length of tube well drilled.....
k) Assembly of production well ..... Size.....
Length .....type .....
Perforation per meter .....

Housing pipe .....

Blind pipe .....

Strainer pipe.....
Bail plug.....
l) Top of tube well above/below ground level.....
m) Size of gravel.....
n) Quantity used before .....
o) Development.....Quantity used during development.....
p) Method used for development.....

Total hours of testing.....

q) Development discharge.....
r) Turbidity.....
s) Further details appended
i) Sample of strata, neatly packed in sample bags
ii) Chart of pipe assembly lowered
Results of mechanical analysis of samples of unconsolidated strata.

12. No running payment shall be made for incomplete tube well. Payment shall be made after completion of development, testing of tube well.

The above conditions may be read very carefully and adhered strictly.

I/we confirm above

Signature of contractor **Executive Engineer (PHE-III)**
JDA, Jaipur

Special Condition Of Contract (Part- "B")

Conditions Of Contract For Operation & Maintenance Of Newly developed Water Supply assets under this contract By Bidder For 36 Months.

Definitions-

- **Equipment-** is the contractors machinery and vehicles brought temporarily to the site to construct the works.
- **Facilities-** Shall mean all works and its equipment(s), components which have been supplied and/ or installed or designed, and/or constructed in the contract for works.
- **Plant-** is any integral part of the works, which is to have a mechanical, electrical, electronic, chemical functions.

1 - Administrative Provision

The following additional clauses shall apply only during the Operation and Maintenance period.

1.1 "Maintenance Standard" shall mean the requirements for maintaining, repairing, and renewing the Facility :

a) As set forth in the O & M Manual: bidder shall enclose this with the bid document
b) Required pursuant to applicable law:
c) As may be necessary for keeping the facility in a satisfactory condition such that the Facility will continuously, comply with the Operation Standard; and
d) As may be necessary to ensure that the Facility shall continuously be in an optimum condition and state in relation with the lifetime of the Facility.

1.2 "O & M Manual" shall mean the final Manual for the Operation and Maintenance of the Facility to be prepared in accordance with the Bid Documents.

Brief scope under this contract will be as described below:

1.4.1 To schedule daily operations.
1.4.2 To keep records for daily operation of tube well and leakages.
1.4.3 To keep records of staff in position.

2.0 OBJECT OF CONTRACT:

2.1 RISKS AND OBLIGATION OF THE CONTRACTOR :

FOR THE DURATION OF O & M PERIOD, CONTRACTOR SHALL RENDER AND MAKE AVAILABLE TO JDA THE FOLLOWING SERVICES :

2.1.1 Pump water from Tube wells to pipe line.

2.1.2 Supply all spares & consumables for routine, preventive & break down maintenance. No extra payment shall be made for these supplies of spares & consumables.

2.1.3 If any loss or damage happens to the Facility, or any part thereof, or materials, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other that the risks, the Contractor shall, at his own cost, rectify without loss or damage so that the Facility conforms in every

respect with the provisions of the Contract to the satisfaction of JDA. The contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligation.

2.1.4 All material for the repair and maintenance of pumping machinery, pipeline, electrical equipment shall be arranged by the contractor at his own cost.

2.1.5 Power charges shall be borne by JDA. However it shall be responsibility of the contractor to collect the bills from JVVNL seven days before due date of payment by cheque and handing over to Engineer in charge, also collecting the cheque from JDA and deposit it in JVVNL within due date. Any late payment, penalty will be on the part of contractor.

2.1.6 In case of any break down of pump machinery or starters, the contractor shall have to inform the JEN/AEN (PHE-III) concerned. In no case the information shall take more than six hours to reach the engineer in charge staff of JDA. However, simultaneously he shall make the arrangements to install the stand by units to restore the supply. The contractor shall always keep the stand by readily available units in respect of all important item/installation Viz. Pump set, starter ICTP switches etc, originally provided by JDA or supplier under the contract. The contractor shall keep stores of all essential items as site.

2.1.7 In case of power break down, the contractor shall lodge complaint to the concerned JVVNL office/ station and get the problem solved. In case of major power problem, the contractor shall immediately inform the JEN/AEN (PHE-III) concerned for seeking their help. However, it would be responsibility of the contractor to get the electric problem rectified through proper pursuance. In case, it is unavoidable to restore the water supply, the contracting agency would arrange to get it properly announce to the public taking advance action for water storage/alternative arrangement.

2.1.8 Necessary tools required in repairing of Tube Wells and conveyance vehicles such as jeep, tractor, mini truck etc. shall be arranged by the contractor at his own cost. No payment in lieu of conveyance or tools shall be admissible.

3.0 Risk & Obligations of the JDA

- For the duration of O & M Period, the employer will be responsible to bear of the costs for electricity.

4. Commencement And Duration Of O & M Contract :

4.1 The O & M period shall commence upon issuing of completion Certificate of construction phase of the project and shall Continue for a period of thirty six (36) months. Should JDA wish to propose an extension to the O & M Period, after completion of initial 36 moths O & M contract a prior notice of its intention to exercise such option shall be given to the contractor.

5. Liability:

The contractor will not in any circumstances, be liable for costs or loss of profit that JDA may incur as a result of the unavailability of the plant on account of force major.

6. Personnel :

JDA is not liable for any personnel provided by the contractor in any way and cannot be held responsible in the event of litigation of any sort between the Contractor and members of plant personnel or their representatives. Round the clock (24 hours) watch and ward shall be the responsibility of contractor throughout the contract period. In case of theft of any asset from site, contractor shall replace it at his own cost.

All decisions related to staff numbers and qualifications should be approved by JDA. The number of shifts for pump operation will be decided by the contractor in accordance with the operations requirements.

The Contractor shall undertake to comply with applicable legislation and the code of labour law on the matters of health, hygiene and safety, and shall assume responsibility for works required in the event of any change in applicable regulations.

7. Assignment :

The Contractor will not be entitled to sub-contract any part of his obligation to any third party without prior approval of JDA.

8. Completion Of The Contract :

On the date of Contract Completion or if the Contract is terminated, all the installations, works and equipment placed under the Contractor's responsibility shall be handed over to JDA or any agency, organization specified by it, at no cost, in good working order, except for normal wear and tear. JDA may perform any inspections tests or expert appraisals as may be considered necessary with a view to checking that the property is in good working order. If the works, equipment, plant and/or property is not found in working condition or acceptable condition, the contractor will replace / repair / rectify the same at his own cost to the satisfaction of JDA or third party inspector to be appointed by JDA at its cost.

At the end of O&M period, the Contractor shall be entitled to receive an Operation and Maintenance Completion Certificate within twenty-one (21) days, of the completion of the Contract.

The delivery of such Completion Certificate will relieve the Contractor from his responsibility as regard to the Operation and Maintenance and confirm that the Contractor has fulfilled all of his obligations under the contract.

9. Technical Provisions

The Contractor shall be responsible for corrective maintenance of mechanical, electrical and measuring equipment as well as miscellaneous equipment. The contractor shall properly repair during any leakage, bursts in rising and distribution pipelines, valves, specials etc. The contractor shall ensure that the water losses are not more than 5%, in pipe line network of rising main/ distribution system laid by it.

The Contractor shall be responsible for carrying out regular servicing and lubrication of all machinery and equipment, complying with maintenance instructions as defined in the Operation and Maintenance manual and ensuring that electromechanical equipment and motors operate correctly at all times.

The brief scope will be:

- Operation of submersible pumps at TW's to provide adequate water to meet the daily demand and maintenance of uPVC distribution network and to maintain all the assets created under this contract.

10.0 Consumables And Spare Parts:

Unless stipulated otherwise elsewhere in the document, for the duration of O & M period, the Contractor will be responsible for the supply and control of lubricants, spare parts and consumable materials & chemicals excluding electrical power charges, necessary for the continuous operation of the works.

The stores inventory, the issuing and recording of spare parts will be the responsibility of the Contractor.

The contractor is also responsible for providing spare parts and material required for the operation and maintenance during the operation period and shall bear the cost for the same, including the cost of storing and safeguarding.

The contractor will make all necessary arrangements to ensure the continuous supply of spare parts and material for the works, and the rate of supply of these materials shall be in such quantities and amounts as would ensure uninterrupted operation.

Spare parts shall be supplied by the Contractor without any additional charge and the same will be used during O & M period.

11. Documents To Be Provided By The Contractor :

11.1 Operation Log Book :

The Contractor shall keep a permanent record of tube well operation (log book). This log book shall be kept at the site and shall be presented on request to agents approved by JDA.

The log book shall be provided by the contractor. The contractor shall also indicate any significant modification to the set-up characteristics of the installation, shut-downs anomalies or incidents that have occurred with respect to operation.

The log book shall also contain the following :

- Daily report
- Weekly report
- Readings of meters Gauges (voltmeter, ammeter, Flow meter, pressure gauges at TW's.
- Record of break down
- Staff attendance `
- Trouble identification for the installation

Signature of Contractor

Executive Engineer (PHE-III)
JDA, Jaipur

Section A-4
Specifications of Work

SUPPLY OF UPVC PIPES, SPECIALS, VALVES AND LAYING OF PIPES FOR WATER SUPPLY

General

Standards

Except as otherwise specified in this technical specification, the Indian/International Standards and Codes of Practice in their latest version shall be adhered to for the design, manufacturing, inspection, factory testing, packing, handling and transportation of product. Should any product be offered conforming to other standards, the equipment or products shall be equal to or superior to those specified and the documentary confirmation shall be submitted for the prior approval of the Engineer in Charge.

