JAIPUR DEVELOPMENT AUTHORITY

Bid Document

For

Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur

Cost: Rs. 96.14 Lacs

NIT No. 02/2021-22 **Due On: 17.05.2021**

Executive Engineer (PHE-II)
Jaipur Development Authority
Jaipur

समाचार पत्रों में प्रकाशन हेतु

जयपुर विकास प्राधिकरण, जयपुर

इन्दिरा सर्किल, जवाहर लाल नेहरू मार्ग, जयपुर–302004

क्रमांकः जविप्रा/अधि.अभि. (पीएचई–।।)/2021/डी– **दिनांकः–**

बिड आमंत्रण सूचना

बिड़ संख्या : जविप्रा/अधि. अभि. पीएचई–।।/02/2021–22

जयपुर विकास प्राधिकरण द्वारा **अधिशाषी अभियन्ता पीएचई–।। जविप्रा के क्षेत्राधिकार के अंतर्गत '' जल वितरण पाइप लाइन जोड़ने बिछाने एवं नलकूपों का निर्माण कार्य हेतु दो वर्ष की दर संविदा''**, जिसकी अनुमानित लागत रूपये 96.14 लाख के लिए ऑनलाईन निविदा दिनांक 17.05.2021 सांय 6:00 बजे तक आमंत्रित की जाती है। निविदा बोली का ऑनलाईन आवेदन व भुगतान जविप्रा पोर्टल पर करने की अन्तिम तिथि दिनांक 17.05.2021 को सांय 6:00 बजे तक है। निविदा बोली के दस्तावेजों का विस्तृत विवरण www.sppp.raj.nic.in व www.eproc.rajasthan.gov.in एवं www.jda.urban.rajasthan.gov.in पर देखा जा सकता है।

(UBN No. ……..).

निविदा में भाग लेने वालो को निम्न शर्तो की पूर्ति करनी होगी :–

1. निविदा दाता जयपुर विकास प्राधिकरण की वेबसाइट www.jda.urban.rajasthan.gov.in पर पंजीकृत हो एवं निविदा में भाग लेने के लिए बोलीदाता को आवेदन करने के लिए दस्तावेज शुल्क, अमानता राशि, आर.आई.एस.एल. प्रोसेसिंग शुल्क ऑनलाईन जमा करनी होगी।
2. ऑनलाईन निविदा प्रस्तुत करने के लिए निविदा दाताओं का राजस्थान सरकार के ई–प्रॉक्योरमेंट पोर्टल www.eproc.rajasthan.gov.in पर पंजीकृत हो।

(एम.एल. जांगिड़)
अधिशाषी अभियन्ता(पीएचई–।।)
जयपुर विकास प्राधिकरण,
जयपुर

प्रतिलिपिः–

1. **जन सम्पर्क अधिकारी, जविप्रा को तकनीकी सहायक (निदेशक अभियान्त्रिकी–प्रथम) के मार्फत समाचार पत्र में प्रकाशन हेतु।**

Job No. JDA/EE PHE II/A & F/2020-2021/Mar/255 dt. 28.03.2021 Rs. 99,98,555.00

(एम.एल. जांगिड़)
अधिशाषी अभियन्ता(पीएचई–।।)
जयपुर विकास प्राधिकरण,
जयपुर

Annexure: 1
NIB for Publication in News Paper

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

Room No. 302, Citizen Care center Building, Ram Kishore Vyas Bhavan, Indira Circle, Jawaharlall Nehru Marg, Jaipur – 302 004
Telephone: +91-141-2569696 email: eephe2@gmail.com

No: - JDA/EE/PHE-II/2021/D- **Dated:-**

NOTICE INVITING BID

NIB No. : JDA/EE (PHE-II)/02/2021-22

Online Bids are invited upto 6.00 PM of 17.05.2021 for "Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur". The Last date of for applying bid and making online payment on JDA portal is up-to 6.00 PM of 17.05.2021. Details may be seen in the Bidding Document at our office or the State Public Procurement Portal website www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in and www.jda.urban.rajasthan.gov.in

(UBN No. ……..)

To participate in the bid, bidder has to be:

1. Registered on JDA website www.jda.urban.rajasthan.gov.in
   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 ww.eproc.rajasthan.gov.in for online e-Bid submission.

(M.L. Jangid)
Executive Engineer (PHE-II)
JDA, Jaipur

Copy to :-

1. PRO Cell, JDA, Jaipur through TA to DE (I) for publication in News paper.

   Job No. JDA/EE PHE II/A & F/2020-2021/Mar/255 dt. 28.03.2021 Rs. 99,98,555.00

(M.L. Jangid)
Executive Engineer (PHE-II)
JDA, Jaipur

Annexure: 2

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

JAIPUR DEVELOPMENT AUTHORITY

Room No. 302, Citizen care center Building, Ram Kishore Vyas Bhavan, Indira Circle, Jawaharlal Nehru Marg, Jaipur – 302 004

Telephone: +91-141-2569696 email: eephe2@gmail.com

Bid No: - JDA/EE(PHE-II)/2021/D- **Dated:-**

NOTICE INVITING BID

NIB No. : JDA/EE(PHE-II)/02/2021-22

Name & Address of the Procuring Entity	➢ Name: Executive Engineer (PHE-II), Jaipur Development Authority ➢ Address: 302, Citizen care center Building, Ram Kishore Vyas Bhavan, Indira Circle, Jawaharlal Nehru Marg, Jaipur – 302 004 (Rajasthan) ➢ Email: eephe2@gmail.com
Subject Matter of Procurement	➢ **Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur** ➢ **Job No. : Job No. JDA/EE PHE II/A & F/2020-2021/Mar/255 dt. 28.03.2021 Rs. 99,98,555.00**
Bid Procedure	➢ Single-Stage tender (eg. Single-envelope) open competitive eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ L1 (eg.Least Cost Based Selection (LCBS)-L1)
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: **www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in, www.jda.urban.rajasthan.gov.in**
Website for online Bid application participation and payment *	➢ Website: www.jda.urban.rajasthan.gov.in ➢ 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 Rs. 96.14 Lakh **(Rupees Ninety Six Lakh Fourteen Thousand Only)**
Bid Security Deposit	➢ All the eligible contractors should be submit bid security declaration on non-judicial stamp of Rs. 50/- as par order issued by Rajasthan Government of Finance Department (GF&AR) Gor. Dated 23.12.2020 (Declaration form attached with tender document. It is mandatory to submitted bid security declaration in prescribed format along with bid. ➢ Bidder who is A and AA Class contractor registered in other Govt. Department and Bidder registered as contractor in AA, A, B & C in JDA. ➢ In case of Department's of the State Government and undertakings] Corporations, Autonomous bodies, Registered Societies, Cooperative Societies which are owned or controlled or managed by the State Government and Government undertakings of the Central Government shall submit a bid securing declaration in lieu of bid security.
Date/Time/Place of Pre-Bid	➢ N.A.

Applying Bid and making Online Payment on JDA portal (www.jda.urban.rajasthan.gov.in)	➢ Start Date: 03.05.2021 at 10.00 AM ➢ End Date: 17.05.2021 at 06.00 PM
Bid Submission on e-Procurement Portal of GOR	➢ Start Date: 03.05.2021 at 10.00 AM ➢ End Date: 17.05.2021 at 06.00 PM
Date/Time/Place of Technical Bid Opening	➢ N.A.
Date/ Time/ Place of Financial Bid Opening	➢ 19.05.2021 at 11.00 AM ➢ First Floor, Room No. 135 Main 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	➢ 24 Months

* Jaipur Development Authority has decided to receive Earnest Money Deposit (EMD) (Bid Security), Tender Fee and RISL processing fee online through JDA Portal. The bid security options available in tender for participants are a Mentioned Below:-

A. Payment Options:

Option-1: Bank Guarantee (BG) against EMD / Bid Security

Bidder may opt Bank Guarantee (BG) against EMD (Bid Security), for which bidder requires to prepare BG before applying in the tender. The details of B.G. requires to be fed on JDA portal before paying balance amount (Tender Fee + RISL Processing Fee). This amount will be paid through Payment Gateway only, option to make balance payment through EFT (RTGS/NEFT) will not be available.

If bidder does not opt for BG against EMD, options of making complete payment through Payment Gateway or through EFT (NEFT / RTGS) will be available.

Option-2: Electronic Fund Transfer (EFT: NEFT/RTGS)

If the bidder selects payment mode as EFT (NEFT/RTGS), "Paying Slip for EFT (NEFT/RTGS)" will be generated by the system for the complete amount. The payment can be made from any Bank any Branch using this Paying Slip through NEFT/RTGS (Claim against payment made through EFT in any other JDA bank account will not be acceptable and bidder stands disqualified from participation in the bid applied for). After successful transaction through NEFT/RTGS, as per the standard procedures it may take 4 to 24 hours in process of confirmation of EFT through Auto-Process depending on the time of EFT done. Therefore, option to make payment through EFT (NEFT/RTGS) will be available till 48 hours prior to closing date of bid participation.

Option-3: Payment Gateway (Aggregator)

The facility to make payment through Debit Card, Credit Card, Net banking etc., will be available. User can use this facility from anywhere any time till the closing date & time of bid participation.

B. Bid Participation Receipt

After confirming payment, the bidder will get Bid Participation Receipt on the basis of which user will get the payment details along with other details for bidding on e-Procurement portal of GOR.

- In case of BG as the remaining payment will be done through Payment Gateway, on successful transaction the "Bid Participation Receipt" will be generated on real time basis.
- In case complete payment is done through Payment Gateway, on successful transaction the "Bid Participation Receipt" will be generated on real time basis.
- In case complete payment is done through EFT (NEFT/RTGS), on confirmation of payment from ICICI Bank (Auto Process) "Bid Participation Receipt" will be available on Login of Bidder on JDA portal.

Note:-

1. Bidder (authorized 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 (e-Procurement) 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, Yojana Bhawan, 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 2013 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.

