

JAIPUR DEVELOPMENT AUTHORITY



Bid Document

For

**Providing Laying and Jointing of HDPE PE 80 PN-06
distribution line and construction of 200 mm dia tube well for
25% developed land (Science tech city) Achrol under EE
PHE-II JDA Jaipur
Cost : Rs 23.00 Lac**

NIB No. 02/2017-18

**Executive Engineer (PHE-II)
Jaipur Development Authority
Jaipur**

जयपुर विकास प्राधिकरण, जयपुर

इन्दिरा सर्किल, जवाहर लाल नेहरू मार्ग, जयपुर-302004

क्रमांक: जविप्रा/अधि.अभि. (पीएचई-11)/2017/डी-

दिनांक:-

निविदा सूचना

निविदा क्रमांक : जविप्रा/अधि. अभि. पीएचई-11/02/2017-18

अधिशायी अभियन्ता पीएचई-11 प्रकोष्ठ के अंतर्गत 25% विकसित भूमि (साईस टैक सिटी) अचरोल में एच.डी. पी.ई., पी.ई. 80 पीएन-06 वितरण पाईप लाईन उपलब्ध कराने, बिछाने एवं जोड़ने का कार्य तथा 200 एमएम व्यास नलकूप का निर्माण कार्य अनुमानित लागत 23,00,000/- के लिए दिनांक 24.05.2017 को सांय 06.00 बजे तक ऑनलाईन निविदा आमंत्रित की जाती है। निविदा बोली का ऑनलाईन आवेदन व भुगतान जविप्रा पोर्टल पर करने की अन्तिम तिथि 24.05.2017 को सांय 06.00 बजे तक है। निविदा बोली के दस्तावेजों का विस्तृत विवरण अद्योहस्ताक्षरकर्ता के कार्यालय में अथवा राजस्थान सरकार के उपापन पोर्टल www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in व www.jaipurjda.org पर देखी जा सकती है। निविदा में भाग लेने वालों को निम्न शर्तों की पूर्ति करनी होगी :-

1. निविदादाता जयपुर विकास प्राधिकरण की वेब साईट www.jda.urban.rajasthan.gov.in पर पंजीकृत हो एवं निविदा में भाग लेने के लिए बोलीदाता को आवेदन करने के लिए दस्तावेज शुल्क, अमानत 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-प्रोक्यूमेंट पोर्टल www.eproc.rajasthan.gov.in पर पंजीकृत हो।

(मनोज कुमार सिंह)

अधिशायी अभियन्ता(पीएचई-11)

जयपुर विकास प्राधिकरण,

जयपुर

प्रतिलिपि:-

1. सहायक निदेशक (जनसम्पर्क), जविप्रा, को बिड प्रकाशनार्थ प्रेषित है।

(मनोज कुमार सिंह)

अधिशायी अभियन्ता(पीएचई-11)

जयपुर विकास प्राधिकरण,

जयपुर

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: ee.phe2@jaipurjda.org

No: - JDA/EE/PHE-II/2017/D-

Dated:

NOTICE INVITING BID

NIB No. : JDA/EE (PHE-II)/02/2017-18

Online Bid is invited up-to 6.00 PM on 24.05.2017 for "Providing Laying and Jointing of HDPE PE 80 PN-06 distribution line and construction of 200 mm dia tube well for 25 % developed land (Science tech city) Achrol under EE PHE-II JDA Jaipur" Estimated cost of 23,00,000/-. The last date for Applying Bid and making online payment on JDA portal is up-to 6.00 PM on 24.05.2017. 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.jaipurjda.org.

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 www.eproc.rajasthan.gov.in for online e-Bid submission.