This specification requires a reference to the following standard specifications

IS: 4985	Unplasticized PVC pipes for potable water supplies
IS: 10151	PVC and its copolymers for its safe use in contact with foodstuffs, pharmaceuticals, and drinking water
IS: 10500	Drinking water specification
IS: 12235	Methods of test for unplasticized PVC pipes for potable water supplies
IS: 4669	Methods of test for PVC resin
IS: 12818	Unplasticized PVC screen and casing pipes for bore/tube well
IS: 3400	Methods of test for vulcanized rubber (part-1 to 22)
IS: 1387	General requirements for the supply of metallurgical material
IS: 210	Grey iron casting
IS: 1536	Centrifugally cast (spun) iron pressure pipe for water, gas and sewage
IS: 1537	Vertically cast iron pressure pipe for water, gas and sewage
IS: 1538	Cast iron fittings for pressure pipes for water, gas and sewage
IS: 5531	CI specials for Asbestos cement pressure pipes for water gas & sewage
IS: 1363	Hexagon head bolts, screws and nuts of product grade A and B (part:1-5)
IS: 1367	Technical supply conditions for threaded steel fasteners
IS: 780	Sluice valve for water works purposes
IS: 2906	Specifications for sluice valves for water works purposes
IS: 318	Leaded tin bronze ingots and casting
IS: 8543	Methods of testing plastics: Determination of density of solid plastics
IS: 7181	Horizontally cast iron double flanged pipes for water, gas and sewage.
IS: 8794	CI detachable joints for use with Asbestos cement pressure pipes
IS: 5382	Rubber sealing rings for gas mains, water mains and sewers
IS: 5531	Cast iron specials for asbestos cement pressure pipes for water, gas and sewage
IS: 779	Water meters
IS: 3624	Pressure and vacuum gauges
IS: 341	Black japan, types A, B and C
IS: 9862	Ready mixed paint, brushing, bituminous, black, lead free, acid, alkali, water and chlorine resisting
IS: 1239	Mild steel tubes, tubular and other wrought steel fittings
IS: 7328	High density polyethylene materials for moulding and extrusion
IS: 4984	Specification for high density polyethylene pipes for potable water supplies; sewage and industrial effluents
IS: 554	Dimensions for pipe threads where pressure tight joints are required on the threads
IS: 1592	Asbestos cement pressure pipes - Specifications
IS: 778	Specifications for copper alloy gate, globe and check valves for water works purposes
IS: 12820	Dimensional requirements for rubber gaskets for mechanical joints and push on joint for use with cast iron pies and fittings for carrying water, gas and sewage.
IS: 9523	Specification for DI fittings for pressure pipes for water, gas, and sewage.
ISO: 2045	Single socket for uPVC and uPVC pressure pipes with elastic sealing ring type joints - Minimum depth of engagement
ISO: 2507	PVC pipes and fittings- Vicat softening temperature - Test method and specification
ISO: 3603	Fittings for PVC pipe with elastic sealing ring joints pressure test for leak profanes
ISO: 1167	Thermoplastics pipes for the transport of fluids - Resistance to internal pressure - Test method and basic specification
ISO 3451-5	Determination of Ash: Part-5 - Poly vinyl chloride
ASTM: D 2152	Standard test method for degree of fusion of extruded PVC pipe and moulded fittings by Acetone immersion
MTNL	Mahanagar Telephone Nigam Limited; Technical specifications for cable ducts.
BS: 4772	Specification for DI fittings
IS: 7634- Parts 1-3	Code of practice for plastic pipe works for potable water supplies
IS: 8329	Centrifugally cast (spun) ductile iron pressure pipes for water, gas and sewage.
IS: 12288	Code of practice for use and laying of ductile iron pipes

CPHEEO Manual on Water Supply and Treatment, III edition, Ministry of Urban Development, New Delhi- May 1999.

PVC Pipes

Scope

This section of the document specifies the required properties of the pipes made of unplasticized polyvinyl chloride (uPVC) with socket(s) suitable for elastomeric sealing ring type joints for conveyance of water under pressure for supply of drinking water. The pipes are intended to be used for buried water mains with ambient atmospheric temperature reaching up to 50°C and soil surface temperature rising more than 65°C. The stipulations given in this document for uPVC pipe which are not covered by any other code/standard, shall be governed by the provisions of IS 4985
The pipes will be supplied with one end plain with chamfer and other end socket suitable for elastomeric sealing ring type joints in accordance with IS: 4985.
Each pipe shall be supplied along with a rubber ring suitable for the socket for elastomeric sealing ring type joints.

Material

The material from which the pipes are made shall consist substantially of unplasticized polyvinyl chloride conforming to IS: 10151, to which may be added only those additives that are absolutely needed to facilitate the manufacture of the polymer, and the production of sound, durable pipes of good surface, finish, mechanical strength and opacity. The total quantity of additives like plasticizers, stabilisers, lubricants and fillers shall not exceed more than the percentage specified in IS 4985.The bulk density of uPVC pipe shall be 1.39 to 1.44 g/ cm^3.PVC resin of suspension grade K-66/K-67 shall be used for extrusion of uPVC pipe.

Classification

The pressure rating of pipes shall be of class-3 and class-4 in accordance with IS: 4985 with a maximum continuous working pressure at 27 ^{0}C of 6 and 8 kg/cm^2

Dimensions of the pipes and the sockets

The dimensions and tolerances of pipes shall comply to clauses of IS: 4985.
The tolerance on outside diameter and wall thickness of pipe shall be as per Table-1 given in IS: 4985.

The dimensions of the socket for elastomeric sealing ring type joint shall be in accordance with Clause 7.2.1.2 and Tables 4 and 5 of the IS 4985

The pipe shall be supplied in straight lengths of 6 m with tolerance of + 20 mm and -0 mm. The effective length of socket pipe shall be considered as shown in Figure-3 of IS: 4985.

Physical & chemical properties

The pipe shall confirm to the Clause 10 of IS 4985-2000 for its physical and chemical properties except for the density and ash content provisions which shall be as per the stipulations of Clause 1.2.2 of this chapter.

The colour of the pipes shall be dark grey.

Influence on water intended for human consumption shall be governed by IS: 12235.

All plastic and non plastic material for components of the uPVC piping system e. g. Elastomeric sealing ring, lubricants, when in permanent or in temporary contact with water which is intended for human consumption, shall not adversely affect the quality of the drinking water.

Mechanical properties

Hydrostatic strength of the pipes

The pipes and integral sealing ring will confirm to internal hydrostatic pressure in accordance with Clause 11.1 and sampling as per annex D of IS 4985

Tests and conformity criteria

Quality assurance from the manufacturer

The following in house tests shall be carried out on the raw material:
Grade (K-value)
Particle size distribution
Bulk density of resin
Bulk density of compound

The manufacturer will also have the following tests conducted from Standard Test Laboratory
Effect on water quality
Internal Hydrostatic Test (Type)

Acceptance Test

All uPVC pipes of the same size and class manufactured on a particular machine shall be considered as a lot for quality control inspection. However, the maximum size of a lot shall not be more than 1000 pipes.

The sampling procedure and scale of sampling for visual inspection and dimensional requirements shall be as per given in Annexure-D of IS: 4985.

The pipes shall be tested for lot acceptance.

The following acceptance tests shall be conducted in accordance with IS: 4985 and IS: 12235.
Visual and dimensional check
Reversion test.
Vicat Softening test
Ash Content
Bulk density
Resistance to external blows
Internal hydrostatic pressure test for pipes and joints
Opacity

Markings

Each pipe shall be clearly marked as indicated below:
Manufacturers name and trademark
Outside diameter in mm.
Class of pipe and pressure rating
Month and year of manufacturing
Length of pipe
Marking of insert depth of spigot

Each pipe shall also be marked in centre strip as circumference 1" wide at intervals not more than 3 meters to show the class of pipe.

Class 3 – Green
Class 4 – Brown

Packing and transport

The socket and spigot end of all the pipes shall be provided with tightly fitted end caps, protecting the inside of the pipes effectively against dirt etc. The end caps shall be of suitable high density (HD) plastic material in any colour other than black. They shall be fitted to the pipes prior to packing and transportation.

The pipes shall be transported to the store and site by trucks in pre packed bundles to ensure adequate protection during transport. At the time of packing and stacking of pipes the sockets shall be alternated within the pile and shall project sufficiently for the pipes to be correctly supported along their whole length. The pipes shall rest uniformly on the vehicle bed over their whole length during transport, carefully placed and firmly secured against unwarranted movement during transportation to the satisfaction of Engineer In charge.

Supply of uPVC Pipes:-

The Contractor will have to supply uPVC pipes manufactured by manufacturers having ISO 9000-2000 certification and who has been in the business of supply of uPVC pipes with elastomeric rubber ring joints and have proven record of successful supply and testing for minimum one year. The Contractor will have to present a certified photocopy of this certification for manufacturer he propose to procure his material from before starting supplies.

Rubber Rings for PVC Pipes and Specials

Scope

This section prescribes the requirements for materials used for vulcanized solid rubber sealing rings for water supply at ambient temperature. It covers rubber rings for uPVC pipes.

Material

The rubber shall be free from extractable substances which impart taste, odour or toxicity to water. The rubber or its compound shall not content toxic materials, such as compounds of mercury, antimony, manganese, lead or copper.

The rubber rings shall be vulcanized from Ethylene propylene (EPDM). The colour of material shall be black.

The rubber ring shall be long term termite resistant.

The sealing ring shall have no detrimental effect on the properties of the pipe and shall not cause the test assembly to fail the functional requirements

Appearance and homogeneity

The rings shall be homogeneous, free from porosity, grit, excessive blooms, blisters, or other visible surface imperfections. The fin or flash shall not exceed 0.4 mm and width 0.8 mm.

Rubber rings shall be made of a properly vulcanized virgin rubber compound containing no scrap or reclaim.

The surface of the rubber rings shall be smooth, free from pitting cracks, blisters, air marks, and any other imperfection that may affect its behavior in service. The body of the rubber ring shall be free from porosity and air pockets.

Dimensions and tolerances.

The profile and dimensions of the rubber ring shall be such that under normal circumstances efficient sealing can be expected for the socket dimensions.

The nominal measurements and the tolerances shall be in accordance with the figures stated by the manufacturer and they shall be laid down in a drawing.

Physical requirements.