(M.L. Jangid)
Executive Engineer (PHE-II)
JDA, Jaipur

Section A-1
Instructions to Bidders

JAIPUR DEVELOPMENT AUTHORITY JAIPUR

SCHEDULE AND SPECIFICATIONS

Name of work: Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur

1.	NIB No.	:-	E.E.(PHE-II)/02/2021-22
2.	Approximate cost	:-	Rs. 96.14 Lakh
3.	Cost of the tender documents	:-	Rs 1,000.00
4.	Earnest Money	:-	All the eligible contractors should be submit bid security declaration on non-judicial stamp of Rs. 50/- as par order issued by Rajasthan Government of Finance Department (GF&AR) Gor. Dated 23.12.2020 (Declaration form attached with tender document. It is mandatory to submitted bid security declaration in prescribed format along with bid.
5.	Bid Submission start date & Time	: -	03.05.2021 (10:00 AM)
6.	Bid Submission end date & Time	: -	17.05.2021 (upto 6:00 P.M.)
7.	Bid opening date & Time	: -	19.05.2021 at 11.00 A.M.
8.	Completion period of work	: -	24 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.** 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, GST registration, clearance certificate and copy of registration of contractor in required category are found to be in order. The Bid security, tender fee will be accepted through online payment only.

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 **24 months.**

SCHEDULE 'G' : ATTACHED SEPARATELY BASED ON 2016 JDA BSR (Electrical Works)-2015-2016, 2016 JDA BSR (Sanitary Works)-2015-2016 & JDA PHE BSR (Sewerage & Water Supply)-2014-2015, JAIPUR.

SCHEDULE 'H' : SPECIAL CONDITION.

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

Annexure E : DLP period for various type of works. Office order D-29 dated 11.03.2016

Annexure F : Payment mechanism for participating in tender: Office order D-399 dated 04.10.16.

Annexure G : GST Circular for participating in tender: Office order D-172 dated 12.07.17.

Annexure H : Rajasthan Government of Finance department : Office order F-2(1)Fin./G&T-SPFC/2017 dated 23.12.2020.

SIGNATURE OF CONTRACTOR

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

With full address & Mobile No. :

TENDER FOR WORKS

I/We hereby tender for the execution for the Jaipur Development Authority, Jaipur of the work specified in the underwritten memorandum within the time specified in such memorandum at the rates, (in figure) .....% (as well as in words) ..... Percent below/above the amount, entered in the schedule G in all respects in accordance with the specifications, designs, drawings and instructions in writing referred to in Rule I in all respects in accordance conditions with such conditions so far as applicable. I/We have visited the site of work and am/are fully aware of all the difficulties and conditions likely to affect carrying out the work, I/We have fully acquainted myself/ourselves about the conditions in regard to accessibility of site and quarries/kilns nature and the extent of ground, working conditions including stacking, of materials, installation of tools & plant, conditions effecting accommodation and movement of labour etc. required for the satisfactory execution of contract.

Memorandum

(a) **General description of work:**

(b) **Estimated cost** **: Rs. 94.14 Lakh**

(c) **Earnest money** **: All the eligible contractors should be submit bid security declaration on non-judicial stamp of Rs. 50/- as par order issued by Rajasthan Government of Finance Department (GF&AR) Gor. Dated 23.12.2020 (Declaration form attached with tender document. It is mandatory to submitted bid security declaration in prescribed format along with bid.**

(d) **Security Deposit:**

(i) "The security deposit @ 10% of the gross amount of the running bill shall be deducted from each running bill and shall be refunded as per rules on completion of the contract as per terms and conditions. However, the amount of security deposit deducted from running bills shall not be converted into any mode of securities like bank guarantee. FDR etc. The earned money deposited shall however be adjusted while deducting security deposit from first running bill of the contractor. There will be no maximum limit of security deposit.

However, a contractor may elect to deposit of full amount of 10% security deposit in the shape of bank guarantee or any acceptable form of security before or at the time of executing agreement. In that case earnest money may be refunded only after deposition of full 10% as above. However, in case during execution cost of works exceeds as shown at the time of depositing 10% as above, balance security deposit shall be deducted from the Running Account Bills."

(ii) Bank Guarantee shall in all cases be payable at the headquarter of the Division or the nearest District Headquarters.

(e) Time allowed for the completion of work (to be reckoned from the 10th day after the date of written order to commence the work) is **24 month** Should this tender be accepted in whole or in Part, I/We hereby agree to abide by and fulfill all the terms and provisions of the conditions of contract annexed here to and of the Notice Inviting Tender, or in default thereof, to forfeit and pay to the Governor of Rajasthan or his successors in office, the sum of money mentioned in the said conditions.

Validity of rates 120 days.

A sum of Rs. ..... is forwarded herewith in the form of Cash, Bank Draft, Bankers Cheque as Earnest Money. This amount of earnest money shall absolutely be forfeited to the Governor of Rajasthan or his successor in office without prejudice to any other right or remedies of Governor of Rajasthan or his successor in his office, should I/We fail to commence the work specified in the above memorandum.

Signature of Witness
Signature of Contractor
Witness's address & Occupation Address of Contractor

Date:
The above tender is hereby accepted by me on behalf of the Governor of Rajasthan
Date:

Executive Engineer (PHE-II)

Section A-2
General Conditions of Contract

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

Section A3
Scope of Work &
Special Conditions of Contract

Name of work:- **Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur**

Scope of work:- Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur

SPECIAL CONDITIONS OF THE CONTRACT

1. Contractor shall get the DI/UPVC pipes inspected from the third party (CEIL, SGS, RITES) before bringing the material at site. The inspection charges shall be borne by the contractor. No payment of this item 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. According to the alignment of pipe line thrust blocks shall be constructed as per IS code for which no extra payment shall be payable. The cost of thrust blocks shall be deemed to be considered in the rates quoted by bidder.
4. Cement concrete roads required to be dismantled for laying of pipe line shall be done by mechanical means / breaker in the manner such that pavement in required width is only dismantled. No extra payment for cutting of payment shall be made and it shall be deemed to be considered in the rates quoted by bidder.
5. The JDA shall be free to carry out the work from any participating agency on the rate of lowest bidder during the concurrency of rate contract.
6. The quantity of work can be increased or decreased. However, no guarantee is given about the actual quantity of work.
7. No extra payment shall be made to the contractor on account of excavation in collapsible strata or in hard or rocky strata. The bidders shall have to make their own arrangement for completing the work and no claim in this respect will entertained.
8. 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.
9. The electric connection, if required, for construction and testing purpose shall be arranged by the contractor at his own cost.
10. 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 in force, shall also be provided by the contractor at his own cost.
11. 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.
12. 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 borne by the contractor only and JDA will not be responsible in any way.
13. Water for construction / testing purpose shall have to arrange 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.
14. The contractor shall be fully responsible for structural safety and water tightness of pipeline when tested.
15. No secured advance against material procured at site will be allowed.
16. Pipe line 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.
17. 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 borne by the contractor only

18. 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.
19. 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.
20. The surplus earth and damaged materials will be immediately removed from the site of work and dumped as per instruction of Engineer-in-charge
21. 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.
22. 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.
23. The contractor/firm/company is bound to get the workmen insured against accident from the Insurance Company at his own cost.
24. Contractor shall be the sole custodian of the men and material at work and will be fully responsible for any loss of life or otherwise occurred during the execution of the works.
25. 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.
26. Before start of work contractor has to inform concerned JDA zone officers to avoid/minimize road damage
27. The follow up / liaison for release of Electric Power connection of TWs from JVVNL Jaipur shall be in the scope of contractor and shall be deposited the required fess for issue the demand note, which shall be reimbursed by JDA on submission of original receipt.
28. As per office order no. JDA/DD (E&B)/2018/D-352 dated 29.08.2018, Clause of agreement no. 45 for Price Escalation variation is not applicable.

As Built Drawings.

1. The submission of the as-built drawings of the proposed work with old pipe 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 on CD ROM / DVD in two copies with proper directory structure. The scale of drawing and the size of drawing shall be as per the direction of the Engineer in Charge
2. If there is any typographical error or otherwise in the 'G' Schedule. The nomenclature and the rates as given in the relevant BSR and JDA approved items/rates on which schedule 'G' is based, shall prevail.

3. Defects liability period

   The defect liability period shall be of 3 years, from the date of the completion. The Contractor shall be responsible for satisfactory performance of the work under all design and operation conditions for the duration of the defects liability period, except for damages due to unprecedented natural calamities.

4. Refund **of Performance Guarantee & Security Deposit**

The Security Deposit (SD) and Performance Guaranty (PG) shall be refunded after successfully completion of defect liability period of 3 years. The 20 % amount of SD shall be released after completion of 1st year of DLP, other 20 % amount of SD shall be released after completion of 2nd year of DLP and remaining 60 % amount of SD shall be released after completion of 3rd year of DLP. (As per JDA Office order no. JDA/EE(TA to Dir.-Engg-I)/2016/D-29 dated 11.03.2016)

5. The contractor/firm or company while executing the above work will adopt all safety measures on his cost to safeguard from any loss of life & damage of public & private property. If any loss & damage occurred then they will pay the full compensation from their own pocket. All the consequence will be borne by them & JDA will not be responsible in any way.
6. The contractor/firm or company will display necessary signboards & lights from safety point of view during nights at site of work on his own cost as directed by the authorized Engineer in Charge.
7. The contractor shall not work after the sunset & before sunrise without specific permission of the Engineer In Charge in-charge

8. 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-In Charge.
9. The contractor will pay compensation to the house owner or to the owner of any adjoining property or any other works for the damaged sustained on account of this work while in progress or complete from his own pocket.

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 9000 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.

Safety aspects associated with the work.

1. Safety And Accident Prevention Officer: Due precautions shall be taken by the Contractor, at his own cost, to ensure the safety and protection against accidents of all staff and Labour engaged on the works, local residents in the vicinity of the works, and the public traveling through the works. The contractor shall deploy at least one officer from his staff, qualified to promote and maintain safe working practices. This/these officer(s) shall has/have authority to issue instructions and shall take protective measures to prevent accidents, including but not limited to the establishment of safe working practices and the training of staff and labor in their implementation. The contractor shall furnish to the department the name(s) of such officer(s) before the start of the work.
2. 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 borne by the contractor only and JDA will not be responsible in any way.
3. The contractor shall not work before sunrise and after the sunset.
4. 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 borne by the contractor only.
5. The contractor/firm/company is bound to get the workmen insured against accident from the Insurance Company at his own cost.

6. The contractor will pay compensation to the house owner or to the owner of any adjoining property or any other works for the damaged sustained on account of this work while in progress or complete from his own pocket.
7. Electric and water connections, if needed, shall be arranged by the contractor himself at his own cost.
8. Contractor shall be the sole custodian of the men and material at work and will be fully responsible for any loss of life or otherwise occurred during the execution of the works JDA and its representatives will not be responsible in anyway.
9. Demolishing of concrete road work will be done by mechanical means in the proper way.

