JAIPUR DEVELOPMENT AUTHORITY

Bid Document

For

P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium.

Cost : Rs. 99.32 Lacs

NIB No. 04/2017-18

Executive Engineer (PHE-I)
Jaipur Development Authority
Jaipur

जयपुर विकास प्राधिकरण, जयपुर

राम किशोर व्यास भवन, कमरा नं. 135, मुख्य भवन,
इन्दिरा सर्किल जवाहर लाल नेहरू मार्ग, जयपुर–302004

क्रमांक जविप्रा/अधि.अभि. (पीएचई–।)/2017-18/D-289 दिनांकः 19.05.2017

निविदा सूचना

निविदा सूचना सं0 अधि. अभि. (पीएचई–।)/04/2017–18

जयपुर विकास प्राधिकरण, अधिशाषी अभियंता (पीएचई–।) द्वारा (पीएचई–।) क्षेत्र में **"P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium"** स्वीकृत राशि रू 99.32 लाख कार्य की निविदा दिनांक 22.06.2017 को सायं 6:00 बजे तक आमन्त्रित की जाती है। निविदा बोली का ऑनलाईन आवेदन व भुगतान जविप्रा पोर्टल पर करने की अन्तिम तिथी 22.06.2017 को सायं 6:00 बजे तक है। निविदा बोली के दस्तावेजों का विस्तृत विवरण www.sppp.rajasthan.gov.in, www.eproc.rajasthan.gov.in and www.jda.urban.rajasthan.gov.in पर देखा जा सकता है।

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

1. निविदा दाता जयपुर विकास प्राधिकरण की वेबसाईट 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–प्राक्यूमेंट पोर्टल www.eproc.rajasthan.gov.in पर पंजिकृत हो।

अधिशाषी अभियंता (पीएचई–।)
जविप्रा, जयपुर।

JAIPUR DEVELOPMENT AUTHORITY

Room No. 135, Main Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 Telephone: +91-141-2569696 E.mail: zephe1jda@yahoo.in

No: - JDA/EE/PHE-I/2017-18/D-289 **Dated: 19.05.2017**

NOTICE INVITING BID

NIB No. : JDA/EE (PHE-I)/04/2017-18

Online Bids are invited up-to 6.00 PM of 22.06.2017 for the work **"P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium"** Estimated cost of Rs. 99.32 Lacs. The last date for Applying Bid and making online payment on JDA portal is up-to 6.00 PM of 22.06.2017. 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.jda.urban.rajasthan.gov.in.

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.

(Mukesh Kumar Meena)
Executive Engineer (PHE-I)
JDA, Jaipur

JAIPUR DEVELOPMENT AUTHORITY

Room No. 135, Main Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 Telephone: +91-141-2569696 E.mail: zephe1jda@yahoo.in

Bid No: - JDA/EE/PHE-I/2017-18/D-289 **Dated: 19.05.2017**

NOTICE INVITING BID

NIB No. : JDA/EE(PHE-I)/04/2017-18

Name & Address of the Procuring Entity	➢ Name: Executive Engineer (PHE-I), Jaipur Development Authority Address: Room No. 135, Main Building, Ram Kishore Vyas Bhavan, Indira Circle, JawaharLal Nehru Marg, Jaipur – 302 004 Telephone: +91-141-2569696 E.mail: zephe1jda@yahoo.in
Subject Matter of Procurement	➢ **P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium** ➢ **Job No. :** 208/2014-15 (NR-300/2015-16)
Bid Procedure	➢ Single Stage Tender (eg. Single-stage Two part (envelope) open competitive) eBid procedure at http://eproc.rajasthan.gov.in
Bid Evaluation Criteria (Selection Method)	➢ L1 (eg.Least Cost Based Selection (LCBS)-L1)
Websites for downloading Bidding Document, Corrigendum's, Addendums, etc.	➢ Websites: www.sppp.rajasthan.gov.in, www.eproc.rajasthan. gov.in, www.jda.urban.rajasthan.gov.in
Website for online Bid application participation and payment *	➢ Website: www.jda.urban.rajasthan.gov.in ➢ For participating in the Bid, the Bidder has to apply for this Bid and pay the Bidding Document Fee, RISL Processing Fee and Bid Security Deposit, online only. o Bidding document fee: Rs. 500/- Rupees (Five hundred only) o RISL Processing Fee: Rs. 1000/- (Rupees One Thousand only) Requisite Bid Security Deposit
Estimated Procurement Cost	➢ INR 99,32,803/- (Rupees Ninety Nine Lacs Thirty Two Thousand Eight Hundred Three Only)
Bid Security Deposit	➢ Amount (INR) : 2% (Rs.1,98,656/-) of Estimated Procurement Cost, 0.5% (49,664/-) 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	➢ NA
Applying Bid and making Online Payment on JDA portal (www.jda.urban.rajasthan.gov.in)	➢ Start Date: 31.05.2017 at 9.30 AM ➢ End Date: 22.06.2017 at 06.00 PM ➢ 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 23.06.2017 10.00AM to 28.06.2017 upto 5.00 PM
Bid Submission on e-Procurement Portal of GOR	➢ Start Date: 31.05.2017 at 9.30 AM ➢ End Date: 22.06.2017 at 06.00 PM
Date/Time/Place of Technical Bid Opening	➢ 29.06.2017 at 03.00 PM
Date/ Time/ Place of Financial Bid Opening	➢ Will be intimated later to the Technically qualified bidders in case of Two Bid
Bid Validity	➢ 120 days from the bid submission deadline
Completion period of work	➢ 7 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 RTPP Act 2012 and Rules thereto, the later shall prevail.

(Mukesh Kumar Meena)
Executive Engineer (PHE-I)
JDA, Jaipur

Annexure: 3
As part of NIB Document

Process for Participation & Depositing Payment Online

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

To participate in the bid, bidder has to be:

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

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

Methods for depositing on line amount

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

  Jaipur.

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

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

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

Jaipur Development Authority

Bid Participation Receipt

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

Bid Detail

Bid Id : 6215152001 **Procurement Entity :** XXXXXXXXXXXXX

Bid Title : Testing

Bid Value : 300000 **Bid Opening Place :** Manthan Hall, Jaipur Development Authority

Bidder Detail

Name of Entity : XXXXXXXXXXX Mobile: 9829012345

Registration Type: Individual Instrument Amount : 32500.00

Payment Mode: Online/UTR Payment Channel :Payment Gateway/ICICI Branch - JDA

Instrument No : 456123789 Instrument Date : 17-06-2015

Dates Detail

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

Specific Instrument Detail for eProc Rajasthan

Instrument Type: DD

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

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

Section A-1
Instructions to Bidders

JAIPUR DEVELOPMENT AUTHORITY JAIPUR

SCHEDULE AND SPECIFICATIONS

Name of work:- P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium.

1. NIB No. :- E.E.(PHE-I)/04/2016-17
2. Bid cost :- Rs. 99.32 Lac
3. Cost of the tender documents :- Rs 500/-
4. Earnest Money :- Rs. @ ½% Rs. 49,664/-
   (For Contractors Enlisted in JDA in class C/B/A/AA, Jaipur)
   :- Rs. @ 2 % Rs. 1,98,656/-
   (For Contractors Enlisted in other Govt. Deptts. In Class-A/AA category)
5. Download of tender documents : - 31.05.2017 to 22.06.2017 (upto 6.00 PM)
6. Date & Time of upload of tenders :- 22.06.2017 (upto 6.00 P.M.)
7. Date & Time of Opening tenders :- 29.06.2017 at 3.00 P.M.
8. Completion period of work : - 7 Months.
9. Bid Validity : - 120 Days

SCHEDULE 'A' : INFORMATION USEFUL FOR THE CONTRACTORS :

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

The bid will be opened only of those bidders deposit proper bid security, processing fee, tender fee, VAT clearance certificate (Valid up to 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 form 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 work should start within Ten days of issue of work order and complete **within 7 months.**

SCHEDULE 'G' : ATTACHED SEPARATELY BASED ON JDA PHE BSR & JDA PWD BSR 2016 & approved rates.

SCHEDULE 'H' : SPECIAL CONDITION & BoQ for which rate to be quoted by bidder.

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

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

Annexure B : Declaration by the Bidder regarding Qualifications

Annexure C : Grievance Redressal during Procurement Process

Annexure D : Additional Conditions of Contract

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

SIGNATURE OF CONTRACTOR

with full address & Mobile No. :

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

Section A-2
General Conditions of Contract

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

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

SCHEDULE 'I'

Name of work:- P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium

Scope of work:-

1. P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium as per site requirement.

SPECIAL CONDITIONS OF THE CONTRACT (Part-A)

CONTRACT

1.1 Type of Contract

THE WORK DESCRIBED IN THIS TENDER DOCUMENTS CONSIST OF TWO PARTS;

PART "A"	**P/L/J OF DI PIPE LINE FOR TREATED WATER AND INSTALLATION OF CENTRIFUGAL SUBMERSIBLE PUMP SET, ELECTRIC PANEL, VALVES ETC.**
PART "B"	**PROVISION FOR OPERATION AND MAINTENANCE WORKS AND CONSTRUCTION OF 500 KL TREATED WATER TANK AT SAHKAR MARG.**

1.2 Priority of contract

The documents forming part of the agreement are to be taken as mutually explanatory documents of one another. In case of discrepancies they shall be explained and adjusted by the Engineer In Charge. The priority of the Contract documents shall be as follows:

1. Letter of award
2. Special Conditions of Contract Part A & Part B

Instructions to Bidders

3. General Conditions of Contract
4. Work description/ Scope of works
5. Technical specifications
6. Drawings
7. Bill of quantities

Design And Drawings

2.1 General Design Obligations

The Contractor shall be deemed to have scrutinized, prior to submission of bid, the JDA Requirements (including design criteria and calculations, if any). The Contractor shall be responsible for the design of the following works and for the accuracy of such designs-

1. RCC CWR

JDA shall not be responsible for any error, in accuracy or permission of any kind in JDA requirements as originally included in the contract. Any data or information received by the Contractor, from JDA or otherwise, shall not relieve the Contractor from his responsibility for the design and execution of the works.

2.2 Contractor's Documents & Submission Procedure For Detailed Design & Execution Drawings

The Contractor's Documents shall comprise the Technical Documents specified in the JDA requirements, Documents Requirement to satisfy all regulatory approvals, As Built Documents and Operation and Maintenance Manuals. The Contractor's Documents shall be written in the language for communications defined in contract.

If errors, omissions, ambiguity, inconsistencies, inadequacies or other defects are found in the Contractors Documents, these and the works shall be corrected at the Contractor's cost, notwithstanding any consent for approval under this clause.

The contractor shall carry out the preparatory works such as Topographic survey, soil investigations, geo technical investigations etc to prepare the plans, designs, drawings etc.

The contractor is required to submit the detailed design and execution drawings such as site plan, general arrangement drawings, plans, structural drawings and all working drawing of all civil works stated in the above clause 2.1. He will also submit the detailed system and working drawings as well as performance curves and data for all hydraulic, mechanical, Electro-mechanical and electrical equipment.

The detailed design & execution drawings shall be submitted only after verification by MNIT,MBM engineering college or any other NIT as per approval of EIC.

2.3 Approval procedures

After submission of detailed designs, working drawings and documents etc., the competent authority or his authorized representative shall progressively review them and issue an approval within 15 days. The period of review will be counted after all quarries are replied satisfactorily. The schedule should be such so as not to obstruct the actual construction work.