The rubber ring shall have the ISI mark and will confirm to IS: 5382 and comply with the following physical properties when tested in accordance with IS: 3400

Properties	EPDM
Tensile Strength	11 MPa
Hardness	50, +5, -4 IRHD
Elongation at break	Min. 400%
Compression Set Test condition 27degree C., 72h, Max. permanent deformation	12%
Water absorption Test	Max. 10%
Accelerated ageing Test Hardness Tensile Strength Elongation at break	 -5 to +8 IRHD ± 20% -30% to +10%

Marking

Each sealing ring shall be permanently marked with:
The Manufacturer's name or trade mark.
The month and year of manufacture
Diameter of pipe for which the ring is suitable.
Type of rubber material

Testing

The scale of sampling and criteria for conformity shall be in accordance with IS: 5382. The following tests shall be conducted for conformity.
Hardness
Tensile strength
Elongation at break
Compression set
Accelerated ageing
Water absorption
Stress relaxation

The test pieces shall be cut from the finished product. Where this is not possible because the sample would be too small, the manufacturer shall provide test slabs from the same batch of rubber and vulcanized to the same degree and in the same manner as that of the rubber from which the rubber rings have been manufactured.

Wherever it is not possible to cut standard test piece from the rings, for determination of tensile strength and elongation at break, test piece in the shape of dumb bell as shown in Figure - 2 of IS: 5382 shall be used with the rate of traverse of moving grip as 15 cm/min.

Packing

Maximum 10 pieces of rubber ring shall be packed in one polyethylene bag. The colour of the polyethylene bags shall be preferably black or dark grey. The rubber rings packed in polyethylene bags shall be supplied in bituminized polyethylene lined jute bags to protect them from undue exposure to light and heat.

The rubber rings should also be supplied by the manufacturer of the pipes. They should preferably be manufactured by the manufacturer of the pipes. In case they are not, it will be the responsibility of the manufacturer of the pipes to have them manufactured from a suitable manufacturer under its own supervision and have it tested at his/sub contractors premises as per the contract. The pipe manufacturer will however be responsible for the compatibility and quality of the products.

Specials for uPVC Pipe System

uPVC specials

Manufacturing and type of sealing joint

All the uPVC fittings shall be fabricated from class-4 uPVC pipes only.

The socket dimensions shall be in accordance with the pipe sockets. The rubber sealing rings for pipe/specials shall be in accordance with the specifications .

Type of specials

Double sockets

The double socket special shall be suitable for elastomeric sealing ring type joint as per the enclosed drawing. The dimensions of the fitting shall be as given in Table below.

Table for dimensions of Double Sockets

S No.	Suitable for pipe OD (mm)	Min. length of fitting (h) mm	Min. spacer (l) mm
1	63	235	20
2	90	266	20
3	110	288	20
4	140	314	20
5	160	334	20
6	225	404	30
7	280	460	30
8	315	485	30

Double Socket Bends:

The fabricated bends shall be suitable for elastomeric sealing ring type joint as per the enclosed drawing. The dimensions of the double socket bends shall be as given below:

S.No.	Outside diameter in mm	Radius (r) mm	Angle of bend in degrees	L1 = L2
1	63	221	90	359
		221	45	230
2	90	315	90	469
		315	45	285
3	110	385	90	551
		385	45	326
4	140	490	90	674
		490	45	387
5	160	560	90	756
		560	45	428
6	225	788	90	1023
		788	45	562
7	280	980	90	1268
		980	45	674
8	315	1100	90	1410
		1100	45	746

Quality control tests

All the fitting shall be tested for socket dimension, workmanship/surface finish and leak tightness in accordance with for uPVC pipes.

Supply of specials

All the PVC fittings shall be supplied along with necessary rubber rings. The rubber rings shall be supplied in black coloured polyethylene bags. The fittings shall be packed and supplied in jute bags or in cardboard or wooden boxes according to their size.

The fittings should also be supplied by the manufacturer of the pipes. They should preferably be manufactured by the manufacturer of the pipes. In case they are not, it will be the responsibility of the manufacturer of the pipes to have them manufactured from a suitable manufacturer under it's own supervision and have it tested at his/sub contractors premises as per the contract. The pipe manufacturer will however be responsible for the compatibility and quality of the products.

Valves

General

The sluice valve will confirm to IS: 780/ IS: 2906.

The material to be supplied under this sub-section shall include but not be limited to the following:

All necessary fittings including bolts, nuts, gaskets, backing rings, counter flanges, jointing material, strainers etc. as required.

Sluice Valves

Scope

This section covers the requirements for non rising stem type sluice valve from 50 mm to 600 mm size. The valves will be used for water supply on line installations in upright positions, up to 450 C working temperature, with double flange and cap or hand wheel, for manual operation.

Nominal pressure and dimensions

The working pressure of the valves shall be 10 kg/cm2 (1 MPa)
The dimension and mass of the sluice valves shall be in accordance with IS: 780 for sizes from 50 to 300 mm and IS: 2906 for sizes 350 to 600 mm.
The flanges and their dimensions of drilling shall be in accordance with IS: 1538 (part-I to XXII).

Material

The material for different component parts of sluice valve shall conform to requirements given below:

S No.	Component	Material	Ref. to IS	Grade / designation
1	Body, bonnet, wedge, stuffing box, gland, thrust plate, hand wheel cap. etc.	Grey cast iron	210	FG 200
2	Stem	Stainless steel	6603	AISI 431, AISI 410
3	Wedge nut	Leaded tin bronze	318	LTB 2
4	Body seat ring, wedge facing ring	Leaded tin bronze	318	LTB 2
5	Bolt	Carbon steel	1363	Class 4.6
6	Nut	Carbon steel	1363	Class 4
7	Bonnet gasket	Compressed fiber board	2712	C
8	Gland packing	Asbestos	4687	Nil

Coating

All sluice valves shall be coated by dipping in a bath of tar base composition as given in Clause 7 of IS: 780 for sizes from 50 mm to 300 mm and Clause 8 of IS: 2906 for sizes from 350 mm to 600.

All components susceptible to corrosion attack shall be coated internally and externally. Protective coating shall always be applied to the individual components before they are assembled, following shot blasting to give good adhesion.

Marking, testing and inspection

The standard marking and packing of the valves shall be done as per Clause 10 and 11 of IS: 780. The direction of rotation for OPEN, CLOSE position shall be marked on the hand wheel and on the bonnet of the valve.

Testing of sluice valve shall be done for close end in accordance with IS: 780 for sizes from 50 mm to 300 mm and IS: 2906 for sizes from 350 mm to 600.

All the valves shall be inspected for flaw detection test in accordance with IS: 780. for sizes from 50 mm to 300 mm and IS: 2906 for sizes from 350 mm to 600.

The design, construction material, manufacture, inspection, performance and testing shall comply with all applicable Indian Standards and Codes. Nothing in the specification will be construed to relieve the supplier of this responsibility.

Air valves

Scope and general design feature

This section covers the requirements of automatic double ball air valves to be used for evacuation of accumulation of air in water mains under pressure, for the exhaust of air when such mains are being charged with water and for inlet of air when they are emptied of water.

The Air Valves shall conform to IS14845. The design shall be such that higher the rate of flow the greater the resultant down thrust keeping the ball 'glued' to its seat until the last drop of air is expelled from the pipe system.

The valves shall have an integrated sluice valve. If required, they shall be installed on a flange welded on the MS pipe / special. The possible air velocity (inflow and outflow) must be at least 10 m/s. The working pressure of the air valves shall be 10 kg / cm^2 (1Mpa).

Construction feature

The flow of air should be as unobstructed as possible. The low-pressure orifice shall be in the same axis as the main discharge/incoming airflow and must have a diameter sufficiently large.

The cone angle in the low-pressure (large orifice) chamber should be carefully calculated and there should be adequate height to allow for free movement of the vulcanite ball in the low chamber. The annulus around the low-pressure vulcanite covered ball is to be generously proportioned for discharge of air under various differential pressures.

The orifice shall be carefully profiled to allow the requisite flow of air under varying differential pressure. It shall be in moulded synthetic rubber such that even after extended contact the vulcanite covered ball does not stick to it when the line pressure becomes zero.

In the high-pressure chamber the orifice shall be in profiled in such a manner that the rubber-covered ball is not damaged even after extended contact. There should be machined guide in the chamber, which ensures that the ball travels vertically and makes contact with the nipple and seals off the orifice without fail.

Material

The material for different component parts of the air valve shall conform to requirements given below:

S No.	Component	Specifications
1	Body	Cast Iron conforming to IS: 210 GR FG 200
2	High Pressure Cover	Cast Iron confirming to IS 210 GR FG 200
3	Low Pressure Cover	Cast Iron confirming to IS 210 GR FG 200
4	Cowl	Cast iron confirming to !S 210 GR FG
5	High Pressure Orifice Plug	Stain less steel conforming to AISI 410
6	Low pressure ball	Vulcanite covered seasoned timber
7	High pressure ball	Rubber covered seasoned timber
8	Lower pressure seat ring	Dexine (Nitrile rubber)
9	Isolating sluice valve	Conforming to IS: 780 – 1984
10	Spindle for sluice valve	Stainless steel conforming to AISI 410
11	Bolts and nuts	Mild steel

The body and seat of the valve shall withstand a working pressure of 10 kg/cm^2 for at least 15 minutes.

Inspection

Third Party Inspection:

The following items of supply will be got inspected from approved inspecting agency (CEIL, SGS. RITES) at manufacturers premises before dispatch at his own cost.

1. upvc pipes

Specifications for Laying and Jointing of Pipe Line System for Water Supply

Preparatory work

The contractor will inspect the route along which the pipe line is proposed to be laid. He should observe/ find out the existing underground utilities/ construction and propose an alignment along which the pipeline is to be laid. He should make all efforts to keep the pipe as straight as possible with the help of ranging rods. Wherever there is need for deviation, it should be done with the use of necessary specials or by deflection in pipe joints (limited to 75% of permissible deflection as per manufacturer). The alignment as proposed should be marked on ground with a line of white chalk and got approved from Engineer In-Charge. The Contractor will than prepare an L-Section along this alignment showing the location of proposed pipeline. The L-section should be got approved from the site Engineer. The position of fittings, valves, should be shown on the plan.