(Manoj kumar singh)
Executive Engineer (PHE-II)
JDA, Jaipur

Copy to:-

1. Assistant Director (PRO), JDA, Jaipur for NIB Publication.

(Manoj kumar singh)
Executive Engineer (PHE-II)
JDA, Jaipur

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: ee.phe2@jaipurjda.org

Bid No: - JDA/EE(PHE-II)/01/2017/D-

Dated:

NOTICE INVITING BID

NIB No. : JDA/EE(PHE-II)/02/2017-18

Name & Address of the Procuring Entity	<ul style="list-style-type: none"> ➤ 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: ee.phe2@jaipurjda.org
Subject Matter of Procurement	<ul style="list-style-type: none"> ➤ Providing Laying and Jointing of HDPE PE 80 PN-06 distribution line and construction of 200 mm dia tube well for 25 % developed land (Science tech city) Achrol under EE PHE-II JDA Jaipur ➤ Job No. : 2017- 2018/ Apr/022
Bid Procedure	<ul style="list-style-type: none"> ➤ Single-stage Two part (envelope) open competitive eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	<ul style="list-style-type: none"> ➤ Least Cost Based Selection (LCBS) -L-1
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	<ul style="list-style-type: none"> ➤ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in, www.jaipurjda.org
Website for online Bid application participation and payment *	<ul style="list-style-type: none"> ➤ 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. <ul style="list-style-type: none"> ○ Bidding document fee: Rs. 250/- Rupees (Two Hundred fifty only) ○ RISL Processing Fee: Rs. 1000/- (Rupees One Thousand only) ➤ Requisite Bid Security Deposit
Estimated Procurement Cost	<ul style="list-style-type: none"> ➤ INR 23,00,000/- (Rupees Twenty Three Lacs only)
Bid Security Deposit	<ul style="list-style-type: none"> ➤ Amount (INR) : 2% (Rs. 46,000/-) of Estimated Procurement Cost, 0.5% (11,500/-) of S.S.I. of Rajasthan, 1% for Sick Industries, other than S.S.I., whose cases are pending with Board of Industrial & Financial Reconstruction (* 2% for Bidder who is A and AA class contractor registered in other Government Department/ 0.5% for Bidder registered as contractor AA, A,B,C in JDA) ➤ Micro Small Medium Enterprise Situated in Rajasthan Tender Fee 50% EMD Value 0.5% ➤ In case of Departments' 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	<ul style="list-style-type: none"> ➤ NA
Applying Bid and making Online Payment on JDA portal	<ul style="list-style-type: none"> ➤ Start Date: 03.05.2017 at 10.00 AM ➤ End Date: 24.05.2017 at 06.00 PM

(www.jda.urban.rajasthan.gov.in)	➤ In case EMD in from BG Original Bank Guarantee is to be submitted in Room No MB-SF-225A (Room No. of DD (E&B) of Main Building, Jaipur Development Authority by 25.05.2017 10.00AM to 29.05.2017 upto 3.00 PM
Bid Submission on e-Procurement Portal of GOR	➤ Start Date: 03.05.2017 at 10.00 AM ➤ End Date: 24.05.2017 at 06.00 PM
Date/Time/Place of Technical Bid Opening	➤ NA
Date/ Time/ Place of Financial Bid Opening	➤ 29.05.2017/ 04.00 PM ➤ CCC TF 302, Third Floor, Customer Care Building, Ram Kishore Vyas Bhavan, Indira Circle, Jawaharlal Nehru Marg, Jaipur-302 004 (Rajasthan)
Bid Validity	➤ 120 days from the bid submission deadline
Completion Period	➤ 03 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 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 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.

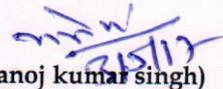
B. Bid Participation Receipt

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 (authorised signatory) shall submit their offer on-line in Electronic formats both for technical and financial proposal.
2. In case, any of the bidders fails to pay the Tender Fee, BSD, and RISL Processing Fee, online (subject to confirmation), its Bid shall not be accepted.
3. To participate in online bidding process, Bidders must procure a Digital Signature Certificate (Type III) as per Information Technology Act-2000 using which they can digitally sign their electronic bids. Bidders can procure the same from any CCA approved certifying agency, i.e. TCS, Safecrypt, Ncode etc. Bidders who already have a valid Digital Signature Certificate (DSC) need not procure a new DSC. Also, bidders must register on <http://eproc.rajasthan.gov.in> (bidders already registered on <http://eproc.rajasthan.gov.in> before 30-09-2011 must register again).
4. JDA will not be responsible for delay in online submission due to any reason. For this, bidders are requested to upload the complete bid well advance in time so as to avoid 11th hour issues like slow speed; choking of web site due to heavy load or any other unforeseen problems.
5. Bidders are also advised to refer "Bidders Manual Kit" available at eProc website for further details about the e-Tendering process.
6. Training for the bidders on the usage of e-Tendering System (eProcurement) is also being arranged by DoIT&C, GoR on a regular basis. Bidders interested for training may contact e-Procurement Cell, DoIT&C for booking the training slot.
Contact No: 0141-4022688 (Help desk 10 am to 6 pm on all working days) e-mail: eproc@rajasthan.gov.in
Address : e-Procurement Cell, JDA, 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 RTPPA Act 2012 and Rules thereto, the later shall prevail.