The following shall be the procedure for submission and approval of detailed design and execution drawings:

The Contractor shall submit three copies of design/drawings and performance curves etc. to the Engineer in Charge. All the drawings are to be signed by the Contractor or his authorized representatives.

(a) The Engineer in Charge will review the design/drawings etc. and if found in order return one copy duly approved to the Contractor within 15 days.

(b) In case the design/drawings etc. are not found fit for approval, the Engineer in Charge will mark the comments on them and return two copies to the Contractor within 15 days and the same shall be repeated till drawings are finally approved as mentioned in the above clause. The contractor in such cases shall submit the revised and corrected design/drawings within 15 days to the receipt of comments from Engineer-In-Charge.

(c) On request of the Engineer in Charge, the Contractor shall depute the design engineer responsible for the particular design/drawing to discuss with the Engineer in Charge or his Representative.

(d) On receipt of approved designs/drawings as per sub-clause (b) above, the Contractor shall submit four (4) additional copies of the approved designs / drawings to JDA for reference and records.

No designs / drawings with corrections made after taking the prints will be accepted.
The approval of drawings/designs by the Engineer in Charge shall not relieve the Contractor of his responsibility in terms of the Contract for soundness of the designs. The Contractor shall be responsible for the structural safety of all the components of the Work.

2.4 Discrepancies between Drawings and Specifications

In case of discrepancies between drawings and specifications or data sheets arising from the meaning, dimensions or quality of the materials and equipment for the due and proper execution of the Work, the discrepancy shall be explained by the Engineer in Charge. His explanation shall be the final decision and the Contractor shall execute the Work accordingly without any extra payment.

3. Pre – Construction, Inspection and testing and review of data for material, plant and equipment

- The contractor shall place order for the material and equipment only after approval of Engineer In Charge. The contractor shall submit the detailed drawings to the Engineer In Charge for approval.
- The contractor shall inform the Engineer In Charge about the likely dates of manufacture, testing and dispatching of the material. The contractor shall notify the Engineer In Charge for inspection and testing, at least twenty eight (28) days prior to packing and shipping and shall supply the manufacturers test results and quality control certificate.
- The inspection and test categories shall be applied prior to delivery of the equipment of various categories as indicated in the technical specifications for each type of equipment.

Category A: The drawing/data sheet has to be approved by the Engineer In Charge before manufacture and testing. The material has to be inspected by inspecting agency at the manufacturers premise before packing and dispatching.
Category B: The drawings of the equipment have to be submitted and to be approved by the Engineer In Charge prior to manufacture. The material has to be tested by the manufacture and the manufacturers test certificate are to be submitted and approved by the Engineer In Charge before dispatching of the equipment. Notwithstanding the above, the Engineer In Charge after examination of the test certificates, reserves the right to instruct the contractor for testing, if required, in the presence of the contractors representative.
Category C: The material may be manufactured as per standards and deliver to the site.

- For material/equipment under Category 'A' and 'B' the Engineer In Charges will provide an authorization for packing and shipping after inspection.
  - The testing, approval for dispatching shall not absolve the contractors obligations for satisfactory performance of the plant.

Inspection Category

S.Nos.	Items	Category
	Related to Rising mains and Distribution System	
1.	Cast Iron specials	B
2	uPVC / DI pipes	A
3	Sluice Valves, Reflux valves, Air Valves, Water Meter, Bulk Meter and Pressure sensor, Magnetic Water Meter	B
4	C.I. Joints and rubber rings for joints & couplers	B

3.1 Third Party Inspection :

The contractor is to contact for third party inspection amongst the CEIL, SGS, RITES on his own. He shall deposit & bear the cost of inspection. The contractor should inform the JDA of the name of agency finalized by him for the contract. The agency finalized by him for the contract. The agency will be same for all items of supply in this contract requiring 3rd party inspection.
The manufacturer should be required to call for inspection to the agency under instructions of the Contractor and Engineer In Charge. The Engineer in Charge may depute a representative to witness the inspection. The inspection agency should furnish copies of Inspection Certificate to the manufacturer, Contactor and to the Engineer In Charge directly. All material tested and found satisfactory as per specifications shall be marked distinctly.

3.2 Cost for Inspection

The cost of inspection shall be borne by the contractor.

3.3 Approval of Material and Equipment

The fact that the Contractor has agreed to provide the material prescribed in the Tender Documents does not release him to ask for the final approval of the equipment and material to be used for the Work. The specifications and drawings of each item to be supplied shall be individually scrutinized and its conformity with the technical specifications and the standards shall be verified by the Engineer In Charge.
Prior to ordering any material and equipment such as pipes, specials, measuring equipment's, mechanical and Electro-mechanical equipment, electrical equipment, material for civil works and interior decoration, paints, etc. the Contractor has to supply the detailed specification, drawings, performance curves and data, operation instructions etc., to the Engineer In Charge. If the Contractor has any doubts about the required specifications as prescribed in the Contract, he has to clarify them with the Engineer In Charge.
The procedure for the submission of documents, verification, re-submission if necessary and approval of these items is the same as that for the drawings, described in clause 2.3. If equipment or material which the Contractor submitted first is refused in the approval process he has to submit documents of such equipment which corresponds to the specifications of the Tender Documents and which is likely to be approved. Only after approval of the material and equipment, the Contractor can place the order or start the manufacturing or purchasing procedures.
Four weeks prior to packing and shipping the Contractor must inform the Engineer In Charge when the material/equipment is ready for inspection and testing. At this date, the Contractor shall supply the results of all manufacturer's own tests made during or after manufacturing and his own quality control certificates. The Engineer In Charge will decide whether he or his representative will inspect and test the material/ equipment or whether he will approve it on the basis of the supplied documentation.
Inspection of bought out items i.e. Sluice valve, Air Valve, or any other Electro-Magnetic, Electrical and Mechanical equipment(s) and other items defined under Category 'A' shall done by third party selected by the JDA.
The Engineer In Charge will provide an authorization for packing and shipment after inspection and/or approval of the material/equipment.
If the Contractor packs and ships material/ equipment without approval or authorization of the Engineer In Charge-in-Charge, it can be refused if it is not matching with the specifications of the Contract. All costs resulting from this are to be borne by the Contractor. The Contractor has then to provide the material/ equipment, which is matching with the Contract.

4. COMPLETION OF THE WORK

4.1 Time for completion

The whole of the work, including mobilization, reconnaissance, construction, installation, testing, commissioning and trial runs, and demobilization has to be completed within a period of **07 months** calculated from the commencement date, which is 10 days after the written order to commence the Work.

4.2 Completion of work and fully commissioning

Once the entire system has been successfully tested and commissioned, and removal of all visible defects to the satisfaction of Engineer In Charge-in-Charge, the work shall be treated as **"Completed".**

Unless otherwise provided in the contract, after the successful completion Engineer In Charge shall issue a certificate of "Completion of Work". The date of Certificate notifying "Completion of Work" will be used for the final payment as per clause 6 and 7 of General Conditions of Contract. From this date of issue of certificate for "Completion of Work", the Operation and Maintenance period shall commence.

4.3 Defects liability period

The defect liability period shall be of 3 years, from the date of the completion. The contractor shall be responsible for satisfactory performance of the work under all design and operation 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').

4.4 Cost of water and electricity for testing

Water and electricity for construction and testing of scheme purpose shall be arranged by the contractor at his own cost. Electricity for trial and run period shall be provided by JDA. Electric connection and regular electric bill of TW shall be paid by JDA but liaison work shall be carried by contractor with JVVNL, Jaipur.

5 As-Built Drawings

The submission of the as-built drawings for the equipment 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 and approved design calculations on CD ROM / DVD in two copies with proper directory structure. The scale of drawing and the size of drawing shall be as per the direction of the Engineer In Charge.

The contractor shall prepare, and keep up to date, a complete set of "as built" records of the execution of the works, showing the exact as built locations, sizes and details of the works as executive. The records shall be kept on the site and shall be used exclusively for the purpose of this sub clause. Two copies shall be supplied to JDA before the commencement of the tests on completion. The Contractor shall obtained the consent of JDA as to their size, the references system, and other relevant details.

6 Progress Of Work

All components of works shall ensure a logical sequence of supply, installation, testing, and commissioning. If any supply of a material is made, not in conformity to the logical sequencing of the work component, no payments will be entitled against such supplies and installations.

It will be the responsibility of contractor to maintain simultaneous pro-rata progress of civil work, pumping stations, RCC SR.

7 Documents Required For Payment:

The contractor shall submit the following documents in duplicate along with the invoice/bill.

(i) Invoice indicating details of equipment's, material manufactured, supplied and installed or work carried out, supply value of such material or equipment or value of such work carried out and amount claimed.
(ii) Inspection reports/ test reports/ reports certifying completion of activity with acceptable results.
(iii) Report/certificate of inspections /tests carried out by the supplier of the contractor or by the contractor himself.
(iv) Any other such details/documents as may be reasonably specified by the Engineer In Charge-in-Charge from time to time during execution of the contract.
(v) Certificates, as prescribed, regarding payment of Sales Tax, duties etc. legible on supplies made.
(vi) Other documents required by the Engineer In Charge-in-charge.

8 Payment Terms

9.1 Breakup of Payment for construction of RCC CWR

1	After excavation, laying PCC and casting of foundation slab	15%
2	After completion of outer vertical wall, RCC stair case inside and outside	30%
3	After completion of top dome, Head room, railing	30%
4	After fixing of CI fittings, painting and miscellaneous works, and satisfactory testing as per standards	25%

9.2 Breakup of payment for Supply laying jointing, installation and testing of uPVC pipe line and specials, installation of sluice valve, Air Valves and dismantling joints.

1	After Supply laying jointing, installation and testing of uPVC pipe line and specials, installation of sluice valve, Air Valves and dismantling joints.	80 % payment on providing lowering in trenches, laying installation and jointing etc. complete. Remaining 20 % after satisfactory testing

10. Refund of Performance Guarantee & Security Deposit

The Security Deposit (SD) and Performance Guarantee (PG) shall be refunded after successfully completion for defect liability period as per JDA DLP norms.

10.1 The contractor/firm or company while executing the above work will adopt all safety measures on his cost to safeguard from any loss of life & damage of public & private property. if any loss & damage occurred then they will pay the full compensation from their own pocket. all the consequence will be born by them & JDA will not be responsible in any way.

10.2 The contractor/firm or company will display necessary signboards & lights from safety point of view during nights at site of work on his own cost as directed by the authorized Engineer In Charge.

10.3 The contractor shall not work after the sunset & before sunrise without specific permission of the Engineer In Charge in-charge.

10.4 Contractor shall provide sufficient number of boards at site of work indicating 'JDA AT WORK" at his own cost as required by Engineer In Charge-In Charge.

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

11. **Price Variation Clause:**

If, during the progress of the contract of value exceeding Rs. 50.00 lac (accepted tendered amount minus cost of material supplied by the department), and where stipulated completion period is more than 03 months (both the conditions should be fulfilled), the price, of any materials/bitumen/diesel and petrol / cement / steel incorporated in the works (not being materials to be supplied by the department) and / or wages of labour increases or decreases, as compared to the price and / or wages prevailing at the date of opening of tender or date of negotiations for the work, the amounts payable to contractors for the work shall be adjusted for increase or decrease in the rates of materials (excepting those materials supplied by the department) / labour / bitumen / diesel and petrol / cement / steel. If negotiated rates have been accepted, prices as on the date of negotiation shall be considered for price adjustment. Similarly, if rates received on the

date of opening of tenders have been accepted, then prices on the date of opening of tender shall be considered for price adjustment.
Increase or decrease in the cost of labour / material / bitumen /diesel and petrol / cement / steel shall be calculated quarterly in accordance with the following formula.