Alignment and the L-Sections

The alignments, L-section (depth of laying) and location of specials, valves and chambers may be changed at site in co-operation with and after approval of the Engineer in Charge. The minimum cover to the top of the pipe shall be 1 m.

Standards

Except as otherwise specified in this technical specification, the Indian Standards and Codes of Practice in their latest version, National Building code, PWD specification of the state of Rajasthan and Manual of water supply of GOI shall be adhered to for the supply, handling, laying, installation, and site testing of all material and works.

Tools and equipment

The contractor has to provide all the tools and equipment required for the timely, efficient and professional implementation of the work as specified in the various sections of the contract and as specified by the instructions of manufacturers of the pipes and other material to be handled under this contract. On demand he shall provide to the Engineer in Charge a detailed list of tools and equipment available. If in the opinion of the Engineer in Charge the progress or the quality of the work cannot be guaranteed by the available quantity and type of tools and equipment the contractor has to provide additional ones to the satisfaction of the Engineer in Charge. The Contractor will always have a leveling instrument on site.

Handling and laying of pipes

Transportation of pipes and specials & Storage:-

The Contractor has to transport the pipes and other materials from manufacturer to the site of laying as indicated by the Engineer in Charge. Pipes should be handled with care to avoid damage to the surface and the socket and spigot ends, deformation or bending. Pipes shall not be dragged along the ground or the loading bed of a vehicle. Pipes shall be transported on flat bed vehicles/trailers. The bed shall be smooth and free from any sharp objects. The pipes shall rests uniformly on the vehicle bed in their entire length during transportation. Pipes shall be loaded and un-loaded manually or by suitable mechanical means without causing any damage to the stacked pipes.

The transportation and handling of pipes shall be made as per IS 12288. Handling instructions of the manufacturers of the pipes shall be followed. All precautions set out shall be taken to prevent damage to the protective coating, damage of the jointing surfaces or the ends of the pipes.

Whatever method and means of transportation is used, it is essential that the pipes are carefully placed and firmly secured against uncontrolled movement during transportation to the satisfaction of engineer in charge.

Cranes or chain pulley block or other suitable handling and lifting equipment shall be used for loading and un-loading of heavy pipes. However, for pipes up to 400 mm nominal bore, skid timbers and ropes may be used. Where using crane hooks at sockets and spigot ends hooks shall be broad and protected by rubber or similar material, in order to avoid damage to pipe ends and lining. Damage to lining must be repaired before pipe laying according to the instructions of the pipe manufacturer. Pipes shall not be thrown directly on the ground or inside the trench.

When using mechanical handling equipment, it is necessary to employ sufficient personnel to carry out the operation efficiently with safety. The pipes should be lifted smoothly without any jerking motion and pipe movement should be controlled by the use of guide ropes in order to prevent damage caused by pipes bumping together or against surrounding objects.

Rolling or dragging pipes along the ground or over other pipes already stacked shall be avoided.

The pipe should be given adequate support at all times. Pipe should be stored on a reasonably flat surface free from stones and sharp projections so that the pipe is supported through out its length. In storage, pipe racks should provide continuous support and sharp corners of metal racks should be avoided. Socket and Spigot pipes should be stacked in layer with sockets placed in alternate ends of the stack to avoid lop sided stacks.

Pipes should not be stored inside another pipe. On no account the pipes should be stored in stressed or bent condition or near the sources of heat. Pipes should not be stacked more than 1.5 m high and pipes of different sizes and classes should be stacked separately. The ends of the pipes should be protected from abrasion. The pipes should be protected from U.V. rays and excessive heat at all times. Their storage facility should be well ventilated.

The Contractor shall provide proper and adequate storage facilities to protect all the materials and equipment's against damage from any cause whatsoever and in case of any such damage/theft, the Contractor shall be held responsible.

The contractor will lay the pipelines along the alignments as per the layout given by the Engineer in Charge. The layout shall be given keeping in view the information available regarding existing services like water lines, sewers, telephone and electric lines/ cables. The contractor shall take all due care to avoid damage to any such services and, in case of any damage occurring to them in progressing the work, the Contractor shall make good the same at his own cost. No additional time shall, however, be allowed on this account.

Stringing of pipes along the alignment

The pipes shall be laid out properly along the proposed alignment in a manner that they do not create any significant hindrance to the public and that they are not damaged.

Stringing of the pipe end to end along the working width should be done in such a manner that the least interference is caused in the land crossed. Gaps should be left at intervals to permit the passing of equipment across the working area. Pipes shall be laid out that they remain safe where placed and that no damage can occur to the pipes and the coating until incorporated in the pipeline. If necessary, pipes shall be wedged to prevent accidental movement. Precautions shall be made to prevent excessive soil, mud etc. entering the pipe.

Generally, the pipes shall be laid within two weeks from the date of their dispatch from the manufacturer /store .

Pipe trench

Trench excavation

The trench excavation of pipeline shall be in accordance with IS 12288. Pipe trenches shall be excavated to the lines and levels shown on the drawings or as directed by the Engineer in Charge. The depth of the excavated trench shall be as given

in the drawings or as directed by the Engineer in Charge. The width of the trench at bottom between the faces of sheeting shall be such as to provide 200 mm clearance on either side of the Diameter. No pipe shall be laid in a trench until the section of trench in which the pipe is to be laid has been approved by the Engineer in Charge.

The depth should be sufficient to provide a cover not less than 1000 mm. It may be necessary to increase the depth of pipeline to avoid land drains or in the vicinity of roads, railways or other crossings. Care should be taken to avoid the spoil bank causing an accumulation of rainwater.

The bottom of the trench shall be trimmed and leveled to permit even bedding of the pipes. It should be free from all extraneous matter, which may damage the pipe or the pipe coating. Additional excavation shall be made at the joints of the pipes, so that the pipe is supported along its entire length.

All excavated material shall be stacked in such a distance from the trench edge that it will not endanger the work or workmen and it will avoid obstructing footpaths, roads and driveways. Hydrants under pressure, surface boxes, fire or other utility controls shall be left unobstructed and accessible during the construction work. Gutters shall be kept clear or other satisfactory provisions made for street drainage, and natural watercourses shall not be obstructed.

To protect persons from injury and to avoid damage to property, adequate barricades, construction signs, torches, red lanterns and guards, as required, shall be placed and maintained during the progress of the work and until it is safe for traffic to use the roadways. All materials, piles equipment and pipes which may serve as obstruction to traffic shall be enclosed by fences or barricades and shall be protected by illuminating proper lights when the visibility is poor.

As far as possible, the pipe line shall be laid below existing services, like water and gas pipes, cables, cable ducts and drains but not below sewers, which are usually laid at greater depth. Where it is unavoidable, pipeline should be suitably protected. A minimum clearance of 150 mm shall be provided between the pipeline and such other services.

Trees, shrubbery fences, poles, and all other property and surface structures shall be protected. Tree roots shall be cut within a distance of 50 cm from pipe joints in order to prevent roots from entering them. Temporary support, adequate protection and maintenance of all under ground and surface structures, drains, sewers and other obstructions encountered in the progress of the work shall be provided. The structures, which will be disturbed, shall be restored after completion of the work.

Where water forms or accumulates in any trench the Contractor shall maintain the trench free of water during pipe laying.

Wherever necessary to prevent caving, trench excavations in soils such as sand, gravel and sandy soil shall be adequately sheeted and braced. Where sheeting and bracing are used, the net trench width after sheeting shall not be less than that specified above. The sides of the excavation shall be adequately supported at all times and, except where described as permitted under the Contract, shall be not battered.

The Engineer in Charge in co-operation with the Contractor shall decide about the sheeting/ bracing of the trench according to the soil conditions in a particular stretch and taking into account the safety requirements of the Contractor's and Engineer- In-Charge's staff. Generally, safety measures against caving have to be provided for trenches with vertical walls if they are deeper than 2.0 m.

Trench excavation to commensurate with the laying progress

The work of trench excavation should be commensurate with laying and jointing of the pipeline. It should not be dug in advance for a length greater than 500 m ahead of work of laying and jointing of pipeline unless otherwise permitted by the Engineer in Charge. The Contractor has to ensure the following:

- safety protections as mentioned above have to be incorporated in the work process
- hindrances to the public have to be minimized
- the trench must not be eroded before the pipes are laid
- the trench must not be filled with water when the pipes are laid
- the trench must not be refilled before laying of the pipes

The bed for the laying of the pipes has to be prepared according to the L-Section immediately before laying of the pipes.

Bedding of the pipes

The trench bottom shall be even compact and smooth so as to provide a proper support for the pipe over its entire length, and shall be free from stones, lumps, roots and other hard objects that may injure the pipe or coating. Holes shall be dug in the

trench bottom to accommodate sockets so as to ensure continuous contact between the trench and the entire pipe barrel between socket holes.

Laying and jointing of pipes

General

The pipes will be cleaned in the whole length with special care of the spigot and sockets on the inside/ outside to ensure that they are free from dirt and unwarranted projections. The whole of the pipes shall be placed in position singly and shall be laid true to profile and direction of slope indicated on longitudinal sections. The pipes shall be laid without deflection in a straight alignment between bends and between high and low points. Vertical and horizontal deflections between individual pipes need the approval of the Engineer in Charge. In no case the deflection shall be more than 75 % of those recommended by the manufacturer.

Before pipes are jointed they shall be thoroughly cleaned of all earth lumps, stones, or any other objects that may have entered the interior of the pipes, particularly the spigot end and the socket including the groove for the rubber ring.

Pipes and the related specials shall be laid according to the instructions of the manufacturers and using the tools recommended by them.