(Manoj kumar singh)
Executive Engineer (PHE-II)
JDA, Jaipur

Process for Participation & Depositing Payment Online**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

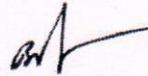
After confirming payment, the bidder will get Bid Participation Receipt on the basis of which user will get the payment details along with other details for bidding on e-Procurement portal of GOR.

- 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.

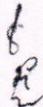
This payment mechanism will come into force w.e.f 15/10/2016. Thereafter, old payment mechanism related to NEFT/ RTGS in which the bidder makes direct payment without "Paying Slip for EFT (NEFT/RTGS)" in JDA's bank account will be discontinued.

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)

Section A-1

Instructions to Bidders

JAIPUR DEVELOPMENT AUTHORITY JAIPUR

SCHEDULE AND SPECIFICATIONS

Name of work : Providing Laying and Jointing of HDPE PE 80 PN-06 distribution line and construction of 200 mm dia tube well for 25 % developed land (Science tech city) Achrol under EE PHE-II JDA Jaipur

- | | |
|-------------------------------------|---|
| 1. NIB No. | : - E.E.(PHE-II)/02/2017-18 |
| 2. Approximate cost | : - Rs. 23.00 Lacs |
| 3. Cost of the tender documents | : - Rs 250.00 |
| 4. Earnest Money | : - Rs. @ 0.5 % Rs. 11,500.00
(For Contractors Enlisted in JDA, Jaipur)
: - Rs. @ 2 % Rs. 46,000.00
(For Contractors Enlisted in other Govt. Deptts. –“A” & “AA” Category) |
| 5. Download of tender documents | : - 03.05.2017 to 24.05.2017 (upto 6:00 PM) |
| 6. Date & Time of upload of tenders | : - 24.05.2017 (upto 6:00 P.M.) |
| 7. Date & Time of opening tenders | : - 29.05.2017 at 04:00 P.M. |
| 8. Completion period of work | : - 03 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 on the rates as given in the 'G' Schedule (BSR Items).** The work shall be carried out in accordance with the Rajasthan PWD, PHED and JDA detailed specification and to the entire satisfaction of the Engineer-In charge of the work.

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

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 total time period for this contract is equal to 03 months. The work should start within Ten days of issue of work order and complete accordingly.

SCHEDULE 'G' : ATTACHED SEPARATELY BASED ON 2016 JDA BSR (ELECTRICAL WORKS)-2015-2016 2016, JDA BSR (SANITARY WORKS)-2015-2016 2017, JDA BSR ITEMS (APPROVED NON-BSR ITEMS)-2017-2018, JDA PHE BSR (SEWERAGE & WATER SUPPLY)-2014-2015**SCHEDULE 'H' : SPECIAL CONDITION ATTACHED SEPARATELY.****SCHEDULE 'I' : SPECIAL CONDITIONS OF CONTRACT : ATTACHED AT SECTION A3.****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 3 : Payment mechanism for participating in tender: Office order D-399 dated 04.10.16.**

SIGNATURE OF CONTRACTOR


EXECUTIVE ENGINEER (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. 23.00 Lacs**
- (c) **Earnest money** : **Rs. 46,000.00** for enlisted contractors outside JDA and
: **Rs. 11,500.00** @1/2% within JDA enlistment.

(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 06 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
Witness's address & Occupation
Date:

Signature of Contractor
Address of Contractor

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


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

Section A-2

General Conditions of Contract

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

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

Name of work:- Providing Laying and Jointing of HDPE PE 80 PN-06 distribution line and construction of 200 mm dia tube well for 25% developed land (Science tech city) Achrol under EE PHE-II JDA Jaipur.