(A) Labour :

$$V_L = 0.75 \text{ x } \frac{P_L}{100} \text{ x } \frac{(I_{L1} - I_{L0})}{I_{L0}}$$

V_L = Increase or decrease in the cost of work during the quarter under consideration due to change in rates for labour.
R = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.
I_{L0} = The average consumer price index for industrial workers (whole-sale prices) for the quarter in which tenders were opened / negotiated (as published in Reserve Bank of India Journal / labour Bureau Simla, for the area).
I_{L1} = The average consumer price index for industrial workers (whole-sale prices) for the quarter of calendar year under consideration (as published in Reserve Bank of India Journal / labour Bureau Simla, for the area).
P_L = Percentage of labour components.
Note: In case of revision of minimum wages by the JDA or other competent authority, nothing extra would be payable except the price escalation permissible under this clause.

(B) **Material** (excluding material supplied by the department)

$$V_M = 0.75 \text{ x} \frac{P_M}{100} \text{ x } \frac{(L_{M1} - L_{M0})}{L_{M0}}$$

V_M = Increase or decrease in the cost during the quarter under consideration due to change in rates of material.
R = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.
L_{M0} = The average wholesale price index (all commodities) for the quarter in which tender were opened / negotiated (as published in Reserve Bank of India Journal / labour Bureau Simla, for the area).
L_{M1} = The average wholesale price index (all commodities) for the quarter under consideration (as published in Reserve Bank of India Journal / labour Bureau Simla, for the area).
P_M = Percentage of material component (excluding materials supplied by the Department).

(C) Bitumen :

$$V_b = 0.75 \text{ x } \frac{P_b}{100} \text{ x } \frac{(B_1 - B_0)}{B_0}$$

V_b = Increase or decrease in the cost during the quarter under consideration due to change in the rate for bitumen.
R = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.
B_0 = The wholesale price for bitumen on the day of opening of tenders/negotiation, as published by the Economic Adviser to Govt. of India, Ministry of Industry.
B_1 = The average wholesale price index for bitumen for the quarter under consideration (as published by the Economic Adviser to Govt. of India, Ministry of Industry.
P_b = Percentage of bitumen component excluding supplied by the Department (Specified in the sanctioned estimate of the work).

(D) Petroleum :

$$V_f = 0.75 \text{ x } \frac{P_f}{100} \text{ x R } \frac{(F_1 - F_0)}{F_0}$$

V_f = Increase or decrease in the cost of work during the quarter under consideration due to change in the rates for fuel and lubricants.
R = The value of the work done in rupees during the quarter under consideration excluding the cost of materials supplied by the department and excluding other items as mentioned in this clause.
F_0 = The average wholesale price Index of High Speed Diesel (HSD) as published by the Economic Adviser to the Govt. of India, Ministry of Industry on the day of opening of tender / negotiations.
F_1 = The average wholesale price index of H.S.D. for the quarter under consideration as published weekly by the Economic Adviser to Govt. of India, Ministry of Industry for the quarter under consideration.
P_f = Percentage of fuel and lubricants component excluding fuel and lubricants supplied by the Department (Specified in the sanctioned estimate for the work).
R = Total work done during the quarter as prescribed under this clause.

Note : For application of this clause price of HSD is chosen to indicate fuel and lubricant component.

(E) **Cement :**

$$V_f = 0.75 \text{ x } \frac{P_f}{100} \text{ x R } \frac{(F_1 - F_0)}{F_0}$$

V_C = Increase or decrease in the cost of work during the quarter under consideration due to change in rates for cement.

R = The value of the work done in rupees during the quarter under consideration excluding the cost of cement supplied by the department and excluding other items as mentioned in this clause.

I_{C0} = The average wholesale price index for the quarter in which tenders were opened / negotiated (as published by the Economic Advisor to Government of India , Ministry of Industries.).

I_{C1} = The average wholesale price index for the quarter under consideration (as published by the Economic Advisor to Government of India , Ministry of Industries).

P_C = Percentage of cement components (excluding cement supplied by the Department).

(F) Steel :

$$V_f = 0.75 \text{ x } \frac{P_f}{100} \text{ x R } \frac{(F_1 - F_0)}{F_0}$$

V_S = Increase or decrease in the cost of work during the quarter under consideration due to change in rates for steel.

R = The value of the work done in rupees during the quarter under consideration excluding the cost of steel supplied by the department and excluding other items as mentioned in this clause.

I_{S0} = The average wholesale price index for the quarter in which tenders were opened / negotiated (as published by the Economic Advisor to Government of India , Ministry of Industries.).

I_{S1} = The average wholesale price index for the quarter under consideration (as published by the Economic Advisor to Government of India , Ministry of Industries).

P_S = Percentage of steel components (excluding steel supplied by the Department).

Clause 45 A : Price Variation in – installation of elevators, supply/installation of Centrally Air Conditioning and Central Evaporating Cooling Works :

In all cases of contracts for installation of elevators, supply/installation of Central Air Conditioning and Central Evaporating Cooling Works, the price quoted shall be based on the Indian Electrical and Electronics Manufacturers Association (IEEMA) price variation clause based on the cost of raw materials / components and labour cost as on the date of quotation / tender, and the same is deemed to be related to wholesale price index number of metal products and All India Average consumer price index number of industrial workers as specified below. In case of any variation in these index numbers, the prices shall be subject to adjustment up or down in accordance with following formula.

$$P = \frac{P_0}{100}\left[15+55\frac{MP}{MP_0}+15\frac{W_0\,(D)}{Wo}+15\frac{Wo\,(I)}{Wo}\right]$$

Where :

P = Price payable as adjusted in accordance with the above price variation formula.

P_0 = Price quoted / confirmed

M_{P0} = Wholesale Price Index Number for metal products as published by the office of the Economic Adviser, Ministry of Industry, JDA of India in their weekly bulletin, Revised Index Number of Wholesale Prices (Base : 1981-82=100) for the week ending first Saturday of the relevant calendar month. The relevant month shall be that in which price was offered or negotiated whichever is later.

W_0 = All India Average Consumer Price Index Number for Industrial workers (Base : 1982 = 100) as published by Labour Bureau, Ministry of Labour, JDA of India, for relevant calendar month. The relevant month shall be that in which price was offered or negotiated whichever is later.

The above index number MPo & We are those published by IEEMA as prevailing on the first working day of the calendar month FOUR months prior to the date of tendering.

MP = Wholesale Price Index Number of Metal Products as published by the office of Economic Adviser, Ministry of Industry, JDA of India, in their weekly bulletin Revised index number of wholesale prices (Base : 1981-82 = 100). The applicable wholesale price Index Number for Metal Products as prevailing on Ist Saturday of the month covering the date FOUR months prior to the date of delivery and would be as published by IEEMA.

W0 (D)= All India Average Consumer Price Index Number for Industrial workers prevailing for the month covering the date FOUR months prior to the date of delivery of manufactured material and would be as published by IEEMA.

W0 (I) = All India Average Consumer Price Index Number for Industrial workers (Base : 1982=100) as published by Labour Bureau, Ministry of Labour, JDA of India. The applicable All India Consumer Price Index Number of Industrial workers prevailing for the FOUR months prior to the date of completion of installation / progress parts of installation and would be as published by IEEMA. The date of delivery shall be the date on which the manufactured material is actually supplied at site. The date of completion of installation (or progress part of installation shall be the date on which the work is notified as being completed and is available for inspection / duly tested. In the absence of such notification, the date of completion is not intimated, such completion shall be considered by the Engineer-in-charge which shall be final.

Note-1 The Wholesale Price Index Number for Metal Products is published weekly by the office of the Economic Adviser, but if there are any changes, the same are incorporated in the issue appearing in the following week. For the purpose of this Price Variation Clause, the final index figures shall apply.

Note-2 The sole purpose of the above stipulation is to arrive at the entire contract under the various situations. The above stipulation does not indicate any intentions to sell materials under this contract as movables.

Note-3 The indices MP & Wo are regularly published by IEEMA in monthly basic price circulars based on information bulletins from the authorities mentioned. These will be used for determining price variation and only IEEMA Circulars will be shown as evidence, if required.

General Conditions for admissibility of Escalation

1. The exact percentage of labour / material (excluding materials to be supplied by the department)/bitumen/diesel and petrol/cement/steel component for the work shall be approved by the authority while sanctioning the detailed Estimates.

2. The break-up of components of labour / materials (excluding materials to be supplied by the department)/bitumen/diesel and petrol cement/steel as indicated in Clause 45 have been pre-determined as below :

(a)	**Labour**	**00.00 percent**
(b)	**Material**	**00.00 percent**
(c)	**Bitumen**	**00.00 percent**
(d)	**Diesel and Petrol**	**00.00 percent**
(e)	**Cement**	**00.00 percent**
(f)	**Steel**	**00.00 percent**
	Total	**000.00 percent**

3. While allowing price escalation the following shall be deducted from the value of work done (R): (a) Cost of material supplied by the Department. (b) Cost of services rendered as per clause 34. (C) of Secured Advance / any advance added earlier but deducted now after work is measured. (d) Cost of extra items, the rates for which have been worked out based on market rates / mutually agreed rates.

4. The first statement of escalation shall be prepared at the end of three months in which the work was awarded and the work done from the date of start to the end of this period shall be taken into account. For subsequent statement, cost of work done during every quarter shall be taken into account. At the completion of work, the work done during the last quarter or fraction, thereof, shall be taken into account.

5. For the purpose of reckoning the work done during any period, the bills prepared during the period shall be considered. The dates of recording measurements in the Measurement Book by the Assistant Engineer shall be the guiding factor to decide the bills relevant to any period. The date of completion, as finally recorded by the competent authority in the Measurement Book shall be the criterion.

6. The index relevant to any quarter, for which such compensation is paid, shall be the arithmetical average of the indices relevant of the calendar month.

7. Price adjustment clause shall be applicable only for – the work that is carried out within the stipulated time, or extension thereof, as are not attributable to the contractor.

8. If during the progress in respect of contract works stipulated to cost Rs. 50 lacs or less. the value of work actually done excluding cost of material supplied by the Department exceeds Rs. **50** lacs and completion period is more **than 03** months, then escalation would be payable only in respect of value of work in excess over Rs. 50 lacs from the date of satisfying both the conditions.

9. Where originally stipulate period is 03 months or less but actual period of execution excess beyond 06 months on account of reasons not attributable to contractor, escalation amount would be payable only in respect of extended period of amount of work is more than Rs. 50 lac.

10. In case the contractor does not make prorate progress in the first or another time span and the short fall in progress is covered up by him during subsequent time span within original stipulated period then the price escalation of such work expected to be done in the previous time span shall be notional given based upon the price index of that quarter in which such work was required to be done.

11. No claims for price adjustment other than those provided therein shall be entertained.

12. If the period of completion including extended period attributable to JDA exceeds twelve months but cost does not exceeds more than Rs. 50 lac, no escalation is admissible.