Cutting of pipes shall be reduced to a minimum required to conform to the drawings. Cutting has to be made with suitable tools and according to the recommendations of the manufacturer. The spigot end has to be chamfered again at the same angle as the original chamfered end. Cutting shall be perpendicular to the Centre line of the pipe. In case of ductile iron pipes the cut and chamfered end shall be painted with two coats of epoxy paint. If there is no mark for the insertion depth on the spigot end of the (cut) pipe it shall be marked again according to the instructions of the manufacturer.

Before pipes are jointed they shall be thoroughly cleaned of all earth lumps, stones, or any other objects that may have entered the interior of the pipes, particularly the spigot end and the socket including the groove for the rubber ring. End caps are removed only just before laying and jointing

All specials like bends, tees etc. and appurtenances like sluice or butterfly valves etc. shall be laid in synchronization with the pipes. The Contractor has to ensure that the specials and accessories are ready in time to be installed together with the pipes.

At the end of each working day and whenever work is interrupted for any period of time, the free ends of laid pipes shall be protected against the entry of dirt or other foreign matter by means of approved plugs or end caps.

When pipe laying is not in progress, the open ends of installed pipe shall be closed by approved means to prevent entrance of trench water and dirt into the line.

No pipe shall be laid in wet trench conditions that preclude proper bedding, or when, in the opinion of the Engineer in Charge, the trench conditions or the weather are unsuitable for proper installation.

The pipeline laid should be absolutely straight unless planned otherwise. The accuracy of alignment should be tested before starting refilling with the help of stretching a string between two ends of the straight stretch of pipes to rectify possible small kinks in laying.

Special Cast Iron fittings and Accessories

Normally when pipeline is laid, a certain number of cast iron fittings such as tees, bends, reducers, etc, and special fittings such as air or sluice valves are required.
Laying of Fittings – All cast iron fittings shall be plain ended to suit the outside diameter of Asbestos cement pressure pipes and to the class and diameter of pipe manufactured. When using such cast iron fittings, they are jointed by cast iron detachable joints only. For cast iron specials having flanges, they are jointed in the pipeline with cast iron flange adaptors having one end flanged and the other plain ended.

Anchorages - It should particularly be noted that the cast iron joints do not hold pipe ends within it firmly. During working or test pressure, there will be tendency for the pipe ends or special ends to slip out of the joint, more so with the case of blank end cap used for closure of pipeline and all degree bends and tees. In order to keep them firmly in the pipeline, anchoring of these specials are necessary against the direction of thrust.

The anchorage shall consist of either concrete cast-in-situ or masonry built in cement mortar. The anchors shall be extended to the firm soil of the trench side. The shape of the anchors will depend on the kind of specials used. They shall be spread full width of trench and carried vertically by the side and over the special to about 15 cm. The bearing area on sides of the trench will be proportional to the thrust and to bearing capacity of the sides of the trench.

Back filling and tamping

The soil under the pipe and coupling shall be tamped in order to provide a firm and continuous support or the pipeline. Tamping shall be done either by tamping bars or by using water to consolidate the back fill material.

The initial back fill material used shall be free of large stones and dry lumps. In stony areas the material for initial back fill can be shave from the sides of the trenches. In bogs and marshes, the excavated material is usually little more than vegetable matter and this should not be used for bedding purposes. In such cases, gravel or crushed stone shall be hauled in.

The initial back fill shall be placed evenly in a layer of about 100 mm thick. This shall be properly

Consolidated and this shall be continued till there is a cushion of at least 300 mm of cover over the pipe.

If it is desired to observe the joint or coupling during the testing of mains they shall be left exposed.

Sufficient back fill shall be placed on the pipe to resist the movement due to pressure while testing.

Balance of the back fill need not be so carefully selected as the initial material. However, care shall be taken to avoid back filling with large stones, which might damage the pipe when spaded into the trench.

Pipes in trenches on a slope shall have extra attention to make certain that the newly placed back fill will not become a blind drain in effect because until back fill becomes completely consolidated, there is a tendency for ground or surface water to move along this looser soil resulting in a loss of support to the pipe. In such cases, the back fill should be tamped with extra care and the tamping continued in 100 mm layers right up to the ground level.

Anchoring of the pipeline

Thrust blocks shall be provided at each bend, tee, taper, end piece to prevent undue movements of the pipeline under pressure. They shall be constructed as per actual design and approval of Engineer in Charge according to the highest pressure during operation or testing of the pipes, the safe bearing pressure of the surrounding soil and the friction coefficient of the soil.

Testing of the upvc pipelines

Leakage Test

After laying and jointing the pipeline shall be tested for tightness of barrels and joints, and stability of thrust blocks in sections approved by the Engineer in Charge. The length of the sections depends on the topographical conditions. Preferably the pipeline stretches to be tested shall be between two chambers (air valve, scour valve, bifurcation, other chamber). At the beginning, the Contractor shall test stretches not exceeding 2 km. After successful organization and execution of tests the length may be extended to more than 2 km after approval of the Engineer in Charge.

The water required for testing shall be arranged by the contractor himself. The Contractor shall fill the pipe and compensate the leakage during testing. The Contractor shall provide and maintain all requisite facilities, instruments, etc. for the field testing of the pipelines. The testing of the pipelines generally consists in three phases: preparation, pre-test/saturation and test immediately following the pre-test. Generally, the following steps are required which shall be monitored and recorded in a test protocol if required

The testing condition for the pipeline shall be as per the test pressure and the condition laid out in relevant IS codes for uPVC pipes. The field testing pressures for pipelines & duration of test shall be follows:

S. No.	PIPE MATERIAL	MAXIMUM WORKS PRESSURE	TEST PRESSURE	TEST DURATION
1.	uPVC pipes CL-3	6.0 Kg/ Sq cm	1.5 Times The Working Pressure	6 Hours (Pipe to be filled for 24 hours before testing)

Acceptance Criteria for uPVC pipes shall be that the required addition of water to maintain pressure is not more than
Q = 4.5 liter per 1.6 Km per 25 mm of pipe diameter per 30 m test pressure for 24 Hours
The sectional tests shall be accepted if the quantity of water required to be added to maintain test pressure during test duration of
No section of the pipe work shall be accepted by the Engineer in Charge until all requirements of the test have been obtained.

On completion of a satisfactory test any temporary anchor blocks shall be broken out and stop ends removed. Backfilling of the pipeline trench shall be completed. After sectional testing, it will be the responsibility of the contractor that the pipelines be filled with water upto commissioning of the system.

On completion of a satisfactory test any temporary anchor blocks shall be broken out and stop ends removed. Backfilling of the pipeline trench shall be completed. After sectional testing, it will be the responsibility of the contractor that the pipelines be filled with water upto commissioning of the system.

Failure to pass the test

All pipes or joints which are proved to be in any way defective shall be replaced or remade and re-tested as often as may be necessary until a satisfactory test shall have been obtained. Any work which fails or is proved by test to be unsatisfactory in any way shall be redone by the Contractor.

SPECIFICATIONS FOR TUBE WELL WORK

Specification and scope of tube well work

The work of construction of tube wells is to be done in JDA jurisdiction and accordingly G schedule has been prepared.

The work of drilling of bores is suitable for 200mm diameter casing pipes and strainer pipes in all type of soils and rocks including fixing of casing and strainer pipes, Gravel Packing, Wrapping coir rope and development by compressor. The boring will be done as per relevant IS : 2800-1979, 4097-1970, 4270-1967, IS : 8110 amended up to date and any other relevant code applicable along with notifications.

Definition of Strata

ROCKY AREA SHALL MEAN, AREA WHERE THE STRATA ESSENTIALLY COMPRISES OF THE ROCK FORMATION WITH OVER BURDEN OF LESS THAN 30 M AND THE AQUIFER IS TO BE TAPPED IN ROCK. THE ROCK MAY BE WITH OR WITHOUT FISSURES AND FAULTS, JOINTS AND BEDDING, PLANES MAY HAVE FRACTURED AND WEATHERED ZONES, ROCKS MAY BE SOFT, MEDIUM OR HARD AND MAY COMPRISE OF SHALES, SAND STONE, LIME STONE, DOLOMITE, QUARZITE, BASALTS, GRANITE, SCIESTS, FILLITIES SLATES, CHEISSES ETC. AND THEIR INTERCALATION, INTRUSIVE AND CONGLOMERATES OF THESE HUT SHALL EXCLUDE CLAYS, SAND SILTS, PEBBLES CABLES, MURRUM AND SILT STONES. THE DEPTH OF DRILLING CAN BE INCREASED OR DECREASED AS PER SITE CONDITIONS.

All alluvium area shall mean, areas where the strata comprises of loose, unconsolidated material like clay, silts, sands, gravel's, pebbles, cobbles 10 cms. Diameter and 2 M thickness and boulders (Upto beds of 1.0 meter thickness and less than 15 cms. Diameter)

Installation of well assembly

Aquifer study is to be done by the tenderer and accordingly he has to design the gravel pack, blind pipe, housing pipe and slotted pipe to be used shall be made of mild steel conforming to IS : 4270/1967 and approved class. The pipes may be seamless or electric resistance welded (ERW) with specified threads.

The slotted pipe to be used shall be lined slots (Vertical or Horizontal) with an opening area equal to as arrived at is design. The slots size should not exceed the thickness of slotted pipe. This slots size shall be specific depending on the result by actual mechanical analysis of the aquifer samples, which shall have to be done by the tenderer. The length of the slotted pipe/strainer shall normally be not less than 3 M. It shall actually be arrive at from the thickness of the aquifer encountered. It is not necessary to screen the whole part of the aquifer and such depth should be drilled so as to give at least 7000 LPH discharge for 200 mm diameter tube well.

The slotted pipe shall be attached to the housing pipe/blind pipe by means of strong M.S. Coupling/reducers as the case may be of quality ad design approved by Engineer-in- charge. The bottom plow shall be such as to suit the design of pipe assembly.

The design of well assembly should be got approved from the Engineer-in-Charges before lowering is started.

Painting

Before lowering, coat of approved corrosion resistance paint shall be given to all the mild steel parts of the well assembly.