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

I/we confirm above

Signature of contractor

Executive Engineer (PHE-II)
JDA, Jaipur

Section A-4

Specifications of Work

Name of work:- **Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II JDA Jaipur.**

Specifications of D.I. Pipe line work

SUPPLY OF DI 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.

The work consists of Providing, Laying & Jointing of 200mm ,150 mm & 100 mm DI pipe line in approximately 2650.00 mtr length as per BOQ:

Ductile Iron Pipe:-

The pipes will be centrifugally cast (spun) Ductile Iron pipes for Water and Sewage confirming to the IS 8329: 2000. The pipes used will be either with push on joints (Rubber Gasket Joints) or Flanged joints. The class of pipe to be used shall be of the class K-7.
The pipes shall be coated with bitumen as per appendix C and have factory provided cement mortar lining in the inside as per the provisions of Appendix B of the IS 8329: 2000.
The pipes will be supplied in standard length of 5.50 and 6.00 meters length with suitably rounded or chamfered ends. Each pipe of the push on joint variety will also be supplied with a rubber EPDM gasket. Any change in the stipulated lengths will be approved by the Engineer – in charge. The gaskets will confirm to the IS 5382:1985.

The gaskets 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.
The flanged joints will confirm to the Clause 6.2 of IS 8329. The pipe supply will also include one rubber gaskets for each flange.

Inspection and Testing:
The pipes will be subjected to following tests for acceptance:
Visual and dimensional check as per Clause 13 and 15 of IS 8329
Mechanical Test as per Clause 10 of IS 8329
Hydrostatic Test as per Clause 11 of IS 8329
The test reports for the rubber gaskets shall be as per acceptance tests of the IS 5832 and will be in accordance to Clause 3.8
The sampling shall be as per the provisions of the IS 8329

Marking
All pipes will be marked as per Clause 18 of IS 8329 and show as below:
Manufacturer name/ stamp
Nominal diameter
Class reference
A white ring line showing length of insertion at spigot end

Packing and Transport:
The pipes should be preferably transported by road from the factory and stored as per the manufacturer specifications to protect damage.

Specials for Ductile Iron Pipes
General
This section covers the general requirements for Ductile Iron (DI) fittings suitable for Tyton joints to be used with Ductile Iron pipes with flanged and Tyton jointing system.

Types of specials
The following types of DI fittings shall be manufactured and tested in accordance with IS: 9523 or BS: 4772.
flanged socket
- flanged spigot
- Double socket bends (900, 450, 22 1/2 0, 11 1/4 0)
- Double socket branch flanged tee
- All socket tee.
- Double socket taper.
- All Flanged Tee.
- All Flanged taper.

Supply
All the DI fittings shall be supplied with one rubber ring for each socket. The rubber ring shall conform to IS: 12820 and IS: 5382 as described in the preceding chapter. Flanged fittings shall be supplied with one rubber gasket per flange and the required number of nuts and bolts.

General
This section covers the requirements for lubricant for the assembly of Ductile Iron pipes and specials suitable for Tyton push-in rubber ring joints

Specification
The lubricant has to have the following characteristics:
must have a paste like consistency and be ready for use
has to adhere to wet and dry surfaces of DI pipes and rubber rings
to be applied in hot and cold weather; ambient temperature 0 - 50 °C, temperature of exposed pipes up to 70 °C
must be non toxic

must be water-soluble
must not affect the properties of the drinking water carried in the pipes
must not have an objectionable odour
has to inhibit bacterial growth
must not be harmful to the skin
must have a shelf live not less than 2 years

Acceptance tests

They shall be conducted in line with the provisions of the IS 9523

Packing

All the DI fittings shall be properly packed with jute cloth. Rubber rings shall be packed in polyethylene bags. Rubber rings in PE bags and nuts, bolts etc. shall be supplied in separate jute bags.

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.

Laying and jointing of DI pipes

Pipes should be lowered into the trench with tackle suitable for the weight of pipes. For smaller sizes, up to 200 mm nominal bore, the pipe may be lowered by the use of ropes but for heavier pipes suitable mechanical equipment have to be used.

All construction debris should be cleared from the inside of the pipe either before or just after a joint is made. This is done by passing a pull-through in the pipe, or by hand, depending on the size of the pipe. All persons should vacate any section of trench into which the pipe is being lowered

On gradients of 1:15 or steeper, precautions should be taken to ensure that the spigot of the pipe being laid does not move into or out of the socket of the laid pipe during the jointing operations. As soon as the joint assembly has been completed, the pipe should be held firmly in position while the trench is back filled over the barrel of the pipe.

The designed anchorage shall be provided to resist the thrusts developed by internal pressure at bends, tees, etc.

Where a pipeline crosses a watercourse, the design and method of construction should take into account the characteristics of the watercourse to ascertain the nature of bed, scour levels, maximum velocities, high flood levels, seasonal variation, etc. which affect the design and laying of pipeline.

The assembly of the pipes shall be made as recommended by the pipe manufacturer and using the suitable tools.

The socket and spigot ends of the pipes shall be brushed and cleaned. The chamfered surface and the end of the spigot end have to be coated with a suitable lubricant recommended by the manufacturer of the pipes. Oil, petroleum bound oils, grease or other material which may damage the rubber gasket shall not be used as lubricant. The rubber gasket shall be inserted into the cleaned groove of the socket. It has to be checked for correct positioning.

The two pipes shall be aligned properly in the pipe trench and the spigot end shall be pushed axially into the socket either manually or with a suitable tool specially designed for the assembly of pipes and as recommended by the manufacturer. The spigot has to be inserted up to the insertion mark on the pipe spigot. After insertion, the correct position of the socket has to be tested with a feeler blade

Deflection of the pipes -if any- shall be made only after they have fully been assembled. The deflection shall not exceed 75 % of the values indicated by the pipe manufacturer.

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 design 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.

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 conditions for the pipelines are summarized as follows:

Maximum hydrostatic test pressure for DI K-7 pipes shall be 2.0 times of maximum design pressure in the pipeline.

Pre test and saturation period with addition of make-up water

Pressure:	Test pressure
Duration:	3 hrs for DI pipes without cement mortar lining / 24 hrs for DI pipes with cement mortar lining

Pressure test with addition of make-up water

Pressure:	Test pressure
Duration:	3 hrs

Test criteria for DI pipes: Q = 1 liter per km per 10mm of pipe per 30 m test pressure per 24 hrs.

All pressure testing at site should be carried out hydrostatically. The pipes shall be accepted to have passed the pressure test satisfactorily, if the quantity of water required to restore the test pressure as per the latest codal provisions does not exceed the amount 'Q', calculated by the above formula.
If it is required to test a section of a pipeline with a free end, it is necessary to provide temporary support against the considerable end thrust developed by the application of the test pressure. The end support can be provided by inserting a wooden beam or similar strong material in a short trench excavated at right angle to the main trench and inserting suitable packing between the support and pipe end.
The pipeline stretch will pass the test if the water added during the test period is not exceeding the admissible limits. 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 shall be completed.

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 the unsatisfactory in any way, shall be redone by the Contractor.

Flushing and disinfecting of pipelines

After testing and commissioning the contractor shall flush the pipes with a velocity not less than 1 m/s or as approved by the Engineer in Charge. Disinfection of drinking water pipelines shall be made by engineer- in charge.

Supply of Ductile Iron Pipes:-

The Contractor will have to supply DI pipes manufactured by manufacturer who has been in business of supply of DI pipes rubber ring jointed and have proven record of successful supply and testing of pipeline for minimum one year.

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 throughout 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. In the event some services fall in the alignment of lines to be laid, the contractor shall have to shift such services for which a provision has been made in the BOQ. 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 underground 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.

Sectional tests:- 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 as per IS Code.

Specifications of Tube well Works

The work consists of Construction of 6 nos Tube Well's and allied works as per BOQ.

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 & 150mm 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.

The work consists of 200mm , 4 nos of tube wells &150 mm ,2 nos of tube well as per BOQ:

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 9000 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 HDPE PE 80 Grade pipes

HDPE Pipes

The HDPE (High density polyethylene) pipes (for water supply) confirming to IS 4984-1995 and duly marked with certification of BIS shall only be supplied. The pipe shall confirm to the test requirements prescribed in IS 4984-1995. The minimum factory test pressure for hydraulic test shall be 2 times the rated pressure of pipe for 60 seconds. No defect/ leakage/ cracks should be visible after hydraulic test.

Colour

The colour of pipe shall be black. Each pipe shall contain minimum three equispaced longitudinal stripes of width 3mm in blue colour. These strips shall be co-extruded during pipe manufacturing and shall not be more than 0.2mm depth. The material of the stripes shall be same type of resin, as used in the base compound for the pipe.

Material

The raw material used for the manufacture of pipes should not constitute toxic hazard, should not support microbial growth and should not give rise to unpleasant taste or odor, clouding or discoloration of water. The pipes shall be manufactured from 100% virgin PE-80 High density polyethylene (HDPE) food grade raw material with minimum required strength of 8MPa (PE-80). The raw material should be of food grade quality. The nominal pressure of pipes required shall be as specified in the scope of work. The pipe material shall be suitable for conveyance of drinking water for which the certificate of recognized institute shall be provided. High density polyethylene (HDPE) used for the manufacture of pipes shall confirm the designation PEEWA-45-T-003 or PEEWA-45-T-006 or PEEWA-50-T-003 or PEEWA-50-T-006 or PEEWA-57-T-003 or PEEWA-57-T-006 of IS: 7238/1992. In addition the material shall also confirm to $5.6.2 of IS 7328-1992. The specific base density shall be between 940.0 Kg/Cum and 958.4 Kg/Cum (both inclusive) when determined at 27 C according to procedure prescribed in Annexure “A” of IS: 7328/1992. The value of the density shall not differ from the nominal value by more than 3 kg/cum as per $ 5.2.1.1 of IS 7328-1992.

The MFR (Melt Flow Rate) of the material shall be between 0.20g/10min and 1.10g/10min (both inclusive) when tested at 190 degree C with nominal load of 5 Kgf when determined by the method prescribed in $ 7 of IS: 2530-1963. The MFR of the material shall be within +/- 20% of the value declared by the manufacturer.