Scope of work:-

1. **Providing Laying and Jointing of HDPE PE 80 PN-06 distribution for 25% developed land (Science tech city) Achrol .**
2. **construction of one no. 200 mm dia tube well for 25% developed land (Science tech city) Achrol .**

SCHEDULE 'I'

SPECIAL CONDITIONS OF THE CONTRACT

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

18. 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.
19. 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.
20. The contractor/firm/company is bound to get the workmen insured against accident from the Insurance Company at his own cost.
21. 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.
22. The Engineer – in – Charge or his authorized representative will carry out as and when considered necessary for the quantity and quality of work done and for the materials used in the work. The contractor, unless otherwise specified shall provide all facilities and arrangements to undertake these tests and all testing charges shall be borne by the contractor.
23. The contractor shall supply required quantity of samples desired by executive engineer, the samples so obtained shall be sent to authorized laboratory for testing, if the material is not found according to the specifications the entire lot of supply will also be rejected. The entire cost of samples and testing shall be borne by the contractor.
24. **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 for the duration of the defects liability period. Except for damage due to unprecedented natural calamities. The release of SD amount shall be as per JDA office order no. JDA/Ex.En. (TA to Dir. Eng.-1)/2016/D-29 dated 11.03.16 (Annexure 'E').
25. **As Built Drawings.**
The submission of the As-built drawings of the water line work is the precondition for the final payment. The final drawings shall be submitted in one reproducible set and 3 copies on linen bound in an album of an approved size. The contractor shall submit all the completion drawings. The scale of drawing and the size of drawing shall be as per the direction of the Engineer in Charge.
26. **“Price escalation shall be admissible as per GF & AR rule and clause 45 applicable time to time.**
27. **“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.
28. 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.
29. Before start of work contractor has to inform concerned JDA zone officers to avoid/minimize road damage
30. 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.

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 be 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 as per report of state GWD/ PHED or more for 200 mm diameter TUBE WELL. 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 typeHours.....fromto

- g) Coring doneBit size..... Bit type
Hoursrecovery.....from.....to.....
- h) ReamingBit 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.....
 Lengthtype
 Perforation per meter
- Housing pipe
- Blind pipe
- Strainer pipe.....
- Bail plug.....
- l) Top of tube well above/below ground level.....
- m) Size of gravel.....
- n) Quantity used before
- o) Development.....Quantity used during development.....
- p) Method used for development.....

Total hours of testing.....

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

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

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

I/we confirm above

Signature of contractor


 Executive Engineer (PHE-II)
 JDA, Jaipur

Section A-4
Specifications of Work

SUPPLY OF HDPE 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 pipes 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.	

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 stripes 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.

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 ASTM-1474 (Notch Impact Test) should pass the Hydraulic test as per IS: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. 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 rest 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 $\frac{1}{4} : 1$ or $\frac{1}{2} : 1$ 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 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 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 minimum 15 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 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.

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 equi material for the HDPE water stops shall as per standards IS :4984-1995 pment have to be used.

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:

- | | |
|---|--|
| <p>Zone A: From the bottom of the trench to the level of the centre line of the pipe</p> | <p>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.</p> |
| <p>Zone B: From the level of the centre line of the pipe to a level 300 mm above the top of the pipe</p> | <p>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.</p> |
| <p>Zone C: From a level 300 mm above the top of the pipe to the top of the trench.</p> | <p>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.</p> |

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° 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 from 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	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/mm² 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 conform to IS: 780/ IS: 2906.

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

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

Sluice Valves

Scope

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

Nominal pressure and dimensions

The working pressure of the valves shall be 10 kg/cm² (1 MPa)

The dimension and mass of the sluice valves shall be in accordance with IS: 780 for sizes from 50 to 300 mm and IS: 2906 for sizes 350 to 600 mm.

The flanges and their dimensions of drilling shall be in accordance with IS: 1538 (part-I to XXII).

Material

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

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

Coating

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

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

Marking, testing and inspection

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

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

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

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

Air valves

Scope and general design feature

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

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

The valves shall have an integrated sluice valve. If required, they shall be installed on a flange welded on the MS pipe / special. The possible air velocity (inflow and outflow) must be at least 10 m/s. The working pressure of the air valves shall be 10 kg / cm² (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 conforming to IS 210 GR FG 200
3	Low Pressure Cover	Cast Iron conforming to IS 210 GR FG 200
4	Cowl	Cast iron conforming to IS 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/cm² 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

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.

Anchorage - 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.