13. Similarly, if cost of works increases more than Rs. 50 lac but completion period including extended period attributable to JDA is less than 3 months, no escalation is admissible.

14. No provisional escalation is payable quarterly and no provisional escalation is payable monthly or fortnightly.

15. Escalation is always payable quarterly and no provisional escalation is payable monthly of fortnightly.

16. In case at the time of executing agreement, both the conditions (completion period **3 months** and amount of work **Rs. 50 lac)** for admissibility of price escalation are not fulfilled and subsequently due to additional work and extension of time attributable to JDA, both the conditions become fulfilled, in that case the escalation shall be payable from the date of satisfying both the conditions and only for work done beyond Rs. 50 lac and in period of work beyond 6 months.

17. The contractor shall for the purpose of this conditions keep such books of accounts and other documents are necessary to show the amount of any increase climbed or reduction available and shall allow inspection of the same by a duly authorized representative of JDA and further shall at the request of the Engineer-in-charge furnish, verified in such a manner as the Engineer-in-charge may required any documents so kept and such other information as the Engineer-in-charge may requireContractor shall get the material 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.

18. In case of pipe line testing shall be done as per the relevant Codal 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.

19. The JDA shall be free to carry out the work from any participating agency on the rate of lowest bidder during the concurrency of rate contract.

20. Excise Duty Exemption on DI pipe line shall be applicable as per rules and bidder has to consider this while quoting the rates. Bidder shall assess regarding applicability of EI certificate of DI pipe for this work.

21. The contractor shall submit the proof of ownership of suitable machinery for laying of pipeline in all type of strata.

22. The quantity of work can be increased or decreased. However, no guarantee is given about the actual quantity of work.

23. 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.

24. 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.

25. The electric connection, if required, for construction and testing purpose shall be arranged by the contractor at his own cost.

26. 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 inforce, shall also be provided by the contractor at his own cost.

27. 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.

28. The security deposit of the work shall be refundable after six months from the date of completion of the work only after successful testing of the works.

29. 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.

30. Water for construction / testing purpose shall have to arranged by contractor at his own cost. If water is supplied by the department, the same shall be recovered from the contractor from each running bill at the rate of 1% of total value of pipe line laying work, In case of metered connection the charges shall be recovered on the actual consumption basis on the commercial rates.

31. The contractor shall be fully responsible for structural safety and water tightness of pipeline when tested.

32. No secured advance against material procured at site will be allowed.

33. 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 sector engineer. After taking layout, the contractor shall submit day to day schedule of work to the Engineer–in- charge in advance.

34. 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.

35. 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.

36. 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.

37. The surplus earth and damaged materials will be immediately removed from the site of work and dumped as per instruction of Engineer-in-charge.

38. 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.

39. 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.

40. The contractor/firm/company is bound to get the workmen insured against accident from the Insurance Company at his own cost.

41. 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.

42. 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 and approved design calculations on CD ROM / DVD in two copies with proper directory structure. The scale of drawing and the size of drawing shall be as per the direction of the Engineer in Charge.

43. If there is any typographical error or otherwise in the 'G' Schedule. The nomenclature and the rates as given in the relevant BSR-2010 and JDA approved items/rates on which schedule 'G' is based, shall prevail.

SPECIAL CONDITIONS OF THE CONTRACT

1. Contractor shall get the D.I. 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 arranged by contractor at his own cost. If water is supplied by the department, the same shall be recovered from the contractor from each running bill at the rate of 1% of total value of pipe line laying work, In case of metered connection the charges shall be recovered on the actual consumption basis on the commercial rates.
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 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. The contractor shall be solely responsible for all kind of liaison before starting the work with PHED/Other JDA zone/JVVNL & BSNL etc. which is required to avoid any damage of already laid pipe lines, Electric, BSNL cables. The contractor shall also liaison for the inter connection work with existing PHED system.
27. Before start of work contractor has to inform concerned JDA zone officers to avoid/minimize road damage
28. 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.

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

I/we confirm above

Signature of contractor

Executive Engineer (PHE-I)
JDA, Jaipur

Operation & Maintainance of all newly developed treated water assests under the contract as per scope of work for 36 months.

Definitions-

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

1 - Administrative Provision

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

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

a) Required pursuant to applicable law:
b) As may be necessary for keeping the facility in a satisfactory condition such that the Facility will continuously, comply with the Operation Standard; and
c) As may be necessary to ensure that the Facility shall continuously be in an optimum condition and state in relation with the lifetime of the Facility.

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

Brief scope under this contract will be as described below:

1.4.1 To schedule daily operations
1.4.2 To schedule inspection of machinery viz. lubrication, servicing, etc.
1.4.3 To keep records for daily operation and activities
1.4.4 To keep records of spare parts, equipment, tools, consumables, etc.
1.4.5 Inventory of stores
1.4.6 To keep records of staff in position
1.4.7 To prepare O & M manual
1.4.8 To provide necessary tools, tackles and instruments

2.0 OBJECT OF CONTRACT :

2.1 RISKS AND OBLIGATION OF THE CONTRACTOR :

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

2.1.1 Pump treated water from 1 MLD CETP to vidhan sabha & SMS stadium. Maintain D.I. Pipe lines, Pumping machinery of treated water tank Electric panels, valves, flow meters and all the other assets created under this contract.

2.1.2 Control and Operate the Pumping machinery.

2.1.3 Routine Maintenance of pumping station and HT switch room buildings, electrical, mechanical and instrumentation installations, equipment and areas;;

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

2.1.5 If any loss or damage happens to the Facility, or any part thereof, or materials or Plant for incorporation therein, during the period for which the Contractor is responsible for the care thereof, from any cause whatsoever, other that the risks, the Contractor shall, at his own cost, rectify without loss or damage so that the Facility conforms in every respect with the provisions of the Contract to the satisfaction of JDA. The contractor shall also be liable for any loss or damage to the Works occasioned by him in the course of any operations carried out by him for the purpose of complying with his obligation.

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

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

2.1.8 In the event of any damage/ loss of life and property in treated water tank and Pumping machinery, the contractor shall be solely responsible for compensation and damages as per the rules..

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

2.1.10 In case of power break down, the contractor shall lodge complaint to the concerned JVVNL office/ station and get the problem solved. In case of major power problem, the contractor shall immediately inform the JEN/AEN (PHE-I) concerned for seeking their help. However, it would be responsibility of the contractor to get the electric problem rectified through proper pursuance. In case

2.1.11 As built drawing' of water supply scheme showing location oftreated water tank, pipe lines shall be framed and displayed at appropriate place (s) in pump houses/ office building (s).

3.0 Risk & Obligations of the JDA

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

4. Commencement And Duration Of O & M Contract :

4.1.1 The O & M period shall commence upon issuing of Taking Over Certificate as per clause 4.2 under the construction phase of the project and shall Continue for a period of Thirty Six (36) months. Should JDA wish to propose an extension to the O & M Period, after completion of initial 36 moths O & M contract a prior notice of its intention to exercise such option shall be given to the contractor.

5. Liability:

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

6. Personnel :

The contractor shall depute to carry out O&M work as per scope of work, as per the minimum staff shall be deputed as per direction of EIC .

JDA is not liable for any personnel provided by the contractor in any way and cannot be held responsible in the event of litigation of any sort between the Contractor and members of plant personnel or their representatives. Round the clock (24 hours) watch and ward shall be the responsibility of contractor throughout the contract period.
All decisions related to staff numbers and qualifications should be approved by JDA. The number of shifts for pump operation will be decided by the contractor in accordance with the operations requirements.
The Contractor shall undertake to comply with applicable legislation and the code of labour law on the matters of health, hygiene and safety, and shall assume responsibility for works required in the event of any change in applicable regulations.

7. Assignment :

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

8. Completion Of The Contract :

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

replace / repair / rectify the same at his own cost to the satisfaction of JDA or third party inspector to be appointed by JDA at its cost.

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

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

9. Technical Provisions

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

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

The brief scope will be:

- Operation, maintenance and repairing as and when required of centrifugal submersible pumps for provide adequate water to meet the demand for gardening at vidhan sabha & SMS stadium.
- Weekly, fortnightly, monthly and yearly maintenance and repair of all the electrical, mechanical instrumentation and civil structures created under this contract. Cost of repair and consumables shall be born by the contractor.
- Maintenance of rising and distribution pipe line for leakage free system.
- Semi annual or monthly inspection for items such as gland of stuffing box, cleaning of gland bolts, inspection of packing, alignment of pump and drive, condition and quantity of grease or oil for bearings, motors, circuit breakers, ATS, etc., contacts of relay and circuit breakers, level of oil in transformer, GO/DO contacts and over current relay, settings of over current relay, no volt coil and tripping mechanism, temperature of oil and windings, connections of equipment etc.
- Annual inspection like checking of shaft sleeves for wear, checking of clearances, pump test, end play of bearings, impeller condition, calibration of instruments, resistance of earth pit, insulation resistance of switches, bus bars, auto transformer, phase to earth & phase to phase resistance.
- .

10.0 Performance Standards :

THE CONTRACTOR WILL OPERATE AND MAINTAIN IN A STATE OF CONTINUOUS OPERATIONAL READINESS ALL PLANT AND SYSTEMS TO MEET THE FLOW REQUIREMENTS. IT SHALL REMAIN THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE PLANT SYSTEMS ARE AT ALL TIMES ABLE TO OPERATE TO THE MAXIMUM CAPACITY OF THE INSTALLED EQUIPMENTS. ALL PLANT AND PLANT INSTALLATION SHALL BE OPERATED WITHIN THEIR DESIGNED LIMITS. THE CONTRACTOR SHALL OPERATE THE PLANT STRICTLY WITHIN THESE OPERATING RANGES AND SHALL MANAGE THE OPERATION OF THE PLANT TO ACHIEVE OPTIMUM PERFORMANCE AS FAR AS POSSIBLE.(CREATED UNDER THIS CONTRACT ONLY)

11.0 Consumables And Spare Parts:

Unless stipulated otherwise elsewhere in the document, for the duration of O & M period, the Contractor will be responsible for the supply and control of lubricants, spare parts, chemicals and consumable materials excluding electrical power charges, necessary for the continuous operation of the works.
The stores inventory, the issuing and recording of spare parts will be the responsibility of the Contractor.
The contractor is also responsible for providing spare parts and material required for the operation and maintenance during the operation period and shall bear the cost for the same, including the cost of storing and safeguarding.

The contractor will make all necessary arrangements to ensure the continuous supply of spare parts and material for the works, and the rate of supply of these materials shall be in such quantities and amounts as would ensure uninterrupted operation.
Spare parts shall be supplied by the Contractor without any additional charge and the same will be used during O & M period.

12. Documents To Be Provided By The Contractor :

12.1 Operation Log Book :

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

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

12.2 MONTHLY REPORT :

The monthly report shall include but not be limited to :

a) volume of water distributed

b) all the problem areas in the facility,

13.0 Reduction in Rates

13.1 On account of poor upkeep of pump house and campus

A token penalty of Rs 100 per day would be levied on account of each day of poor upkeep of the treated water. Decision of Engineer In Charge shall be final in this regard.

Signature of Contractor

Executive Engineer (PHE-I)
JDA, Jaipur

Section A-4
Specifications of Work

SUPPLY OF DI PIPES, SPECIALS, VALVES AND LAYING OF PIPES FOR TREATED WATER

General

Standards

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

This specification requires a reference to the following standard specifications

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

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

Ductile Iron Pipe:-

The pipes will be centrifugally cast (spun) Ductile Iron pipes for Water and Sewage confirming to the IS 8329: 2000. The pipes used will be either with push on joints (Rubber Gasket Joints) or Flanged joints. The class of pipe to be used shall be of the class K-7.