The resin shall be compounded with Carbon black. The Carbon Black content in the material shall be within 2.5 + 0.5% and dispersion of Carbon black shall be satisfactory when tested according to the procedure prescribed in IS: 2530-1963.

With the advancement in technology natural (unpigmented) resin designation PEEWA-45-T-003 or PEEWA-45-T-006 or PEEWA-50-T-003 or PEEWA-50-T-006 or PEEWA-57-T-003 or PEEWA-57-T-006 of IS: 7238/1992 duly stabilized with anti-oxidants may be compounded with suitable black master batch or processed directly after physical mixing with suitable black master batch in the pipe extruder for production of pipes, which shall confirm to the performance requirements of the pipe as specified in IS 4984. The material of pipe thus produced shall confirm to the requirements of $ 5.2 of IS 4984-1995.

The percentage of anti-oxidant used shall not be more than 0.3 percent by mass of finished resin. The anti-oxidant used shall be physiologically harmless and shall be selected from the list given IS: 10141-1982.

The work consists of Providing, Laying & Jointing of 160mm ,110 mm & 90 mm HDPE pipe line in approximately 4250.00 mtr length as per BOQ:

No reworked or recycled material shall be used.

Dimensions

The outside diameter of pipes, tolerance on the same and ovality of pipes, and minimum and maximum wall thickness shall be confirming to IS 4984-1995. The length of straight pipe shall be 5 to 20m. However wherever specifically required under the conditions of contract, the pipes shall be supplied in coils.

Visual appearance

The internal and external surfaces of pipes shall be smooth, clean and free from grooving and other defects. The ends of the pipes shall be cleanly cut square with the axis to within the tolerances given in IS 4984 and free from deformity. Slight shallow longitudinal grooves or irregularities in the wall thickness shall be permissible provided that the wall thickness remains within the permissible limits.

Inspection and Testing of HDPE Pipes

The HDPE pipes supplied by the contractor shall be subjected to following tests as per IS 4984 for acceptance:

- Visual and dimensional check as per IS 4984
- Hydraulic characteristics/ Internal pressure creep rupture test as per IS 4984
- Longitudinal reversion test as per IS 4984
- Overall Migration test
- Density test
- Melt flow rate test
- Carbon black content and Dispersion test
- Any other test required as per provisions to which supplied pipes confirms i.e. (IS 8329)
- Hydraulic test at manufacturer premises before dispatch.

In addition the following are required for review by inspection authority:

- The test reports of raw material.
- The type test report of pipe. This shall not be more than two years old from the date of inspection of pipes.
- Notch Impact test as per ASTM-1474. HDPE pipes when tested as per ASTH-1474 (Notch Impact Test) should pass the Hydraulic test as per 1S:4984:1995 for a minimum 165 Hrs. This test can be carried out at factory or at some private laboratory. Such report should not be more than 3 month old from date of inspection.

The sampling method for testing shall be as per the provisions of the standards to which they are manufactured.

The pipes shall also be got tested from CIPET and amount for testing shall be borne by contractor.

Department shall demand for manufacturers' test report for pipes along with pre dispatch inspection by EIC or his authorized representative.

Marking

All pipes shall be marked as per the provisions of IS 4984 and subjected to following minimum requirements:-

- Manufacturer name/ Trade mark,
- Designation of pipe,
- Lot number/ Batch number,
- Manufacturing standard to which the pipe confirms (IS 4984) and BIS certification mark,
- Mark of pre-dispatch Inspecting authority.

TRANSPORTATION / STORAGE OF PIPES AND SPECIALS:

The Contractor has to transport the pipes and other materials from manufacturer to the site stores and from the site stores to the site of laying as per the instructions given 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 DI pipes shall be made as per IS 12288. 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.
Damage to lining must be repaired, as per relevant IS code, before pipe laying according to the instructions of the pipe manufacturer after taking approval of EiC. 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. Pipes should not be stacked in large piles for all pipes. Socket and Spigoted 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 equipments 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 approved L section. layout shall be given by the Engineer in Charge of his authorized representative. The layout shall be given keeping in view the information available regarding existing services like water lines, sewers, telephone and electric lines/ cables. In the event some services fall in the alignment of lines to be laid, the contractor shall have to shift the alignment or such services. 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 and payment shall be allowed on this account.
Rubber rings shall be handled and stored in their original packing, protected against sunlight and contacts with petroleum product, solvents and paints.
The Contractor shall provide suitable lifting equipment for loading, unloading and laying of the pipes.

Specials for HDPE Pipes

Unless otherwise specified, the specials and the jointing material for HDPE pipes shall be Fusion fittings confirming to GBE/PL2:PART 4. Fusion fittings with integral heating element shall be used in general. All fittings shall be of Class B. Fittings shall be produced from material class PE 80 or PE 100. The fittings shall be free from cracks, voids, blisters, holes, distortion, dents, injurious incisions, inclusions or any other likely to impair their performance. For each fitting the fusion time shall be the same.

SPECIFICATIONS FOR L/J AND SECTIONAL TESTING OF PIPELINES

General

The contractor will inspect the route along which the pipe line is proposed to be laid. Efforts shall be made by the contractor to make minor deviations from the marked alignment so as to keep the pipe alignment as straight as possible and to avoid damage of public and private properties along the alignment. The alignment of pipe line and location of specials & chambers may be changed at site in co- ordination and with prior approval of the Engineer In Charge. The final alignment on which the pipeline shall be laid shall be marked in field and got approved from the Engineer in Charge or his representative. Where ever 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 relevant standards). The alignment as proposed should be marked on ground with a line of white chalk and got approved from Engineer In-Charge. The position of fittings, valves, shall be as per directions of engineer-in-charge.

The quality of pipes, inner mortar lining and the quality of laying shall ensure that the considered co- efficient of friction of value (Cr=1) is obtained during the designed period, so that the design is validated and the designed quantities of flow can be delivered. Thus the contractor shall ensure that the conditions of pipes its lining and the laying are perfect in all respect.

Standards

Except 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. The laying of pipeline shall be done in confirmations to the following standards:

.**Alignment and the L-Sections**

The slopes provided shall be such that in existing ground level conditions, the maximum cover over the laid pipe is neither more than 1.5 m nor less than 0.9 m, if the pipe is to be laid above ground. The average cover generally should not be less than 0.9 meters. In case of HDPE pipes, the pipes shall have a minimum cover of 900 mm when laid under roads with light traffic or under cultivated soils and 1.25 m when laid under roads with heavy traffic. When the soil has poor bearing capacity and is subject to heavy traffic, the pipes shall be laid on a concrete cradle.

Earth Work

General

The Contractor shall furnish all tools, plant, instruments, qualified supervisory personnel, labour, materials, any temporary works, consumables, any and everything necessary, whether or not such items are specifically stated herein for completion of the work in accordance with the Departments Requirements.

The excavation shall be carried out to correct lines and levels. This shall also include, where required, proper shoring to maintain excavations and also the furnishing, erecting and maintaining of substantial barricades around excavated areas and warning lamps at night.

Excavated material shall be dumped in regular heaps, bunds, riprap with regular slopes within the lead specified and leveling the same so as to provide natural drainage. Rock/soil excavated shall be stacked properly as approved by the Engineer in Charge. As a rule, all softer material shall be laid along the center of heaps, the harder and more weather resisting materials forming the casing on the sides and the top. Rock shall be stacked separately.

Topsoil shall be stock piled separately for later re-use. Clearing The area to be excavated/filled shall be cleared of fences, trees, plants, logs, stumps, bush, vegetation, rubbish, slush, etc. and other objectionable matter. If any roots or stumps of trees are encountered during excavation, they shall also be removed. The material so removed shall be disposed off as approved by the Engineer in Charge. Where earth fill is intended, the area shall be stripped of all loose/ soft patches, top soil containing objectionable matter/ materials before fill commences.

Pipe Laying below Ground

Trench Excavation General

The earth work shall be carried out as specified above.

Before excavating the trench the alignment of pipeline and L-section shall be approved by Engineer-in- Charge. 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 3 days ahead of work of laying and jointing of pipeline unless otherwise directed by the Engineer-in-Charge. It is proposed to ensure the following:

Safety precautions have to be incorporated in the work process Hindrances to the public have to be minimized

The trench shall not be allowed to erode The trench must not be filled with water 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.

Trench Excavation For Laying Pipeline below ground

The trench excavation of pipe line shall be in accordance with IS 6530-1972 for AC pipes and IS 7634 for HDPE pipes /or as per the general provisions given above. Pipe trenches shall be excavated to the lines and levels approved by the Engineer in Charge. The width of the trench at bottom between the faces of sheeting shall be such as to provide minimum 200 mm clearance on both sides of the pipe. 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 walls of the trench shall be cut to stable side slopes preferably to a slope of ¼ : 1 or ½ : 1 depending on the nature of soil.

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. For trench bottom with boulders or rock, sand bedding as per details detailed herein after shall be provided.

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 drive ways.

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 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 in sandy or loose formations.

Trench excavation to commensurate with the laying progress

The work of trench excavation should be commensurate with laying and jointing of the pipe line. 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 to the pipe grades so that uniform support is assured for the full length of the pipe.

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.

Adequate soil cushion of minimum15 cm depth shall be provided under the pipes if the strata, on which the pipes are laid, are rocky. The soil used for cushion should be free from stones, lumps and other hard objects that may injure the pipes or their coating.

Laying and jointing of pipes Below Ground

General

Before commencing the work the bidder shall submit the proposed L-Section and plan for approval of Engineer in Charge. No work shall be taken until such approval is received. The pipe laying shall be as per the approved L-Section. The pipes will be cleaned in the whole length with special care of the spigot and sockets/other ends 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 / or with permissible deflection as prescribed in the respective pipe material code between bends and/or between high and low points.

The pipes shall rest continuously on the bottom of the trench. The pipes should not rest on lumps of earth or on the joints.

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 with 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 center 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.

Where the gradient of the bed slopes is more than 15 degrees, it may be necessary to anchor pipes against their sliding downwards, by providing suitable gradient blocks and straps. Suitable cut off walls shall also be provided in these sections to protect the trench soil to be washed out during rains.

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 pipe line 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.

Laying and jointing of pipes

The laying of HDPE pipes as . However the specific references given herein shall prevail on the provisions of the standards. Pipes should be lowered into the trench with tackle suitable for the weight of pipes. For smaller sizes, up to 200 mm nominal bore, the pipe may be lowered by the use of ropes but for heavier pipes suitable mechanical equipment have to be used. Material for the HDPE pipe shall be as per standards IS :4984-1995.