Gravel Packing

Gravel to be used shall be confirming with IS : 2800 (Part-II) 1979(latest). These shall be hard, well rounded and of reasonable size free from dust and foreign material as well as flaky particles. The uniformity coefficient should not be more than 2 (uniformity coefficient = D_{60}/D_{10}.

The size of gravel shall finally depend on the mechanical analysis of the aquifer. The Gravel will have to be cleaned and washed before use. A tolerance of 10% shall be allotted in respect of grading of Gravel.

The Gravel filling of the annular space between the pipe assembly and the bore holes shall start from the bottom of bore holes and shall be done upto ground level. The gravel packing will have to be done as per IS : 2800.

Development of the tube well

The tube well may be developed as per clause 9.3 of IS : 2800 (Part I)-1991 (latest). The water coming out should be silt/sand free after completion of development. The tube shall be developed by using a compressor of minimum capacity 600 cfm and pressure 7.0 kg/cm^2. Final discharge should be totally sand free as per IS: 2800 (Part –I) 1991 (amended upto date). The payment shall be made for actual working hours for development subject to ceiling of maximum 24 hours for each tube well. The contractor has to bear the cost of development work needed beyond 24hrs, at his own cost.

Lowering of Riser pipe in Tube Well

Providing & lowering of G.I. Pipes, flange pipe including rubber washer and nuts of 8 mm dia complete in all respect I.S.1239 Marked. B Class 50/65 mm diameter shall be lowered in required length. The flange shall have required suitable size of holes and slot for cable.

Specifications for submersible pump sets

Supply of submersible pumping sets comprising of submersible motor of sufficient horse power coupled to a pump of duty condition as specified in the schedule of rates, having detailed specification given below:

Description:

The submersible pump set should be in accordance with the provision of IS 8034-1976 (specification for submersible pumps sets for clear cold fresh water) amended or revised upto date.

The electric motor is to operate through 3 phase, 50 c/s A.C. Supply of 400 +10% volts at 3000 rpm (synchronize).

The pump sets shall normally be installed in bore wells and should be suitable for grounding water generally available in Rajasthan. The water to be handled by the pump sets may have total solids 3000 ppm (max), turbidity 50 ppm chlorides 1000ppm (max) pH value between 6.5 to 8.5.

The discharge casing, suction casing, and pump bowl shall be made from cast iron grade FG 200 IS 210-1978. The pump shaft and bearings sleeves are to be made of stainless steel as per IS 1570(part IV) 1972 or CA 6mm confirming to ASTMA 296 with 12 % chrome steel carbon content upto 0.1% for mixed flow impellers materials should be chrome steel having minimum hardness of 200 BHN , or Aluminum Bronze as per grade AB- II or BS 1400. In case of radial flow impellers material may be aluminum bronze with hardness 140-180 BHN. The casing wear ring (where required and bearing bush shall be made from lead tin bronze grade 4 of IS 318-1981.

The motor starter should be easily rewire able and winding should be easily accessible to facilitate checking and locating of any fault without disturbing the full winding and to replace the default coils. It should be possible to rewind the motor with readymade pre-tested coils.

The stator body should preferably be shrunk fitted instead of being only press fitted. The stator body should be rigidly welded on the stamping assembly and adequate to arrangement of stamping inside the stator body preferably by providing matching grooves in stamping assembly and stator body. Metal rings with rounder fingers should be provided on both ends of stampings. Threaded joints in the motor should be avoided to prevent damage due to rest. Bearing housing should be threaded but located in spigot and by suitable tie bolts. The motor as well as stator should be impregnated under vacuum and the motor should be backed repeatedly under controlled conditions to ensure long life of varnish and give a hard finish to the motor surface. The rotor shaft should be provided with stainless steel sleeves in the bearing portion. The rotor should be made of corrosion resisting material.

The thrust bearing should be water lubricated and of hydro dynamic Mitchell type and should be able to take all untoward loads at most unfavorable running conditions. It should have sieving metallic thrust pads.

The rotating element (as assembled rotors) of pump should be dynamically balanced at high speeds.

The manufacture should have facilities for dynamic balancing at high speed, vacuum impregnated of rotors and stators high tension electrical testing and pump testing. Details in this regard be enclosed with tender.

Performance curves of various pumps offered should be enclosed. The curve should he for duty range showing discharge/head, discharge/efficiency, discharge/BHP and discharge /submergence relations.

The cable shall conform to IS 694 (Part I) 1964 and IS 694 (Pt. II) 1964 specifications for PVC insulated cables (for voltage upto 1100 volts) Pt. I with copper conductors.

The coupling shall be preferably of mesh type rigid sleeves coupling of stainless steel non slip type with matching groove collar and key way arrangement.

The duty point of pumps shall be located near the peak efficiency and three should not be any steep fall in QHH V/s efficiency curve in the head range of 10% and 25%.

Efficiency – The efficiency, motor efficiency and overall efficiency should be clearly mentioned in the offer. Please note that no negative tolerance in overall efficiency with be allowed.

The motor shall conform to IS 9283-1979 and IS 325-1978 (amended up to date) the later a far it can be applied to submersible motors regarding electrical performance. The motor shall not get overloaded throughout the working range of pump even when voltage is as low 358 volts.

Inspection :- A certificate of inspection of submersible pumping set will be produced by contractor along with the bill to Engineer-in-Charge. All the testing and inspection charges will be paid by the contractor himself.

Specifications for feeder pillar panels:

Feeder Pillar Panels suitable for 10.0 H.P. Electric Motors complete with star delta starters and DOL starter upto 5 HP Electric motor and other accessories as detailed below operated on 3 phase 50 cycles A.C. supply 415 volts.

1 No. push button operated air Break fully automatic Star Delta Starters in sheet steel enclosure for 10.0 H.P. electric motors confirming to IS: 8544 (amended upto date).

Motor	Contactor Rating		
	Main	Delta	Star
Upto 10.0 H.P.	16 Amps	16 Amps	16 Amps

1 No. Miniature Circuit breaker (TPN) confirming to IS: 8828-1978 of adequate capacity, 32 Amp
1 No. 0-500 volts 100mm diameter round projection volt meters class 1.5 with selector switch confirming to IS: 1248 (amended upto data)

1 No. 100mm diameter round projection mounting type ammeter of suitable range class 1.5 with selector switch (details shown below) confirming to IS: 1248 (amend upto date) 0 to 30 amp range

3 Nos. Indicator Lamps RYB indication.

Provision for supply and fixing of power capacitor 4 KVAR ISI mark with the panel, space of requisite standard KWH meter may be provided in the panel with thick bakelite sheet for fixing of KWH meter

3 Nos. 415 volts rewirable type fuses (for 32 Amp)
1 No. Danger plate

1 no. Name plate.

1 No. Single phase preventor based on negative sequence voltage sensing to protect the submersible motor against single phasing should have facility to automatically restart the pump on resumption of power supply with auto/manual selection.

Space for Flow meter display unit.

Space for Pressure Display.

Neutral link.
Connecting strip 60 Amp 9 way

The above accessories and equipment will be mounted in a floor mounting type sheet shall enclosures made out of 16 gauge MS sheet and having locking arrangement and 2 Nos. earthing bolts, The complete panels board should be synthetic enamel painted with two coats after applying basic primer over washed and clean metal surface. The panel board will be fixed/mounted on a angle iron framework made of 35x35x5mm angle iron so that the same could be floor mounted and installed at site. The panel will be fully factory wired and ready for connection to the equipment.

Starters

Push button operated air break starter fully automatic suitable for starting squirrel cage induction motor working on 3 phase 415 Volts (+10% to –15%) 50 c/s A.C. supply each starter shall comprising as per IS:8444 (amended upto date)

(a) Over Current Device:

1 No. Triple pole thermal bimetallic/over current relay accurately calibrated and temperature compensated with differential system for phase failure and unbalanced load protections.

(b) Control Assembly

I. It shall confirm to IS: 2959-1975 and shall comprise of 3 triple pole contractors of specified capacity one for main, one for the star position and one for delta position. Each contractor shall be provide with 1 No. And 1 NC auxiliary unit.

II. Vacuum impregnated machine wound and backed coil with inter layer paper insulation/epoxy cost suitable for tropical conditions. The coil should be safe from mechanical damage in case of accidental mishandling and should have high resistance to moisture and suitable for operation of 415 (+10% to –15%) volt supply.

III. Contractors should be of suitable silver alloy to ensure long life and the contact system should be double break and designed to keep bounce to the minimum. Provision for mechanically interlocking the contractors should be available.

IV. The manner of removal of fixed and moving contacts should be easy. The thermal connections preferable should be require disconnection during contact replacement.

V. The coil should be easily accessible and the coil replacement as well as the contactor assembly should be simple without likely to pull out. Screws should be provided with retaining arrangement.

(c) Timer:

The change over from star to delta position shall be automatic and sharp through thermal/pneumatic /electronic timer (adjustable approximately from 5 to 20 seconds or 2 to 12 seconds)

(d) Start and Stop Push Button:

Shrouded and mounted on the cover.

Control Switch:

The miniature circuit breaker shall be of adequate rating suitable for operation at 415 V-3 phase, to C/s A.C. supply. The breaker mechanism shall be of quick make break and trip free. The components of the breaker should be designed to last the life of the breaker with no maintenance what so ever including greasing.
The circuit breaker shall have unambiguous mechanical trip indication by means of the position of the knob in addition to ON/OFF.

The circuit breaker shall trip in less than or equal to 25 mille-seconds short circuit conditions.

Painting

All steel work should undergo a process of de-greasing, pickling in acid and cold rising, **passivating** and sprayed with a high corrosion resistance primer. The finishing treatment should be application of two coats of synthetic enamel paint.