The pipes shall be coated with bitumen as per appendix C and have factory provided cement mortar lining in the inside as per the provisions of Appendix B of the IS 8329: 2000.

The pipes will be supplied in standard length of 5.50 and 6.00 meters length with suitably rounded or chamfered ends. Each pipe of the push on joint variety will also be supplied with a rubber EPDM gasket. Any change in the stipulated lengths will be approved by the Engineer – in charge. The gaskets will confirm to the IS 5382:1985.

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

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

Inspection and Testing:

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

Marking

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

Packing and Transport:

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

Specials for Ductile Iron Pipes

General

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

Types of specials

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

Supply

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

General

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

Specification

The lubricant has to have the following characteristics:
must have a paste like consistency and be ready for use
has to adhere to wet and dry surfaces of DI pipes and rubber rings
to be applied in hot and cold weather; ambient temperature 0 - 50 °C, temperature of exposed pipes up to 70 °C
must be non toxic
must be water-soluble
must not affect the properties of the drinking water carried in the pipes
must not have an objectionable odour
has to inhibit bacterial growth
must not be harmful to the skin
must have a shelf live not less than 2 years

Acceptance tests

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

Packing

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

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

Laying and jointing of DI pipes

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

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

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

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

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

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

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

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

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

Anchoring of the pipeline

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

Leakage Test

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

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

The testing conditions for the pipelines are summarized as follows:

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

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

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

Pressure test with addition of make-up water

Pressure:	Test pressure
Duration:	3 hrs

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

All pressure testing at site should be carried out hydrostatically. The pipes shall be accepted to have passed the pressure test satisfactorily, if the quantity of water required to restore the test pressure as per the latest codal provisions does not exceed the amount 'Q', calculated by the above formula.

If it is required to test a section of a pipeline with a free end, it is necessary to provide temporary support against the considerable end thrust developed by the application of the test pressure. The end support can be provided by inserting a wooden beam or similar strong material in a short trench excavated at right angle to the main trench and inserting suitable packing between the support and pipe end.
The pipeline stretch will pass the test if the water added during the test period is not exceeding the admissible limits. No section of the pipe work shall be accepted by the Engineer in charge until all requirements of the test have been obtained.
On completion of a satisfactory test any temporary anchor blocks shall be broken out and stop ends removed. Backfilling of the pipeline shall be completed.

Failure to pass the test

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

Flushing and disinfecting of pipelines

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

Supply of Ductile Iron Pipes:-

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

Valves

General

The sluice valve will confirm to IS: 780/ IS: 2906.
The material to be supplied under this sub-section shall include but not be limited to the following:
All necessary fittings including bolts, nuts, gaskets, backing rings, counter flanges, jointing material, strainers etc. as required.

Sluice Valves

Scope

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

Nominal pressure and dimensions

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

Material

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

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

Coating

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

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

Marking, testing and inspection

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

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

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

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

Air valves

Scope and general design feature

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

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

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

Construction feature

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

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

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

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

Material

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

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

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

Inspection

Third Party Inspection:

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

1. Ductile Iron Pipes

Specifications for Laying and Jointing of Pipe Line System for Water Supply/treated water

Preparatory work

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

Alignment and the L-Sections

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

Standards

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

Tools and equipment

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

Handling and laying of pipes

Transportation of pipes and specials & Storage:-

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

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

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

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

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

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

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

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

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

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

Stringing of pipes along the alignment

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

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

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

Pipe trench

Trench excavation

The trench excavation of pipeline shall be in accordance with IS 12288. Pipe trenches shall be excavated to the lines and levels shown on the drawings or as directed by the Engineer in Charge. The depth of the excavated trench shall be as given in the drawings or as directed by the Engineer in Charge. The width of the trench at bottom between the faces of sheeting shall be such as to provide 200 mm clearance on either side of the Diameter. No pipe shall be laid in a trench until the section of trench in which the pipe is to be laid has been approved by the Engineer in Charge.

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

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

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

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

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

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

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

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

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

Trench excavation to commensurate with the laying progress

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

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

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

Bedding of the pipes

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

Laying and jointing of pipes

General

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

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

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

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

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

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

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

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

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

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

Special Cast Iron fittings and Accessories

Normally when pipeline is laid, a certain number of cast iron fittings such as tees, bends, reducers, etc, and special fittings such as air or sluice valves are required.

Laying of Fittings – All cast iron fittings shall be plain ended to suit the outside diameter of Asbestos cement pressure pipes and to the class and diameter of pipe manufactured. When using such cast iron fittings, they are jointed by cast iron detachable joints only. For cast iron specials having flanges, they are jointed in the pipeline with cast iron flange adaptors having one end flanged and the other plain ended.

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

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

Back filling and tamping

The soil under the pipe and coupling shall be tamped in order to provide a firm and continuous support or the pipeline. Tamping shall be done either by tamping bars or by using water to consolidate the back fill material.
The initial back fill material used shall be free of large stones and dry lumps. In stony areas the material for initial back fill can be shave from the sides of the trenches. In bogs and marshes, the excavated material is usually little more than vegetable matter and this should not be used for bedding purposes. In such cases, gravel or crushed stone shall be hauled in.
The initial back fill shall be placed evenly in a layer of about 100 mm thick. This shall be properly Consolidated and this shall be continued till there is a cushion of at least 300 mm of cover over the pipe. If it is desired to observe the joint or coupling during the testing of mains they shall be left exposed.
Sufficient back fill shall be placed on the pipe to resist the movement due to pressure while testing.
Balance of the back fill need not be so carefully selected as the initial material. However, care shall be taken to avoid back filling with large stones, which might damage the pipe when spaded into the trench.
Pipes in trenches on a slope shall have extra attention to make certain that the newly placed back fill will not become a blind drain in effect because until back fill becomes completely consolidated, there is a tendency for ground or surface water to move along this looser soil resulting in a loss of support to the pipe. In such cases, the back fill should be tamped with extra care and the tamping continued in 100 mm layers right up to the ground level.

- **All pipe laid shall be painted by enamel paint in red or any other color approved by EIC with embossing SEWER LINE at interval of every one meter.**
- **HDPE pipe is used for laying of pipe line by trenchless technology method shall be got approved by EIC.**
- **If any underground utility or structure is damaged during laying of HDPE pipe same shall be repair immediately by contractor for which no any payment shall be made.**
- **All prerequisite permission/survey/investigation shall be carried out by contractor for which no charge shall be paid.**

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.

A. Construction of treated water tank of Capacity 500 KL at Sahkar Marg near 1 MLD CETP

Following are the works covered in the Job of CWR

- SBC test of the soil for determination of SBC of the site. The structural design of the reservoir shall be based on the actual SBC or 8 MT/sqM, whichever is less.
- Submission of structural design and drawing as per specification and general arrangement drawing for the CWR and get checked from MNIT Jaipur , MBM engineering college or any other NIT as per approval of EIC
- Construction of RCC treated water tank as per approved design along with sump for fixing of centrifugal submersible pump with a provision of lifting arrangements..
- Providing and fixing of all puddle collars, valves, ventilator, dismantling piece and level indicator and lowering pipe upto 1 mt distance of tank wall as per specifications for delivery side.
- Size of Puddle collars/ DI pipes shall be as below;

Location	Pipe/Puddle Size	Length	Duck foot Band
Inlet	150 mm	Puddle 1 nos	1
Outlet	200 mm	2.75 mtr./1 nos	
Overflow	200 mm	As per requirement	

- Plinth protection of the RCC CWR,s as per GA drawing.
- The Contractor shall be fully responsible for the soundness of the construction, structural safety & water tightness of the structure based on the specifications, sound engineering practices, and latest I.S. provisions.
- Valve chamber for valve of out let pipe SV shall have to be constructed.
- Excavation for all structures including working spaces, trench excavation for pipes & other ancillary works in all sorts of soils, refilling & disposal of surplus earth at suitable site & dressing as per direction of Engineer-in-charge.
- Providing access to the top and inside the reservoir as per the drawing.
- Providing ventilation for the reservoir as per the specifications given in the chapter of “Specifications for Clear Service Reservoir & Specifications for Civil Works”.
- The outer surface of top dome shall be painted with suitable anti-carbonation paint.
- Testing of tank for water tightness and structural stability by filling it with water and in accordance to the procedure laid down in tender document/IS code.
- Colour washing using cement paint of approved make & quality as per specifications
- Painting the metallic surface & putting slogan on tank as per specifications.
- Final clearance of site before handing over the work, including leveling of earth and disposal of surplus earth as per directions of the Engineer in Charge.
- Submission of 'As Built' drawings.
- Cleaning, washing & disinfecting the reservoir and making its interior free of all foreign material, loose particles, debris etc and making it fit for storage of potable water, once in a year.

DESIGN CONDITIONS FOR UNDERGROUND OR PARTLY UNDERGROUND LIQUID RETAINING STRUCTURES

Ground or partly underground liquid containing structures shall be designed for the following conditions:
Liquid depth up to full height of wall : no relief due to soil pressure from outside to be considered;
Structure empty (i.e. empty of liquid, any material, etc.): full earth pressure and surcharge pressure wherever applicable, to be considered;
Structures shall be designed for uplift in empty conditions with the water table as indicated in geo-technical report & due care should be taken for seasonal variation on higher side.
Walls shall be designed under operating conditions to resist earthquake forces from earth pressure mobilization and dynamic water loads;

Ground or partially underground structures shall also be checked against stresses developed due to any combination of full and empty compartments with appropriate ground/uplift pressures from below to base slab. The design shall be such that the minimum gravity weight exceeds the uplift pressure at least by 20%.
An increase cover of 15 mm is recommended for walls and roof bottom to account for contract with chlorinated water in side the reservoir. The increase cover is not proposed for the base slab as cement concrete screed topping is proposed to provide protection to the RCC Structure.

FOUNDATIONS

The minimum depth of foundations for the structures, frame foundations and load bearing walls shall be as per IS 1904.
Bearing capacity of soil shall be determined as per IS: 6403.
Care shall be taken to avoid the foundations of adjacent buildings or structure foundations, either existing or not within the scope of this contract. Suitable adjustments in depth, location and sizes may have to be made depending on site conditions. No extra claims for such adjustments shall be accepted.
A structure subjected to groundwater pressure shall be designed to resist floatation. The dead weight of empty structure shall provide a factor of safety of 1.2 against uplift during construction and service.
Where there is level difference between the natural ground level and the foundations of structure or floor slabs, this difference shall be filled up in the following ways
In case of liquid retaining structures, the natural topsoil shall be removed as described above and the level difference shall be made up with Plain Cement Concrete not weaker than M 10.

DESIGN REQUIREMENTS

The following are the design requirements for all reinforced or plain concrete structures.

a) All blinding and leveling concrete shall be a minimum 75 mm thick in concrete grade M10 unless otherwise specified.