Back filling and tamping of the pipe trench

Back-filling of trenches shall be done as specified below with watering and compacting in layers under “Optimum Moisture Content” conditions to achieve required density of refilling and strength after compaction. For the purpose of back-filling, the depth of the trench shall be considered as divided into the following three zones from the bottom of the trench to its top:

Zone A: From the bottom of the trench to the level of the centre line of the pipe	Back-filling by hand with sand, fine gravel or other approved material placed in layers of 150 mm and compacted by tamping. The back-filling material shall be deposited in the trench for its full width of each side of the pipe, specials and appurtenances simultaneously. Special care shall be taken to avoid damage of the pipe and the coating or moving of the pipe.
Zone B: From the level of the centre line of the pipe to a level 300 mm above the top of the pipe	Back-filling and compaction shall be done by hand or approved mechanical methods in layers of 150 mm, special care shall be taken to avoid damage of the pipe and the coating or moving of the pipe.
Zone C: From a level 300 mm above the top of the pipe to the top of the trench.	Back-filling shall be done by hand or approved mechanical methods in 15 cm layers after compacting and carried to the level necessary to allow for the temporary restoration of road and path surfaces, and also for hard-core (if and where ordered) on roads or to such level as will leave the requisite space for the top soil, road surface etc. to be reinstated as directed by the Engineer-in-Charge

Where the excavation is made through permanent pavements, curbs, paved footpaths, or where such structures are undercut by the excavation, the entire back-fill to the sub grade of the structures shall be made with sand in accordance with IS: 7634 for HDPE pipes. The excavated material may be used for back-fill in the following cases, provided it complies with clause 10 of IS 7634 for HDPE pipes.

a)
In Zone C: In cases where settlement is unimportant the back-fill shall be neatly rounded over the trench to a sufficient height to allow for settlement to the required level.

b)
In any zone, when the type of back-fill material is not indicated or specified, provided that such material consists of loam, clay, sand, fine gravel or other materials which are suitable for back-filling in the opinion of the Engineer In Charge.

All excavations shall be backfilled to the level of the original ground surfaces unless otherwise ordered by the Engineer in Charge, and in accordance with the requirements of the specification. The material used for backfill, the amount thereof, and the manner of depositing and compacting shall be subject to the approval of the Engineer in Charge, but the Contractor will be held responsible for any displacement of pipe or other structures, any damage to their surfaces, or any instability of pipes and structures caused by improper depositing of backfill materials.

Trenches shall be backfilled with selected material placed in layers not exceeding 15 cm in thickness after compacting, wetted and compacted to a density of not less than 90 percent of the maximum dry density at optimum moisture content for zone A, Zone B and Zone C of the surrounding material. Any deficiency in the quantity of material for backfilling the trenches shall be supplied by the Contractor at his expense. Water for compaction shall be arranged by the contractor at his cost.

The Contractor shall at his own expense make good any settlement of the trench backfill occurring after backfilling and until the expiry of the defects liability period.

On completion of pressure and leakage tests exposed joints shall be covered with approved selected backfill placed above the top of the pipe and joints in accordance with the requirements of the above specifications. The Contractor shall not use backfilling for disposal of refuse or unsuitable soil.

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

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.

Sand Bedding

The pipeline shall generally be laid in ordinary sandy soil for which no extra bedding shall be provided. In such case, while doing the excavation, the bottom of the trench shall be prepared in a manner so as to match the curvature of the pipe as far as possible subtending an angle of about 120^{o} at the center of pipe. Wherever the bottom of the trench is of such a nature (i.e. decomposed rock/ hard soil/ boulder) which is likely in the opinion of the Engineer-in-Charge to cause damage to the pipe or coating or an unsuitable material is encountered which cannot support the pipe, the contractor shall excavate the trench to an additional depth below the required depth and shall refill to required level with suitable material such as loose soil/ sand, to be approved by the Engineer-in-Charge. The bedding thickness shall be not less than 15 cm under the barrel of the pipes. The complete pipe has to be covered and surrounded by the same material as used for bedding so that a total cover of 30cm above the barrel can be achieved as shown in the drawing in volume III. The excavated hard/dense soil can be refilled after bedding and covering of the pipe with the loose soil/sand.

The bedding shall be compacted with a light hand rammer. Any reduction in thickness due to compaction shall be made up by adding sand during ramming. For the purpose of the bedding under this item only screened fine sand of grain size not larger than 2mm shall be used. The sand shall be clean, uncoated and free form clay lumps, injurious amounts of dust, soft particles, organic matter, loam or other deleterious substances.

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. Nominal steel shall be provided as per the provisions of CPHEEO manual and the construction of block shall be done in M15 grade of concrete.

Testing of the pipelines

Sectional tests

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, and other chamber).

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:

i. Complete setting of the thrust blocks.
ii. Partial backfilling and compaction to hold the pipes in position while leaving the joints exposed for leakage control.
iii. Opening of all intermediate valves (if any).
iv. fixing the end pieces for tests and after temporarily anchoring them against the soil (not against the preceding pipe stretch)

v. at the lower end with a precision pressure gauge and the connection to the pump for establishing the test pressure

vi. at the higher end with a valve for air outlet

vii. If the pressure gauge cannot be installed at the lowest point of the pipeline, an allowance in the test pressure to be read at the position of the gauge has to be made accordingly

viii. Slowly filling the pipe from the lowest point(s).

ix. the water for this purpose shall be reasonably clear and free of solids and suspended matter

x. Complete removal of air through air valves along the line.

xi. Closing all air valves and scour valves.

xii. Slowly raising the pressure to the test pressure while inspecting the thrust blocks and the temporary anchoring.

xiii. Keeping the pipeline under pressure for the duration of the pre-test / saturation of the lining by adding make-up water to maintain the pressure at the desired test level. Make up water to be arranged by Contractor himself at his own cost.

xiv. Start the test by maintaining the test pressure at the desired level by adding more make-up water; record the water added and the pressure in intervals of 15 minutes at the beginning and 30 minutes at the end of the test period.

xv. Water used for testing should not be carelessly disposed off on land which would ultimately find its way to trenches.

xvi. The field testing pressures for pipelines & duration of test shall be follows:

S.No	PIPE MATERIAL	ALLOWABLE OPERATING PRESSURE	TEST PRESSURE	TEST DURATION
1.	HDPE PIPES	6.0 Kg / Sqcm	1.5 TIMES THE WORKING PRESSURE	30 SEC (Pipe to be filled for 24 hours before testing)

The acceptance criteria for HDPE pipes shall be that the pressure test pressure should be maintained for test duration.

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.

For HDPE pipes, the test pressure shall be kept as 1.5 times the actual operating pressure. Maximum field test pressures shall be as per table 3, clause 11.2 of IS 6530 and IS 7634. After the line is filled, it should be allowed to stand for 24 hours, before pressure testing and the line shall again be filled. The test pressure shall gradually be raised at the rate of one kg sq. cm/min when the field test pressure is less than 2/3 the works test pressures the period of test should be at least 24 hours. The test pressure shall be gradually raised at a rate of 0.1 N/mm^2 per minute.

If a drop in pressure occurs, the quantity of water added in order to reestablish the test pressure should be carefully measured. This should not exceed 0.1 liter/ mm of pipe diameter per km of pipeline per day for each 30 m head of pressure applied.

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.

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.

Pre-Commissioning & Commissioning Tests

After successful sectional testing & leakage test, Pre-Commissioning & commissioning tests shall be performed when the work in the section is completed in all respect and the gaps / interconnections are made.

Sequence of works for ensuring good pipe laying

The required fittings, valves and jointing material should be carefully worked out in beginning. This material should be received in full first of all on site and stored as per directions of manufacturer or as directions given elsewhere in this manual on Standards.

The pipes should be received on site only after the above fittings, valves and material for joints has been received and all necessary preparation for laying has been made.

The material received should be checked for inspection certification as per contract and damage during transportation. All damaged material should be separated and not used.

The pipes received should be stored strictly as per directions of the manufacturer or as mentioned elsewhere in this manual or standards.

The pipes and other material should be again inspected for any damage before use in the trench.

The fittings and valves should be installed in sequence with the laying of pipes without leaving any gaps. It is desirable to lay the pipe lines from the end from where it can be connected to the water source to enable regular flushing of laid pipes.

The entry of dirt or any foreign material in the pipe should be religiously prevented. Each joint should be carefully checked for its completeness before covering up.

There should be a commensurate progress in trench excavation, laying and jointing of pipes, fittings, valves etc. and testing of laid pipes in sections so as to complete testing of all pipes laid in quick follow up of completing laying and jointing.

Disinfection of pipe lines should be carried out before commissioning.

Damage to Public Utilities

All precautions shall be taken during excavation and laying operations to guard against possible damage to any existing structure/pipeline of water, gas, sewage etc. After excavation of trenches, pipe shall not be lowered unless the dimensions of trenches and bedding for work for pipes at the bottom of the trenches are approved by Engineer-in-Charge. Pipes and fittings/specials shall be carefully lowered in the trenches. Special arrangements such as cranes, tripods with chain pulley block for lowering the pipes and fittings/specials shall be made by contractor. In no case pipes and fittings/specials shall be dropped.

Reinstatement of Road/ Footpath

Wherever the road is required to be cut, the Deptt. Shall obtain prior permission from the concerned authorities. The Contractor has to prepare a negotiable diversion, at his cost, before taking up road cutting. After the line has been laid and the trench refilled to the original level, the traffic may be allowed to pass through. After the pipe is

laid the road must be properly re-graded and the damaged portion of road as well as the re-graded portions must be made good.

Clearing the site

All surplus materials, and all tools and temporary structures shall be removed from the site as directed by Engineer-in-Charge and the construction site left clean to the satisfaction of Engineer-in-Charge.

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 80 mm to 200 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 80 to 200 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 80 mm to 200 mm

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 80 mm to 200 mm.

All the valves shall be inspected for flaw detection test in accordance with IS: 780. for sizes from 80 mm to 200 mm.

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 molded 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. **HDPE pipe PE 80 Grade**
2. **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 joined 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 stamped 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.

Sectional tests:- 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 as per IS Code.