Executive Engineer (PHE-II)
JDA, Jaipur

Section A-5

Annexure

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

Any person participating in a procurement process shall –

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

Conflict of Interest:-

The Bidder participating in a bidding process must not have a Conflict of interest.

A conflict of interest is considered to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations.

i. A Bidder may be considered to be in Conflict of Interest with one or more parties in a bidding process if, including but not limited to:

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

Annexure B :

Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

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

1. I/We possess the necessary professional, technical, financial and managerial resources and competence required by the Bidding Document issued by the Procuring Entity;
2. I/We have fulfilled my/our obligation to pay such of the taxes payable to the Union and the State Government or any local authority as specified in the Bidding Document;
3. I/We are not insolvent, in receivership, bankrupt or being wound up, not have my/our affairs administered by a court or a judicial officer, not have my/our business activities suspended and 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 Redressed during Procurement Process**

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

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

(1) Filing an appeal

- a. If any Bidder or prospective bidder is aggrieved that any decision, action or omission of the Procuring Entity is in contravention to the provisions of the Act or the Rules or the Guidelines issued there under, he may file an appeal to First Appellate Authority, as specified in the Bidding Document within a period of ten days from the date of such decision or action, omission, as the case may be, clearly giving the specific ground or grounds on which he feels aggrieved:
- b. Provided that after the declaration of a Bidder as successful the appeal may be filed only by a Bidder who has participated in procurement proceedings:
- c. Provided further that in case a Procuring Entity evaluates the Technical Bids before the opening of the Financial Bids, an appeal related to the matter of Financial Bids may be filed only by a Bidder whose Technical Bid is found to be acceptable.

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

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

(4) Appeal not to lie in certain cases

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

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

(5) Form of Appeal

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

(6) Fee for filing appeal

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

(7) Procedure for disposal of appeal

- (a) The First Appellate Authority or Second Appellate Authority, as the case may be, upon filing of appeal, shall issue notice accompanied by copy of appeal, affidavit and documents, if any, to the respondents and fix date of hearing.
- (b) On the date fixed for hearing, the First Appellate Authority or Second Appellate Authority, as the case may be, shall,-
 - (i) Hear all the parties to appeal present before him; and
 - (ii) Peruse or inspect documents, relevant records or copies thereof 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 an 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) If 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/CSB	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 ⁴⁺

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

Table-II

S. No.	Released SD				
	DLP period	1 st year	2 nd year	3 rd year	5 th 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 RIPP Rule 2012 and 2013 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.

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 than 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. Excise Duty Exemption on D.I. pipe line shall be applicable as per rules and bidder has to consider this while quoting the rates.
6. 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.
7. The rate quoted by the contractor shall remain valid for a period of 120 days from the date of opening of the tenders.
8. 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.
9. No conditions are to be added by the contractor and conditional tender is liable to be rejected.
10. 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.
11. If any Bid withdraws his Bid prior to expiry of said validity period given at S.No. 7 or mutually extended prior or makes modifications in the rates, terms and conditions of the tender within the said period which are not acceptable to the department or fails to commence the work in the specified period, fails to execute the agreement and fails to furnish performance guarantee the department shall without prejudice to any, other right or remedy, be at liberty to forfeit the amount of earnest money given in any form absolutely. If any contractor, who having submitted a Bid does not execute the agreement or start the work or does not complete the work and the work has to be put to re-bidding, 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
12. Rules regarding enlistment of contractors provide that work up to 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.
13. 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 in writing. Failing which, such material shall be removed by the Engineer-In charge at risk and the contractor after expiry of 3 days period.
14. 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.
15. The rates provided in Bid documents are inclusive of all Taxes, royalty.
16. 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.
17. Undersigned has full right to reject any or all Bids without given any reasons.
18. Mortar of Masonry work and lean concrete will be permitted mixer with hopper.
19. 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."
20. The Bidder are required to submit copy of their enlistment as contractor.
21. Conditions of RPWA-100 will be mandatory & acceptable to the contractor.
22. 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.
23. 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:- Providing Laying and Jointing of HDPE PE 80 PN-06 distribution line and construction of 200 mm dia tube well for 25 % developed land (Science tech city) Achrol under EE PHE-II JDA Jaipur.