Liquid Retaining Structures:

All structural reinforced concrete shall be of a minimum M25 grade with a maximum 40 mm aggregate size for footings and base slabs and with a maximum 20 mm aggregate size for all other structural members.
The reinforced concrete for water retaining structures shall have minimum cement content of 360 kg/m^3 with a maximum 20 mm size aggregate and 330 kg/m^3 with a maximum 40 mm size aggregate.
The minimum reinforcement in walls, floors and roofs in each of two directions of right angles within each surface zone shall be as per 7.1 of IS: 3370 part 2.

a) The nominal cover of concrete for all steel, including stirrups, links, sheathing and spacers shall be as per 7.2 of IS: 3370 Part 2.
b) Structure shall be provided with damp proofing for basement and floors and water proofing for roofs.

Any structure or pipeline crossing below roads shall be designed for Class A of IRC loading.
All pipes and conduits laid below the structural plinth and road works shall be embedded in reinforced concrete of grade M20 of minimum thickness 150 mm.
Suitable admixtures may be used with the approval of Engineer in charge.
Construction of floors and walls of Liquid Retaining structures shall be as per 9.4 & 9.5 of IS: 3370 Part 1.
The following minimum thickness shall be used for different reinforced concrete members, irrespective of design thickness.

(i)	Walls for liquid retaining structures	:	150 mm
(ii)	Roof slabs for liquid retaining structures (other than flat slabs)	:	125 mm
(iii)	Bottom slabs resting on Ground for liquid retaining structures	:	150mm
(iv)	Floor slabs including roof slabs, walkways, canopy slabs	:	100 mm
(v)	Wall of cables/ pipe trenches, underground pits etc.	:	150 mm
(vi)	Column footings	:	300 mm
(vii)	Parapets, Chhajja	:	100 mm

CONCRETE MIXES

Cement concrete (plain or reinforced) shall comply with the requirement of specifications of Rajasthan PWD (B&R) Specification and Explanatory Notes for Buildings and House Drainage except in so far as these are not altered or modified by specific stipulations as given in the specifications herein. The concrete grades to be used shall not be leaner than following:

Water bearing structure i.e. container, beam platform in the reservoir and roof.	M25
Other structural concrete	M25
Lean concrete in foundation	M10

(D) Specifications of Electrical and mechanical works at Pump House

1. Centrifugal Submersible Pumps

1.1 General

It is not the intent to specify herein all the details pertaining to the design, drawing, selection of equipment/material, procurement, manufacture, installation, testing & commissioning, however, the same shall be of high standard of engineering and shall comply with all currently applicable standards, regulations & safety codes.

Generally from considerations of reliability, case of operation and maintenance, a split casing centrifugal pumps are proposed.

1.2 Pump Operation Range:

The pump shall be suitable for operation in a pumping system at the duty points specified for each pump and should be able to satisfactorily operate within the range of operation specified in the tender (make KSB, Aqua, MBH or any other equipment approved by EIC).

The duty condition of the pumps in the pumping system are as follows:-

a. 3 Nos Pumps Each of Discharge 16.0 lps, 40.0 mtr. Head.

1.3 Codes And Standards

The design, manufacture and performance of the centrifugal submersible pumps specified herein shall comply with the requirements of the latest edition of the applicable Codes and Standards.

1.4 Design Requirements

The pumps shall be capable of developing the required duty point head at rated capacity for continuous operation. Pumps shall be single stage or two stage in horizontal split case design running at 1450 rpm . Contractor shall select the pumps to operate satisfactorily within the operating rate. The pump shall have to stable bend curve, i.e. the total head.

The material of the various components shall conform to those stipulated in the “Technical Particulars” section.

The power characteristic shall be non overloading and preferably flat for flows higher than the best efficiency flow (BEP).

Specifications / dimensional standards for flanges are mentioned elsewhere in this document. It is Contractor’s responsibility to provide pump suction and discharge flanges as specified. Otherwise contractor must supply correct matching, M.S.plate flanges as per the thickness specified.

Spare parts supplied with the pump shall be identical to respective pump components and shall be from original manufacturer.

Pumps shall run smooth without undue noise or vibration. Noise levels and velocity of vibrations shall be within acceptable limits. Noise level shall be limited to 85 dba at a distance of 2m. Velocity of vibrations shall be within 4.5 mm/s as per relevant Hydraulic Institutes Standards and IS.

1.5 FEATURES OF CONSTRUCTION

1.5.1 Impeller

The impeller shall be an enclosed impeller, made in one piece and securely keyed on the shaft. The installation will include means to prevent loosening of the impeller during operation, including rotating in the reverse direction. The impeller shall be statically and dynamically balanced to prevent vibration.

1.5.2 Casing Ring

The pump shall be provided with a renewable type casing ring, to offer wearing resistance. Hardness of the casing ring shall be lower than the impeller.

1.5.3. Shaft

Single integral shaft, shall be designed to withstand the torque loads throughout the whole range of operating conditions, for the selected particular impeller diameter as well as all the impeller diameters covered between minimum and maximum impeller diameters when coupled to the motor shaft through flexible coupling.

1.5.4. Shaft Sleeves

Replaceable shaft sleeves shall be provided to protect the shaft where it passes through stuffing boxes. The end of the shaft sleeve assembly shall extend through the packing gland. Shaft sleeves shall be securely locked or keyed to the shaft to prevent loosening. Shaft and shaft sleeve assembly shall ensure concentric rotation.

1.5.5. Stuffing Boxes

Stuffing boxes at driving end and non-driving end shall be of such design that they can be re-packed, without removing any part, other than the gland and lantern ring. An axially split gland should be used to facilitate changing the gland packing. Sufficient space shall be available for maintenance purposes.

1.5.6 Air Release Valves

Pump shall be provided with arrangement of valve to vent air which may get accumulated in the pump.

1.5.7. Sealing

Self sealing water connections should be provided.

1.5.8. Flanges

Flanges shall be machined flat, with flange faces vertical and at right angles to the pump mounting surface. Flange drilling shall conform to IS 1538 (table IV & VI) with suction and discharge connections being flanged and drilled to the specified flange table. Pump flanges shall be flat faced and bolt holes shall be spot faced on the back side.

1.5.9 Bearings

Bearings shall be grease lubricated and should absorb the radial and axial thrusts, under all operating conditions. Anti-friction bearing shall be of standard type and shall be selected to give 20,000 hours continuous operation at rated operating conditions. The rise in bearing grease temperature will continuous running of the pump shall be within the allowable limits.

1.5.10. Base plate

The common base plate for pump and motor shall be provided having sufficient rigidity to resist vibration and distortion. Suitable holes shall be provided for grouting and they shall be so located that the base will be able to be grouted in place, without disturbing the pump and motor. The base plate should be of the drain rim type to collect any gland water leakage and lead to drain. All pumps and motors should be properly and accurately aligned, bolted and doweled to the base plate for installation of minimum 15mm diameter drain pipe. Foundation bolts shall be complete with nuts and flat and shake proof washers.

1.5.11.Coupling

A flexible pinbush type coupling shall be provided, duly bored and keyed to the pump and motor shafts.
The coupling and the pump shafts have to be designed such that the breaking load of the coupling system is below that of the shaft.

1.5.12 Accessories

All specified accessories and any other standard accessories required for correct and safe operation of the pump shall be furnished with the pumps.

Amild steel fabricated coupling guard shall be provided to provide a safeguard against the open rotating parts of the pump and motor.

Eye bolts (as many per pump as required for safety), shall be provided for ease of lifting and installation.

1.6 TECHNICAL PARTICULARS COMMON TO ALL PUMPS

1.6.1 Materials of Construction

1.	Casing	Cast Iron Gr.260 of IS 210
2.	Impeller	Bronze Gr. LTB II of IS 318
3.	Shaft	Carbon Steel 40 C 8 of IS 1570
4.	Shaft Sleeve	SS AISI 410 of LTB II of IS 318
5.	Casing Rings	Bronze Gr. I.T.B.II of IS 318
6.	Gland Packing	Graphited Asbestos

Accessories and services required to be supplied by the Contractor with pump

1.	Base Plate	Yes
2.	Coupling	Yes
3.	Coupling Guard	Yes
4.	Foundation Bolts	Yes

1.6.2 DRAWINGS AND INFORMATION TO BE PROVIDED

During detailed engineering the Contractor shall submit the following:

1. General arrangement, cross sectional and dimensional drawings/data pertaining to selected models with improvements, if any.

2. General arrangement/dimensional drawing of pump set including motor, base plate and coupling guard..

3. Complete pump performance curve with

   a) Il-Q curves for complete range of impellers between minimum and maximum size of impellers and efficiency curves super imposed on them, highlighting selected impeller diameter.

   b) Shaft Power – Q curves for complete range of impellers.

   c) Efficiency – Q curve for Maximum impeller diameter and selected impeller diameter.

   d) NPSHR – Q curve for maximum, minimum and selected impeller diameters.

4. Test reports, performance curves and other particulars, as required by the applicable clauses of this specification.

   Instruction Manuals:

   a) Instruction manual for erection.

b) Instruction for pre-commissioning check up, operation, abnormal conditions, maintenance and repair.
c) Write up on Controls and interlocks provided.
d) Recommended inspection points and period of inspection.
e) Schedule of preventive maintenance.
f) Ordering information for all replaceable parts.
g) Recommendations for types of lubricants, lubricating points, frequency of lubrication and lubricant changing schedule.

2.0 Motor Control Center (MCC)/ LT MCC

2.1. General requirements :

The Motor control Centre (MCC/ LT MCC) required for 3x12 KW

2.2. Construction :

i) The Motor Control Center shall be in Conventional cubicle Type formation indoor, floor mounted metal enclosed.
ii) MCC shall be dust & vermin proof (Protection Class 1P54) all doors, panels, removable covers etc. are lined all around with Rubber/PVC gasket in U or rectangular shape.
iii) Metal enclosed bus bar compartment running horizontally throughout the length of the Switchgear.
iv) Sides of the MCC & front of the Starter Doors of Panel shall be provided with louvers to Facilitate proper circulation of Air.
i) Individual feeder modules (Starters) in Horizontal in conventional cubicle type formation.
ii) Metal enclosed unit is comprixed of rigid structural frame of 2 mm thick 14 SWG sheed steel and doors and covers of 1.6 mm thick 16 SWG cold rolled sheet steel.
iii) A 75x40 mm MS channel is provided as the Base Frame of the MCC.
iv) All Starters shall be accessible from the front side of the MCC. And the Starters are assembled on separate removable plate of not less than 16 SWG (1.6mm) thickness.
v) All Starters shall have Separate Door.
vi) All Aluminium busbars are supported by non-hygroscopic DMC resin cast insulating material.
vii) The busbars are minimum 150 sq.mm. Aluminium flat and are designed for carrying rated current continuously.
Viii) The Aluminium busbars are insulated by heat shrinkable sleeves of Red/Yellow/Blue & Black colours. For each Phase & Neutral.
Ix) The Incoming Main LT Cable shall be connected to Incoming MCCB only through Busbars with proper support of DMC Insulators.
x) The Ground Aluminium busbar will run throughout the length of the MCC.
Xi) Power Control and motor control equipment shall be fixed type execution.
Xii) The panel wiring will be executed by PVC insulated 660 Volts grade flexible wires of Grey/Red colours.
Xiii) The wiring of CT circuit is executed with 2.5 sq.mm wires.
Xiv) Normal control circuit wiring will be executed with 1.5 sq.mm control Cables.