G. Submissions

The following submissions are required for approval:-

- Submission of acceptance of structural designs and working drawings to Engineer-in-charge. The foundation shall only be laid on firm ground or hard soil bed after removing all loose material, if any.
- Submission of test reports of construction material to be used in the structure
- Submission of samples of material equipment(s) for approval.
- Submission of data sheet for equipment's for approval.
- No separate payments shall be made for the reconnaissance, preliminary investigations, surveys, inspections, plinth protection, site clearance etc. They shall be included in the lump sum rates.

The Contractor shall be fully responsible for Technical suitability of design, soundness of the construction, structural safety & water tightness of the structure based on the specifications, sound engineering practices, and latest IS Provisions.

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 Executive Committee (E.C.), JDA Jaipur**.

(1) Filing an appeal

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:

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:

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

(a) 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.

(b) 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.

(c) 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.

(iii) 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.

Signature of Contractor
with full address & Mobile No.

Executive Engineer (PHE-II)
JDA, Jaipur

Annexure E:

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

No. JDA/Ex.En. (TA to Dir. Engg.-I)/2016/D-29 Dated: 11/3/2016

Office Order

Subject: - DLP period for various type of works.

As per the decision taken in the 201st meeting of Executive Committee held on 23.02.2016 w.r.t. agenda no. 201:22, DLP period of various natures of works amounting more than Rs. 25 lakhs has been revised as per following time periods based on nature of works.

This order will supersede the earlier orders issued in this regard i.e. order No. JDA/TA to D(E)/2010-11/D-317 dated 28.04.2011 including Special Condition No. 2.2.2 & 2.2.3 of Annexure-I related to SD refund & forfeiture (other Special Condition of annexure-I of this order will remain valid) and order No. JDA/Ex.En.(Pr.-5 & TA)/2013/D-43 dated 27.02.2013 and also all pertaining orders, in contract agreements or in PWF&AR having DLP period different than what is being enforced through this present order for concerned type of work.

Table-I

S.No.	Type of Work	Existing DLP Period	As per approved in E.C. held on 23.02.2016
1.	Bridge Work	3 years	5 Years
2.	CD Work	3 years	5 Years
3.	CC Road, PQC Work	3 years	5 Years
4.	CC tiles/Kerbs/medians	3 years	5 years
5.	Drains	6 months	3 years
6.	Roads		
	(i) Two layer WBM/GSB	3 years	6 Months or one full rainy season which ever is later
	(ii) For Renewal/Strengthening		
	(a)BT upto 30 mm thickness	3 years	1 year
	(b)BT above 30 mm to upto 40 mm	3 years	2 years
	(c)BT above 40 mm to upto 90 mm	3 years	3 years
	(d) BT Above 90 mm	3 years	5 years
	(iii)New Roads		
	(a) BT upto 90 mm	3 years	3 years
	(b) BT more than 90 mm	3 years	5 years
7.	Compound wall	6 months	3 years
8.	Buildings work		
	(i) Work pertaining to Sanitary works electrical works, Joinery works and painting works.	6 months	2 years
	(ii) Work pertaining to Building structure and other civil works.	6 months	5 years
9.	Electric work except maintenance	6 months	3 years
10.	Sewer/Water supply all including STP and water supply related work except maintenance works.	6 months	3 years

The release of SD amount shall be as per following table:-

Table-II

S. No.	Released SD / DLP period	1st year	2nd year	3rd year	5th year
1.	Upto 1 year	100%	40%	20%	10%
2.	Upto 2 year		60%	20%	10%
3.	Upto 3 year			60%	10%
4.	Upto 4 year				20%
5.	Upto 5 year				50%

Various conditions for managing DLP are as under:-

(i) At the time of completion of work, final component shall be worked out for each individual item like BT/CC/tiles/drains etc (as per different categories in Table I), DLP shall be operative based upon type of individual item ex:- CC-5 years, BT- 1/2/3/5 years, Drain- 3 years etc.

(ii) Similarly for all new works, these components should be calculated at the time of TS itself, which should be made part of BID document.

(iii) If any work, amount is less than Rs. 25 lakhs but later on due to extra/excess work, if amount of final work crosses more than Rs. 25 lakhs, DLP shall be operative as per rule for each individual item.

(iv) Similarly if any work is more than Rs. 25 lakhs but after finalization amount of work is less than Rs. 25 lakhs, DLP should be operative for six months or rainy season whichever is late.

(v) During DLP period if contractor fails to repair any work even after issue of 7 days written notice, same work shall be got executed by respective Executive Engineer at the contractor's risk and cost. This process shall be applicable throughout the DLP period. After completion of DLP period in such works contractor should be debarred and blacklisted from JDA for three years as per RTPP Rule 2012 and 20, 3 where he defaults twice in a single agreement or in two different works.

(vi) Quarterly Inspection as per rules shall be carried out and DLP registers shall be maintained by respective Executive Engineers to monitor the DLP repairs.

(vii) Special and regular inspection shall also be carried out as per order no. JDA/Ex.En & TA to DE-I/2014-15/D-223 dated 12.03.2015 and order no. SE (PMGSY) CIRCULAR 2006/D-115 dated 04.05.2006 Point no. 3.

(viii) In case JDA feels to take up work on any existing DLP road due to any reason, following procedure should be adopted:

(a) At the time of withdrawal total liability of repairs as per DLP conditions to be carried out and contractor shall be asked to complete the same. After completion of assessed repairs DLP period shall be released after deduction amt. as per table III.

Table-III

% Recovery on Withdrawal of DLP, of work order / DLP period	1 year	2 year	3 year	4 year	5 year
1 year	1.12	-	-	-	-
2 year	2.55	1.43	-	-	-
3 year	4.38	3.26	1.83	-	-
5 year	9	7.88	6.45	4.62	2.47

Note:- Calculation is to be done on quarterly basis.

(b) In case Contractor fails to carry out these repairs, same shall be carried out at his risk and cost. If the total amt. of such repairs works out to be more than total retained amt. of SD, same shall be recovered from other works and as per PDR rules. The amount as per Table III is also to be deducted in addition to this amount.

(ix) Based upon type of work, DLP conditions for works to be carried out during DLP period with their frequency of respective type of work shall be prepared by respective SE's after approval of these periods.

This order shall come in force with immediate effect and will be applicable on all new works whose NIB is to be called.

Sd/-
Director (Engineering-I)
JDA, Jaipur

Copy to following for information and necessary action:-

1. PS to IDC, JDA, Jaipur.
2. PS to Secretary, JDA, Jaipur.
3. Director Engineer I/II, JDA, Jaipur.
4. Director (Fin.), JDA, Jaipur.
5. C.F, JDA, Jaipur.
6. All Add. Chief Engineers, JDA, Jaipur.
7. All Superintendent Engineers, JDA, Jaipur.
8. OSD (RM), JDA, Jaipur.
9. Additional Director (REV.&DP.)
10. CAO (P&A) JDA, Jaipur.
11. Sr. Horticulturist, JDA, Jaipur
12. All Executive Engineer, JDA, Jaipur.
13. DD (E&B) JDA, Jaipur.
14. All AOs, JDA, Jaipur.
15. All AAOs, JDA, Jaipur.
16. System Analyst
17. All Contractors' Association, JDA, Jaipur.
18. Guard file

S.E. & TA to Dir. (Engg.-I)
JDA, Jaipur

Annexure F:

Jaipur Development Authority, Jaipur

Office Order

No. : JDA/IT(1074501)/E-Services/2015-16/D-399 Dated: 4-10-2016

Subject: Payment mechanism for participating in tender.

Jaipur Development Authority has decided to receive Earnest Money Deposit (EMD) (Bid Security), Tender Fee and RISL processing fee online through JDA Portal. The bid security options available in tender for participants are as mentioned below:

A. Payment Options:

Option-1: Bank Guarantee (BG) against EMD / Bid Security

Bidder may opt Bank Guarantee (BG) against EMD (Bid Security), for which bidder requires to prepare BG before applying in the tender. The details of BG requires to be fed on JDA portal before paying balance amount (Tender Fee + RISL Processing Fee). This amount will be paid through **Payment Gateway only**, option to make balance payment through EFT (RTGS/NEFT) will not be available.

If bidder does not opt for BG against EMD, options of making complete payment through Payment Gateway or through EFT (NEFT / RTGS) will be available.

Option-2: Electronic Fund Transfer (EFT: NEFT/RTGS)

If the bidder selects payment mode as EFT (NEFT/RTGS), "**Paying Slip for EFT (NEFT/RTGS)**" will be generated by the system for the complete amount. The payment can be made from **any Bank any Branch** using this Paying Slip through NEFT/RTGS (Claim against payment made through EFT in any other JDA bank account will not be acceptable and bidder stands disqualified from participation in the bid applied for). After successful transaction through NEFT/RTGS, as per the standard procedures it may take 4 to 24 hours in process of confirmation of EFT through Auto-Process depending on the time of EFT done. Therefore, option to make payment through EFT (NEFT/RTGS) will be available till 2 days prior to closing date of bid participation.

Option-3: Payment Gateway (Aggregator)

The facility to make payment through Debit Card, Credit Card, Net banking etc., will be available. User can use this facility from **anywhere any time** till the closing date & time of bid participation.

B. Bid Participation Receipt

After confirming payment, the bidder will get Bid Participation Receipt on the basis of which user will get the payment details along with other details for bidding on e-Procurement portal of GOR.

- In case of BG as the remaining payment will be done through Payment Gateway, on successful transaction the "**Bid Participation Receipt**" will be generated on real time basis.

- In case complete payment is done through Payment Gateway, on successful transaction the "**Bid Participation Receipt**" will be generated on real time basis.
- In case complete payment is done through EFT (NEFT/RTGS), on confirmation of payment from ICICI Bank (Auto Process) "**Bid Participation Receipt**" will be available on Login of Bidder on JDA portal.

This payment mechanism will come into force w.e.f 15/10/2016. Thereafter, old payment mechanism related to NEFT/ RTGS in which the bidder makes direct payment without "**Paying Slip for EFT (NEFT/RTGS)**" in JDA's bank account will be discontinued.

All procuring entities are hereby directed to clearly mention this procedure in NIB document.