"G"-Schedule

BSR Items

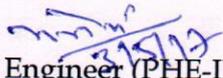
Based on 2016 JDA BSR (Electrical Works)-2015-2016 2016
JDA BSR (Sanitary Works)-2015-2016 2017
JDA BSR Items (Approved Non-BSR Items)-2017-2018
JDA PHE BSR (Sewerage & Water Supply)-2014-2015

S. No.	Particulars	Unit	Qty	Rate	Amount
1.	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 special 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 clear 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)				
a	90 MM Dia	R.mtr.	4576.00	318.00	1455168.00
b	110 MM Dia	R.mtr.	308.00	441.00	135828.00
c	140 MM Dia	R.mtr.	131.00	664.00	86984.00
d	160 MM Dia	R.mtr.	83.00	834.00	69222.00
e	180 MM Dia	R.mtr.	95.00	1042.00	98990.00
2.	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 gasket and nut bolts complete as required for following sizes. (D-547 dt. 20.12.2011) 25 mm size Air valve	Each	4.00	1202.00	4808.00

S. No.	Particulars	Unit	Qty	Rate	Amount
3.	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) 200 Nominal bore of pipe (mm)	mtr	62.00	1413.00	87606.00
4.	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.	Hours	6.00	445.50	2673.00
5.	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. 150 mm diameter Submersible pump shall have following HP Rating, phase, Head, minimum Discharge respectively. 7.5HP, 3-Ø, (65-135)Mtr, (240-115)LPM Complete Rate Group-I	Each	1.00	23184.00	23184.00
6.	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). 200 mm Nominal Bore.	R.mtr.	80.00	1089.00	87120.00
7.	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 sheet A 25 mm socket with end plug shall also be welded over top plate (as per drawing enclosed), A GI nipple having outside thread of size 1/2" (for installation pressure gauge) shall be provide & welded with GI 80 mm nipple near top plate nipple shall be provided with end plug.) (D-547 dt. 20.12.2011)	Each	1.00	908.00	908.00
8.	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 mm dia	R.mtr.	115.00	369.00	42435.00

S. No.	Particulars	Unit	Qty	Rate	Amount
9.	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 sheets suitable for 80 mm water meter (As per drawing including all accessories.) 50 mm to 80 mm dia (D-547 dt. 20.12.2011)	Each	1.00	22997.00	22997.00
10.	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: 200 mm dia Nominal bore.	R.mtr.	80.00	742.50	59400.00
11.	P/Laying ISI marked P.V.C. insulated submersible cable confirming to IS:694 with flexible copper conductor including making connection etc. as required. 4.0 Sq.mm 3 core flat / Round Complete Rate Group 1	mtr	130.00	102.40	13312.00
12.	Providing and installing of approved make spring loaded dual plate check valve of following dia. Including all taxes, inspection charges, loading and unloading, stacking etc., including cost of all labour, jointing material with nut bolts, rubber mats etc., and giving satisfactory hydraulic field testing, complete as per specifications.(D-547 dt. 20.12.2011) 50 mm	Each	1.00	1571.00	1571.00
13.	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 selector 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 platform, size of feeder penal box 900X 450X1200mm (D-547 dt. 20.12.2011) Star Delta above 5 HP to 15 HP	Each	1.00	24915.00	24915.00
14.	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. 200 mm Nominal Bore.	mtr	18.00	1638.00	29484.00

S. No.	Particulars	Unit	Qty	Rate	Amount
15.	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. 10.0 Sq.mm 3 core Complete Rate Armoured	mtr	40.00	120.80	4832.00
16.	Providing, fabricating and installing MS specials including rolling, cutting, welding in different shape and size. (D-547 dt. 20.12.2011)	Kg	30.00	80.00	2400.00
17.	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 specificatins. (D-547 dt. 20.12.2011) 100 mm	Each	2.00	274.00	548.00
18.	Supply and fixing of cast iron double sluice valves IS 14846/2000 specification (ISI marked) of PN-1 rating including cost of rubber flange gasket and nut bolts complete as required for following sizes. (D-547 dt. 20.12.2011) 100 mm	Each	1.00	5541.00	5541.00
				Total Rs.	2259926.00


Executiv Engineer (PHE-II)
JDA, Jaipur

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

(in Words.....)

'Signature of Contractor With full Address & Mobile No.
With full Address & Mobile No.