2.3 Metal Treatment and Finish

All steel fabrication work used in the construction of the switchgear should have undergone a rigorous metal treatment process as follows:
i) The panel is first treated with a NEROLAC's degreasing, de-rusting, pickling and phosphating emulsion.
Ii) Thereafter, passivating in de oxalite solution to retain and augment the effect of phosphating.
Iii) Drying with compressed air in a dust free atmosphere.
Iv) The panel is then coated with 2 (two) coats of metal primer.
v) The pasting be done with automative NC putty.
Vi) Finally two coats of Mat finish (Non glazing) synthetic enamel paint is applied and air dried.

2.4. Wiring

i) The panel shall be completely factory wired, ready for connection to the equipment at site.
Ii) Power wiring for 20 HP starters shall be carried out with 1100 volt grade by 10 sqmm copper conductor Multistrand single core flexible cable.
Iii) Motor side wiring shall be carried out with 1100 volt grade by 6 sqmm copper conductor multistrand single core flexible cable.
Iv) All control wiring shall be carried out with 1100 volt grade single core PVC cable Grey/ Black conforming to IS:694 having stranded copper conductors, of minimum 1.5 sqmm section for potential circuits and 2.5 sqmm section for current transformer circuits.
v) Wiring shall be neatly bunched, adequately supported and properly routed to allow easy access and maintenance.
Vi) Wire shall be identified by numbered ferruled at each end. The ferrule shall be of ring type and of non deteriorating material. They shall be firmly gripped on each wire so as to prevent free movement.
Vii) All control circuit of individual starters, metering and indication shall be protected by single pole(SP) MCB not more then 6 amp.

2.5. Lables:

i) A anodized aluminium Danger Plate for 440 volts is provided.
Ii) Individual module (Motor Starter or Power Control) shall be labelled by acrylic or anodized

2.6. Earthing terminals

A ground earthing aluminium Busbar of 25 x 6 shall run throughout the length of MCC.

2.7. Water Level Indicators

The Motor Control Centre is comprised of the following components:-

S.No.	Description	Make	Quantity
1	Moulded case Circuit Breaker (MCCB) of 100 amp TP of 25 KA	L&T, GE Power,	As per

	breaing capacity. Suitable for 415 volt 50 Hz. AC supply with adjustable Thermal current setting	Crompton, (CGL), Havels	requirement
2	Volt meter, Digital Type (DPM) 1.5 class, 0-700 volt Ac range. 96 sqmm frame size. 31/2 digit LED Display, with selector switch	Meco, AE, Enercon, Agronic, Indotech	As per requirement
3	Ampere meter, Digital Type, (DPM) 1.5 class, 100/5 CTR current range., 96 sqmm frame size., 31/2 digit LED display with selector switch	Meco, AE, Enercon, Agronic, Indotech	As per requirement
4	Current Transformer BPL type Class –I, 100/5 CTR 5 VA burden.	Alfa, Essma, Indotech	As per requirement
5.	Phasing Indication Light RYB, LED Type. For 230 Volt AC Supply.	Vaishno, Teknic	As per requirement
6.	MCB 2 Amp. SP for Control Circuit.	Protec, Havells, Hager (L&T)	As per requirement
7.	Aluminium Busbar 150 Sq. mm. (25x6mm.) 4 Pole.	Panel Manufacturer	As per requirement
8.	Cable Gland suitable size for 50 sq.mm. $3^{1/2}$ Core Armoured nickle plated for Incoming Cable.	Gripwell	As per requirement
9.	Electroni Digital Type Water Level Indicating Instrument to Indicate Water Level of SR & CWR.	Nivo	As per requirement

2.8 Outgoing Feeders :

Sr. No.	Description	Make	Quantity
1.	Moulded Case Circuit Breaker (MCCB) of 40 Amps. TP of 16 KA Breaking capacity. Suitable for 415 Volt 50 Hz AC Supply. 35 HP fully Automatic Star Delta Starter with Push Button Starting facility from MCC as well as Remote Push Button Station. Star-delta Starter comprised of 40 Amp. AC 3 Duty Contactors 3 nos. Single Phase Preventer Minilec Make, Pneumatic Timer of BCH Make & Thermal Overload Relay suitable for 20 HP Motor. Star-delta Starter is provided with Ampere Meter Digital Type DPM 1.5 CLASS 50/5 ctr CURRENT Range 96 Sq. mm. Frame size, 31/2 digit LED Display with Ammeter selector Switch & CT's. Starter 'ON' Indication LED type to be provided on MCC as well as Remote Push Button Station. Outgoing Termination of Starter not less than 60 Amp. 6 Way open type Separate Control Terminate 30 Amp. Way for Remote Push Button Station A 7.5 KVAR Capacitor to be provided with each Star-Delta Starter.	As per List	As per requirement
2.	MCB 6 Amp. TP with 2 HP DOL Starter with Push Button Starting facility from MCC as well as Remote Push Button Station.	As per List	As per requirement
3.	MCB 32 Amp. TPN.		As per requirement
	MCB 32 Amp. TPN		As per requirement

2.9 Approved Make of Components :

1.	MCCB :	L&T, GE Power, Crompton,, (CGL), Havells (Dorman Smith)
2.	DIGITAL METERS :	Meco, IMP, Enercon, Agronic, Indotech.
3.	CURRENT TRANSFORMERS :	Alfa, Indotech, AE.
4.	INDICATING LIGHT & PUSH BUTTON:	Teknic, Vaishno, Standard Gold.
5.	MCB:	Protec, Hager, Standard, Merlin Gerin.
6.	SELECTOR SWITCH :	Salzer, Kaycee, Standard Gold.
7.	CABLEGLAND :	Gripwell, Commet.
8.	DIGITAL WATER LEVEL INDICATOR :	Nivo
9.	CONTACTOR, RELLAY :	BCH, L&T, Siemens, Telemecanique (Schneider)
10.	PNEUMATIC TIMER :	BCH

11.	TERMINAL STRIPS :	Veeco, Essen.
12.	CAPACITORS :	Dugati (Neptune), L & T

3.0 Cables

3.1 LT Cables

3.1.1 Standards

No.	Standard	Description
1.	IS 1554	PVC insulated electric Cables.
2.	IS 8130	Conductors for insulated electric cables.
3.	IS 5831	PVC insulation and sheath of electric cables.
4.	IS 3975	Mild steel wires, strips and tapes for armouring of cables.

3.1.2 Other Considerations

Power cable shall be of Al conductor, whereas control and lighting cables shall be of Cu conductor. The minimum size of Al conductor cable shall be 4 mm^2 and Cu conductor cable of 1.5 mm^2.The sizes of the cables shall be as per cable list given in Part B7.Control cables of CTs shall be based on the VA burden of CT and relays, meters.

3.2 Technical parameters

LT Cables	PVC insulated, taped PVC inner sheath and outer sheath 1100 V grade, with multi-stranded aluminium/copper conductor, armoured
Cable selection	Cable shall be selected considering following points Current rating of the load De-rating due to grouping of cables Voltage drop up to 3% in cable due to cable resistance De-rating factor due to ambient temperature. De-rating due to depth in case of buried cables

3.3 Inspection

All routine test on cables-**class B** All type test certificate conducted on similar cables

4.0 Mild Steel Pipes

Pipe work within the battery limits shall be flanged, mild steel (MS) pipes confirming to IS 3589. The pipes shall be manufactured from fresh mild steel plates confirming to IS 2062 and having minimum tensile strength 410 Mpa . The pipe wall thickness shall not be less than 6.35mm for pipes from 200 to 500 NB sizes. Pipes of sizes 150mm and below shall be MS black pipes as per IS1239 heavy class.

4.1 MS specials and pipe assemblies

Should any mild steel (MS) specials (bends, reducers, enlargers, tees, tail pieces and pipe assemblies i.e. headers etc.) , can be required they shall conform to IS 7322. The overall. Dimensions i,e. Length, radius etc. Of the specials shall be as per IS 1538. The contractor will submit the design and drawings for each special to be used in any of the Pipe work in the package. After approval by Engineer in charge, the contractor will take up the manufacturing. The specials shall be manufactured in a workshop and under conditions approved by Engineer in Charge. Headers with branches and other similar piping, components shall be pre fabricated at the contractors work shop. Welding at the site shall be limited to a strict minimum after approval of the Engineer in Charge, No specials shall be manufactured /welded on site. The contractor has to ensure the timely manufacturing of the MS specials so that they can be installed in synchronization with the pump and equivalent installation.

On completion of the manufacturing the material will be inspected by the Engineer in Charge or his representative. After clearance and approval, the coating and lining for the specials will be applied by the contractor.

4.2 Flanges

All mild steel flanges shall be machined flat with flange faces vertical and at right angles to the mounting surface. The thickness of the flanges shall be as per IS 6392. The drilling of the flanges shall confirm to IS 1538 (part IV and VI)

4.3 Design consideration – MS pipe and specials

Pipe fittings of size 50NB and below shall be forged confirming to IS –1239 Part II. Fittings above 50NB upto 200 NB shall be welded/seamless confirming to ASTM A-234 Gr. WPB and dimensional standard ANSI B 16.9 Fittings and specials of size 250 NB and above can be fabricated from pipes of respective specifications. 45^0 and 90^0 bends shall be made in mitre construction with 3 piece and 5 piece design respectively. Equal and unequal tees shall be made by direct welding of pipe to pipe with reinforcement pads wherever as per direction of Engineer in Charge

4.4 Nuts, Bolts, Studs and Washers

Nuts and bolts shall be of the best quality bright steel, machined on the shank and under the head and nut. Studs, bolts and nuts shall be galvanised. Bolts shall be of adequate length. Nuts and bolts shall conform to IS 1363 and IS 1367.

Washers, locking devices and anti-vibration arrangements shall be provided where necessary.

Where there is a risk of corrosion, bolts, nuts and studs shall be designed so that the maximum stress does not exceed half the yield stress of the material under any conditions.

The Contractor shall supply all holding down, alignment leveling bolts complete with anchorages, nuts washers and packing required to fix the plant to its foundations, bed plates, frames and other structural parts.

The Contractor shall procure and keep at site, reasonable excess quantities to cover wastage of those materials which will be normally subject to waste during erection, commissioning and setting to work.

5.0 Miscellaneous

5.1.Chairs

Steel tubular office chair with cane seat and back made of ERW 1/14 gauge pipe with half hanging arms.

5.2 Stool

Wooden stool ordinary size 38x38x45cm

5.3 Tables

Office table of steel tube with sunmica top fitted with 3 drawers one side (automatic lock) and another side cupboard with shelf having lock and key arrangements of size 150 x 90 x 75 cm round pipe.

Executive Engineer (PHE-I)
JDA, Jaipur

Section A-5
Annexure

Annexure A :

Compliance with the code of Integrity and No Conflict of Interest

Any person participating in a procurement process shall –

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

Conflict of Interest:-

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

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

Annexure B :

Declaration by the Bidder regarding Qualifications

Declaration by the Bidder

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

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

Date :
Place :

Signature of bidder

Name :
Designation :
Address :

Annexure C:

Grievance 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 there of relating to the matter.
(c) After hearing the parties, perusal or inspection of documents and relevant records or copies thereof relating to the matter, the Appellate Authority concerned shall pass and order in writing and provide the copy of order to the parties to appeal free of cost.
(d) The order passed under sub-clause (c) above shall also be placed on the State Public Procurement Portal.

FORM No. 1

[See Rule 83]

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

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

1. Particulars of appellant :

(i) Name of the appellant :

(ii) Official address, if any :

(iii) Residential address :

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

Place ……..
Date ……..