(Pawan Arora)
Secretary

Copy for information and further necessary action to:

1. P.S. to JDC, JDA, Jaipur.
2. P.S. to Secretary, Secretary, JDA, Jaipur.
3. Director (Law / Finance / Town Planning / Engineering-I / Engineering-II), JDA, Jaipur.
4. All Additional Chief Engineer _____, JDA, Jaipur
5. DC (Administration)/DC(Store)/DC (Vehicle), JDA, Jaipur
6. System Analyst, JDA, Jaipur
7. Analyst-cum-Programmer, JDA to ensure integration of software w.e.f 01/10/2016.
8. All Xen_____, JDA, Jaipur.
9. Officer-in-charge, SPPP Portal, Jaipur.
10. OSD (Public Relation) / PRO, JDA, Jaipur.

(Brijesh Kishore Sharma)
OSD (RM)

Annexure G:

जयपुर विकास प्राधिकरण, जयपुर

क्रमांक :- F-( )JDA/Sr.Ao.works-II/2017/D-172 दिनांक :- 12.7.17

आदेश

1 जुलाई 2017 से भारत सरकार के नोटिफिकेशन द्वारा GST लागू होने के कारण व्यक्तियों/फर्मो/कम्पनी/संस्था/ठेकेदार के निर्माण/सिविल आपूर्ति/सेवाओं इत्यादि के कार्यो के प्राधिकरण द्वारा बिल भुगतान किये जाने के लिये प्राधिकरण कर सलाहकार चार्टेड एकाउन्टेन्ट से प्राप्त हुई राय के क्रम में निम्नांकित प्रमाण पत्र/शपथ पत्र/Invoice बिलों के साथ प्रस्तुत किया जाना सुनिश्चित करावें :-

1. व्यक्ति/फर्म/कम्पनी/संस्था/ठेकेदार का GST के अन्तर्गत रजिस्ट्रेशन प्रमाण पत्र की स्वःप्रमाणित फोटो प्रति।
2. व्यक्ति/फर्म/कम्पनी/संस्था/ठेकेदार का GST के रजिस्टेशन नही होने के स्थिति में स्वःप्रमाणित शपथ पत्र।
3. अपंजीकृत व्यक्ति/फर्म/कम्पनी/संस्था/ठेकेदार के बिलो के भुगतान की स्थिति में मासिक टैक्स Invoice भुगतान-अधिकारी द्वारा मासिक आधार पर उसी माह के अंत में तैयार करवाया जाना सुनिश्चित किया जावेगा।
4. आपूर्ति एवं सेवा के विरूद्ध भुगतान बिलो में Vat/Service Tax चार्ज होने (Vat/Service Tax होने) पर (दिनांक 30.06.17 तक आपूर्ति एवं Invoice जारी करने पर) Taxable Invoice नहीं बनाया जावेगा एवं इनका भुगतान पूर्वानुसार (01.07.2017 से पूर्व निहित प्रक्रिया अनुसार) किया जाना सुनिश्चित करावें।

स्पष्टीकरण :- दिनांक 30.06.17 तक सामान की आपूर्ति के बिलो में Vat Invoice होने पर या अन्यथा होने पर इनका भुगतान पूर्वानुसार 01.07.2017 से पूर्व निहित प्रकिया अनुसार किया जावेगा।

संलग्न :- GST रेट तथा HSN/SAC CODE की फोटो प्रति

(बृजेश किशोर शर्मा)
निदेशक(वित्त)

प्रतिलिपि निम्न को सूचनार्थ एवं आवश्यक कार्यवाही हेतु :-

1. वरिष्ट निजी सचिव, आयुक्त, जविप्रा, जयपुर।
2. वरिष्ट निजी सचिव, सचिव, जविप्रा, जयपुर।
3. निदेशक (वित्त/विधि/अभियांत्रिकी-प्रथम व द्वितीय/आयोजना/परियोजना, जविप्रा, जयपुर।
4. अतिरिक्त आयुक्त(प्रशासन/पूर्व/पश्चिम/एल.पी.सी./भूमि), जविप्रा, जयपुर।
5. संयुक्त आयुक्त(सिस्टम मैनेजमेन्ट/संसाधन एवं समन्वय), जविप्रा, जयपुर।
6. विशेषाधिकारी(संसाधन विकास), जविप्रा, जयपुर।
7. अतिरिक्त निदेशक(राजस्व एवं सम्पति निस्तारण), जविप्रा, जयपुर।
8. समस्त जोन उपायुक्तगण ....., जविप्रा, जयपुर।
9. मुख्य लेखाधिकारी(पी. एण्ड ए.), जविप्रा, जयपुर।
10. उपनिदेशक(व्यय एवं बजट), जविप्रा, जयपुर।
11. वरिष्ट लेखाधिकारी(निर्माण-प्रथम/द्वितीय/आर.सी.आर./पेंशन/नीलामी), जविप्रा, जयपुर
12. सिस्टम एनालिस्ट, जविप्रा, जयपुर को प्रेषित कर लेख है कि सिस्टम में GST नम्बर सम्मिलित करने एवं Tax Invoice बनाने की प्रक्रिया तैयार करावें
13. उप रजिस्ट्रार(सहकारिता), जविप्रा, जयपुर।
14. अधिशाषी अभियन्ता जोन ...., जविप्रा, जयपुर।
15. वरिष्ट उद्यानविज्ञ, जविप्रा, जयपुर।
16. लेखाधिकारी (भुगतान/योजना/निर्माण)/सहायक लेखाधिकारी, जविप्रा, जयपुर।
17. प्रभारी अधिकारी, नागरिक सेवाकेन्द्र, जविप्रा, जयपुर
18. सलाहकार(जनसम्पर्क), जविप्रा, जयपुर।
19. रोकडियॉ(निर्माण/सिविल/भूमि आवंप्ति), जविप्रा, जयपुर।
20. रक्षित पत्रावली

अति.निदेशक(रा.एवं स.नि.)

D:\Babulal computer\ADR Cell\Eval 2010\UO Note 1.doc

Annexure H:

राजस्थान सरकार
वित्त (सामान्य वित्तीय एवं लेखा नियम) विभाग

क्रमांक : एफ.2(1)वित्त/जीएण्डटी–एसपीएफसी/2017 जयपुर, दिनांक : 23.12.2020

परिपत्र

वित्त विभाग की अधिसूचना क्रमांक एफ. 2(1)वित्त/जीएण्डटी – एसपीएफसी/2017 दिनांक 18.12.2020 द्वारा आरटीपीपी नियम, 2013 के नियम 42(2) में संशोधन करते हुए आमंत्रित की जाने वाली आगामी बोलियों के संदर्भ में दिनांक 31.12.2021 तक बिड सिक्यूरिटी राशि प्राप्त नहीं करने एवं इसके स्थान पर बिड सिक्यूरिटी के संबंध में घोषणा पत्र (Declaration) प्राप्त करने का प्रावधान किया गया है।

चूंकि उक्त नियमों में बिड सिक्यूरिटी राशि के स्थान पर बिड सिक्यूरिटी के संबंध में घोषणा पत्र (Declaration) प्राप्त करने का नवीन प्रावधान किया गया है। अतः समस्त उपापन संस्थाओं के उपयोगार्थ बिड सिक्यूरिटी के संबंध में लिए जाने वाले घोषणा पत्र (Declaration) का मानक प्रारूप संलग्न प्रेषित है। राजस्थान स्टाम्प अधिनियम, 1998 की धारा 3 सपठित अनुसूची के अनुच्छेद 4 के अनुसार घोषणा पत्र (Declaration) पर 50/– रूपये स्टाम्प ड्यूटी देय है तथा इस स्टाम्प ड्यूटी की राशि पर नियमानुसार 30 प्रतिशत सरचार्ज देय है। अतः समस्त उपापन संस्थाओं को निर्देशित किया जाता है कि बिड सिक्यूरिटी के संबंध में प्रस्तुत किए जाने वाले घोषणा पत्र (Declaration) पर उक्तानुसार राजस्थान राज्य में स्टाम्प ड्यूटी एवं सरचार्ज का भुगतान सुनिश्चित करावें।

संलग्न– उपरोक्तानुसार

23/12/2020
(विमल कुमार गुप्ता)
संयुक्त शासन सचिव

प्रतिलिपि निम्नांकित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है:–

1. सचिव, राज्यपाल/प्रमुख सचिव, मुख्यमंत्री/विशिष्ट सहायक समस्त मंत्रीगण/राज्य मंत्रीगण ।
2. उप सचिव, मुख्य सचिव/निजी सचिव, समस्त अति. मुख्य सचिव/प्रमुख शासन सचिव/ शासन सचिव/विशिष्ठ शासन सचिव ।
3. सचिव, राजस्थान विधानसभा, राजस्थान, जयपुर ।
4. सचिव, लोकायुक्त सचिवालय, राजस्थान, जयपुर ।
5. सचिव, राजस्थान लोक सेवा आयोग, अजमेर ।
6. रजिस्ट्रार, राजस्थान उच्च न्यायालय जोधपुर/जयपुर ।
7. प्रधान महालेखाकार ए एण्ड ई राजस्थान जयपुर ।
8. प्रधान महालेखाकार ऑडिट राजस्थान जयपुर ।
9. समस्त संयुक्त शासन सचिव/उप शासन सचिव/सचिवालय के समस्त अनुभाग/विभाग ।
10. समस्त विभागाध्यक्ष/जिला कलक्टर/संभागीय आयुक्त।
11. रजिस्ट्रार, राजस्थान सिविल सेवा अपील अधिकरण, जयपुर ।
12. समस्त वित्तीय सलाहकार/मुख्य लेखाधिकारी ।
13. समस्त कोषाधिकारी ।
14. समस्त उपापन संस्थाएं।
15. तकनीकी निदेशक वित्त विभाग को भेजकर लेख है परिपत्र को वित्त विभाग की वेबसाईट पर प्रकाशित करवाने की व्यवस्था करावें।
16. रक्षित पत्रावली।

23/12/2020
संयुक्त शासन सचिव

Room No. 5128, First Floor, Main Building, Government Secretariat, Jaipur (Raj.) - 302005
Phone No. 0141-2227921 www.finance.rajasthan.gov.in E-mail - jsfgt@rajasthan.gov.in
GFR Rules-8

Form of Bid-Securing Declaration

Date :
Bid No. :
Alternative No. :

To :

We, the undersigned, declare that:

We understand that, according to your conditions, bids must be supported by a Bid-Securing Declaration.