Wiring

The panel should be completely factory wired for the connection to the equipment at site, wiring should be made in such a way that it is easily accessible for observations repair work without disturbing other components. Contactor should be PVC insulated confirming to IS 694
The make of various components should be as below

Miniature Circuit breaker
L&T/MDS/Standards/Indo Asian make or any equivalent mark.
Ampere/Voltmeter
IMP /AE/Essmoar equivalent ISI mark
Starter/Contactor/|Relay Timer:
L&T/Siemens/BCH
Porcelain Rewirable fuse unit:
Havells/Standard or any equivalent ISI mark.
Selector Switch:
Kaycee/Becon/Salzer
Single Phase preventor:
Minilec/or any equivalent ISI mark
Capacitor L&T and equivalent ISI marked

Water sample after development in two bottles for each tube well (The Chemical analysis from PHED laboratory shall be submitted to Engineer -in-charge, no payment shall be made by department in this regard)

Executive Engineer (PHE-III)
JDA, Jaipur

Section A-5
Annexure

Annexure A :

Compliance with the code of Integrity and No Conflict of Interest

Any person participating in a procurement process shall –

(a) Not offer any bribe, reward or gift or any material benefit either directly or indirectly in exchange for an unfair advantage in procurement process or to otherwise influence the procurement process;
(b) Not misrepresent or omit the misleads or attempts to mislead so as to obtain a financial or other benefit or avoid an obligation;
(c) Not indulge in any collusion, Bid rigging or anti-competitive behavior to impair the transparency, fairness and progress of the procurement process;
(d) Not misuse any information shared between the procuring Entity and the Bidders with an intent to gain unfair advantage in the procurement process;
(e) Not indulge in any coercion including impairing or harming or threatening to do the same, directly or indirectly, to any party or to its property to influence the procurement process;
(f) Not obstruct any investigation or audit of a procurement process;
(g) Disclose conflict of interest, if any; and
(h) Disclose any previous transgressions with any Entity in India or any other country during the last three years or any debarment by any other procuring entity.

Conflict of Interest :-

The Bidder participating in a bidding process must not have a Conflict of interest.
A conflict of interest is considered to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.
i. A Bidder may be considered to be in Conflict of Interest with one or more parties in a bidding process if, including but not limited to:

a. Have controlling partners/shareholders in common ; or
b. Receive or have received any direct or indirect subsidy from any of them; or
c. Have the same legal representative for purposes of the Bid; or
d. Have a relationship with each other; directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Procuring Entity regarding the bidding process; or
e. The Bidder participates in more than one Bid in a bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which the Bidder is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one Bid; or
f. The Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the Goods, Works or Services that are the subject of the Bid; or
g. Bidder or any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as engineer-in-charge/ consultant for the contract.

Annexure B :

Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

In relation to my/our Bid submitted to …….. for procurement of …….. in response to their Notice inviting Bids No. ……..Dated …….. I/We hereby declare under Section 7 of Rajasthan Transparency in Public Procurement Act, 2012, that :

1. I/We possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;
2. I/We have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Document;
3. I/We are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended ant not the subject of legal proceeding for any of the foregoing reasons;
4. I/We do not have, and our directors and officers not have, been convicted of any criminal offence related to my/our professional conduct or the making of false statements or misrepresentations as to my/our qualifications to enter into a procurement Contract within a period of three years preceding the commencement of this procurement process, or not have been otherwise disqualified pursuant to debarment proceedings;
5. I/We do not have a conflict of interest as specified in the Act, Rules and the Bidding Document, which materially affects fair competition;

Date :
Place :

Signature of bidder

Name :
Designation :
Address :

Annexure C:

Grievance Redressal during Procurement Process

The designation and address of the **First Appellate Authority is Commissioner, JDA, Jaipur.**

The designation and address of the **Second Appellate Authority is Executive Committee (E.C.), JDA, Jaipur.**

(1) Filing an appeal

a. If any Bidder or prospective bidder is aggrieved that any decision, action or omission of the Procuring Entity is in contravention to the provisions of the Act or the Rules or the Guidelines issued there under, he may file an appeal to First Appellate Authority, as specified in the Bidding Document within a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:

b. Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings:

c. Provided further that in case a Procuring Entity evaluates the Technical Bids before the opening of the Financial Bids, an appeal related to the matter of Financial Bids may be filed only by a Bidder whose Technical Bid is found to be acceptable.

(2) The officer to whom an appeal is filed under para (1) shall deal with the appeal as expeditiously as possible and shall Endeavour to dispose it of within thirty days from the date of the appeal.

(3) If the officer designated under para (1) fails to dispose of the appeal filed within the period specified in para (2), or if the Bidder or prospective bidder or the Procuring Entity is aggrieved by the order passed by the First Appellate Authority, the Bidder or prospective bidder or the Procuring Entity, as the case may be, may file a second appeal to Second Appellate Authority specified in the Bidding Document in this behalf within fifteen days from the expiry of the period specified in para (2) or of the date of receipt of the order passed by the First Appellate Authority, as the case may be.

(4)Appeal not to lie in certain cases

No appeal shall lie against any decision of the Procuring Entity relating to the following matters, namely:-

(a) Determination of need of procurement;
(b) Provisions limiting participation of Bidders in the Bid process;
(c) The decision of whether or not to enter into negotiations;
(d) Cancellation of a procurement process;
(e) Applicability of the provisions of confidentiality.

(5) Form of Appeal

(f) An appeal under para (1) or (3) above shall be in the annexed form along with as many copies as there are respondents in the appeal.
(g) Every appeal shall be accompanied by an order appealed against, if any, affidavit verifying the facts stated in the appeal and proof of payment of fee.
(h) Every appeal may be presented to First Appellate Authority or Second Appellate Authority, as the case may be, in person or through registered post or authorized representative.

(6) Fee for filing appeal

(a) Fee for first appeal shall be rupees two thousand five hundred and for second appeal shall be rupees ten thousand, which shall be non-refundable.
(b) The fee shall be paid in the form of bank demand draft or banker's cheque of a Scheduled Bank in India payable in the name of Appellate Authority concerned.

(7) Procedure for disposal of appeal

(a) The First Appellate Authority or Second Appellate Authority, as the case may be, upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.
(b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be, shall,-
  (i) Hear all the parties to appeal present before him; and
  (ii) Peruse or inspect documents, relevant records or copies there of relating to the matter.
(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass and order in writing and provide the copy of order to the parties to appeal free of cost.
(d) The order passed under sub-clause (c) above shall also be placed on the State Public Procurement Portal.

FORM No. 1

[See Rule 83]

Memorandum of Appeal under the Rajasthan Transparency in Public Procurement Act, 2012

Appeal No. …… of …… Before the …….. (First/Second Appellate Authority)

1. Particulars of appellant :

(i) Name of the appellant :

(ii) Official address, if any :

(iii) Residential address :

2. Name and address of the respondent (s) :
   (i)
   (ii)
   (iii)
3. Number and date of the order appealed against and name and designation of the officer/authority who passed the order (enclose copy), or a statement of a decision, action or omission of the Procuring Entity in contravention to the provisions of the Act by which the appellant is aggrieved:
4. If the Appellant proposes to be represented by a representative, the name and postal address of the representative:
5. Number of affidavits and documents enclosed with the appeal :
6. Grounds of appeal : ……..
   (Supported by an affidavit)
7. Prayer : …….

Place ……..
Date ……..

Appellant's Signature

Annexure D :

Additional Conditions of Contract

1. **Correction of arithmetical errors**

Provided that a Financial Bid is substantially responsive, the Procuring Entity will correct arithmetical errors during evaluation of Financial Bids on the following basis:

i. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Procuring Entity there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected;

ii. It there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected ; and

iii. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (i) and (ii) above.

If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be disqualified and its Bid Security shall be forfeited or its Bid Securing Declaration shall be executed.

2. **Procuring Entity's Right to Vary Quantities**

(i) At the time of award of contract, the quantity of Goods, works or services originally specified in the Bidding Document may be increased or decreased by a specified percentage, but such increase or decrease shall not exceed twenty percent, of the quantity specified in the Bidding Document. It shall be without any change in the unit prices or other terms and conditions of the Bid and the conditions of contract.

(ii) If the Procuring Entity does not procure any subject matter of procurement or procures less than the quantity specified in the Bidding Document due to change in circumstances, the Bidder shall not be entitled for any claim or compensation except otherwise provided in the Conditions of Contract.

(i) In case of procurement of Goods or services, additional quantity may be procured by placing a repeat order on the rates and conditions of the original order. However, the additional quantity shall not be more than 25% of the value of Goods of the original contract and shall be within one month from the date of expiry of last supply. If the supplier fails to do so, the Procuring Entity shall be free to arrange for the balance supply by limited Bidding or otherwise and the extra cost incurred shall be recovered from the supplier.

3. **Dividing quantities among more than one Bidder at the time of award (In case of procurement of Goods)**

As a general rule all the quantities of the subject matter of procurement shall be procured from the Bidder, whose Bid is accepted. However, when it is considered that the quantity of the subject matter of procurement to be procured is very large and it may not be in the capacity of the Bidder, whose Bid is accepted, to deliver the entire quantity or when it is considered that the subject matter of procurement to be procured is of critical and vital nature, in such cases, the quantity may be divided between the Bidder, whose Bid is accepted and the second lowest Bidder or even more Bidders in that order, in a fair, transparent and equitable manner at the rates of the Bidder, whose Bid is accepted.

4. **"If any bidder quotes a rate below than the schedule ''G'' rates, i.e. rates below than at par, than the bidder has to deposit the difference amount i.e. amount between the rates as per at par and below, as work performance guarantee. This amount has to be deposited before the commencement of work and will be refunded after successful completion of work. Lowest bidder will be issued LOA (Letter of Acceptance) and within 7 days period he has to deposit difference amount in the from of B.G./FDR/NSC. The validity of these shall be for a period three months beyond the stipulated date of completion / actual date of completion. In case of non deposition of the same in specified period, the 2 % Bid security will be forfeited. In case work is not completed satisfactorily, the work performance security will be forfeited along with Bid security."**

Signature of Contractor
with full address & Mobile No.