Appellant's Signature

Annexure D :

Additional Conditions of Contract

1. **Correction of arithmetical errors**

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

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

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

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

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

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

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

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

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

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

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

Signature of Contractor
with full address & Mobile No.

Executive Engineer (PHE-I)
JDA, Jaipur

AnnexureE:

JAIPUR DEVELOPMENT AUTHORITY, JAIPUR

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

Office Order

Subject: - DLP period for various type of works.

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

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

Table-I

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

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

Table-II

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

Various conditions for managing DLP are as under:-

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

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

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

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

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

Table-III

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

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

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

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

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

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

Copy to following for information and necessary action:-

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

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

SCHEDULE 'H'

SPECIAL CONDITIONS

1. If there is any typographical error or otherwise in the 'G' Schedule the rates given in the relevant BSR on which schedule 'G' has been prepared, shall prevail.
2. The contractor shall follow the contractor labour regulation and abolition Act 1970 & Rule 1971.
3. The JDA shall have right to cause on audit and technical examination of the work and the final bills of the contractor including all supporting vouchers, abstract etc. to be made within two years after payment of the final bills and if as a result such audit any amount is found to have been over paid/excess in respect of any work done by the contractor under the contract or any work claimed by him to have been done under this contract and found not to have been executed the contractor shall be liable to refund such amount and it shall be lawful ;for the JDA to recover such sum from him in ;the manner prescribed in special condition no. 8 or any other manner legally permissible and if it is found that the contractor was paid less then that was due to him under the contract in respect of any work executed by him under it, the amount of such under payment shall be paid by the JDA to the contractor.
4. The contractor shall not work after the sunset and before sunrise without specific permission of the authority Engineer.
5. 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. 6 or mutually extended prior or makes modifications in the rates, terms and conditions of the tender within the said period which are not acceptable to the department or fails to commence the work in the specified period, fails to execute the agreement and fails to furnish performance guarantee the department shall without prejudice to any, other right or remedy, be at liberty to forfeit the amount of earnest money given in any form absolutely. If any contractor, who having submitted a Bid does not execute the agreement or start the work or dose not complete the work and the work has to be put to re-biding, he shall stand debarred from participating in bidding in JDA for Six Months in addition to forfeiture of Earnest Money / Security Deposit /Performance Guarantee and other action under agreement
12. Rules regarding enlistment of contractors provide that work upto five times limit for which they are qualified for tendering can be allotted to them. Therefore, before tender the contractors will keep this in mind, and submit the details of work. Bids with incomplete or incorrect information are liable to be rejected.
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-Incharge in writing. Failing which, such material shall be removed by the Engineer-Incharge at risk and the contractor after expiry of 3 days period.
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-I)
JDA, Jaipur

ANNEXURE- I

[Reference Clause 3(i)]

Signed Photograph of Applicant

To be given on Non-Judicial stamp
Paper of Rs. 10/- only,

AFFIDAVIT

I/We…… Proprietor/ Partner/ Authorized signatory of M/s …… under take the oath that the information furnished by me/us of the assessment Bid for …… is correct to the best of my/our knowledge and nothing has been concealed by me. I acknowledge that if in future any information furnished by me is found incorrect I will be solely responsible and shall be punished as per the law and also any benefits in any form obtained by me shall be recoverable.

.....
Proprietor/ Partner/ Authorized signatory
M/s .....
.....

Note:-
The applicant has to enclose a self attested photo identity card with the above affidavit.

ANNEXURE- II

Bank Guarantee Performa for Bid security deposite

Form of (Bank Guarantee) -En cashable at branch of the bank in Jaipur City.

To
Secretary,
Jaipur Development Authority,
Jaipur

Sub:
Bank Guarantee No. _____ dated _____ for [amount of Security in figures] [in words] on behalf of _____ [Name of the Bidder] against the Security Deposit for the work of "**P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium**"

WHEREAS, _____ [name of Bidder with address] **(hereinafter called "the Bidder")** has submitted his Bid dated ..... for the work of "**P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium**" (Hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that we _____ _____ (Name of Bank) of having our registered office at _____[name of country] having our registered office at _____ (hereinafter called "the Bank") are bound unto Secretary, Jaipur Development Authority. (Hereinafter called "the Employer") in the sum of Rupees _____ **[Amount of Security in figures]** _____ (in words) only for which payment will and truly to be made to the said Employer, the Bank binds itself, its successors, and assigns by these presents.
That on demand of JDA , this Bank Guarantee is encashable at following branch in Jaipur City.
1. Name of Bank:
2. Name of the branch with branch code:
3. Address:
4. E-Mail Id:
5. Telephone No.
6. Fax No.:

SEALED with the Common Seal of the said Bank this _____ day of _____ of 20____.

THE CONDITIONS of this obligation are:
(1) if the Bidder withdraws his Bid during the period of Bid validity specified in the Form of Bid;
(2) if the Bidder refuses to accept the correction of errors in his bid;
(3) If the Bidder, having been notified of the acceptance of his Bid by the Employer during the

period of Bid validity;

(a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, or

(b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders;

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

This Guarantee will remain in force up to and including the date 30 days after the date of expiration of the Bid Validity, as stated in the Instructions to Bidders, or any such extension thereto as may be agreed by the Bidder, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

The amount covered under the above Bank Guarantee shall be automatically be credited in the accounts of JDA in ICICI Bank, JDA Campus, Jaipur through **ISFC code No ICICI 006754. Bank Account No. 675401700518** on the date of expiry or its validity, unless the agencies get it re-validated well before its expiry date or produce NOC from JDA in written for its release.

Date _____Signature of the Bank_____

Witness_____ Seal _____

[Signature, Name and Address]

[Note: To be furnished on appropriate non-judicial stamps.]

PAYMENT MECHANISM FOR PARTICIPATING IN TENDER

Jaipur Development Authority has decided to receive Earnest Money Deposit (EMD) (Bid Security) Tender 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). 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/RTGSL **"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 (NEFTIRTGS), on confirmation of payment from ICICI Bank (Auto Process) **"Bid Participation Receipt"** will be available on Login of Bidder on JDA portal.

-SD-
Executive Engineer (PHE-I)
JDA, Jaipur

Section A6
Drawings

Jaipur Development Authority, Jaipur

Name of Work:- P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium

G-Schedule

Based on JDA PHE BSR & approved rates

S.No.	Particulars	Unit	Qty	Rate	Amount
1	Providing laying & Jointing of ISI mark centrifugally cast (Spun) ductile iron pressure pipe for water with socket and spigot end and Tyton joint confirming to IS 8329/2000 and departmental specification in standard length (As required) for (Class K-7) suitable for push on joint (rubber gaskets jointing) with side cement mortar lining with cutting of pipe and fixing of C.I. special joint where ever required. This also include the excavation of trench up to 1.5 Meter depth in all type of soil cutting of road surface pavement where required lift up to 1.5 Mt. stacking the soil clear form the edge of excavation and refiling of soil after laying and jointing of pipe line with proper compaction and disposing of all surplus soil as directed with in lead of 30 Meter. This also include getting the pipe line tested and site clearance etc.**(D-878 dt.01.09.2008)**				
1.1	150 mm	P. Mtr.	1150.00	2013.00	2314950.00
1.2	200 mm	P. Mtr.	1100.00	2455.00	2700500.00
1.3	100 mm	P. Mtr.	300.00	1397.00	419100.00
2	Providing, fabricating and installing MS specials including rolling, cutting, welding in different shape and size. **(D-547 dt. 20.12.2011)**	Kg	1500.00	80.00	120000.00
3	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)**				
3.1	100 mm	Each	6.00	274.00	1644.00
3.2	150 mm	Each	12.00	458.00	5496.00
3.3	200 mm	Each	12.00	652.00	7824.00
4	Supply and fixing of cast iron double sluice valves IS 14846/2000 specification (ISI marked) of PN-1 rating including cost of rubber flange gaskit and nut bolts complete as required for following sizes. **(D-547 dt. 20.12.2011)**				
4.1	100 mm	Each	2.00	5541.00	11082.00
4.2	150 mm	Each	4.00	8107.00	32428.00
4.3	200 mm	Each	4.00	12565.00	50260.00

5	Supply and fixing of cast iron Dismentiling joint as per PHED Specifiction including cost of rubber flange gaskit and nut bolts complete as required for following sizes. **(D-547 dt. 20.12.2011)**				
5.1	200 mm	Each	2.00	6036.00	12072.00
6	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.				
6.1	25.0 Sq. mm Complete Rate Armoured				
6.2	4 Core	P. Mtr.	50.00	177.60	8880.00
7	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade:				
7.1	Two or more coats on new work	Sqm	7124.45	39.60	282128.22
8	Providing, installation, testing and commissioning of LT MCC with panels housing motor starters relays, MCB/MCCBs, bus-bar for all pump sets including all internal cabling and cable/bus-bar from switchyard, up to panels, Capacitor control pannel, housing power factor control system panel/capacitor (APFC Panel), other switchyard upto panels, soft starters, for each pump set, complete in all respect as per the scope of work & specifactions.(36 KW) (12 KW X 3 Nos. = 36 KW)	Each	1.00	218077.00	218077.00
9	Supply & Installation of submersed centrifugal pump set At CWR near 1 MLD CEP at Sahkar Marg 16 lps capacity at 40 MWC with accessories (12 KW)	Each	3.00	50000.00	150000.00
10	Providing supplying, erection and commissioning of Electro-Magnetic flow meters with transmitter & flow integator (with Digital display in Instrument Panel in Contral Room) complete in all respect as per the scope of work & specifications of following sizes (200 mm)	Each	1.00	192362.00	192362.00

11	Providing, jointing, laying, testing and commissioning of HDPE - 100/PN (suitable for pulling method for jointing) pipes for sewer line as per IS-14743 : 1996 by trenchless method adopting any suitable technology below ground at required depth including carriage etc. complete in all respect, construction of thrust pit and receving pit of required size upto 3 meter depth and soil investigation, making suitable arrangement for barricading of pits, traffic diversion, lights, traffic permission from relevant authority (though department will assist in getting the permission), refilling of pits in compacted layers of 150 mm including disposal of surplus material with all lift and lead upto 50 metre as per specification and the direction of the engineer In all type of soil 200 mm dia HDPE pipe	Mtr.	120.00	2150.00	258000.00
				Total of Part 'A'	**6784803.22**
				Say Rs.	**6784803.00**

Executive Engineer (PHE-I)
JDA, Jaipur

I/We Quote as …….. % Above/ Below the schedule " G "

(In Words……..……..……)'

Signature of Contractor
With full Address & Mobile No.

Jaipur Development Authority, Jaipur

Name of Work:- P/L/J of pipe line for treated water from 1 MLD CETP Sahkar Marg to Vidhan Sabha and SMS Stadium

H-Schedule

Based on JDA PHE BSR & approved rates

S.No.	Particulars	Unit	Qty	Rate	Amount
1	Design & construction of clear water reservoirs of required capacity at following places, including its piping, fittings, etc complete in all respect as per the scope of work & specifications given in the tender documents near 1 MLD CETP at Sahkar Marg. Capacity 500 KL.	Kilo Ltr.	500.00		
2	Operation and maintenance of all the newly developed water supply assets under the contract as per scop of work including cost of consumable material for maintenance and spars (excluding electrical charges).	Per Month	36.00		
				Total	
				Say Rs.	

Executive Engineer (PHE-I)
JDA, Jaipur