We accept that we are required to pay the bid security amount specified in the Term and Condition of Bid, in the following cases, namely :-

(a) when we withdraw or modify our bid after opening of bids;
(b) when we do not execute the agreement, if any, after placement of supply/work order within the specified period;
(c) when we fail to commence the supply of the goods or service or execute work as per supply/work order within the time specified;
(d) when we do not deposit the performance security within specified period after the supply/work order is placed;and
(e) if we breach any provision of code of integrity prescribed for bidding specified in the Act and Chapter VI of these rules.

In addition to above, the State Government shall debar us from participating in any procurement process undertaken for a period not exceeding three years in case where the entire bid security or any part thereof is required to be forfeited by procuring entity.

We understand this Bid Securing Declaration shall expire if :-

(i) we are not the successful Bidder;
(ii) the execution of agreement for procurement and performance security is furnished by us in case we are successful bidder;
(iii) thirty days after the expiration of our Bid.
(iv) the cancellation of the procurement process; or
(v) the withdrawal of bid prior to the deadline for presenting bids, unless the bidding documents stipulate that no such withdrawal is permitted.

Signed :----------

Name :----------

In the capacity of :----------

Duly authorized to sign the bid for and on behalf of :

Dated on day of
Corporate Seal ----------

[Note: In case of a Joint Venture, the Bid Securing Declaration must be signed in name of all partners of the Joint Venture that is submitting the bid.]

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. 6 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 & GST etc.
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-II)
JDA, Jaipur

Section A-6
Bill of Quantities

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

Name of work:- Rate contract for 2 years for laying and jointing of water supply pipe line, construction of Tube wells under EE PHE-II, JDA, Jaipur.

G-Schedule

S. No.	Particulars	Qty.	Unit	Rate	Amount (In Rs.)
1.00	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).				
1.10	150 mm Nominal bore.	150.00	R.Mtr.	792.00	118800.00
1.20	200 mm Nominal Bore.	300.00	R.Mtr.	1089.00	326700.00
2.00	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:				
2.10	150 mm dia Nominal bore.	200.00	R.Mtr.	495.00	99000.00
2.20	200 mm dia Nominal bore.	400.00	R.Mtr.	742.50	297000.00
3.00	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.				
3.10	150 Nominal bore of pipe (mm)	24.00	Mtr.	1224.90	29397.60
3.20	200 Nominal bore of pipe (mm)	48.00	Mtr.	1638.00	78624.00
4.00	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)				
4.10	150 Nominal bore of pipe (mm)	126.00	Mtr.	999.90	125987.40
4.20	200 Nominal bore of pipe (mm)	252.00	Mtr.	1413.00	356076.00
5.00	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.	72.00	Hours	445.50	32076.00

S. No.	Particulars	Qty.	Unit	Rate	Amount (In Rs.)
6.00	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.)	4.00	Each	908.00	3632.00
7.00	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 sheet suitable for 80 mm water meter (As per drawing including all accessories.) 50 mm to 80 mm dia.	6.00	Each	22997.00	137982.00
8.00	S & F tube well cover of M.S. sheet (6mm thick) with nuts and bolts complete for casing size:				
8.10	150 mm dia	2.00	Each	207.90	415.80
9.00	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.				
9.10	50 mm	6.00	Each	1571.00	9426.00
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	330.00	R. Mtr.	369.00	121770.00
10.20	B Class 80 mm dia	660.00	R. Mtr.	479.70	316602.00
11.00	P & F G.I. pipes (external work) with G.I. fittings excluding union (IS : 1239 mark) including trenching & refilling earth etc.				
11.10	50 mm dia nominal bore B Class	30.00	Mtr.	302.40	9072.00

S. No.	Particulars	Qty.	Unit	Rate	Amount (In Rs.)
12.00	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.				
12.10	100 mm diameter Submersible pump shall have following HP Rating, phase, Head, minimum Discharge respectively.				
12.20	5.0 HP, 1-Ø, (120-220)Mtr, (100-38)LPM Complete Rate Group-I	2.00	Each	27320.00	54640.00
12.30	150 mm diameter Submersible pump shall have following HP Rating, phase, Head, minimum Discharge respectively.				
12.40	7.5 HP, 3-Ø, (65-135)Mtr, (240-115)LPM Complete Rate Group-I	4.00	Each	23184.00	92736.00
13.00	P/Laying P.V.C. / XLPE insulated & P.V.C. sheathed cable of 1.1 KV grade with aluminium 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.				
13.10	10.0 Sq.mm 3 core Complete Rate Armoured	150.00	Mtr.	120.80	18120.00
14.00	P/Laying ISI marked P.V.C. insulated submersible cable confirming to IS:694 with flexible copper conductor including making connection etc. as required.				
14.10	2.5 Sq.mm 3 core flat / Round Complete Rate Group 1	350.00	Mtr.	72.00	25200.00
14.20	4.0 Sq.mm 3 core flat / Round Complete Rate Group 1	700.00	Mtr.	102.40	71680.00

S. No.	Particulars	Qty.	Unit	Rate	Amount (In Rs.)
15.00	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 900X450X1200mm				
15.10	DOL up to 5 HP	2.00	Each	20130.00	40260.00
15.20	Star Delta above 5 HP to 15 HP	4.00	Each	24915.00	99660.00
16.00	Providing laying & Jointing of ISI mark centrifugally cast (Spun) ductile Iron pressure pipe for water with socket and spigot end and Tyton joint confirming to IS 8329/2000 and departmental specification in standard length (As required) for (Class K-7) suitable for push on joint (rubber gaskets jointing) with side cement mortar lining with cutting of pipe and fixing of C.I. special joint where ever required. This also include the excavation of trench up to 1.5 Meter depth in all type of soil cutting of road surface pavement where required lift up to 1.5 Mt. stacking the soil clear form the edge of excavation and refiling 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 Meter. This also include getting the pipe line tested and site clearance etc.				
16.10	100 mm	1500.00	P. Mtr.	1397.00	2095500.00
16.20	150 mm	650.00	P. Mtr.	2013.00	1308450.00
16.30	200 mm	500.00	P. Mtr.	2455.00	1227500.00

S. No.	Particulars	Qty.	Unit	Rate	Amount (In Rs.)
17.00	Providing, Laying & Jointing in standard lengths HDPE PE-80 PN-6 pipes conforming to IS-4984:1995 (UP TO DATE) with necessary jointing material like mechanical connection i.e. thread/insert/quick release coupler joint/compression fitting joint of flanged joint and specials jointing pipe by butt fusion welding method, including all taxes (central and local), transportation and freight charges inspection charges loading/unloading charges, stacking the same in closed shade duly protecting from sunray and rain including cost of labour and material, specials (Tees, bend etc.) and also including the excavation of trench up to 1.5 Meter depth in all type of soil cutting of road surface pavement where required lift up to 1.5-Mt. stacking the soil lear from 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 50 Meter with satisfactory, hydraulic testing etc. complete as per technical specifications and direction of Engineer-in-charge. (supply up to 90 mm dia. Coil & above 90 mm dia straight length in 6.0 M)				
17.10	90 mm dia	2000.00	Mtr.	318.00	636000.00
17.20	110 mm dia	1500.00	Mtr.	441.00	661500.00
17.30	160 mm dia	750.00	Mtr.	834.00	625500.00
18.00	Providing/fixing/testing KG of DI specials (K-7) i.e. bend, tees, tail pieces, flanges etc. of various size as per the site condition and requirement including all jointing material in all respects, As per PHED specification.	500.00	Kg.	90.00	45000.00
19.00	Providing, fabricating and installing MS specials including rolling, cutting, welding in different shape and size.	500.00	Kg.	80.00	40000.00
20.00	Supply of cast iron specials (class-10) as per IS : 5531-1988) specification as required.				
20.10	80 mm to 150 mm	500.00	Kg.	58.00	29000.00
20.20	200 mm to 300 mm	500.00	Kg.	62.00	31000.00
21.00	Labour charges for inter connection of proposed pipe line with existing, pipe line by digging of Pit, cutting of pipe, dewatering through pumps and satisfactory testing of inter connection and site clearance	40.00	Each	2512.00	100480.00
22.00	Labour charges for inter connection of proposed pipe line with existing, pipe line by digging of Pit, cutting of pipe, without bailing out of water and satisfactory testing of inter connection and site clearance	57.00	Each	890.00	50730.00
23.00	Supply of cast iron detachable joints class-10 as per ISI specification (IS 8794-1988) along with rubber ring (ISI marked) and nut bolts complete as per PHED specifications.				
23.10	80 mm	20.00	Each	225.00	4500.00

S. No.	Particulars	Qty.	Unit	Rate	Amount (In Rs.)
23.20	100 mm	20.00	Each	274.00	5480.00
23.30	125 mm	10.00	Each	360.00	3600.00
23.40	150 mm	10.00	Each	458.00	4580.00
23.50	200 mm	10.00	Each	652.00	6520.00
24.00	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.				
24.10	80 mm	6.00	Each	3855.00	23130.00
24.20	100 mm	6.00	Each	5541.00	33246.00
24.30	150 mm	4.00	Each	8107.00	32428.00
24.40	200 mm	2.00	Each	12565.00	25130.00
25.00	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.				
25.10	25 mm Double Air valve	2.00	Each	1202.00	2404.00
25.20	50 mm Double Air valve	2.00	Each	3730.00	7460.00
26.00	Shifting of 15 mm house connection from all kind of water mains to consumer and upto meter complete job including E/W, demolishing of CC/ Black top/WBM road etc. of all thickness, fitting of Gun Metal ferrule of appropriate size as per IS 2692, fitting of MS clamp made by MS strip 50 X 3 mm properly welded with saddle piece, fixing Gun metal non return valve or check valve horizontal type of (ISI make) of size 15 mm, MDPE pipe dia 20 mm, PN 16 of confirming to ISO 4427-1996 certified pipe manufactured from virgin PE-80 polyethylene food grade raw material and compressed fitting for MDPE pipe as per ISO 3458-59 or equivalent internal standred of PN-16 rating and fixing of 15 mm size Gun metal full way valve (IS : 778 mark) or wheel valve of approved make complete with supply of all material and successful testing.				
26.10	Upto 5 mtr. length	50.00	Each	1900.00	95000.00
26.20	5 mtr to 10 mtr. length	25.00	Each	2200.00	55000.00
				Total Rs.	**9613994.80**

Executive Engineer (PHE-II)
JDA, Jaipur

I/We Quote as …… % above/ below the schedule "G"

(In Words……)

Signature of Contractor