Executive Engineer (PHE-III)
JDA, Jaipur

Section A6
Drawings

JAIPUR DEVELOPMENT AUTHORITY

Name of work:- Construction of 5 nos Tube well , P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I).

G- Schedule

Part-A **Based on JDA PHE BSR Rates**

S.NO	PARTICULARS	QTY	UNIT	RATE	AMOUNT
1.00	Providing, laying and jointing of UPVC class III (6 kg/cm2) ISI marked pipe with socket suitable for electromeric sealing ring type joint (ESR) in assorted length with fixing of PVC/C.I. Special (excluding cost of valve)fixing at CID joint after cutting, tapering etc. This include the excavation of trench upto 1.5 mtr. depth in all type of soil cutting of road surface pavement where required lift upto 1.5 mtr. stacking the soil clear form the edge of excavation and refilling of soil after laying and jointing of pipe line with proper compaction and disposing of all surplus soil as directed with in lead of 30 mtr. This also include getting the pipe line tested and site clearance etc. complete job (Make of pipe KISAN, FINOLEX).				
1.10	110 mm	9217.00	R.Mtr.	355.00	3272035.00
1.20	140 mm	1537.00	R.Mtr.	532.00	817684.00
1.30	160 mm	861.00	R.Mtr.	691.00	594951.00
1.40	180 mm	481.00	R.Mtr.	832.00	400192.00
1.50	200 mm	464.00	R.Mtr.	1041.00	483024.00
1.60	250 mm	470.00	R.Mtr.	1640.00	770800.00
1.70	280 mm	228.00	R.Mtr.	2147.00	489516.00
1.80	315 mm	307.00	R.Mtr.	2720.00	835040.00
2.00	Supply and fixing of cast iron double sluice valves IS 14846/2000 specification (ISI marked) of PN-1 rating including cost of rubber flange gaskit and nut bolts complete as required for following sizes.				
2.10	100 mm	12.00	Each	5541.00	66492.00
2.20	125 mm	1.00	Each	6817.00	6817.00
2.30	150 mm	1.00	Each	8107.00	8107.00
2.40	200 mm	1.00	Each	12565.00	12565.00
3.00	Supply and fixing of cast Iron Air valves 14845/20 specification (ISI marked) including cost of MS clamp, GI pipe, MS/GI flange, rubber flange gaskit and nut bolts complete as required for following sizes.				
3.10	25 mm size Air valve	2.00	Each	1202.00	2404.00
3.20	40 mm size Air valve	1.00	Each	1789.00	1789.00
4.00	Supply of cast iron specials (class-10) as per IS : 5531-1988) specification as required.				
4.10	80 mm to 150 mm	800.00	Kg	58.00	46400.00
4.20	200 mm to 300 mm	200.00	Kg	62.00	12400.00
5.00	Construction of Tube-well upto 100 Meter depth and above in all type of rocks by DTH system and over burden, to accommodate casing pipe of following sizes in all types of soils and over burden including lowering of casing pipes, but excluding cost of casing pipes as per IS : 2800 (Part I & II) 1979 specifications. The work would be completed after obtaining sand free water. The tube well should have a throughout bore as per nominal dia of casing pipe:				
5.10	200 mm dia Nominal bore.	325.00	R.Mtr.	825.00	268125.00

6.00	Construction of tube-well from ground levels and upto 100 Meter depth and above to accommodate housing and assembly pipe of following sizes in all types of alluvium strata by percussion/ rotary drilling method and with gravel as per IS:4097-1967 and packing as per IS:2800 (Part I -& II) 1979 as amended upto date (the work includes the cost of gravel & its primary packing and packing during development, lowering of housing & strainer assembly pipes, with supply and wrapping of coir-rope, wherever necessary, for arresting fine sand particles. The work will not include cost of housing pipe and strainer pipe assembly and development work, but work would be completed after obtaining sand free water).				
6.10	200 mm Nominal Bore.	325.00	R.Mtr.	1210.00	393250.00
7.00	Development of tube well as per IS specification using suitable compressor to give sand free water for required yield of the gravel packed tube well.	60.00	Hours	495.00	29700.00
8.00	Supply of ERW M.S. black casing pipe ISI marked (IS:4270/1992) of grade Fe410 of following sizes at site of work. Nominal bore of pipe (mm)				
8.10	200 Nominal bore of pipe (mm)	329.00	mtr	1570.00	516530.00
9.00	Supply of strainer pipes made of ERW M.S. black pipe ISI mark of following sizes at the site of work including required size of slotting as per IS:8110-1985.				
9.10	200 mm Nominal Bore.	90.00	mtr	1820.00	163800.00
10.00	Providing & lowering of G.I. Pipes, flange pipe including rubber washer and nuts of 8 mm dia complete in all respect I.S.1239 Marked.				
10.10	B Class 50 mm dia	500.00	R.Mtr.	410.00	205000.00
11.00	P/Laying ISI marked P.V.C. insulated submersible cable confirming to IS:694 with flexible copper conductor including making connection etc. as required.				
11.10	2.5 Sq.mm 3 core flat / Round	600.00	mtr	90.00	54000.00
12.00	P/Laying P.V.C. / XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with Copper conductor of IS:1554 P-I / IS :7098 P - I of Group 1 of approved make in ground as per IS:1255 including excavation of 30cmx75cm size trench, 25 cm thick under layer of sand,IInd class bricks covering, refilling earth,compaction of earth, making necessary connection, testing etc. as required of size.				
12.10	10.0 Sq.mm 4 core	150.00	mtr	170.00	25500.00
13.00	P & F G.I. Pipes (External Work) with G.I. fittings excluding union (IS : 1239 Mark) including trenching & refilling earth etc.				
13.10	50 mm dia nominal bore	60.00	mtr	428.00	25680.00
14.00	P & F Full-way Valve (IS:778 Mark) or wheel valve of approved make :				
14.10	Gun-metal 50mm nominal bore.	5.00	Each	1205.00	6025.00
15.00	S&F tube well cover (for 200 mm dia pipe) of MS sheet 8 mm thick at top & 5 mm thick 100 mm wide shroud around the edge so as to form a cap on the top end of casing pipe with GI Nipple 45 cm long & two GI flanger at both end in 80 mm sizes passing through a hole in the centre of MS shet A 25 mm socket with end plug shall also be weld over top plate (as per drawing enclosede), A GI nipple having outside thread of size 1/2" (for installation pressure gauge) shall be provide & welded with GI 80 mm nipple near top plate nipple shall be provided with end plug.) (D-547 dt. 20.12.2011)	5.00	Each	908.00	4540.00
16.00	Providing fixing and installation of 80 mm dia Woltman type water meter with material (Flanges,Insertion sheet, Nut bolt etc.) &fabrication supply and fixing of meter box made of 10 SWG MS sheetsuitable for 80 mm water meter (As per drawing including all accessories.) 50 mm to 80 mm dia (D-547 dt. 20.12.2011)	5.00	Each	22997.00	114985.00

17.00	Providing and installing of approved make spring loaded dual plate check valve of following dia. Including all taxes , inspection charges, loading and unloading, stacking etc., including cost of all labour, jointing material with nut bolts, rubber mats etc., and giving satisfactory hydraulic field testing, complete as per specifications.(D-547 dt. 20.12.2011)				
17.10	50 mm	5.00	Each	1571.00	7855.00
18.00	Supply and fixing & testing of feeder type penal board suitable for upto 15 HP electric motor having star delta/ DOL starter (L&T /BCH), MCB 32 amp.(havals /L&T), capacitor 3 KVR (L&T/Havals), Single phase priventor(L$T/havals),indicating lamp RYB , Amp. Meter (0 to 30Amp) , Volt Meter with slector switch (0 to 500 V) size 100 mm, kit kat fuse unit 100 amp,backlite sheet for fixing of 3 phase electric meter of JVVNL electric feeder penal approved as per design and specification mounted on angle iron fram and fixed plain on plain cement concrete plateform, size of feeder penal box 900X 450X1200mm (D-547 dt. 20.12.2011)				
18.10	Star Delta above 5 HP to 15 HP	5.00	Each	24915.00	124575.00
19.00	SITC of radial / mixed flow submersible motor pump sets ISI marked (IS:8034-1989) of approved make with required accessories including making connection suitable for T.W./ D.C.B./ Open well. The job includes lowering of riser pipe, G.I./ H.D.P.E. pipe with rope, cables, installation of complete fitting and accessories, jointing of electrical cables up to switch board. All labour for testing of submersible pumps set and supply of water to water mains, complete in all respect. 100 mm diameter Submersible pump shall have following HP Rating, phase, Head, minimum Discharge respectively.				
19.10	5.0 HP, 3-Ø, (55-150)Mtr, (166-60)LPM	5.00	Each	28980.00	144900.00
	Total Part -A Rs.				**9904681.00**

Executive Engineer (PHE-III)
JDA, Jaipur

I/We Quote as …… % Above/ Below the schedule " G " (Part-A)

(In Words……)'

Signature of Contractor
With full Address & Mobile No.

JAIPUR DEVELOPMENT AUTHORITY

Name of work:- Construction of 5 nos Tube well , P/L/J and commissioning of distribution pipe line (upvc) including operation and maintenance work etc. for 3 years for Anand Vihar, village Prithvisinghpura, Jaisingpura Jaipur (Phase -I).

G-Schedule

PART "B":

S. NO	PARTICULARS	QTY	UNIT	RATE	AMOUNT
1	Operation and maintenance of water supply scheme as per scope of work & special condition of contract including complete repair of various pipe line pumping machinary, switchs, strater etc. along with providing of all types of material (ISI marked or asper PHED norms) required for maintenance and repair, rewinding and repair of all types of motor in all respect to avoid any disruption in water supply and including chemical charge. (Except electric charges	36.00	Per Month	14140.00	509040.00
	TOTAL PART A Rs.				**509040.00**

Executive Engineer (PHE-III)
JDA, Jaipur

I/We Quote as …… % Above/ Below the schedule " G " (Part-B)

(In Words……)'

Signature of Contractor
With full Address & Mobile No.